Abraham's Bedroom-Slippers
God, sacred history, and chance

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When I was a student in Cambridge forty-odd years ago a Capuchin friar said to me, 'God is on the surface of things'. I want to talk about that, and about how it gets obscured by the abstractions of science on the one hand and the make-believe of religion on the other.

God and the abstractions of science

First, God as creator is a difficult concept in our modern machine world. We live in a world where man-made machines are on the surface of things, and behind that nature itself experienced as machinery, as something you know only when you know how it works. Newton unravelled some of the heavens' machinery, other scientists followed by unravelling the machinery of earth, Darwin started unravelling the machinery of life, and today the practitioners of artificial intelligence, of whom I am one, promise to unravel the machinery of the mind. God, of course, managed to hang during all this for quite some time in the role of designer and engineer of nature's machines. But he was already doomed: a machine, as we shall see, is put together out of coincidences and is therefore something that can exist by co-incidence, by chance. In our own time God has been dethroned as designer and engineer of the universe by Chance.

What is a machine?

Let me spell this out a little more slowly. To begin with, what is a machine? The big Oxford dictionary wanders widely at first through rackets—'machines which the savages of Canada bind to their feet to enable them to walk more commodiously over the snow'—and siege-towers—'goodly machines recommended (in a 1674 quote from the court of Rome) to batter down the Protestant cause'. A machine, the dictionary ventures, is any apparatus, appliance, instrument, device, engine, contrivance or machination for producing an effect. Then suddenly, more narrowly, any instrument consisting of interrelated parts each having a definite function, the whole designed to transmit force or

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do work. The sudden focus on *doing work* is a mistake. Computers are machines: 'devices' (*devised*), 'contrivances' (*contrived*), 'engines' (*ingeniously engineered*), tricky structures of interrelated parts, about which we ask the question typically addressed to conjuring tricks: how do they work? But *working* doesn't mean *doing work,* consuming energy; it means successfully implementing a function. Computers work by working things out. If they go beserk, as they occasionally do, they can consume enormous amounts of energy, but because they are doing work to no purpose they have ceased to work within the meaning of the act, ceased to function.

So two things characterize a machine: the outside input-output function it implements in the external world (the work it does, what it's for), and the inside conjuring trick (its works), the engineered *organization* of co-incidences between component parts which we must unravel in order to say how it works. In their internal organization machines resemble organisms: they are made up of organs, of working-parts. Each working part is itself a mechanism implementing an input-output function, taking input from a previous component, transforming it in some way, and passing the input to a next component. By organizing co-incidences between the output of one component and the input of the next we gradually build an overall input-output function which characterizes the whole machine.

A quick glance at an actual machine will help us: not a computer but something more familiar to most of you, differing from a computer in no essential respect. Here is a component called a pedal, connected to a crank (put in organized co-incidence with a crank), the crank connected to a spindle, the spindle to a cogwheel, cogwheel to chain, chain to rear cogwheel, rear cogwheel to rear wheel: all connected in such a way that pressure *input* to the pedal is *output* to the crank and thus to the spindle and cogwheel as rotary motion, output from cogwheel to chain as transverse motion, output from chain to cogwheel to rear wheel as rotation again. Everything cleverly engineered to make the output of each component co-incide with the input of the next one.

Then comes a more subtle co-incidence: the rear wheel is made to co-incide with the ground. Suspend this machine in the air and it won't *work*, however much energy it consumes. Put it in contact with the ground and it performs a conjuring trick! Friction with the ground stops the wheel's rim rotating round its hub, and forces the hub to start rotating round the rim-ground co-incidence point. But when the hub rotates, the contact-point doesn't stay still, it moves forward. And when the hub tries to rotate about the new contact-point, it moves again. The hub is reduced to perpetually chasing forward: clever organization of co-incidences has once more transformed rotation into transverse motion.

So, connect the hub to some back-forks and the back-forks to a saddle; organize two final co-incidences—the sole of your foot with the pedal to provide a first input, and the seat of your trousers with the
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saddle to receive a final output—and the machine is complete! The components' input-output functions have been organized end-to-end into the one overall input-output function which identifies the machine to you in the external world: that well-known machine for propelling yourself along the ground by applying the sole of your foot to the seat of your own trousers. Admire its inventor's ingenuity! What genius first realized you could apply boot to bottom in this way, and do it moreover balanced on two spinning wheels? Well, stay with me and I shall tell you.

But first let me remind you why we are talking about machines at all. I am arguing that one way we obscure God from ourselves is by thinking of natural organisms as machines, and of God's making of organisms as an engineering of machines. But then we find that chance can engineer machines and God deserts the place we had reserved for him.

Organisms and machines

In fact organisms are not machines. Their insides are similar, but not their outsides. Despite their internal organization organisms implement no external function, serve no purpose. Organs do, but organisms don't. You can ask what eyes are for, but not what dolphins are for. You can say what kidneys do, but not what cows do. You don't ask how cows work, or whether cows can be implemented otherwise. Machines can in general be otherwise implemented. We analyze how a machine works in terms of abstraction: the 'inside works' of a mechanism at one level are analyzed in terms of the 'outside functions' of components one level down. We abstract from those components' 'insides' unless we want to take the analysis another level down; we treat them as 'black boxes', as we say in computer science. And that means machines can in principle have other insides, be otherwise implemented. But can cows?

Of course, you can treat organisms as machines, breed cows to provide morning milk, and then in the course of time devise an alternative implementation of your milking-machine. You can give organisms external roles in a mechanically organized system, but of themselves—of the identity that belongs to them as independently and naturally existing organisms—they are not organs of a system, but members of something quite different: an ecosystem. In an ecosystem organisms do have roles to play, but no such role defines them; and indeed organisms will change roles to stay alive. For organisms are machines for staying alive, if you like: entities *viable* in some ecosystem, an ecosystem which itself depends on their viability. *Eco-* is the Greek root for house, and an ecosystem is a habitable house or home. Viable and habitable are complementary terms: the viable lives in the habitable, and the habitable is lived in by the viable.

Now this is a totally different concept of existence or identity from that of a machine. Natural organisms don't have the soft sort of identity organs and machines and programs have; the identity of implementing

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this function or serving that purpose. Nor do they have the hard identity which ultimate atomic components of machines must have: the identity of being ultimately unanalysed and unanalysable, unsoft. The identity of natural organisms is the identity of being viable wholes in some habitable environment, at home and enjoying life in some suitable surroundings. Sometimes people say the purpose of organisms is reproduction; organisms exist in order to reproduce themselves in order to reproduce themselves in order to reproduce themselves, ad infinitum. Surely we get the overwhelming sensation that any true function the organism might have is eluding us, remaining just over an ever-receding horizon: the functional organism is being chased perpetually through the reproductive history of the species and never reached. In the meantime, of course, the actual functionless organisms are enjoying *life*.

In a sense, organisms differ from machines not in their works but in the quality of their idleness: a dimension of natural existence no machine can simulate, but which is nevertheless favoured by the world environment we live in. We build a machine to simulate a seeing organism, for example, sensitive to light of different wavelengths, and, to different features of objects, responding appropriately differently to red and to yellow, to straight and to curved, just as if it saw them. But it doesn't see them; it functions in response to colours, it allows colours to function in it, but it doesn't see them. A distinction without a difference, you may say; if machines can be got to work exactly like organisms that see (though without the actual seeing component) then you have simulated all the necessary workings of sight and what is left out is only an idle and useless component. Exactly so! When you are trying to grasp how sight *works,* the actual seeing is an entirely idle component. Nevertheless I value that idle experience as I value life itself: it precisely gives colour to my life, awakes in me the feeling of being alive within a living world I am in touch with and inhabit.

Cause as engineer and cause as environment

I am trying to shift your notion of what really exists away from soft structures or hard data towards any and every naturally favoured form of stability, any viability favoured for survival in some already favoured environment. And this is because I want to make the same shift in our notion of what counts as a cause: away from the notion of design and engineering of clever mechanisms towards the notion of an organism's favouring environment. To concentrate on the mechanics of causing often distracts us from what causing means. A footballer kicks a goal: he runs up, his brain-cells fire, his nerves communicate, his muscles tense, his leg swings, his foot connects with the ball, the ball shoots away towards the goalposts. That's the workings of a kick at goal, all necessary preliminaries, but, as Aquinas and Aristotle say, the actual kicking of the goal takes place after that as the ball soars through the goal-posts, the goal is an event that takes place not in the footballer's leg
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but in the soaring ball (in fact, the footballer could have dropped dead in the meantime!) It takes place *in* the ball but *from* the footballer, the kicked goal is so to speak the footballer's doing. Everything in the world exists in and from, is being and doing. Here we sit surrounded by the being of objects, by the doing of men and women: the ones who wrote these books around us, who printed them and bound them and shelved them, who made the shelves and tables and chairs, who cut the woods and laid the bricks ... Their doing is our environment.

In the same way, the being of every viable organism is the doing of its environment, a product of its favour, favour the environment can show because its own being is a wider environment's doing. And so on, and so on; though not ad infinitum! 'And so not, though not ad infinitum!'—the seven-word essence of Aquinas's five ways of proving God's existence, of revealing God as our maker! If the being of an organism is the doing of the environment which favours it, and the being of that environment the doing of some further favouring environment, then to get the being of the organism at one end of the chain we must appeal eventually to some ultimate favouring environment at the other end that needs no further favouring by anything else, because that is just what it is, the favouring of existence. That favouring is what human beings call God. Not primarily a planner or engineer preceding the happenings, but the ultimate favouring and doing of those happenings. The being of things *is* the doing of God. We are surrounded by the doing of God. 'God is on the surface of things'.

God and chance

But now I must confess to an ulterior motive in shifting from a picture of God as engineer to a picture of God as environment. I wanted to be able to say that though the being of the world is always the doing of its environment, God, it is not always engineered by God: God sometimes leaves it to chance.

Even machines are not always engineered. I promised to let you know who invented the bicycle. The bicycle was invented by chance! True, there was a human inventor sometime in the eighteenth century, but what he invented was the hobby-horse for the delight of the idle aristocrat; not a machine for moving along while sitting down, but a seat for sitting on while moving along. It was a sort of mobile shooting-stick, a steerable seat on two wheels which you could paddle along by walking. The young rips of course weren't content to walk; they ran, faster and faster and faster, discovering that if you went fast enough you could lift your feet from the ground and the apparatus would continue to roll merrily along, balanced, not tipping over ... It was a chance discovery; the thing invented had changed into something else by a chance mutation favoured by the environment!

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What is chance?

For what is chance? According to Aristotle, according to Aquinas, according to Jacques Monod, the Nobel prize-winner who wrote that popular classic of the 1970s on evolution, *Chance and Necessity,* chance is co-incidence, 'the convergence of two totally independent causal chains of events, the convergence itself being causeless'. Aristotle and Aquinas give the example of a peasant digging his field and finding a treasure, Monod the example of a tragic chance convergence of Dr Dupont's purposeful itinerary with the deterministic trajectory of plumber Dubois' hammer falling from the roof. I have my own charming example. As a student in Cambridge I lodged in a house where French students learning English also lodged; one year a young fellow called Jerome, the next a French princess called Thamar. Some years later I received a letter from Jerome, and in it a newspaper cutting announcing Thamar's forthcoming marriage. 'How thoughtful of Jerome!' I murmured, and then came over all goose-pimples, for Jerome had never known Thamar, hadn't even known of her existence; how then could he be sending me notice of her wedding? The cutting was folded and I opened it up; on the other side was a photograph of May madrigals being sung under Kings College bridge! Jerome had noticed it in the newspaper that morning, felt a pang of nostalgia and wanted to pass the pang on. That it was back to back with the announcement of Thamar's marriage was simply an amazing coincidence. Notice: that the photograph appeared on page 3 was caused (somebody had made that decision), that the announcement appeared on page 4 was caused (somebody had made that decision), but that the announcement appeared back-to-back with the photograph was not, as such, caused (nobody had made that decision); that was sheer coincidence, chance.

But let's take another think. Sheer coincidence, mere co-inciding, mere back to backness of disparate things is not at all amazing, rarely of interest, not usually even noticeable. Take *The Times of Zambia* here, picked up in Lusaka a few days ago; here on page 12 is President Kaunda doing 'some light back-stretching exercises', back to back with a Zambian Seed Company advertisement for a processing officer. Here two things co-incide, but you would be puzzled if I even called it a coincidence, never mind 'an amazing coincidence'! Indeed, as Aristotle says, co-incidences as such hardly exist in any significant sense of the word. To be noticed they have to be seen in a context. It's the unexpected appositeness of a coincidence in certain circumstances, the shock of finding chance behaving as if it had been intended for a purpose. Something not intended or favoured by anyone unexpectedly turns out to be a favourable event in the environment, an event life can exploit, an event making for viability, a *happy* coincidence! (And, of course, there are also unhappy coincidences, chances that make for *un*viability!)

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Is God active in chance?

So now I ask: is God, as the ultimate favouring of existence, the final environment of life, active in such causeless coincidences? Aquinas answers that question with a decided Yes. He accepts that chance is causeless coincidence:

> Only what exists as really one thing has a cause as such. That a thing is white has a cause, and that it is musical, but that it is both white and musical has no cause ... A meteor falling to earth has its (natural) heavenly cause; so may the existence of combustible material at a certain place on the earth's surface, but that the one falls on the other and causes a fire can be an accident without (natural) heavenly cause.

But such causeless events are nevertheless part of God's favour, part of God's plan:

> Sometimes what happens by chance or luck as far as minor causes are concerned, is the very thing intended by some higher cause. Like the meeting of two servants, each sent by their master to the same place unbeknownst to each other, as far they are concerned the meeting is unintended and chance, but not so to the master who planned it ... True, no natural cause can intend what is only one by accident: no heavenly body can have as its natural effect that somebody digging a grave finds a treasure. Nevertheless what happens by accident in this world, in nature or in human affairs, must be referred to God's plan. For only *minds* can invest what happens by accident with unity, either just by formulating the proposition that the gravedigger finds a treasure, or by implementing that proposition: persuading an ignorant peasant to dig a grave where we know treasure is hidden. So there is no reason why the chance accidents of this world cannot be referred to a higher *mind*, especially if it is the mind of God, who alone can act on our wills and thus on human actions.

The point Aquinas mainly wants to make is that a causeless event—not unified in itself, just a coincidence—can nevertheless be unified in an observing mind or in a planning mind, and therefore enter into God's plan for the world. But notice that the peasant and servants examples can mislead, because they are examples not just of planning, but of prior partial planning by masters not in total control of every other chance event that can intervene between the time of planning and the time of the happening planned. Such planners are in control only of the beginning of the causal chains they set in motion, at some time earlier than the planned happening. If the independent causal mechanisms set up last out to their point of convergence, then the happening will happen, by chance, yet according to plan; but if something unexpected goes wrong with either causal chain—if the peasant gets distracted from his gravedigging, or the treasure disappears by some other cause in the

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meantime—the happening will not happen, by chance, even though previously planned. This is a penalty attached to the way human beings plan, by partial prior planning; but God doesn't have to plan ahead of time, nor is any intervening chance event going to be less planned by him than the final event. For he is the universal favour within all events, favouring all happenings as they happen, whether they happen causally and necessarily or causelessly and by chance.

And this is what I meant when I said earlier that God doesn't always engineer events in this world, but sometimes leaves them to chance. I wasn't suggesting that God leaves things to chance in the way partial prior planners must leave them to chance, being in control to begin with but then having to share control with unplanned and unengineered chance interventions by other causes. But neither does God leave nothing to chance, in the way that partial prior planners try to do by excluding all chance interventions. God, in his universal favouring of all events as they happen, favours the engineering of engineered events and the leaving to chance of chance ones.

Did God leave the creation of man to chance?
But if this is true there are some surprising consequences. St Thomas could never, of course have foreseen that Evolution would ascribe the creation of human beings to chance. All the same, St Thomas's theology can accommodate the thesis of Stephen Jay Gould's recent book *Wonderful Life—the Burgess Shale and the Nature of History,* namely that if you went back to Burgess Shale times and ran the tape of history again the odds would be overwhelmingly against man's appearance. The Burgess Shale is an area of fossils in British Columbia, nearly all of which represent lines of life which have since petered out. Could anyone, Gould asks, possessed of all the physics and chemistry and biology and zoology in the world, looking at the Burgess Shale, have predicted which fossils would prove viable and which not? No, because the line of that history has been determined by chance, which is to say, has been indeterminate. Even more impossible to predict than the weather, in which an Atlantic hurricane's development may depend on whether a butterfly flew in Peking. Theologians commonly believe man's creation was part of God's plan, but they need not believe God engineered it in any way, by devising some temporal mechanism to ensure it. Nor does it make sense to think God inserts into time from eternity some event independent of all temporal mechanisms and favours, that he somehow influences the existence of things from a direction different from and uncoordinated with the direction in which the world itself influences the existence of those same things. No, God is the ultimate environment favouring the way the world environment produces things, and in this case his ultimate favour is given to a chance happening! As St Thomas says, the fact that God plans or pre-destines something is

not a property of what is predestined but something in God:

the plan in his mind ... But the implementation of this plan ...
is an activity of God that takes place in what he has
predestined... In that respect it is subject to failure, though as
deriving from God's plan it has a certain hypothetical
necessity, that is the necessity that if that is the way God has
planned it then that is the way it is.

Or, in Stephen Jay Gould's language, the tape could have run
differently, but actually didn't.

God and sacred history

But doesn't what we have said about man's creation also apply to the
events of sacred history? Has God engineered 'sacred history'? Or is
'sacred history' rather a plan in God's mind, the implementation of
which in real history conforms to the way in which real history happens?

At this point let me unveil Abraham's bedroom slippers. They are
the objects that first revealed to me that sacred history is as contingent as
real history. Some forty years ago, as a novice student of sacred history,
I read a book by Sir Leonard Woolley, the excavator of Ur of the
Chaldees: *Abraham: Recent Discoveries and Hebrew Origins.* Twenty
years before Christ, Ur had been a thriving commercial city centred on its
civic temple to the moongod Nannar, filled with smaller chapels to
smaller departmental gods for camel-drivers, cobblers, and the like, and
containing in each private house a shrine for the family gods, identified
by Woolley with the biblical teraphim mentioned in the story of Jacob. It
was Woolley's (probably mistaken) thesis that Abraham had been a
citizen of Ur, who first moved to Haran (another Nannar-worshipping
city), and then on into Palestine. In this stage of his journey he left
Nannar and the departmental gods behind, but took with him his family
gods who became the gods of Abraham, of Isaac and of Jacob. On this
basis Woolley succeeded in explaining well enough according to the
knowledge of his time many of the biblically reported customs and
beliefs of Abraham, so rooting into real history much of what we are told
in sacred history.

Now that was exciting enough. But the real shock to my system
came from a wayside remark. In describing the inside of a typical
citizen's house such a house as Abraham may have lived in, conceivably
even Abraham's old house, Woolley mentioned a bedroom with its shelf-
bed in the wall—conceivably Abraham's bed—and by the bed,
amazingly, what was still recognizably a piece of a red leather slipper
such as the Ur citizens wore around the house—conceivably Abraham's
bedroom-slipper! I wonder whether I can articulate the precise nature of
the shock this gave me. It was the sudden juxtaposition of the sacred with
the everyday; I had never thought previously that the daily twenty-four
grind of getting up in the morning, cleaning one's teeth, tying one's
shoelaces, giving the cat its food; quarter an hour of this half an hour of

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that, cooking, laundering, painting, shopping, eating, relaxing, putting on bedroom-slippers, taking off bedroom slippers, going to sleep, was the sort of thing such sacred figures as Abraham (and Sara) were doing day after day. Why, Abraham's life must have been something like mine! Twenty-four hours of his life had taken precisely twenty-four hours to unfold in the quirky way twenty-four hours has always taken twenty-four hours for me. The rollicking pace at which the Bible whisks through the destruction of Sodom and Gomorrah and the births of Ishmael and Isaac was not exactly the pace at which Abraham had experienced it all. I began to suspect that most of the time Abraham no more experienced an important thread of life going on in what was taking place, than I did. This last way of putting it borrows a phrase from John Marsh's Penguin commentary on John's gospel, where he says, justifying the notion of sacred history: 'History is what goes on in what takes place'.

What Abraham's bedroom-slippers made me ask is: 'Now which comes first? Do things take place in order that something might go on in them, is man's real history simply the vehicle for carrying God's sacred history along? Or is the going on at the service of the taking place, is sacred history a somewhat abstract instrument for helping us get our minds round real history? Is it life going somewhere that reveals God, or simply life taking place? Is it specially sacred history or is it real history that is the taking place of God?' Of course, I am aware that the phrase 'real history' is rather odd, that all history is the telling of stories, stories dignifying happenings with some thread of importance greater than the happenings themselves, stories *saving* or *salvaging* reality in some sense, organizing it into some identity or other, an identity for ourselves or for God. But in the last analysis such stories must serve life as it happens and must be revisable in the light of what actually happens, what actually takes place. Is 'sacred history' revisable in this way? Has God engineered sacred history, or is it a plan in God's mind, the implementation of which in real history is conformed to the way real history happens? Has God left sacred history in all its details—Abraham, the exodus, the deportation to Babylon, his own incarnation—to chance?

Has God left sacred history to chance?
Here is a testing question! Could Jesus possibly have died of smallpox at the age of two? Did God actually become incarnate in the world of such accidents? If we instinctively answer: no, he couldn't have died of smallpox, why do we answer that way? Is it because we are thinking: he couldn't have died before God's plan was implemented, God would have taken steps to prevent it happening? I think St Thomas would say: Jesus didn't die of smallpox because that wasn't God's plan, but the fact that he didn't doesn't make it that he couldn't, only that he couldn't on that plan.

In a sense it all depends on what we think Jesus was an incarnation of—was he an incarnation of the Word of God thought of as an
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artificer's plan, an engineering design for all history—or was he an incarnation of the Word 'Let there be Light!', the ultimate favour of God, God as our home and ultimate environment? For what cause did Jesus die? We often talk of causes as though they dignified men's deaths when surely, if anything, it is a man's death that dignifies his cause. Did God engineer his death as the winning move in some wargame, finishing his job, fitting the last component into some planned mechanism of salvation? Or was Jesus overtaken by events in which he chose to show loyal love, and incite loyal love in return? He died because he represented a challenge to sacred law, to the known designs of God, and because, while sinning against the law, he asked 'Which of you shall convict me of sin?' God reminds me of Constable finishing one of his pictures, and entertaining his grandchildren in his studio, whereupon one of them put his fist right through Constable's canvas. And Constable laid the painting aside and took the child on his knee and comforted him. That is what the plan of Calvary was: to educate humankind in love.

God has left himself to us

Christ came, we believe, to leave God's spirit with us in the world, the wind of God. He left that wind here, but left it to chance, to our free actions, to us. Without us the wind is invisible. We are the leaves on the trees that show it up, the papers in the gutter which swirl in the wind of a car's passing. We are to swirl in the wind of Christ's passing: 'Whose sins *you* shall forgive, they are forgiven'. We are to be the actors of God, not in some sacred mime or ritual only, but in the twenty-four days of which real history consists, the world of Abraham's bedroom-slippers. We are to be birds whose soaring makes God's wind visible in history, the 'winged gifts' of D.H. Lawrence's poem 'Song of a man who has come through':

> Not I, not I, but the wind that blows through me!
> A fine wind is blowing the new direction of Time.
> If only I let it bear me, carry me, if only it carry me!
> If only I am sensitive, subtle, oh, delicate, a winged gift!
> If only, most lovely of all, I yield myself and am borrowed
> By the fine, fine wind that takes its course through the chaos
> of the world
> Like a fine, an exquisite chisel, a wedge-blade inserted;
> If only I am keen and hard like the sheer tip of a wedge
> Driven by invisible blows,
> The rock will split, we shall come at the wonder, we shall find
> the Hesperides ...