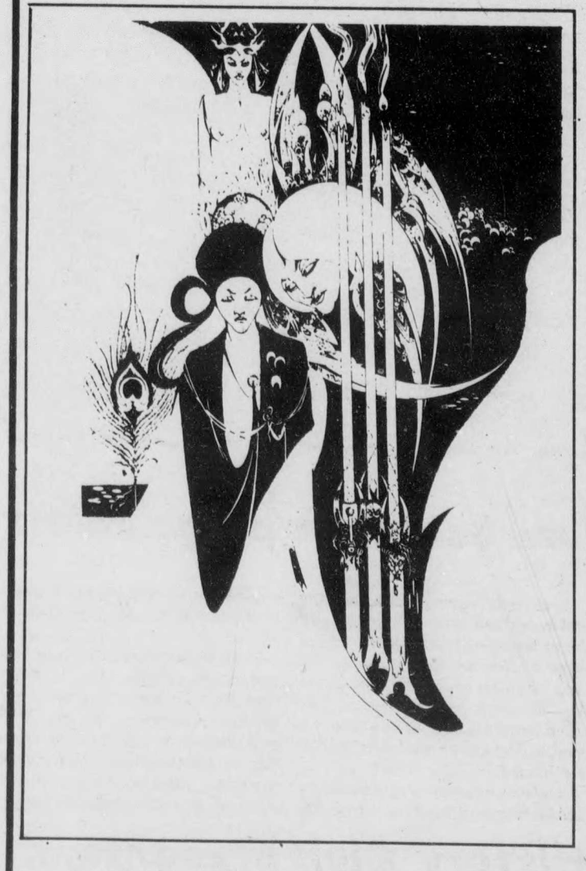

SEEING ISN'T BELIEF

If Uri Geller has begun to make people doubt that seeing is believing, let's begin by giving credit where credit is due. It was Albert Einstein that told us that it was not only possible, but inescapably probable that everything was not as it seemed: first in his special theory and then in his general field theory of relativity. Einstein was not a popularizer, which is probably one reason why today, some 50 years after he made his greatest contributions to man's understanding of the Universe, not more than one in a thousand educated persons really understands it. Indeed, when sophisticated mathematicans found ways of expressing it elegantly and concisely in purely mathematical terms, Einstein himself confessed that their version, although possibly entirely accurate, had now begun to become incomprehensible to him.

But he did not despise popularizers, who attempt to explain complicated ideas to intelligent but not necessarily specially educated people. Sir Arthur Stanley Eddington was one brilliant popularizer; another was Sir James Jeans. Those who have not read anything they wrote about the cosmos certainly should do so. It may well strike you as impossible at first; but that's because the sheer wonder of the Universe invites belief.

Lewis Carrol put it as well as anyone ever will: "I can't believe that," said Alice. "Can't you?" the Queen said in a pitying tone. "Try again: draw a deep breath and shut your eyes."

Alice laughed: "There's no use trying," she said; "one can't believe impossible things."

"I daresay you haven't had much practise," said the Queen. "When I was younger, I always did it for half an hour a day. Why, sometimes I've believed as many as six impossible things before breakfast."

So when we suspend crude commonsensical disbelief we may not simply become gullible. We may open our minds to the wonders of the Universe - of which we ourselves are only a tiny and very recent fragment.

Take first our necessary and everyday assumptions about solidity and stability: they are illusions, created by our limited sensory perception, in turn interpreted by our brains as concrete evidence of the nature of reality; probably for our peace of mind, and to enable us to dare to try to understand our environment.

Our sensory perceptions are limited by the range of the perceiving organ. Our eyes are by far the most sensitive. Of all the electro-magnetic vibrations of the cosmos, our eyes alone respond to pure wavelength: but even so only over a very limited waveband.

The highest frequency our eyes can register is ultraviolet light; the lowest infra red. Below infra red we feel the energy of the electro-magnetic waves purely as heat - as when an electric fire, switched off, continues to warm while ceasing to glow. Above ultra violet, the electro-magnetic waves are not perceived directly by us at all: but they provide us with radio, television, radar and X-rays. These waves pass right through us without our feeling them. Hence the painlessness of being X-rayed, despite the real hazard of radiation sickness from over-exposure.

All other sense - sound, touch, taste, smell - are infinitely cruder. They involve perception only of massive movements of millions of molecules. And what are molecules? Essentially constellations of minute packages of energy convertible into matter or matter convertible into energy. Hence atomic energy, hence the similarity of microphysics to astronomy.

The galaxies of outer space, just like the molecules of my hand and my desk as I type these words, are alike compounded of particles of energy in orbit round each other. Relative to their size, the molecules of material things are scarcely more densely packed than the stars in the Milky Way. Moreover, they have this in common: they are in constant regular motion. Nothing is still in the entire physical universe; something as intangible as light is both particles in motion and waves of

energy, all travelling at around 186,000 miles a second.

Apply more energy to the system (heat it up, in fact) and its physical structure changes. Fire is only one example. Sealing wax and those little glass toys that spurt coloured liquid upward despite gravity when you hold them in your warm hand, are others. If Uri Geller happens to be closer to this invisible restless universe which is the reality behind our perceived world, then he needs no conjuring tricks to change metallic shapes or perceive patterns through opaque envelopes.

Extra-sensory perception is more natural than supernatural. The surprising thing about telepathy is not its proven existence, but its comparative rarity, in everyday experience. If you find this hard to accept, read Eddington's famous lecture on the Two Tables or learn about the universal phenomenon of Brownian movement.

Our daily life is lived in a world of concepts and constructs, fashioned for us by the relatively minute collection of data garnered by our senses. The real world is pure energy in motion - of which we are a part. Intangible by our sense, unknowable except through our instruments, inconceivable except by our ideas, (and the more imaginative, the better), and inexpressible except through mathematical concepts incomprehensible to most of us, or by

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