
David Mumford

Archive for Reprints, Notes, Talks, and Blog

Professor Emeritus
Brown and Harvard Universities
David_Mumford@brown.edu

[HOME](#) [ALGEBRAIC
GEOMETRY](#) [VISION](#) [BEYOND
RESEARCH](#) [ABOUT](#) [BLOG](#)

Reading Spinoza

April 19, 2020

In our secular age, it is hard to bridge the gap between the long tradition of theistic philosophers and contemporary science-based speculation about the nature and fate of humankind. My friends are all over the map -- from avowed atheists to weekly church-goers. I have not been a regular churchgoer since graduating from Phillips Exeter where Sunday church attendance was compulsory. The word "God" was already an obstacle for me as the idea of him as a super-powerful old man in white robes watching and judging every action of every human felt so absurd, there seemed no point in looking further. But in the back of my mind, I knew that all those famous thinkers in the Judeo-Christian tradition were far from stupid. Struggling to find my own path, I stumbled last year upon Spinoza and, to my surprise, found a great deal that I could understand, though not without a struggle. This post is about my efforts to understand his writings and to understand their relation to other key ideas in my thinking, e.g. Plato, Descartes, Buddhism and Physics.

1. Spinoza and *substances*



Born in 1632 into a Jewish family that had immigrated to Holland to escape forced conversion in Portugal, excommunicated by the Jewish



Baruch Spinoza

authorities for his views at age 23 and his books put on the Pope's forbidden list, Spinoza was still protected by this liberal state, an island in turbulent 17th century Europe. He died at age 44 in 1677.

His books are not bed-time reading. His major work *Ethics* is written in the style of Euclid's *Geometry*: it consists entirely in numbered Definitions, Axioms, Propositions with cross referenced proofs and here and there a welcome Scholium (commentary). Fortunately, there are also many good contemporary commentaries on this book. I would like to acknowledge the huge help I got from Prof. Beth Lord's book *Spinoza's Ethics*. But I had another problem: everyone from Aristotle through Leibniz describes their metaphysics using the key word *substance*. Everything depends on this word but, unlike the convention in math textbooks, no philosopher gave a list of simple examples of substances to help you get the feel. Spinoza helpfully gives a philosopher's definition in *Ethics*, namely:

I-Definition 3: By substance I understand what is in itself and is conceived through itself, that is whose concept does not require the concept of another thing, from which it may be formed.

Clearly, he doesn't mean what we call substances, e.g. water, iron, wool. Going back to its origin, the word really seems to stem from a bad Latin translation of the Greek word **οὐσία** used by Aristotle. This word is simply the present participle of the verb "to be", interestingly in the feminine gender and nominalized, i.e. made into a noun. So it means something like "beingness" or "an existing thing" and, moreover, what you decide to call substances must be the core of your ontological beliefs. Aristotle distinguished primary and secondary substances (individual objects and classes of them) and it is the primary ones that Spinoza is talking about. In fact, after many preliminary arguments, Spinoza gets to this Proposition:

I-Proposition 14: Except God, no substance can be, or be conceived.

In the proper scholastic tradition, he gives a *proof* of this! As far as I know Spinoza was the first to interpret substance with this laser-like restricted focus on the ultimate source of existence. He is saying that all being is part of God or that God is precisely the totality of being. He uses the Latin phrase *Deus sive Natura*, God or Nature, to emphasize that he views God and Nature as synonyms, just two ways of thinking of the same thing. For this reason, he has been called a *Pantheist*, a short description that certainly captures part of his beliefs though by no means all as we shall see.

2. A short history of dualism and *substances*

But Spinoza knows well that a full description of substances is not so simple. From Plato to the present day, all philosophers have realized that the simple phrase *what is* is not at all simple and most of them have been forced to one or another form of *dualism*, a system of describing reality as having two parts or two aspects (or even three, e.g. in Popper). In order to put Spinoza's views in context, I need to first review some of notable high points in this history. Starting with Plato, his dualism is best understood through his metaphor that all humans are chained in a cave seeing only shadows of the true world, consisting of *ideal forms* outside the cave. For instance, I see my dog Gracie on the floor next to me, but I can only dimly understand the full essence of dogness, that is present in its ideal form outside the cave. Perhaps clearer is the example of the number five (the choice of 5 is arbitrary): I can see many collections of five objects, but the mathematical number five is an ideal form outside in the sunlight. In short, his dualism consists in the sensory world of our perceptions vs. an ideal world of true forms.

Aristotle developed the idea of *form* being the essence of everything in the world much further. In most of his writings, substances were compounds of *matter*, their material "substratum", and *form*, compounds he called *hylomorphic*. He regards the "form" parts as the true primary substances but also asserts that his forms are *not* the same as Plato's ideal forms. His key examples are sculptures whose matter is

just a hunk of bronze but whose form is its shape that makes it a representation of something. When talking about life, he states that the substance or form of all living things from plants to humans is their *soul*. Since this gives souls to both plants, animals and humans, it suggests that what he calls souls would be better translated as their "life-force". In the absence of any knowledge of biochemistry and DNA, the idea of matter self-organizing into living things was inconceivable at the time, and so endowing all living things with a special type of form called a soul was not an unreasonable idea.

His theory of souls is more or less Psychology 101. They have four parts: the nutritive/reproductive, the sensory, the intellectual/imaginative and the desire/motor parts. Human souls uniquely possess the intellectual part where the forms in the material world are mirrored. What we today call the *mind-body problem* is the question of how his intellect interacts with the material world. Does this raise any problems for Aristotle? In *De Anima*, he simply states "The thinking part of the soul must therefore be capable of *receiving* the form of an object" (Book III, part 4, my italics) and "The instrument which desire employs to produce movement is no longer psychical but bodily: hence the examination of it falls within the province of the *functions common to body and soul*." (Book III, part 10, my italics). Thus the issue of how the mind and body interact, that gave rise to so much discussion from Descartes to the present day, is not at all an issue for Aristotle. He just states that they do interact. Although he does introduce God as the prime mover, his universe is strikingly materialistic and in many ways modern and common-sensical.

Saint Thomas Aquinas(1225-1274) attempted to integrate Aristotle's framework with Catholic doctrine, but it's an uneasy integration. On the one hand, he retains Aristotle's idea just described that a human soul is the *form* of a compound thing in which it is joined to its *matter*, namely a human body. But Catholic doctrine insists that human souls do not die and that there will ultimately be a resurrection in which they regain their bodies. So his synthesis required that our conscious souls can both shed their bodies and later get them back, just like doffing and donning a fancy suit of clothes. I confess that, for me, this feels plain weird.

But Christian metaphysics did make one major step, as I see it, through

its belief that God was *outside* of time, that there was no special present for Him so that our past, present and future were equal parts of his vision. This idea is clear in Aquinas's writings but goes back to Saint Augustine, to his meditations in Book 11 of his *Confessions*. Here he pleads with God to let him understand the mystery of time and winds up saying that the passage of time, the never ending transformation of anticipated events into past memories, is unique to the experience of each human being. After rejecting as unreliable all objective methods of measuring the passage of time, he concludes that the passage of time is not part of either the material world nor of God's understanding of his great creation, but is uniquely a part of our subjective experience. These ideas strikingly foreshadow the 20th century theory of relativity. I will discuss this further below.

Skipping ahead, Descartes (1596-1650) lived only one generation before Spinoza and now shifts the dualism of substances from Aristotle's form vs. matter to intellect vs. matter, better known as the mind-body problem. Under the influence of incipient science being developed by Galileo (in turn, one generation older than Descartes) and others, Descartes believed that the material world proceeded by strictly mechanical laws, or, as one says, by "clockwork". He extended this strict determinism from inanimate objects to bodies, human or otherwise, and to all material forms of life. In his theory, non-human animals lacked a mind, hence were automatons without consciousness or souls. I doubt he had a pet. He attempted to build a physics for all this using his concept of *vortices* but this was sadly a false start.

Humans, for Descartes, did have thoughts and souls and these thoughts were the bedrock of his metaphysics: the only indisputably existing thing. He expressed this, of course, in his famous words *Cogito ergo sum*. But what our senses tell us, he reasoned, might well be an illusion. Only by invoking a benign God did he feel one could dispel one's doubts about the genuine existence of the material world. All this works out in a neat way using the idea of substances. There is only one "true" substance, namely God but there are two sorts of substances in our daily lives: minds whose *mode* of existence is thinking and bodies (animate and inanimate objects) whose *mode* of existence is *extension*, that is, being extended in space, being 3-dimensional matter. With the discovery of the law of conservation of momentum, the problem arose

of how the mind's decision to make a movement of any kind could alter the course of this mechanical universe. How could the soul have free will if the material world followed immutable mathematical laws. This has turned out to be the perennial problem of Cartesian dualists.

3. Spinoza's *Ethics*

At the risk of oversimplifying subtle things, I want to make this long section more readable by starting with a summary. I think Spinoza's thought has three pillars:

FIRST: God is in *everything*,

SECOND: God is *outside* time, his nature makes no distinction between the future and the past, and since he sees it all at once, the world is deterministic and praying for help is an error,

THIRD: For God, *all is good*; evil is a subjective notion caused by our limited perceptions that leave us in bondage to our emotions unless, through reason, we acquiesce to the love of God.

His definitive book *Ethics* is made up of five parts. I will discuss them in some detail.

Part I: Of God

Part II: Of Nature & the Origin of the Mind

Part III: The Origin and Nature of Emotions

Part IV: Of Human Bondage, or the Strength of the Emotions

Part V: Of the Power of the Intellect, or Human Freedom

I. God

We have already described some of the essential properties of God, as Spinoza conceives of it. God is the one and only genuine substance around. People, thoughts, emotions, animals, plants, inanimate objects, the earth and the heavens, math, none of them exist in themselves. All these 'things' exist as part of God. Any sort of *being*, of *existing* must come about as an *attribute* of God. His God, as we shall see, is quite abstract, is not a warm loving spirit who listens to our prayers (more on this below). The word 'God' itself is so fraught these days that I think Spinoza's God as better described by a compound "god-nature-beingness", a synonym for *everything that is*. This is essentially the same as the name Moses receives from God in Exodus, *Yahweh* or

simply YHWH, the 3rd person singular of the Hebrew verb "to be".

Now Spinoza is fully aware of what Plato, Aristotle, Aquinas and Descartes wrote and how they all split things up and wrestled with ontology. Having lumped all substance into one, Spinoza's genius was to redefine the distinction between mind and body as the presence in God of two *attributes*. In fact, God, he believed, has infinitely many attributes but only two of them are manifest to our meagre human existences: *extension* and *thought*. One should think of these attributes as two of the very many faces of God's essence. The attribute of extension characterizes material objects that exist in space and time. In modern physics, we would certainly add "fields"; though non-material, they occupy space and time, so partake of extension. The attribute of thought characterizes all the contents, all the conceptions of our minds. Thus Descartes mind/body problem is solved by there being two attributes in God's substance.

The last key word in Spinoza's ontology is *mode*. Finite modes are the manifestations of the attributes that we are know directly but still owe their existence to the all-encompassing substance, i.e. God. Your body, the North star, a grain of sand are finite modes of the attribute of extension. Your loves, plans, understanding of the number 5 are finite modes of the attribute of thought. He states:

I-Prop.16: From the necessity of the divine nature there must follow infinitely many things in infinitely many modes.

II. Mind

One might think Spinoza would get directly to human beings now. But instead, he must deduce everything from God's nature, the only substance. This may sound unduly abstract and indirect but it's all part of his precise logic, his answer to Descartes "Cogito ergo sum". Here are his conclusions:

II-Prop.13, Corollary: It follows that man consists of a mind and a body, and that the human body exists because we are aware of it
II-Prop.21, Scholium: The mind and the body are one and the same individual, which is conceived now under the attribute of thought,

now under the attribute of extension.

We are, in other words, each a mode of God's substance, an idea actively conceived by God, part of its infinite intellect. And Spinoza is denying that there is any separation between the mind and body, these are two faces of the same thing. And then he continues, giving all objects some sort of mind and making explicit his pantheistic conceptions in a Scholium:

The things we have shown so far are completely general and do not pertain more to man than to other individuals, all of which, though in different degrees, are nevertheless animate. For of each thing, there is necessarily an idea in God, of which God is the cause in the same way that he is of the idea of a human body. And so, whatever we have said of the idea of a human body must also be said of the idea of any thing.

This surely sounds like something John Muir, another pantheist, might have said.

He continues with his epistemology of the mind. The most distinctive part of this is his concept of *adequate* vs. *inadequate* knowledge. As usual, his definition is rather opaque (Part II, Definition 4):

By adequate idea I understand an idea which, insofar as it is considered in itself, without relation to an object, has all the properties, or intrinsic denominations of a true idea.

Here, true ideas are ideas that are "in God" (II- Prop. 32, Demonstration). Since your mind's essence is part of God's infinite intellect, your finite mind can have some access to truth, hence adequate ideas. But most thoughts get confused with many other ideas and are inadequate as the Scholium to P29 states:

I say expressly that the mind has, not an adequate, but only a confused knowledge of itself, of its own body, and of external

bodies, so long as it perceives things from the common order of Nature, that is, so long as it is determined externally, from fortuitous encounters with things, to regard this or that, and not so long as it is determined internally, from the fact that it regards a number of things at once, to understand their agreements, differences and oppositions. For so often as it is disposed internally, in this or another way, then it regards things clearly and distinctly.

In this quote, Spinoza is making the distinction between the mental processes he calls imagination (thoughts swayed by particular perceptions) and reasoning (assessing and integrating your experience). Should I comment that political discourse these days is a clear example of a cacophony of inadequate ideas?

To my understanding, this distinction of adequate vs. inadequate feels very close to Plato's ideal forms vs. perceptions of shadows in the cave, or to Karl Popper's distinction of what he calls "world 3 *knowledge*" vs. "world 2 *mind*". (His "World 1" are the things with extension.) By "mind" Popper refers to mental states, to the content of consciousness, perceptions, ideas and plans. Some mental states can simply be consciousness without thought, as in deep meditation. On the other hand, his "knowledge" consists in ideas whose meaning does not depend on any individual but has universal validity. Math is arguably the best example. Why is it possible for people speaking different languages to communicate? Popper would say it's a reflection of the universality of knowledge, the existence of adequate ideas.

Finally, near the end of this section, Spinoza launches his bomb shell: there is no free will.

II-Prop.48: In the mind, there is no absolute, or free, will, but the mind is determined to will this or that by a cause which is also determined by another, and this again by another, and so to infinity.

As in all his assertions, he "proves" this, referring back to an earlier Proposition that "God acts from the laws of his nature alone, and is compelled by no one". He embodies these laws, so that's how it has to

be! Praying for help from heaven is pointless, is misconceived. In our era of neurobiology and with the legacy of Freud's unconscious, it is hard to deny the logic in this. Arguably, quantum mechanics may give us some wriggle room. But, in this connection, I cannot resist quoting a humorous dialog Lars Gårding wrote between God and the then recently deceased mathematician von Neumann. Von Neumann badgers him with questions and gets annoyed when God states the Riemann hypothesis is true but he can't give a proof, he just knows it. And next:

Von Neumann (agitated): Do you understand why there are so many problematic infinities in quantum mechanics?

God: Understand and understand. When I invented quantum mechanics, I wasn't on my best form, but it hangs together all right.

Von Neumann: Your answer is ridiculous. I find it more and more difficult to believe that you are God.

III. Emotions

Spinoza's analysis of emotions is quite straightforward. There is one and only one basic desire:

III-Prop.6: Each thing, as far as it can by its own power, strives to persevere in its being.

III-Prop.11, Scholium: Joy (is the) passion by which the mind passes to a greater perfection. Sadness (is the) passion. by which it passes to a lesser perfection

This is not merely seeking survival but seeking to flourish in every sense. Joy results from success, sadness from failure. Love and hatred are simply joy and sadness in the presence of an external cause. Passionate love is what arises when when our joy is reciprocated. He discusses fear, hope, pride, pity, shame, anger, etc. but also empathy (here and below I have replaced the word 'affect' by 'emotion', its synonym in Spinoza):

III-Prop.27: If we imagine a thing like us, toward which we have no emotion, to be affected with some emotion, we are thereby affected with a like emotion.

IV.&V. Human Bondage and Freedom

These are arguably the most important sections of the book. Here is how it begins:

Man's lack of power to moderate and restrain the emotions I call bondage. For the man who is subject to emotions is under the control, not of himself, but of fortune, in whose power he so greatly is that often, though he sees the better for himself, he is still forced to follow the worse.

But what he really wants to talk about the problem of good and evil. He has a radical solution to this huge question: From God's perspective, there is no evil; good and evil are always relative to an individual.

Preface, part IV: As far as good and evil are concerned, they also indicate nothing positive in things, considered in themselves, nor are they anything other than modes of thinking, or notions that we form because we compare things to one another. For one and the same thing can, at the same time, be good, and bad, and also indifferent.

IV-Def.1: By good, I shall understand what we *certainly* know to be useful to us.

IV-Def.2: By evil, however, I shall understand what we *certainly* know prevents us from being masters of some good.

This sounds as though he is advocating purely selfish behavior. But he distinguishes people who are controlled by some emotion with those who are able to follow the dictates of reason. If they do so, they will recognize that what is good for others, is also the best thing for them. In a scholium, he expresses himself very eloquently:

So let the satirists laugh as much as they like at human affairs, let the theologians curse them, let melancholics praise as much as they can a life that is uncultivated and wild, let them disdain men and admire the lower animals. Men still find from experience that by helping one another they can provide themselves much more easily with the things they require, and that only by joining forces can they

avoid the dangers that threaten on all sides.

In short, one must use reason to restrain our emotions and then striving to flourish individually will lead us to work together. He goes on to preach the ethics of joy: "to refresh and restore himself in moderation with pleasant food and drink, with scents, with the beauty of green plants, with decoration, music, sports, the theatre ... without injury to another." So what causes clearly evil actions like murder, etc.? It is a confusion or perversion of some action in our nature caused by some emotion, some inadequate thought. There is no force for evil, only inadequate knowledge.

In the last Part, he gives some council on how to restrain our emotions. Understand them as much as you can so you can stand back. Realize that hating someone is more harmful to you than to the other. Proposition 2 says that for both unhealthy desires as well as hates, reason will allow you to deal with them:

V-Prop.2: If we separate emotions from the thought of an external cause, and join them to other thoughts, then the love or hate towards the external cause is destroyed, as are the vacillations of the mind arising from these emotions.

We must gain an adequate understanding of these emotions and then we can control them -- today we call this basic psychotherapy.

He goes on to relate our understanding ourselves to our love of God:

He who understands himself and his emotions clearly and distinctly (i.e. adequately) loves God and does so the more, the more he understands himself and his emotions.

More or less as an aside, he then adds that "God is without passions and is not affected by any emotion of joy or sadness", that "No one can hate God" (essentially because if you thought you hated God, you wouldn't really know God) and that whoever "*loves God, cannot strive that God should love him in return*".

He ends the book with some quite deep and fascinating comments on eternity. I think the key to this discussion is that eternity, for him, does not mean an infinite duration from some unbounded past to an unbounded future. He says "eternity can neither be defined by time nor have any relation to time", i.e. it must be considered outside time altogether. He then says explicitly that when you talk about some aspect of the human mind being eternal, you do not mean to attach to the mind any *duration* beyond the bounds of birth to death. But he asserts that some part of the mind is eternal in this "outside time" sense. You can read this yourself in the often misunderstood passage Part V-Prop.22-23, demonstration and Scholium.

4. Relations to various religions and to modern science

My partner, Alice Gorman, pointed out to me that there were really only two kinds of prayers. One is "help me, help me, help me" and the other is "thank you, thank you, thank you". Likewise, there are two aspects of religions, one where God (or gods) are tracking you and may intervene in your life and the other is where God is unknowable, ineffable and we are on our own. The first type of religion is by far the most universal and "help me" the most common prayer. The most straightforward but simplistic way to way to get a God to help you has always been to give it something dear to you. In the most brutal societies like the Mayan, this would be sacrificing a person's life. Or perhaps an animal would do the trick as in the Vedic tradition, e.g. the fire rituals of the Satapatha Brahmana. In violent Muslim groups but also in some very peaceful Jain sects, it is your own life you offer in sacrifice. In Hinduism, you may bring a simple coconut to a humble shrine and ring a bell loudly calling the God to be present in the idol and you can pray e.g. to Lakshmi for success in business. In China, I am told, even Buddhists pray for monetary success. Another kind of gift, practiced in Evangelical Christian sects, is to publicly vow to give *yourself* to God or Jesus. The variations are infinite.

Spinoza is an example of the iconoclast to both Judaic and Christian religions, who said it explicitly: you should love God but do not treat him like a father who will love you in return. His religion is uncompromisingly of the second sort, saying "thank you" but not asking for anything in return. Of course, many Christian saints epitomize a life

that asks for nothing, e.g. St. Francis of Assisi, St. Theresa of Avila. The Sufi sect of Islam follows the same precepts. Buddha's life certainly exemplifies it. It is particularly interesting to compare the Book of Job with Spinoza's ideas. On the one hand, as in Spinoza's writings, Job's story says don't expect God to always reward you for your prayers and offerings and don't expect to be able to understand why all things happen the way they do in God's world. On the other hand, Job's God is very involved with his creation, tinkers with it and speaks directly to Job, things that Spinoza would find ridiculous. And the cruel irony is that Spinoza's own life had parallels with Job's: while never losing faith, he was ostracized by his fellow Jews and afflicted with a dreadful lung disease that killed him at a young age.

In its original conception, though not always in practice, Buddhism consistently rejected asking some powerful force to help us mortals. "Om mani padme hum" is their "thank you, thank you" prayer and it is up to you to work towards enlightenment through prolonged immersion in meditation. There are clear parallels between Spinoza and Buddhism with respect to the negative things in life. Spinoza says that the bad events in life are only seen as bad because of our limited understanding, our inadequate thoughts, and that mastering your emotions with reason will gradually let you pass to adequate knowledge in which the bad events lose their hold on you. Buddhism talks of *dukkha*, the suffering caused by poverty, illness and death, and that letting go of your emotions through meditation will let you pass to an enlightened state. They both give us tools to release our bondage to our passions.

This may be oversimplifying truly subtle things but I also see a parallel with regard to time. As we have seen, Spinoza talks of part of our essence being outside of time. Is it unreasonable to think Buddhism's seeking an enlightenment where the spirit breaks the endless cycle of rebirth as something similar? There is another possible link. I have not quoted the difficult Prop. 11 of part II that states:

The first thing that constitutes the actual being of a human Mind is nothing but the idea of a singular thing which actually exists.

As I understand this, he is saying that your mind cannot exist before you have something to think about. I believe this a parallel to the Buddhist notion of the essential emptiness of all things. In this doctrine, we are like mirrors and only by reflecting other things do we exist. The world is like a web whose nodes are empty but it is held together by its links. Spinoza seems to be saying that about each human mind.

Relativity theory has gone a long way to illuminating the issue of time. First of all, it states that physics takes place, not in distinct 3-dimensional space and 1-dimensional time but in the merged 4-dimensional space-time. Thus the attribute of "extension" is clarified as "existing in space-time" and our lives are simply paths in space-time that have a beginning and an end and are "time-like", meaning we can never travel faster than light itself. Your subjective feeling of the passage of time is yours alone. To clarify the significance of this, an example is useful. As soon as we begin to travel to nearby stars, we will find that everyone's clocks record time differently. Specifically, you may return from a inter-stellar jaunt still a young person but find your children in their old age. This is *not* science fiction. It has been confirmed by experiments in analogous situations.

As mentioned above, quantum mechanics shakes things up even more. It describes how atomic level events are not deterministic. For a long time, physicists sought to explain this by assuming there was a deeper level with some "hidden variables" in which the world was deterministic. But this has not worked and most feel this indeterminacy is deeply built in to the structure of the theory. Even more strangely, in its standard interpretation, quantum theory includes an interaction of human consciousness with this indeterminacy. Simply put, suppose an experiment in a lab records some atomic level event whose outcome is not determinate by quantum rules. Then the act of observing the recording creates a new atomic state overriding the indeterminacy. This is called "collapsing the waveform". If this sounds weird to you, you're in good company. But if, as Spinoza has it, thought and extension are merely two faces of one reality, perhaps it is not so strange after all. It's just one more way in which it is manifest that thoughts and states of material in space-time are merely attributes of a single reality. To pursue this further would take us far afield from Spinoza. Let us just say that Spinoza's metaphysics feels to me like it accommodates the

complexities and counter-intuitive results with which modern physics has confronted us

I am deeply grateful to Spinoza for giving me his vision of how beautiful our world is. I find both his metaphysics and his ethics to be very persuasive, a very coherent way of making sense of the crazy world. But personally, I still find using the word "God" difficult because of all the associations that it brings with it. And his optimism that reason can overpower our inadequate thoughts sometimes seems hard to share. Being in the midst of a pandemic, it is tempting to head instead the beautiful words of *Amazing Grace*: "T'was grace that brought us safe thus far, And grace will lead us home", even though they do suggest a God who actively intervenes in our small lives. Well, who knows?

David Mumford's content on this site is available under a [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License](#). [Click here for sitemap](#)
