

## **GOD**

Had there been a medium to transmit it and an ear to hear it, the blast would have been exceedingly loud. As it was, silent energy hurled outward, transforming what had been nothing into something. The energy raced and bumped until in places it congealed into aggregations that became dense enough to take on form. In one place the density was such that thoughts actually formed. Thoughts that wondered about those things that thoughts were made to wonder about. "Why am I here?", "Where did I come from?", "What do I do now?"

It was later that one of the elemental facts of existence dawned on this thinking aurora: energy dissipates if it is not fed. The cohesion granted to the cosmic traveler was a momentary gift. Bit by bit the energy would slip away. Without nourishment, soon nothing would be left. Death had been born: but also purpose, optimism and the will to live. The imminence of death created the will and the passion to live, and made it clear that there was work to be done. The strength conferred by that fiery birth would soon be lost.

"Clearly," it reasoned, "the problem is that I am using up energy. What is needed here is some source of replacing what I am using up." The immediate prospects were definitely bleak. The environment offered only drifting energy, and occasional lumps of dust, gas, and bits of matter in various stages of formation. Granted, there was energy stored in the coalescing lumps of matter, but this was thinly spread and there seemed no reasonable way of extracting it. What was needed was some way of producing a higher grade of energy than was currently available, something more distilled and more easily obtained.

The answer seemed to lie in concentrating the debris that littered space, so with grim determination the task of gathering was begun and pursued. But even after a sizable amount had been gathered, nothing happened. All there was to show was an inert mass. In an act of desperation the thinking pool of energy began to compress the lump of matter: tighter and tighter to a density that this new universe had not experienced since the early moments of its existence. And a most amazing thing happened. In a brilliant flash, nuclear fusion - and with it, light - was born. The first new act of creation had been consummated and a basic building block of all subsequent creation had been forged. Whatever else was to be made, the velocity of light would remain a fundamental constant, to which all else would have to conform.

Here at last appeared to be the secret of providing nourishment. In a frenzy of desperate activity, star after star was set blazing, pouring out energy which was greedily consumed. But the glow of creative triumph quickly dimmed. A few calculations confirmed the worst fears. The energy expended to turn on a star was more than the energy that the star could return. The fundamental facts of physics began to establish themselves as the primal thinker found itself in the position that the human race was to arrive at much later with respect to nuclear fusion as an energy source: it was possible but so inefficient that it required more energy than it generated. The inexorable law of entropy continued to do its mindless destructive work. The pool of energy divided and subdivided and was scattered across the universe. Some of the resulting blots of energy were so small as to lose consciousness while others remained sentient, imbued with a particular panic as the inevitable became ever more obvious.

Further work was necessary. The energy of light needed to be refined before it would provide a decent source of consumption. But it would be easier now -- at least it was possible to see. And the light itself began to have remarkable effects. Its heat began to cause motion, which sped up the processes of collision and mass formation. The act of creating light and some of the early suns and planetary systems set in motion processes that now rumbled on of their own accord. Another lesson had been learned: it is one thing to create, it is another thing to control.

Let's follow the story of one of the more significant intelligent energy pools. It might help, at this stage, to give it a name -- God. He found himself near a brightly burning sun, around which several planets had formed. From these raw materials, God realized, he must form his means of survival. A period of desperate experimentation followed. He worked at endless combinations hoping to stumble on some life-sustaining formula.

Right from the start, one of the hallmarks of his creative method was apparent. A guiding principle was to be diversity. He reasoned, "Since I don't know what I am doing nor what I want, it would be best to simultaneously experiment with as many different avenues as is possible." So the planet was to be arranged into dualities: day and night, warm areas and cold areas, land and ocean.

A striking symptom of his advancing degeneration - a lack of structural coherence - had begun to manifest itself. At one stage of dissipation this caused the emergence of distinct sub-entities within his being. This provided the advantage of being able to talk to himself and get opinions from his sub-parts. It had the drawback that the creation process was more or less a committee job, which explains a lot.

(Part of this "committee" were decidedly mathematical in outlook. In the great internal debate about the appropriate tilt of the planet, and the corresponding amount of climatic diversity, these elements argued for a tidy angle of  $22\frac{1}{2}$  degrees -- exactly one-quarter of ninety degrees. When other elements argued that a little more tilt and variety would be advisable, the mathematicians gave to the tune of one extra degree, resulting in the mysterious  $23\frac{1}{2}$  degree tilt. The correct length of the year was also subject of heated discussion. This time the mathematical elements carried the day with their suggestion of precisely 360 days, as compensation for having yielded the one degree in the "tilt debate." The success, however, was meaningless. By the time sentient beings inhabited the planet, the sun had lost enough mass to increase the length of the year to the arithmetically hopeless  $365\frac{1}{4}$ . The more important upshot of this worthless victory occurred when the question of how many fingers Adam was to have was considered. The mathematicians pushed for 6 on each hand so that counting on fingers would lead to a base 12 system, in which fractions and decimals coexist far more comfortably than they do in a base 10 system. A small, fanatical subset favored 8 fingers in anticipation of the eventual value of the binary and hexadecimal systems. They were somewhat placated by having the thumbs separate from the other fingers. Possibly Adam would learn to count using only fingers and thereby discover base 8 -- no such luck. But the mathematicians, having had their way in the length-of-the-year debate, were forced to acquiesce to those who argued for the aesthetic and functional advantages of the five-finger model.)

With the planet roughly in order he began concentrated work on the construction of a being like himself; a companion, to be called Adam, to quell the feeling that he intuited was loneliness

(anyone with multiple personalities can attest that they are no antidote for that) and, he desperately hoped, a helper in the search for the elusive energy source. From the mud he shaped a form as much like himself as his powers of introspection would permit. He decided to give this companion all of the powers of rational thought that he himself had by creating a copy of his own brain. (Perhaps his greatest frustration came on the heels of this triumph. Having replicated as well as he could, the structure of his own brain, he was horrified to realize that he had created man in his own *reflected* image, reversing the locations of right- and left-brain functions. It is an indication of the difficulty of this creative act that, on finding his error, he chose to cross-wire the creature rather than start over and do it correctly.) He chose to withhold from his creation some crucial information: Adam would not be told that the acquisition of energy is the necessary and sufficient condition for immortality and, as a consequence, he would not understand the essential distinction between those activities that contribute energy and those that sap it - the distinction that eventually would come to be called "good" and "evil." Nor would Adam be told about death. His decision to store those pieces of information inside the fruit of two trees was to be a source of significant regret for all concerned.

With the physical act of creation completed, God leaned down and, in the ultimate act of sharing, breathed into the lifeless form a considerable measure of his own energy - rapidly ebbing and precious beyond compare.

The result was dramatic and gratifying. When Adam's eyes opened the first thing he saw was God looking down in stunned admiration, the first words he heard were "Welcome, Adam my friend," and the first emotions he felt were profound gratitude and love. His first words were, "Whatever I am, I owe to you."

A stunning reaction occurred. Adam's single act of pious deference delivered to God a completely unexpected bolt of energetic sustenance. Here was the energy source for which God had been seeking. He was, to say the least, ecstatic. All he had to do was create more like Adam and he would have all the energy he needed. Initial elation quickly subsided as he evaluated the exhausting difficulty of the creative act. A few calculations confirmed that, as was true when he created light, this was not yet the answer. The total energy used in making Adam, particularly the life-giving direct infusion of energy to him, outweighed the amount of energy that Adam was likely to return. Clearly, however, Adam's efficiency as an energy source was far ahead of anything else he had found, but creating more like Adam would only hasten God's demise. Once again a moment of transcendent triumph had been sacrificed on entropy's altar.

The gloom that followed was severe quickly replaced by a steely determination to continue in the quest for a self sustaining form of energy. A less resilient being might have settled for a short future of paralyzed self-pity. But something new had been added to the search: he was not alone. The ever-cheerful Adam, a welcome companion and an unnerving responsibility, added new urgency and meaning to the quest, and, as a source of energy pointed the way to the prize.

The only external source of energy was the sun. The energy was plentiful but too unrefined to be of use as it was. Adam had the right kind of energy, but in far too meager a supply. The trick had to be to convert the sun's energy into the kind of energy that radiated from Adam. And what Adam possessed that the sun did not was life. So God's only hope now lay in truly understanding life. The

fact that God could transfer his own life energy to Adam in no sense meant that he understood what that energy was, where it came from, or how to generate it. He knew how to divide energy - he set about learning how to multiply it. (Those around him in later years tired of his repeated references to "trying to find the meaning of life in those days" as if the phrase itself constituted some kind of worthwhile joke.)

He set about feverishly working at mixtures of chemicals, using the oceans as his witch's cauldron. Understanding that it would be necessary to jump-start any batch of chemicals for it to come to life, but wary of expending his depleting reserve of energy, he learned to mete out pulses of his own being in the form of lightning. So his routine became mix, strike, hope, mix, strike, hope, over and over again. Success came none too soon. When he had begun to despair of ever finding a solution, a bolt struck a particular brew of chemicals and the stew that had been inert a moment ago emitted an unmistakable pulse of nourishment. God had created his grandest wonder -- life.

Once again euphoria yielded to reality. Yes this was nourishment, but it was still insufficient. More refinement was needed. God now pushed himself to new heights of inventive frenzy. It was still entirely unclear exactly what characteristic of life provided him with nourishment.

Two crucial problems had to be solved. The first was to turn the sun's energy into the energy of a living being. Continually throwing lightning at the Earth was not going to be efficient. This problem was stunningly solved by the invention of photosynthesis. Green plants were a crucial break-through: they forged the critical link whereby the energy of the sun became the energy of a living being. But they were insufficiently nourishing; even exceptionally large plants afforded him a meager meal.

The second problem was to populate the earth with the largest possible amount of life. His energy and his time were waning, and the return to all of his creative efforts was still disappointingly small. Furthermore, living things themselves needed to be sustained. Their life-spans were considerably shorter than his had been. So in addition to finding out what sort of life yielded him the best meal, God also needed to work on the problem of making life self-sustaining.

The issue of reproduction thus became a crucial concern. At first his only mode of reproducing life was by asexual means: plants spinning off copies of themselves. And while it meant that no organism actually ever died, the limitation to this was obvious: what was being produced were multiple copies of organisms with identical characteristics. Since these were still not sufficiently nourishing life-forms, it was necessary to find a way to generate diversity -- to keep the pool of organisms ever-changing in the hope of finding something as satisfying as Adam.

It was a milestone, fortuitous day when he received a trickle of energy that, while still small, seemed to be of the right kind -- something like Adam only far less. It took some time to track it down, but when he found it, bobbing in the ocean, he was very pleased. He decided to call it an animal. Although even this better energy source was not enough, it pointed in a promising direction. He tried making these animal life forms larger and larger, but they kept falling apart. It was not until later than this problem was solved by the invention of the skeletal system -- an engineering achievement of which he was justifiably proud.

Ironically it was Adam himself who unknowingly led God to the solution of his problem. It happened one day when Adam roused God from dark, hopeless thoughts. "God," he said, "I feel a feeling that I don't understand and I've come to ask for your help. I sense that I'm suffering from the ill effects of being alone. Now don't get me wrong, I know you're always here for me but you and I both know that we are not the same. I want someone like myself to share my life."

God was initially annoyed and slightly hurt, but he was quickly moved to compassion by his friend's loneliness. He recalled a similar feeling that had caused him to create this man in the first place. But one thing was clear, to create another man, another copy of himself, would entail an expenditure of energy that was unacceptable in his debilitated state. But he did invent a horse, a cow, and a dog at considerable cost to his own energy resources. He brought them to Adam who was enthused and enthralled. But it was clear, after the initial surprise wore off, that horse, nor cow, nor dog was what Adam wanted.

But much was learned. These wonderful new animals were an improvement over any previous energy source, but more than that, they presented an opportunity for experimentation on the making of skeletons, internal systems, and sense organs. Another vital piece of information was also gained - directionality matters: animals with heads transmit energy better than those without. But why? Whatever the reason, these animals, which required an infusion of God's own energy to come to life, still cost more energy to make than they returned. A tantalizing clue had been offered but the solution was elusive.

Insight often results from the juxtaposition of seemingly unrelated ideas. As God returned in desperation to the problem of developing a self-sustaining, self-reproducing, diversity-generating life form, he could not shake the look of Adam's lonely face from his thoughts. The idea finally presented itself whole: the mate, the other half, the avenue by which life forms would intermingle, entwine, branch out, and flourish.

Fevered days of thought and calculation followed. God realized that his waning supply of energy dictated that there would be only one chance. He would not even have enough energy to create another human completely from himself. It would be necessary to extract energy from Adam through some elaborate surgery. He tried to explain to Adam what was to happen, but it was beyond Adam's grasp. The matter was resolved when God affirmatively answered Adam's two questions, "If I do this will I be less lonely?" and, "Do you want me to?"

As Adam slept and God operated, bisexual reproduction and the death of the individual organism entered the equation of life. The operation on Adam not only extracted from him some essential elements of the new creature, but it also necessitated adding a new feature to Adam's anatomy. It would be a long time before Adam became comfortable with his new appendage. While God thought that the dual-purpose nature of the organ was a marvelous piece of efficiency, Adam always felt that it represented a lack of effort and imagination on God's part. Still, he never could figure out how he would have done it any better himself.

With bisexual reproduction now available, God pushed his creative efforts to a fevered tempo. The schism between plants and animals (he could never quite decide exactly when and where it had occurred) posed a particular problem. Animals appeared to be more efficient at recycling energy so

he was tempted to abandon the plant kingdom altogether. But the problem of a photosynthesizing animal was ever elusive, so work was kept up on both the plant and animal kingdoms as the labor continued - always in the directions of greater complexity and diversity. The lower creatures already designed were useful because they provided the anchor for the food chain for larger animals, but producing larger animals became a priority quickly. If the purpose was to get energy from a living being, it followed that the bigger the life the greater the energy it would yield.

Having littered the planet with the results of his creative efforts, God was delighted and surprised to find that new life forms were beginning to spontaneously appear. The whole system was taking on a life of its own. Evolution was not created, nor did it ask God's permission or opinion, it just happened: an inevitable consequence of the genetic mixing that accompanied bisexual reproduction. With awe and relief God watched the forces of mutation and natural selection amplify and multiply his work in wondrous and subtle ways that would never have occurred to him.

As gratifying as this turn of events was, it was not spontaneously generating sustenance at an appreciable rate. Bold, aggressive experimentation was still required. Reasoning that a larger animal must produce more usable energy, God set about creating ever larger creatures. Dinosaurs, the pinnacle of his achievements in that direction, were still ultimately a disappointment: the secret lay in something other than sheer size. The clue to the new direction came from the first of the new mammal branch, a recently evolved tree shrew, a tiny animal packing more energy than the largest dinosaur. An analysis of the rodent's characteristics led to a conclusion: the source of the superior energy was the quality of the animal's brain -- the key to God's search was not size, it was intelligence. Seeing that the massive dinosaurs posed a threat to the hapless mammals, God eliminated them from the Earth with genocidal determination. Very few survived.

The strategy was now clear: nurse the evolution of these creatures until they produced more like Adam and win their devotion and sustaining energy. The nasty incident in the garden meant that Adam and his tiny band of off-spring were not sending much devotion. Likely their children's children could be induced to worship, but it was going to take a bit of time to paper over some badly bruised feelings on all sides.

### **Eve -- the first feminist.**

Eve has taken a lot of flack for tempting Adam into his act of sin. It's probably a bad rap. After all, whom would you admire most: an oppressive father-figure determined to keep knowledge and the truth from his children? a mealy yes-man either unconcerned about being deprived of those things or too dim to recognize the problem? or someone who, with eyes wide open, was willing to take the consequences of confronting authority for the sake of gaining wisdom? And having made her bold stand and statement, did Eve have trouble getting Adam to abandon whatever scruples had heretofore constrained him? Not a bit. The threat of a night alone and he was hers; he lacked even the strength of character to stand up to Eve, let alone God. But she saw what was worth having and she was willing to defy authority to have it.

## SNIPPETS

**THE TOWER OF BABEL** - In an act of near-death desperation God tries to get closer to his creations by getting them to climb up to him. He suffers a complete personality schism in which he divides into smaller units, giving rise to multiple languages, and more importantly, multiple religions. This turns out to bestow a considerable stability to the situation, since the smaller units are more efficient users of energy and the followers of each sub-God generate a sustainable quantity of energy.

**THE DEAL WITH ABRAHAM.** A particular sub-God, let's call him Joh, casts about for a band of followers. He hits on the Jews: there are not too many of them, but what they lack in numbers they promise to make up for in passion. Joh bargains with their leader Abraham and the deal is struck: they will both submit to the God/people arrangement by which devotion is exchanged for assistance. This is a true bargain in that it is unclear to both of them (or to humble narrator) which of them needs the other more. The bargain is to be sealed by the mutual sacrifice of first-born sons. This is a bluff on Joh's part. As a non-procreative being he has no son. Abraham gives all intention of being willing to fulfill his part of the deal, but Joh stops him at the last moment.

Joh: "Look Abe, I trust you. The actual killing won't be necessary. You really needn't do that."

Abe: "So let me get this straight, the deal is still on but I don't need to sacrifice my son? That ram over there in the bushes will do?"

Joh: "You got it friend, I'm in a generous mood."

Abe: "The deal is still on even if I spare little Jake?"

Joh: "Absolutely, cross my heart."

Abe: "Good, because I never let you off the hook. You owe me a son."

This was obviously embarrassing stuff. Joh hoped that the whole thing would be forgotten but it was not. The Jews sat around waiting for the promised gift from God. And a promise is a promise.

**JESUS.** To clear his conscience of the whole thing, Joh finally created a son - a non-trivial chunk of his own energy - and sent him off to Earth to be sacrificed. But a problem had arisen while Jesus was growing up in Heaven, before being sent down to his unsavory fate. The kid had figured out what was going on: that he has been created merely to be disposed of to salve his old man's conscience. Cleverly Joh has chosen a moment in history when Jesus has a slim chance of attracting a following, the only thing that would keep him alive. So Jesus came to Earth, made a pitiful attempt at co-opting a part of his Dad's energy stock, only to be sacrificed according to plan. He returned to heaven to die a premature death for lack of devotional energy. The passion of a handful of followers would not last long. The spectacular, but largely ineffectual, show of returning after the crucifixion depleted most of what he had garnered during his stay.

It is only then that a bold plan asserted itself: Forget the Jews, leave them for Dad, and go after the rest. Jesus returned to Earth, knocked Paul off his ass, and set about, with admirable success, acquiring the devotion of non-Jews. His success was finally sealed by the deal with Jupiter in which he talked the weak old man out of the homage of Constantine and the Roman empire. There was no turning back after that.

**WORLD WAR II** - A patricidal attempt.