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Intelligent design and theodicy

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Abstract: **This paper explores a seldom discussed difficulty for traditional theists who wish to embrace the purported evidence employed in biochemical intelligent design arguments, and who also employ a commonly used element in their theodicies – namely, the claim that God would have reason to make a relatively orderly and self-sufficient world with stable and simple natural laws. I begin by introducing intelligent design arguments and the varieties of theodicy at issue, then I argue that there is at least a strong prima facie tension between these theodicies and the claim that God intelligently designed biochemical systems in humans and other organisms. Subsequently, I examine three strategies for resolving this tension, in increasing order of plausibility. At the end of the paper, I raise and briefly discuss some wider issues for theists enamoured with theodicy approaches that emphasize natural orderliness and the stability of laws of nature.**

Introduction

Recently, there has been a barrage of renewed interest in biological design arguments in popular intellectual culture, sparked largely by Michael Behe's book *Darwin's Black Box* and the 'intelligent design' movement it spawned.[1] It seems that many theists outside professional scientific and philosophical circles have been jumping on the intelligent design [hereafter ID] bandwagon, and while their professional counterparts have been more cautious, they too have had growing sympathies toward the ID movement (sympathies in many cases nurtured for far longer than those in their amateur counterparts, among whom ID is a new fad).

Let me say from the outset that my purpose in this paper is not to join the fray and weigh in on the merits of ID arguments. Instead, I wish to examine a seldom explored topic – the coherence of ID with a popular component of theodicy, namely that stable natural laws and regularity in the world are valuable intrinsic goods. I hope to show that embracing ID is in tension with theodicies that employ this element, a fact that should give pause to any theists who believe that the

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element is an important component in any plausible theodicy and who also are inclined toward enthusiasm for ID. (While such tension need not vitiate evidence for ID, if it goes unresolved it could very well vitiate arguments that the intelligent designer is the God of traditional theism.)[2] At the end of the paper, I will explore some ways out of the difficulty, rejecting one, but ultimately arguing that two lines of response are potentially fruitful (with one of the two having a definite advantage). Let me begin by explaining what I mean by ID, and also describing the kinds of theodicies that are likely to be in tension with ID and why.

A word on terminology

The terminology 'intelligent design' has signified many different things and picked out a number of distinct views in its career (and conjunctions of distinct views, often different conjunctions on different occasions). As a result, it is important to be clear and explicit on its use, since confusion and miscommunication crop up easily in discussions where the wording is employed. In this paper, I will understand 'intelligent design' in the way Behe does – as signifying a theory about the origin and development of various biochemical systems at the subcellular level; biochemical systems he describes as 'irreducibly complex'.

These systems typically involve a large number of independent interactions between proteins. The reason Behe calls them 'irreducibly complex' is that he believes there is no way for such systems to attain even minimal function, and hence confer any sort of survival/reproductive advantage on the organism, unless all the pieces are in place. (Hence, the alleged grounds for the design inference: Darwinian selection, dependent as it is on the fitness brought about by mutations which cause tiny changes in phenotype, cannot be responsible for the production of such systems.) Although, in his book, he only describes a small fraction of the systems he believes are irreducibly complex, some of the examples he gives are bacterial flagellum 'swimming',[3] blood-clotting,[4] and aspects of B-cell functioning.[5] (B cells make antibodies.)

Behe is also very clear that his theory is not intended to challenge or dispute the 'big picture' of evolution, just neo-Darwinism as a theory of the development of these biochemical features of organisms. 'For the record', he says, 'I have no reason to doubt that the universe is the billions of years old that physicists say it is. Further, I find the idea of common descent (that all organisms share a common ancestor) fairly convincing, and have no particular reason to doubt it.'[6]

As I will be using the ID terminology, then, ID is not a theory about the origin of life, or about the need for a designer to meddle in the evolutionary development of macro-level features of organisms.[7] (An advantage of using the ID terminology this way is that most of the heated debates right now are about design inferences in just these biochemical cases.) If there is legitimate evidence against the naturalistic picture of evolution in these non-ID situations and a design inference is

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warranted on that basis, then this will only provide further tension with the theodicies I describe below. For reasons of space, I will only enter into a discussion of the problem for ID specifically here (aside from a few modest non-biological ruminations at the end of the paper). Readers can feel free to extend the lessons to further biological cases if they believe the empirical evidence there is appropriately analogous (or see those further cases as a problem for the solution strategies I will propose in the ID case – I won't speculate on the matter here).

The problem for theodicies

If ID theorists are correct about the development of the biochemical systems they discuss, then there are important lessons that transcend matters of actual biological fact (and which don't have to do directly with design). There are also important conclusions to draw about the likelihood of life evolving naturalistically – in particular, conclusions about the likelihood of certain kinds of life developing if natural processes are left to their own devices. If the arguments of ID theorists are good ones, then it is all but impossible for life of the sort we find on earth (everything from bacteria to human beings) to evolve on its own, where the natural building blocks of a typical solar system/solid planet and the natural laws are the only operative influences. The primary consideration that licenses the design inference to begin with is the very same one that allows us to draw this conclusion. To see this, consider the following propositions:

(L) The conjunction of all the true propositions about the structure and development of biochemical systems in life on Earth.

(G) Theism is true and God intelligently designed the biochemical systems ID theorists typically discuss, by direct intervention in the already operating natural order.[8]

As even proponents of ID are often willing to acknowledge, P(L/G) is not extremely high.[9] As Behe points out, for instance, no known function has been found for various components of DNA – so-called 'pseudogenes'.[10] (Transcending the Lilliputian realm of biochemistry, he is also quite willing to acknowledge the suboptimality of various macro-level biological structures, such as the vertebrate eye, though this is not strictly relevant to considering P(L/G), since L is a proposition about biochemistry, not life in general.) Although Behe is reticent in drawing any firm and specific conclusions about how efficient or optimal a designer would be likely to make a biochemical system (or even that our inability heretofore to find a use for things like these 'pseudogenes' is good evidence that they have no use), it is not a terrible stretch to suggest that if God were the intelligent designer, we would expect Him to make systems that were fairly optimal and efficient. It is also not a terrible stretch to suggest that biochemistry (at its present stage of sophistication) would provide strong clues as to that

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optimality and efficiency. Consequently, it is not much of a reach to suggest that the actual findings, even if there is strong evidence of design, are at least modestly in tension with what we would expect if God were the designer. Consequently, we would not assign a very high number to P(L/G) (i.e. a number very close to 1).

One might even plausibly extend this conclusion about the relatively low conditional probability of L to hypotheses that posit more modest designers. Presumably less powerful or knowledgeable designers would be less likely to produce optimal and efficient mechanisms than God, but the knowledge and power required to design optimal and efficient biochemical systems might not be very great on a cosmic scale. (Not very great for something that could have put itself in position to meddle with happenings on primordial Earth, and had any success in so meddling.)[11] If that were so, then the conditional probability of L on these other design hypotheses would not be much higher than on G.

Such difficulties do not typically give general proponents of ID much of a headache, though, since these theorists are usually not worried about the fact that the probability of L given any of the leading design hypotheses is not very high.[12] Rather, the heart of the ID theorists' case is that P(L/N) is extremely low, where N is the following:

> (N) The natural world (at least in the region that encompasses our solar system) operates in a self-contained fashion – in what philosophers sometimes describe as a 'causally closed' way. Every event in the natural world (including every event involved in the development of biochemical systems) is caused by some other natural event, in keeping with the laws of nature.[13]

ID theorists make the case that P(L/N) is extremely low by adducing evidence about the detailed workings of various biochemical systems (in particular, the allegedly irreducibly complex systems like the ones discussed earlier) in order to argue that the number of independent anomalies that would have to occur coincidentally to produce the systems in question is astronomically unlikely, even given billions of years (and quadrillions upon quadrillions of individual opportunities). Before proceeding, let me offer two comments on ID theorists' claim that P(L/N) is extremely low.

First, it is implausible on everyone's lights to assign P(L/N) a value of zero; even the most hard-headed ID theorist would be willing to acknowledge this. The reason why is that everyone in the debate believes that all that would be needed to produce these biochemical systems are mutations in the genes that code for the production of certain proteins. It is just that, according to ID theorists, there would be a great many different proteins involved, and so highly implausible to think that all the mutations would ever be produced at once (which is what would be needed). But there is no barrier in principle to the possibility of all those mutations happening at once without any violation of the laws (especially assuming that the

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laws governing the physical processes associated with genetic copying are indeterministic, which is a fairly mainstream view). After all, mutations do sometimes occur. If one mutation can occur, there is no barrier to the possibility of multiple mutations occurring at once, since these would be distinct, separate events.

Second, someone might agree with the spirit of the ID theorists' point, but disagree with the letter. How? By claiming that P(L/N) is not low, but only because God has made laws of nature with a variety of ad hoc provisions designed to produce the needed mutations without external interference. (For instance, these ad hoc provisions could include stipulations to the effect that if an event p that normally results in q happens at a specific place or time, it will instead result in r, where $r \neq q$.) While it is open to the opponent of ID to make this move, it is not very attractive. The main reason is that it achieves, at best, a hollow victory. It only defeats ID by conceding ID theorists' central assertion – the existence of a designer.

(It may not even succeed in defeating ID at all, depending on exactly how ID is formulated. If ID is formulated as merely a claim that a designer is responsible for ensuring the development of various irreducibly complex biochemical mechanisms that would not have come about – or were very unlikely to come about – if the natural laws are what natural scientists typically take them to be and were operating alone, then it can survive even this technical challenge. This is because such a formulation of ID does not require any direct intervention by the designer for its truth.) Moreover, even if the opponent of ID does follow this path, the inelegance of the resulting posited laws would result in very similar tension with theodicies as ID theories themselves do. Consequently, from here on, I will set aside these kinds of responses.[14]

We are now in a position to see how ID theorists' claims about P(L/N) allow them to conclude that ID receives tremendous confirmation from the evidence (over against N), even if the probability of L on any of the independently plausible design hypotheses is not especially high. (This comes from an application of the simple principle that, for any hypotheses x and y and evidence e – ignoring background knowledge – the ratio of $P(x/e)$ to $P(y/e)$ > the ratio of $P(x)$ to $P(y)$ if and only if $P(e/x) > P(e/y)$.) The important thing is just that design lead us to expect the evidence far better than N, and since our expectation of the evidence given N is supposedly so incredibly low, it doesn't take much to establish the conclusion that it is much higher given design, even after all the various problems with the design hypotheses have been accounted for.[15]

Here is where the problem for theodicies emerges – specifically, for theodicies that place an emphasis on the stability and simplicity of laws of nature, and the goodness of having such stable and simple laws for their own sake. There are a number of examples of theodicies in the literature that employ such elements. Perhaps the most prominent and explicit example (explicit with a qualification that will be dealt with shortly) is the approach that Peter van Inwagen has taken

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toward animal suffering, most notably in 'The problem of evil, the problem of air, and the problem of silence'.[16] van Inwagen aims to show that the suffering of animals over the course of evolutionary history doesn't provide evidence against theism.

The reason is essentially that God is faced with a decision, according to van Inwagen – either He can maintain a world with stable and simple natural laws where animals suffer (as a result of inevitable selection pressures like disease, scarce food resources, predators, natural disasters, etc.), or He can create a 'massively irregular' world where animals do not suffer, but where He often intervenes and violates the laws of nature, or violates them only once, but in dramatic fashion. Examples that van Inwagen provides of ways God could make a massively irregular world include making a world from scratch five minutes ago complete with apparent memories and records of millennia of history, killing harmful viruses and bacteria each time they are about to enter a sentient organism, or miraculously rescuing animals from forest fires and predators (while compensating predators with another source of food).

van Inwagen does not think that massively irregular worlds without animal suffering are obviously superior to non-massively irregular worlds with animal suffering, and so he thinks it is a mistake to regard the existence of an apparently regular world like the one we live in (that includes, and has included, a large amount of animal suffering) as especially problematic for theism. As he explains, for all we know,[17] 'being massively irregular is a defect in a world, a defect at least as great as the defect of containing patterns of suffering morally equivalent to those recorded by [a true claim about the amount, kinds, and distribution of suffering in the world]'.[18]

Part of his motivation for this view is a scepticism about the commensurability of the values of the various states of affairs (and also scepticism about our ability to correctly make value judgments about them, even if they are commensurable), but part is also just straightforward moral intuition about the good of stable natural laws. Although he does think that deists go too far in deprecating 'the miraculous on the ground that *any* degree of irregularity in a world is a defect', he believes that there might be 'something to this reaction'.[19]

The one complication with van Inwagen's account (alluded to above) is that it is not strictly speaking a theodicy, but rather what he calls a 'defence'. In van Inwagen's way of categorizing things, a theodicy is 'the conjunction of theism with some ''auxiliary hypothesis'' h that purports to explain how [a true proposition about the amount, kinds, and distribution of suffering, which van Inwagen calls 'S'] could be true, given theism'.[20] In addition, P(S/theism and h) must not be too low, and P(h/theism) must be high. (The reason for the latter requirement is that h must cohere well with theism.) A defence, on the other hand, has less stringent requirements. Defences must entail both the existence of God and S, but their probability, given theism, need not be especially high. The

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defender just must not have good reason to believe that their probability on theism is low; it is OK if the defender doesn't have much relevant information one way or the other.[21]

The point of all this for our purposes is that van Inwagen is not full-out endorsing the kind of theodicy I am suggesting is in tension with ID (and its concomitant claims about the goodness of stable natural laws), but he provides a good model of such a theodicy (minus the endorsement of its high probability given theism).[22] There are examples of philosophers who do straightforwardly endorse the goodness of stable and simple laws for their own sake, however. It is widely known that Richard Swinburne has often argued that the natural laws would need to be stable and relatively exceptionless in order to provide moral agents with the opportunity appropriately to gain knowledge that could be used in morally significant contexts, an important good in his eyes. But his grounds for believing that God would make the laws stable seem to transcend their usefulness in this respect. In his book-length treatment of theodicy, *Providence and the Problem of Evil*, for instance, he says that:

> Some of the prose poetry of the more popular science books does quite well in bringing alive the simplicity of the principles of behaviour (laws of nature) which governed the immensely hot and dense quanta of matter-energy at the time of the Big Bang; how they cooled to form the chemical elements and then the larger molecules; how the vast clouds of stuff coalesced into stars which formed galaxies, and cooler bodies – planets; and how the larger molecules came together to form simple and then more complex plants. My poor pen is ill equipped to depict the greatness of the dance of the Universe. But is it not obvious that a good God would seek to bring about such beauty?[23]

There are a number of other, less prominent examples of the same mindset, all expressed in basically similar ways.[24]

By now, the lurking tension should be apparent. If the evidence that leads scientists and philosophers to embrace ID leads them to embrace it because it would be all but impossible for nature alone to produce life in the form that it currently exists, then theodicies that emphasize the importance of stable laws and a pristine, self-contained natural order threaten to misrepresent the choices God would have been faced with. The decision would not be between: (A) a world where life on Earth evolves according to unfettered natural processes and which involves much suffering on the part of sentient (but non-moral) creatures along the way; and (B) a world that is massively irregular, but which has no suffering (or very little) over the course of its history (at least before moral agents appear). Instead, the decision would be between B and A′, a world where life on Earth evolves somewhat according to natural processes and somewhat according to God's (perhaps considerable) intervention.

Philosophers like van Inwagen want to contend that the decision between A and B is a difficult one (perhaps because it is hard to tell which option is superior, perhaps because the options aren't commensurable and so neither is superior

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nor inferior to the other), and others (perhaps like Swinburne) would go so far as to claim that A is superior, and so what we would expect God to choose. But the choice between A′ and B, on the other hand, threatens to be more clear-cut, and more clear-cut in favour of B. If that is in fact the case, it would obviously spell bad news for the theist, since it would imply that God would have had a superior set of options to choose from and did not opt for them (namely, the massively irregular ones that prevented suffering). Clearly, choosing inferior options is not what we would expect from God, and so the evidence against theism would be strengthened considerably as a result.[25]

Potential ways out of the difficulty

Let me now consider three potential general lines of response to this tension. I will present them in what I believe is increasing order of plausibility, with the last offering the promise of a principled escape without an excessive amount of difficult manoeuvring (depending on how some of the empirical details turn out).

The first response would be to deny that simply interfering with evolutionary processes on Earth constitutes massive irregularity, since Earth is just one planet in a vast cosmos, with the rest of that vast cosmos being left to its own devices (as far as we can tell). There are two natural counter-responses to this contention. First, planet Earth is obviously not just any place in the cosmos. It may be small, but as far as we can tell it is very special and much more intriguing than the average cosmic region. It is a rare gem in that it includes a number of extremely low entropy systems, and structures of great intrinsic interest (e.g. life). This is not even to mention, of course, the intrinsic interest of sentient (and intelligent) beings. It is the only such place we know of; it may be unique in the universe, but even if it is not, places as interesting are very rare.

It seems intuitive that God's meddling in such interesting places should count for more in the way of inelegance than his meddling in uninteresting ones. (One reason for this, it seems, is that there is strong intuitive support for thinking that places that are very interesting in the way that Earth is are also thereby important as far as cosmic regions go, and that God's meddling in important regions contributes to inelegance more than in less important regions.) A second counter-response is that if ID doesn't constitute massive irregularity because it's localized on Earth, then neither would God miraculously interfering to save animals from suffering.[26] After all, this sort of meddling would also be localized on Earth. So God could miraculously eliminate animal suffering and still not sacrifice too much elegance in the process. As a result of these considerations, I conclude that the first attempted response to the tension is not plausible.

The second response, unlike the first, doesn't deny the introduction of massive irregularity, but aims to justify it directly. Applying the lessons discussed above,

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we allegedly know that if God couldn't use ID (or some very artificial and rigged-up natural process where the laws have built in ad hoc qualifications that allow the proper things to come together at the proper times), then He couldn't make a world anything like the one we have, with life that has such an intricate biochemical basis. This is because naturalistic processes by themselves, without the ad hoc built-in qualifications, would stand next to no chance of producing such a world, even with God setting them up. But surely, the response goes, this shouldn't prevent God from making a world like ours at all! But if not, then we must tolerate God's use of ID, and so tolerate the massive irregularity that it introduces.

At first glance, a plausible counter-response to this suggestion is simply to ask why, if God is going to introduce massive irregularity, He doesn't go the whole nine yards and prevent all the suffering that has occurred in the evolutionary history of our planet? Why would He not at least miraculously dull any pain that animals have received at the mercy of predators, diseases, and natural disasters like catastrophic forest fires? Are we really to believe that the massive irregularity that accrues as a result of ID is acceptable, but that the irregularity that is added as a result of preventing suffering pushes things over the line of tolerability, or is of a quality that is somehow worse? Prima facie, either of these claims seems ad hoc. Why would one set of instances of massive irregularity be acceptable, but adding a second not?[27] It would be surprising if the standard for acceptable levels of massive irregularity just happened to fall in a spot that allowed for massive irregularity as a result of ID but not ID + relief of suffering.

To address the other issue, why suppose that the kind of irregularity introduced by the prevention of suffering is of a relevantly different quality than the kind introduced by ID? Perhaps a relevant difference between the two is that the suffering prevention is deceptive in a way that the ID is not, and that (in keeping with a line that van Inwagen is fond of) deception is part of the reason why massive irregularity seems like such a defect, since systematic deception of intelligent creatures (like us) with respect to the history or nature of creation is seemingly incompatible with God's goodness. But is there really a relevant difference in principle between the two kinds of case with respect to deception? There was a sizeable gap in human intellectual history between the time when humans were first capable of recognizing that evolution in its general outlines was correct and recognizing that there might be serious problems with naturalistic evolution at the biochemical level (this is assuming that there are such problems). (The gap was from the time when we learned that the Earth was old enough for basic Darwinian processes to occur, in the late nineteenth century, and the widespread use of modern techniques in biochemistry, like X-Ray crystallography, in the mid to late twentieth century.) During the interim, there was a sense in which humans were being systematically deceived about the nature of development of life on Earth.

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Isn't this relevantly different from what would be the case if God deceived us by artificially relieving the pains of all the animals throughout history? Maybe, but presumably in the future humans will have the technology to (e.g.) perform brain scans on animals in real-life environments, perhaps even when they are in circumstances where we would common-sensically judge them to be in pain. The results of these brain scans would indicate that something fishy and unexpected was occurring each time these animals got into the situations (namely, that their brains were not in the typical states associated with pain), assuming God did not cause further irregularities that affected the normal psychophysical bridge laws that govern what mental states are brought about by specified physical states of the brain,[28] (by, for example, making the brain state that we would expect to give rise to pain – based on observation of humans, say – give rise to pleasure instead). If this were the reality, God's systematic deception of people would be more widespread over human history than in the ID case (thousands of years rather than 75 or 100), but the deception would still be the same in kind – there would be massive deception until humans reached a stage of scientific and technological development sufficiently sophisticated to uncover the truth.

Is this more widespread nature of the deception enough to establish a relevant difference? Maybe, maybe not. And to be sure, there are also ways for God massively to deceive us that would not be discoverable in the same way – such as if He were miraculously to rescue fawns from forest fires and wildebeests from lions when and only when people would not be able to discover that there had been intervention. I won't speculate further on these options here. If any of them prove a successful way to rescue the original suggestion (i.e. that if ID is the only way for God to produce a world with a biology and a biological history like this one, then we shouldn't complain that He employed it without also working other kinds of massive miracles), they will have to sort through a myriad of difficult and controversial issues.

In any case, the discussion above naturally suggests a third response to the original tension that is likely to bear fruit more easily. Rather than focusing on the difference in *quality* between the irregularity produced by ID and that produced by artificial relief or prevention of suffering, focus instead on the difference in *quantity*.[29] If God were to have artificially prevented or alleviated suffering, He would have had to intervene billions upon billions of times throughout evolutionary history. In order intelligently to design biochemical mechanisms, however, God may not have had to intervene more than a handful of times. Behe, for instance, has even suggested that the biochemical mechanisms in question could have been designed all at once, and subsequently encoded in the DNA of a primitive organism billions of years ago, complete with special instructions about the points in evolutionary history where the relevant genes should be 'turned on'.[30]

Granted, this idea has been subjected to some harsh criticism,[31] but we can take a basic lesson from it. Regardless of whether all the genetic encoding for all the

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biochemical systems ID theorists believe are irreducibly complex could be programmed into one organism billions of years ago and be preserved and functional to this day, the number of interventions would be quite limited in number. Even if there were hundreds of irreducibly complex biochemical systems that required intelligent designing, this would still represent only hundreds of separate interventions, rather than billions, as would be the case in the artificial pain prevention/alleviation scenarios! And if these interventions would have to be spread out over time (*contra* Behe's speculation), this would be no great cause for concern. Spreading the hundreds of interventions out over millions of years would only make the irregularity in question less striking, and so seemingly less inelegant. Plus, most theists (Swinburne and van Inwagen, in particular) are comfortable with some intervention by God – they are often willing to tolerate religious miracles, for instance. And clearly a few hundred (or even a few thousand) intelligent design miracles over millions of years is no worse an irregularity than a few hundred (or even a few dozen) over the course of human history, at least not on intrinsic grounds.

And of course it is of no use to the defender of the claim that the tension between ID and traditional theism is too great to individuate miracles liberally – by, for example, counting every atom God moves or changes in the ID process as a separate miracle. This is because any similar individuation of miracles in the suffering-prevention scenarios will prove embarrassing, and only play up quantitative differences all the more. (Imagine how many independent atom changes will be required miraculously to transport a fawn from a forest fire, or even to change the brain state of a wildebeest that is being eaten by a lion.)

As far as I can see, there is one main problem that must be worked out with this approach before it can serve as a completed response to the tension, and a second more general one that should be considered if the strategy is to apply in other settings. First, proponents of it must ensure that the biochemical details are in the neighbourhood of what ID theorists have suggested in their printed work. The more interventions required, the more inelegant irregularity will have to be introduced. The irony here is the greater the evidence for ID (the greater the number, variety, and sophistication of irreducibly complex machines), the worse the problem for the traditional theist. But as far as I can see there is no reason to suppose that the number of interventions required will grow to a point that should be disturbing to the ID-defending traditional theist – after all, a large segment of the scientific community (comprised of the opponents of ID) claims that we have no good evidence to suggest that any interventions are required at all!

The second (and perhaps more serious) problem is when analogous considerations are brought in from outside biochemistry – indeed, from outside biology all together. Most traditional theists are sympathetic to a robust libertarian conception of free will (i.e. involving something like agent causation), for

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instance, and with good reason. Without invoking free will at the level of human suffering, it is excruciatingly hard to reconcile the state of the world with the existence of God. But such free will seemingly involves a familiar kind of irregularity – it requires the presence of 'unmoved movers' (the various agents) that have the capacity to affect happenings in the natural world spontaneously.[32] (Although the creation of agents may not involve irregularity – since they aren't part of the natural world – their exertion of causal power on natural entities is no less an irregularity than God's direct causal influence would be on happenings in the natural world.)

If God creates agents and places them in the world, this is itself an impressive kind of intelligent design, in the intuitive sense of 'intelligent design'. And moreover, if human beings are such agents, God will have to intervene each time a human being is created – perhaps not to create the agent, but at least to ensure that the agent will have the causal powers in the natural world required for effective agency. (Presumably the having of these causal powers will be granted by God on an ad hoc basis, not as the result of some law of nature.) Even if these interventions do not contribute to irregularity, God will still be indirectly responsible for all the clear contributions to irregularity that humans make when they exercise their power of agency, and there will be many quadrillions of these (assuming each person exercises this power on many occasions).[33] But now, if God is willing to tolerate this huge quantity of irregularity (which certainly seems massive), why would God feel constrained to avoid massive amounts of irregularity to prevent the suffering of animals throughout evolutionary history?

Perhaps a plausible answer to this question would return to the theme of deception. Or, perhaps it would appeal to important goods (like the goods of significant moral choice and heroic action) that would be impossible without free will, but where there are no corresponding goods associated with the irregularities brought about to prevent animal suffering. In any case, I won't speculate further here, since this is not really a problem for biological ID in resolving its tension with theism, but rather for an analogous kind of tension for design in another sphere. Nevertheless, these are important issues for theists sympathetic to design in a variety of forms to grapple with – and because of the centrality of free will in theodicy generally, dealing with them in this context is especially pressing.

Conclusion

I hope I have adequately demonstrated the nature of the tension between ID and theism. I also hope to have shown that, of the three potential theistic responses that I considered, the first has little or no plausibility, while the second and third have more promise. The third, in particular, is likely to be fruitful once fully developed, owing to the fact that it is less prone to entanglement in thorny issues about value comparison than the second.[34]

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Notes

1. See Michael Behe *Darwin's Black Box* (New York NY: The Free Press, 1996). For other defences of intelligent design, see William A. Dembski *Intelligent Design* (Downer's Grove IL: InterVarsity Press, 1999), and Michael Behe's more recent 'Darwin's breakdown: irreducible complexity and design at the foundations of life', in William A. Dembski & James Kushiner (eds) *Signs of Intelligence: Understanding Intelligent Design* (Grand Rapids MI: Brazos Press, 2001). For a sampling of criticism of intelligent design, see Kenneth R. Miller *Finding Darwin's God* (New York NY: Harper Collins, 1999), 129–164, and Niall Shanks *God, the Devil, and Darwin* (Oxford: Oxford University Press, 2004), 160–190.
2. In this paper I will understand 'traditional theism' (which I will sometimes shorten to 'theism') in the standard way. Traditional theism is true (roughly) if and only if there exists a supernatural being which is omnipotent, omniscient, and omnibenevolent.
3. Behe *Darwin's Black Box*, 69–72.
4. *Ibid.*, 78–97.
5. *Ibid.*, 120–126.
6. *Ibid.*, 5.
7. Both of these are situations where some contemporary philosophers and scientists have also wanted to introduce design inferences.
8. Allow me to say a bit about this direct intervention. I am assuming that we are working within a framework where laws specify how some entities will be involved in the production or generation of other entities. (This is sometimes informally called an 'oomphy' conception of laws.) Imagine that at least some of the fundamental laws are indeterministic (specifically, that they are probabilistic), and that the following is a sample law: 70 per cent of particles of type A will decay into particles of type B. I am supposing that this law specifies that there is an objective chance of .7 that any given particle of type A will decay into a particle of type B. In this situation, any external impetus that changes the objective chance of any type A particle's decay will count as a direct intervention. This is so even if the overall statistical pattern of decays conforms quite closely to what the law leads us to expect. Later, we will have occasion to discuss irregularity in worlds, and I take it that any interference in these sorts of objective chances will contribute to irregularity, regardless of the character of overall statistical patterns. (I also assume that laws of nature are not 'gappy' – there are no situations where the laws leave what should occur completely unspecified.) I am grateful to an anonymous reviewer for this journal for making me aware of the need to clarify my assumptions about laws.
9. I am understanding the probabilities in question here to be epistemic – as something like what are often called 'degrees of belief'. Aside from assuming that these are and should be constrained in various straightforward ways by the probability calculus, I will not propose any more substantive characterization of them in the present context.
10. See Behe *Darwin's Black Box*, 225.
11. Here I will set aside issues about whether it is likely that a knowledgeable and powerful designer lacking in goodness might produce a product that was lacking in optimality or efficiency.
12. ID theorists who believe that God (rather than lesser supernatural beings or aliens) is the intelligent designer will typically appeal to background considerations (and hence prior probabilities) to draw this conclusion, not to confirmation advantages that the God-hypothesis has over competing alternatives with respect to the ID evidence.
13. Caveats and elaborations may be required to make sense of indeterministic quantum processes, but I will set these issues aside. I also use the terminology of 'natural event' rather than 'physical event' to leave open the possibility that the natural order involves primitive mental properties, which can enter into lawlike relationships with other properties without miraculous intervention. Since humans lie outside the mainstream of the present discussion, I am ignoring all issues related to free will for the time being.
14. I am indebted to an anonymous reviewer for this journal for suggesting that these clarifications be made.
15. It is also important to note that these conclusion about P(L/N) being low do not seem to depend on rejecting God as the designer of physical laws or the initial conditions of the universe. If the progression of the universe is indeterministic (as there is good reason to believe), and that indeterminism is of a

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sufficiently substantial nature (as there is also good reason to believe), then it will not be possible for God to rig things up at the start of the universe and produce the biochemical systems with any acceptable likelihood. (A possible complication, which I will not address here, is if God were to have middle knowledge of various indicative conditionals about quantum decay and so forth. For some speculations on this matter, see Michael J. Murray 'Natural providence (or design trouble)', *Faith and Philosophy*, **20** (2003), 325–326.) Even if the world is deterministic (when left to its own devices), there is still good reason to suppose that God could not produce the biochemical systems just by tinkering with the initial conditions, because of chaos considerations (and also assuming God does not create laws with various ad hoc caveats, as discussed above). For some further discussion, see Thomas Tracy 'Evolution, divine action, and the problem of evil', in Robert John Russell, William R. Stoeger, and Francisco J. Ayala (eds) *Evolutionary and Molecular Biology* (Vatican City: Vatican Observatory; Berkeley CA: Center for Theology and Natural Sciences, 1998), 529.

16. See Peter van Inwagen 'The problem of evil, the problem of air, and the problem of silence', in J. Tomberlin (ed.) *Philosophical Perspectives, 5, Philosophy of Religion* (Atascadero CA: Ridgeview Publishing, 1991). All references here will be to the reprinted (but unaltered) version in Daniel Howard-Snyder (ed.) *The Evidential Argument from Evil* (Bloomington IN: Indiana University Press, 1996), 151–174.
17. More on this 'for all we know' qualification below.
18. van Inwagen 'The problem of evil, the problem of air, and the problem of silence', 161.
19. *Ibid.*, 161. van Inwagen is also worried about irregularity because it contributes to the systematic deception of higher-level sentient creatures (like humans). Because this is not an intrinsic problem with irregularity, I won't discuss it at this juncture. Suffice it to say, though, that there is considerably more to van Inwagen's distaste for massive irregularity than just its tendency to deceive.
20. *Ibid.*, 154.
21. For a criticism of van Inwagen's general strategy of employing defences to counter evidential arguments from evil, see M. J. Almeida 'Refuting van Inwagen's ''refutation'': evidentialism again', *International Journal for Philosophy of Religion*, **44** (1998), 23–29.
22. There may be tricky issues generally in evaluating the probabilities of theodicies/defences that make claims about values (claims that if true, are necessarily true), but I will set this aside as irrelevant here. Also, for the remainder of the paper, I will not be addressing the sceptic about value commensurability. The general problem of evil and the specific manifestation of it we will be discussing are much less troublesome for such an individual.
23. Richard Swinburne *Providence and the Problem of Evil* (Oxford: Oxford University Press, 1998), 51.
24. See, for example, Tracy 'Evolution, divine action, and the problem of evil', 525; John Polkinghorne *Faith of a Physicist* (Princeton NJ: Princeton University Press, 1994), 85.
25. Here I ignore issues about God's ability and/or obligation to make the best of all possible worlds (if there even is such a thing). Whatever one's views on these general matters, it is not hard to generate the intuition that in this specific case, if the one option is better than the other, we would expect God to make the better world.
26. We are, of course, assuming that God does not actually do this, and then simply covers His tracks.
27. We are assuming here that ID does in fact bring about massive irregularity on a scale which is similar to that of these artificial measures taken to prevent or relieve suffering. Below, I will tackle the suggestion that there is a serious difference in quantity of irregularity. But that is a separate objection.
28. I am assuming a dualist picture here, since on a physicalist picture, it would be metaphysically impossible for an animal not to feel pain if it were in the ordinary pain-brain state, since the pain would be identical (in some fairly straightforward sense) to the brain state. Consequently, even God could not affect the mental state in this case without affecting the brain state.
29. Here I am forced to set aside consideration of options like creating the Earth five minutes ago complete with apparent memories and substantial history, since the difference between this and ID really would be a difference in quality – a giant one-time intervention vs a (perhaps large) number of smaller, less dramatic, interventions.
30. See Behe *Darwin's Black Box*, 227–228.
31. See, for example, Miller *Finding Darwin's God*, 162–163.
32. In order for this intervention by agents to constitute irregularity, we need not assume that the laws are deterministic. Even indeterministic laws of the sort standardly accepted by physicists do not permit the

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sorts of influences spoken of here. I am grateful to Bill Hasker for pointing out the need for such a clarification.

33. Incidentally, in the 1950 papal encyclical *Humani Generis*, the first document from the Catholic hierarchy endorsing the compatibility of evolution with Catholic doctrine, Pius XII warns that this compatibility does not extend to belief in the naturalistic production of the human soul. He says that God's intervention is required for the production of 'the human soul', presumably implying each human soul.

34. I would like to thank Todd Moody and Bill Hasker, both of whom read previous drafts of this article and suggested a number of helpful improvements. I am also grateful for the detailed comments of an anonymous reviewer for this journal, whose suggestions have helped me to clarify several points.

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