

THE LEVOGYRE

LAFFOLEY 1990





THE COSMOLUX : 1982 , 73½" X 73½" , GILT+ACRYLIC ON CANVAS

THE LEVOGYRE CONSTRUCTED FROM THE SUBSTANCE OF A BURNT OUT GALAXY BECOMES THE CONVENTICLE - THE DREAM OF ESCAPE FROM THE TIBIL [PHYSICAL-HISTORICAL EXISTENCE ITSELF] DREAMT BY THE GNOSTIC-ALCHEMISTS.

MILLIONS OF LIGHT-YEARS IN DIAMETER , THE LIGHT-BODY SHELLS OF CONSCIOUSNESS THAT MAKE UP THIS VERSION OF THE LEVOGYRE ARE CENTERED UPON A HYPER-KLEIN BOTTLE COMPOSED OF HARVESTED BLACK-HOLES AND WORM-HOLES.

AS THE SEED OF THE ULTIMATE URBANIZATION ALL PARTS OF THE COSMOS ARE DRAWN INTO IT AND FINALLY THE ENTIRE PHYSICAL UNIVERSE IS TRANSFORMED AND TRANSPORTED FROM THE FOURTH INTO THE FIFTH DIMENSIONAL REALM.

NOTES : TOWARD
THE EXEGESIS OF
THE LEVOGYRE

BY: PAUL LAFFOLEY

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THIS NOTEBOOK IS DEDICATED TO: MY FATHER
PAUL LAFFOLEY, SR.

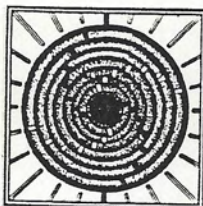
WHOSE LIFETIME DOUBT OF THE EXISTENCE
OF GRAVITY HAS BEEN THE INSPIRATION OF
THE LEVOGYRE;

"TWAS BRYLLYG, AND THE SLYTHY TOWES
DID GYRE AND GYMBLE IN THE WABE:
ALL NIMSY WERE THE BOROGOVES;
AND THE MOME RATHS OUTGRABE."

[STANZA OF ANGLO-SAXON POETRY BY THE JABBERWOCKY],

AND TO MY LONGTIME FRIEND NORMAN DOLPH FOR HIS
CONTINUOUS INTEREST AND SUPPORT FOR MY WORK IN GENERAL,
AND IN PARTICULAR FOR HIS NEVER ENDING SUPPLY OF IDEAS,
HINTS AND REFERENCES ABOUT THE LEVOGYRE.

THE LEVOGYRE:



Subject: A Levitating Gyroscope Which Attains Consciousness

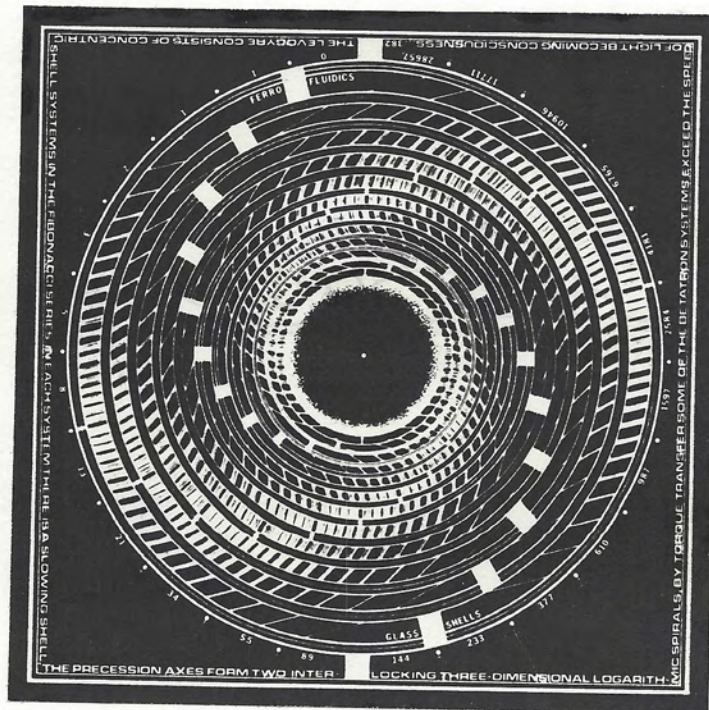
Symbol Evocation: The Mystery of Light as Consciousness

Comments: The Levogyre is an attempt to model a photon creating light, and in turn, an atom of consciousness. The structure of the Levogyre derives from structure of the Universe proposed by Eudoxus (the astronomer pupil of Plato). Eudoxus stated that the Universe is a series of nested crystalline spheres which contained the stars as fixed, the planets which moved, down to the central non-rotating Earth. Each sphere is connected to the next by gimbel-like axes which are randomly distributed.

In the Levogyre, I also have a series of nested shells connected by gimbels, but the axes now form two interlocking, three-dimensional equiangular spirals. Because of the Golden Proportion relationship of the axes, a torque transfer of angular momentum is made toward the Centroid of the Levogyre, building up energy as in a photon. The shells are constructed in the Fibonacci Series (a Golden Proportion or phi relation).

The Torque Wheel of the Levogyre is really now a series of nested rings which unite the hemispheres of the shells. I first proposed betatrons or electron particle accelerators be built into the Torque Rings in order to obtain velocities in the neighborhood of the speed of light.

Now by means of fiber-optics, laser beams of coherent light can be propagated in contained circular orbits. This means that as the Levogyre is in operation, the speed of light is constantly in the process of being transcended, which results in a loss of mass by the device, and thereby a proportionate loss of weight. The loss of weight attained by the Levogyre will never reach zero, but will approach .382 . . . per cent of its total weight at rest. This proportion is the other side of .618 . . . of unity or the Golden Proportion. Ferro-fluidics allow electric current to be transferred from one shell electric motor to the next without wires. In operation, the Levogyre becomes an atom of consciousness—a photonic system—or like a black-white hole drawing kato-energy into the unmanifest aspect of the Universe, or releasing meta-energy out into the manifest aspect of the Universe.



INTRODUCTION

ANTI-GRAVITY
THE LEVGYRE = PROLEVITY

I

①

① PARMENIDES [510-440 B.C.] ASKED: "WHY IS THERE MOTION?"

HERACLEITUS [540-480 B.C.] ANSWERED: "WHY NOT!"

PLATO [427-347 B.C.] WHO WITNESSED THE END OF THE PERICLEAN AGE SAW THIS ARGUMENT AS A RIP IN THE FABRIC OF ANCIENT WISDOM RESULTING IN THE SEPARATED CONCEPTS OF THE PHYSICAL AND THE METAPHYSICAL ASPECTS OF THE UNIVERSE. HE TRIED TO HOLD THE TWO PARTS TOGETHER BY SAYING THAT IT WAS STILL POSSIBLE FOR THE ILLUSIONS OF THE SENSES [HYLE] TO UNITE WITH THE TRUTH OF REALITY AS FORM [EIDOS].

ARISTOTLE [384-322 B.C.] THE INTELLECTUAL HEIR OF PLATO SNIFFED THE MANNERISTIC ODOR OF HELLENISM IN THE AIR AND LET GO OF THE PARTS.

HYLE NOW CAST AS MATTER BECAME TRANSLATED INTO THE "PHYSICAL", AS THAT PROPERTY CALLED GRAVITY — A NATURAL POSSESSION OF HEAVY ENTITIES THAT FIND THEIR PROPER PLACE NEAR THE EARTH.

EIDOS NOW CAST AS MOTIVATION COULD BE CONSIDERED AS THE "META-PHYSICAL" PROPERTY LEVITY WHICH CAUSES ENTITIES TO RISE TO THEIR NATURAL PLACE IN THE SKY.

GRAVITY AND LEVITY WERE DEEMED AS NATURAL PROPERTIES OF THE ENTITIES THEMSELVES AND NOT ATTRIBUTABLE TO ANYTHING OUTSIDE THEMSELVES SUCH AS THE EARTH.

②

② ALCHEMY WHICH AROSE INDEPENDENTLY IN HELLENISTIC EGYPT, ANCIENT CHINA AND ISLAM HELD SWAY IN THE WORLD FOR ABOUT 1500 YEARS THEREAFTER.

THE WESTERN ASPECT OF ALCHEMY, WHILE BASING ITS WORLD-VIEW ON ARISTOTELIAN PHYSICS BECAME STRONGLY NEO-PLATONIC AND KABBALISTIC BY THE TIME OF THE RENAISSANCE. SPIRIT AND MATTER COULD AGAIN UNITE, BUT MATTER [OR PRIMA-MATERIA [FIRST-MATTER]] ITSELF HAD TWO MODALITIES - GROSS MATTER OR NATURAL SPATIAL AND TEMPORAL EXTENSION-DURATION, AND THE IMAGES OR VISIONS OF CONSCIOUSNESS THAT MIGHT ENTER ANOTHER WORLD.

BUT AN ESSENTIAL DIFFERENCE WAS NOT MADE.

GRAVITY AND LEVITY WERE NOW BASICALLY THE SAME THING.

③ ISAAC NEWTON [1642-1727] WHO FORMULATED THE LAW OF UNIVERSAL GRAVITATION, STATED: "ANY TWO BODIES ATTRACT EACH OTHER WITH A FORCE PROPORTIONAL TO THE PRODUCT OF THEIR MASSES AND INVERSELY PROPORTIONAL TO THE SQUARE OF THE DISTANCE BETWEEN THEM", OR ALGEBRAICALLY -

$$F \propto \frac{M_1 M_2}{D^2} \cdot \text{OR INSERTING THE "NEWTONIAN CONSTANT"}$$

OF GRAVITATION $[G]$ - MEASURED IN NEWTONS, KILOGRAMS, AND METERS $[G = 6.66 \times 10^{-11} \frac{M^3}{KG \cdot SEC.^2}]$, YIELDING

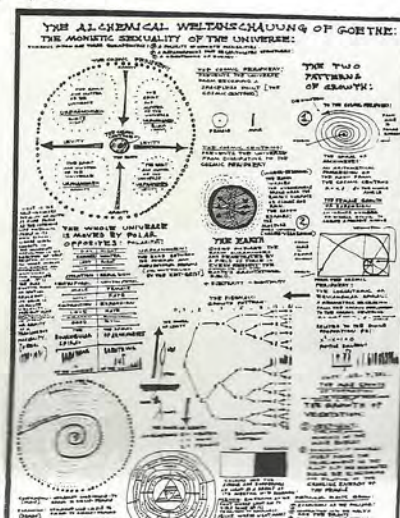
$$F = G \cdot \frac{M_1 \cdot M_2}{D^2} \cdot$$

FOR THIS NEWTON IS OFTEN LABELED AS AN ONTOLOGICAL MATERIALIST ALONG WITH OTHER PHYSICAL RESEARCHES THAT MOVED INTO AREAS THE GENERAL PUBLIC COULD NOT FOLLOW WITHOUT SPECIAL TRAINING. BUT NOTHING CAN BE FURTHER FROM THE TRUTH.

IN HIS OWN LIFETIME HE WANTED TO BE REMEMBERED MORE FOR HIS ALCHEMICAL STUDIES AND EXPERIMENTS THAN FOR WHAT WE WOULD NOW CALL HIS "SCIENTIFIC WORK".

HIS INORDINATE INTEREST IN LEVITY [HE WAS A MEMBER OF THE 17TH CENTURY ROSICRUCIAN ORDER] CAUSED HIS CONTEMPORARY DETRACTORS TO DESCRIBE [IRONICALLY AFTER CALLING HIM A "MATERIALIST"] HIS INTEREST IN ALCHEMY AS "AN UNSEEMLY FRIVOLITY" - WHICH HAS NOW BECOME THE DICTIONARY DEFINITION OF LEVITY.

④ JOHANN WOLFGANG VON GOETHE [1749-1832] THE GREAT GERMAN POET HAS, HOWEVER, PROVIDED US WITH A MORE THOROUGH-GOING ANALYSIS OF THE ALCHEMICAL INTERPRETATIONS OF GRAVITY AND LEVITY. HE MADE SUCH ASSOCIATIONS WITH GRAVITY AND LEVITY AS DEATH-LIFE OR CONTRACTION - EXPANSION. ACCORDING TO GOETHE: LEVITY OR CONSCIOUSNESS IN ITS MALE, FEMALE AND NEUTER MODALITIES PERVADES THE UNIVERSE, THE EARTH AND ALL LIVING THINGS. ITS MANIFESTATION IS ORGANIC MATHEMATICS: THE DIVINE PROPORTION AND ITS INVERSE, AND THE ENNEAGRAM OF PLOTINUS USED LATER BY GURDJIEFF.



NOTE: SEE THE APPENDIX FOR A LARGER COPY →

⑤ THE MODERN WORLD FROM THE 19TH CENTURY ONWARD HAS SOUGHT LEVITY OVER GRAVITY TO SUCH AN EXTENT WE CAN RECAST THE ALCHEMICAL DESCRIPTION OF GRAVITY/LEVITY IN A NEW LIGHT.

WITH AN ALMOST MEDIEVAL QUEST FOR PHYSICAL LIGHT IN OUR CULTURE [ACTING AS THE SYMBOL OF DIVINE OR TRANSCENDENT LIGHT] WE HAVE WITHIN THE SPAN OF 100 YEARS OR MORE MADE A METHODOLOGICAL IDENTIFICATION FROM MATTER EQUALING MASS EQUALING ENERGY EQUALING INFORMATION EQUALING CONSCIOUSNESS: [MATTER = MASS = ENERGY = INFORMATION = CONSCIOUSNESS].

THE INTERVENING STEPS FROM ONE PART OF THE EQUATION TO THE NEXT HAVE PRODUCED WHAT BOTH ARTHUR M. YOUNG AND R. BUCKMINSTER FULLER HAVE TERMED - "A GEOMETRY OF CONSCIOUSNESS": THE EARTH MEASURES OR GUIDES CONSCIOUSNESS IN ORDER TO LET IT PASS FROM THE STAGE OF "MATERIAL PHYSICS" TO A "MIND-PHYSICS".

⑥ NOT ONLY ARE THERE LIGHTER AND STRONGER MATERIALS NOW, ALLOWING US TO CONTROL AND ENHANCE THE EFFECTS OF NATURAL LIGHT FOR ILLUMINATION AND POWER, WE HAVE SPRINKLED THE EARTH AT NIGHT WITH ARTIFICIAL LIGHTS THAT MAKE OUR CITIES, SEEN FROM ABOVE, APPEAR TO BE ELABORATE BYZANTINE BEJEWELED BROOCHES AND NECKLACES SPREAD OUT ON MILES OF BLACK VELVET.

AND THE ALMOST SUPERNATURALLY GIFTED NIKOLA TESLA WANTED TO GO EVEN FURTHER. HE BELIEVED HE COULD LIGHT UP, ARTIFICIALLY, THE SKY OF THE ENTIRE EARTH - THUS ELIMINATING THE NIGHT, UNLESS PEOPLE REQUESTED ITS RETURN OVER SPECIFIC AREAS.

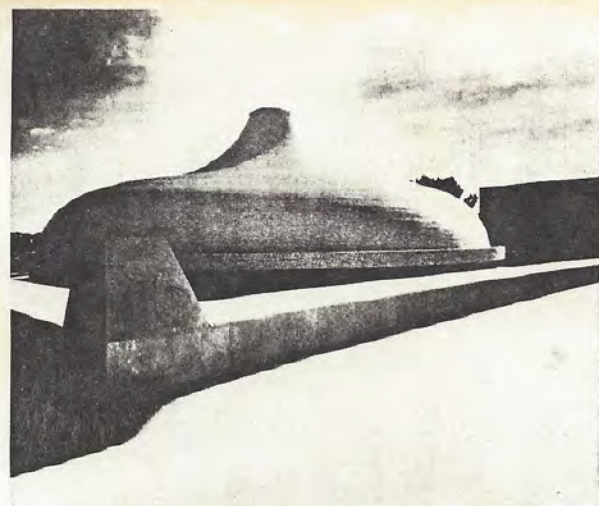
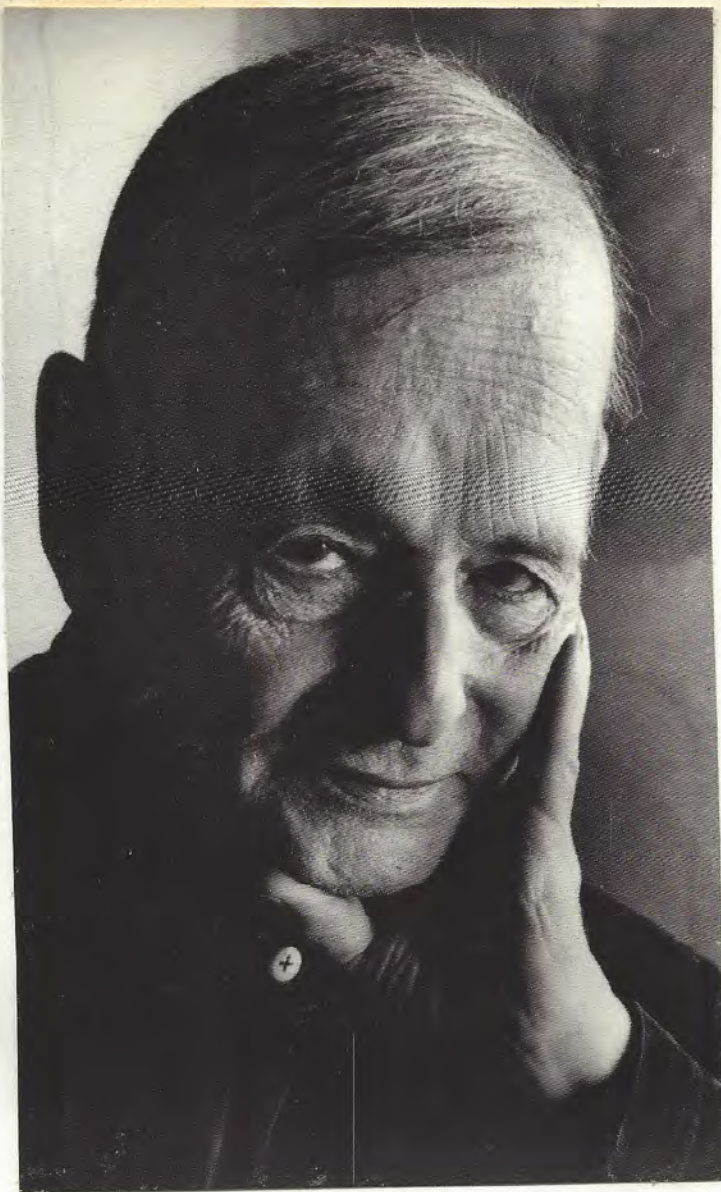
⑦ THE MEANS OF EXPRESSION ON THE EARTH OF LEVITY DEFINED AS THE MOVEMENT OFF OF THE EARTH'S SURFACE WITHOUT VISIBLE MEANS OF SUPPORT, OF PEOPLE, OBJECTS AND OTHER ENTITIES HAS HAD A RICH AND VARIED HISTORY REACHING WAY INTO THE PAST. BUT AGAIN IT IS FROM THE 19TH CENTURY THROUGH THE 20TH ON TO THE 21ST WHERE THIS GOAL SEEMS TO BE REACHING A PAROXYSM.

ONE NEED ONLY HALF REMEMBER PICTURES OF THE CRYSTAL PALACE, OR VISIT THE TOP PLATFORM OF THE EIFFEL TOWER, OR CROSS A FUNICULAR DRAPED SUSPENSION BRIDGE, OR RIDE IN AN AIRPLANE, OR VIEW A DISTANT CITY SKYLINE MADE UP OF SKYSCRAPERS TO SENSE THE DRIVE TOWARD LEVITY THAT HAD SPURRED THE 19TH CENTURY AND IS DRIVING US TO UNDERTAKE THE SEARCH OF THE SPACE OF THE UNIVERSE ITSELF.

⑧ HISTORIANS OF SCIENCE FICTION LIKE TO TRACE ITS ORIGINS BACK TO WRITERS LIKE LUCIAN OF SAMOSATA, THOMAS MORE, FRANCIS BACON, CYRANO DE BERGERAC, JONATHAN SWIFT, BUT IT IS REALLY THE WORK OF 19TH CENTURY WRITERS LIKE EDGAR ALLAN POE, JULES VERNE OR EDWARD BELLAMY, AND H.G. WELLS WHO WROTE INTO THE 20TH CENTURY THAT HAVE MADE SCIENCE-FICTION THE MOST IMPORTANT GENRE OF LITERATURE IN THE 20TH CENTURY.

AND ONE OF IF NOT THE MOST IMPORTANT THEMES OF SCIENCE-FICTION HAS BEEN THE PENETRATION OF AND THE EXISTENCE IN OUTERSPACE BY HUMANS.

THE DIFFERENCE BETWEEN THE USE OF LEVITY AS A GOAL IN THE 19TH AND THE 20TH CENTURIES HAS BEEN THE THEME OF THE INDIVIDUAL AS OPPOSED TO THE COLLECTIVE. IN ARCHITECTURAL TERMS THE COMPARISON MIGHT BE THE CONCERN FOR THE DESIGN OF THE SINGLE FAMILY HOUSE WHICH CHANGES TO URBAN DESIGN.



Shrine of the Book, a Sanctuary for the Dead Sea Scrolls, Jerusalem. Designed and built in association with Armand Bartos 1959-1965.

SHRINE OF THE BOOK 1958-1965

ORIGINAL CONCEPT
BY FREDERICK KIESLER

NOTE HOW THE DOME APPEARS
TO HOVER LIKE A FLYING-
SAUCER ABOUT TO ACHIEVE
LIFT-OFF.

FREDERICK KIESLER, C. 1950
[1890 - 1965]

⑨ TO ME THE PERSON WHO HAS MOST SUCCESSFULLY BRIDGED THE 19TH CENTURY'S INDIVIDUAL EXPERIMENTAL CONCERN FOR ANTI-GRAVITY OR LEVITY INTO THE 20TH CENTURY'S CONCERN FOR LEVITY WITHIN THE CONTEXT OF A GLOBAL COLLECTIVE DESIGN [WITHOUT SACRIFICING THE INTEGRITY OF EITHER] IS THE ARCHITECT AND THEATER DESIGNER - FREDERICK KIESLER. FROM A MEMBERSHIP IN THE DE STIJL GROUP SINCE 1923, HE CAME TO NEW YORK CITY IN 1926 TO BECOME PART OF ITS "PERMANENT AVANT-GARDE" UNTIL HIS DEATH IN 1965. KNOWN AFFECTIONATELY AS "THE SPACE-MAN", NOT ONLY BECAUSE OF HIS DRAMATIC APPEARANCE AND DIMINUTIVE SIZE [HE WAS 4'-10"], BUT MORE IMPORTANTLY FOR HIS FAMOUS URBAN DESIGN PROJECT CALLED "THE CITY IN SPACE" EXHIBITED AT THE GRAND PALAIS IN PARIS IN 1925, IT WAS THE FIRST USE OF THE CONSTRUCTIVISTS' "SPACE-FRAME" CONSIDERED

THE CITY IN SPACE

PARIS 1925

1. **THE CITY IN SPACE** - Exhibited at the Grand Palais in Paris in 1925. A model of a whole city in which houses, streets, landing stages, etc., are spanned and suspended above each other and next to each other in space. An elastic building system of tubes, platforms and cables, developed from bridge building.

THE HORIZONTAL SKYSCRAPER

PARIS 1925

2,4. **THE HORIZONTAL SKYSCRAPER** - Designed 1925 in Paris for residential purposes. In contrast with the vertical skyscraper, which serves through concentration on a small plot the necessity of an efficient place for business transaction. It is a dream for our living quarters, but one that may come sooner than we expect. The four center blocks are for garages. The four wide-stretching wings are the living quarters, each wing surrounded by light and air. All of this open space gives greater health and more privacy to the inhabitants than the usual «community system» where the houses are piled on top of each other like boxes, all alike, each one keeping out the light and air of its neighbor.

Neither does this huge horizontal skyscraper take up valuable ground space. Because the entire structure is raised off the ground. Except for the crossed runways for cars, the complete area, however large the skyscraper may be, is left open for traffic, park space or whatever is needed. We are for complete standardization of building materials, of manufacturing and construction but we are certainly not for standardization of individuals.

FREDERICK KIESLER

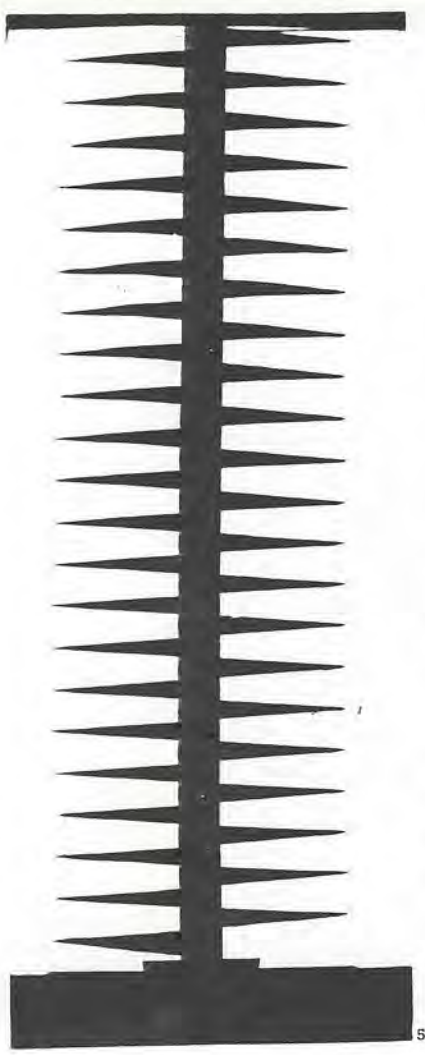
3. Conceptual drawing for the Horizontal Skyscraper (1928). First release to Zodiac for publication.

2

2

3

4



THE «TENSIONIST» SKYSCRAPER

PARIS 1925

5. Project for a department store anchored to the ground only at the central axis, which includes elevator shaft, heating and cooling system. Glass encases the entire structure. The floors are circular and built on the spiral principles of a corkscrew, so that passage is continuous from one floor to the other. Here we have the solution of one of the most pressing problems in department stores to day: free, equal distribution of traffic. At present there is constant congestion at those spots where elevators or escalators are located. In the structure here shown the centralization of elevators makes them much more accessible from all parts of the floor. Furthermore shoppers will often walk down several floors without realizing it because of the slightness of the incline. The store becomes practically one continuous main floor. This type of construction has been made possible by the cantilever properties of steel. Carrying out the tenets of «tensionism» in city planning, it will be joined by spans at every third floor with surrounding buildings. Such a structure is feasible today, if we eliminate this last feature and provide additional support at the periphery.

FREDERICK KIESLER

MANIFESTO OF TENSIONISM «ORGANIC BUILDING THE CITY IN SPACE FUNCTIONAL ARCHITECTURE»

Compulsion directs the new form of the city:

The Country-City: the division of city from country will be abolished.

The Time-City: time is the measure of the organization of its space.

The Space-City: it floats freely in space in a decentralized federation dictated by the ground-formation.

The Automatic-City: the processes of daily life are mechanized.

What are our houses but coffins towering up from the earth into the air? One story, two story—a thousand story. Walled up on two sides, on ten sides. Stone entombed—or wood, clay, concrete. Coffins with airholes. Cemeteries have more air for the skeletons of their dead than our cities for the lungs of their living. Each grave has its lawn, its piece of meadow, a gravelled path to separate it from its neighbors. Each grave an islet of green. Each his own master: each his own settlement. And our cities? walls, walls, WALLS... We will have NO MORE WALLS, these armories for body and soul, this whole armored civilization; with or without ornament. We want:

- 1. Transformation of the surrounding area of space into cities.*
- 2. Liberation from the ground, abolition of the static axis.*
- 3. No walls, no foundations.*
- 4. A system of spans (tension) in free SPACE.*
- 5. Creation of new kinds of living, and, through them, the demands which will remould society.*

We are satiated with architecture. We want no new editions, be they ever so well contrived. Instead of the old bediz-

ened single-faced models, plain fourfaced models; for baroque curves, straight lines; for ogival windows, rectangular windows. The expert is bankrupt. What interests everyone is: how does one LIVE among these curved or straight walls? from what sort of life, of NEW life, do these four or x faces arise?

Instead of ornament, plain walls; instead of art, architecture—these are your demands. But we must have organic building; the city in space; functional architecture: ELASTICITY OF BUILDING ADEQUATE TO THE ELASTICITY OF LIVING.

It is irrelevant whether cupolas or cubes dome man. Either way he suffocates. And your windows holes do nothing to free him. One must discover the urge of the age, as electricity was discovered. One must invent new life, as the motor was invented. Until then this life is merely a process of physical digestion.

The new city will bring with it the solution of the problems of traffic and hygiene; make possible the diversity of private life and the freedom of the masses. It is not built to suffice in itself, but, by the strictest economy of means, to create the greatest possible abundance.

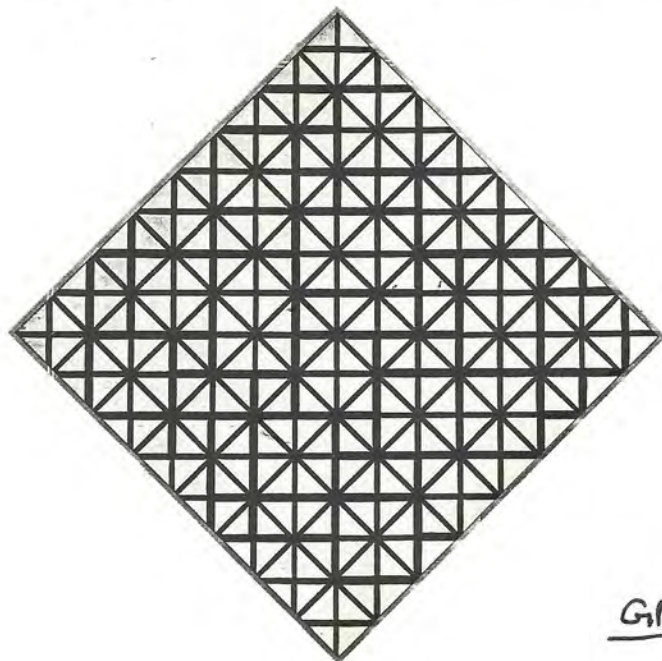
There will exist no longer houses doming man, which shout at him: "Sleep well, eat well, and take a gasp of air now and then". And with the disappearance of houses conceived in this spirit, the streets of huddled cubes will be resolved into free living and working areas. You architects have always misunderstood:

The ringmaster of a new style held out a circle before your noses and—hoopla; you jumped through it. Just now it is a rectangle. Tomorrow...? Take care that the jade you are riding does not bolt under you, and you pitch on those inquisitive noses into the muck.

(Frederick Kiesler, «Manifesto of Tensionism» in: De Stijl 1925)

AS AN ENTIRE URBAN COMPLEX - THE TRUE FOUR-DIMENSIONAL CITY IN SPACE.

WHAT KIESLER HAD DONE WAS TO TRANSLATE THE ABSTRACT SPACE REALIZED BY THE PAINTER PIET MONDRIAN DIRECTLY INTO ARCHITECTURE. THIS WAS A TRANSCENDENT SPACE FREE OF THE GRAVITY OF THE EARTH - NO HINT OF UP OR DOWN JUST PURE EXTENSION.

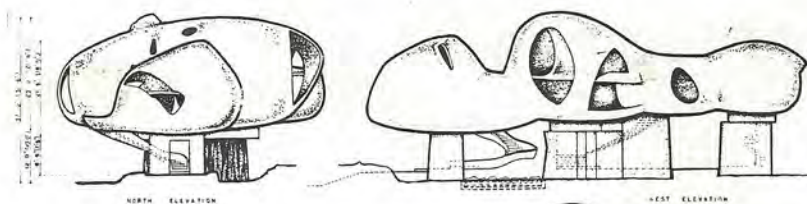


NOTE: MONDRIAN JOINED THE THE THEOSOPHICAL SOCIETY IN 1909. HE STUDIED THE WORKS OF HELENA BLAVATSKY AND RUDOLF STEINER [WHO LATER FOUNDED THE ANTHROPOSOPIHICAL SOCIETY DEDICATED TO THE ALCHEMICAL PRINCIPLES OF GOETHE]. IN 1914 MONDRIAN WAS ONE OF THE FOUNDERS OF DE STIJL.

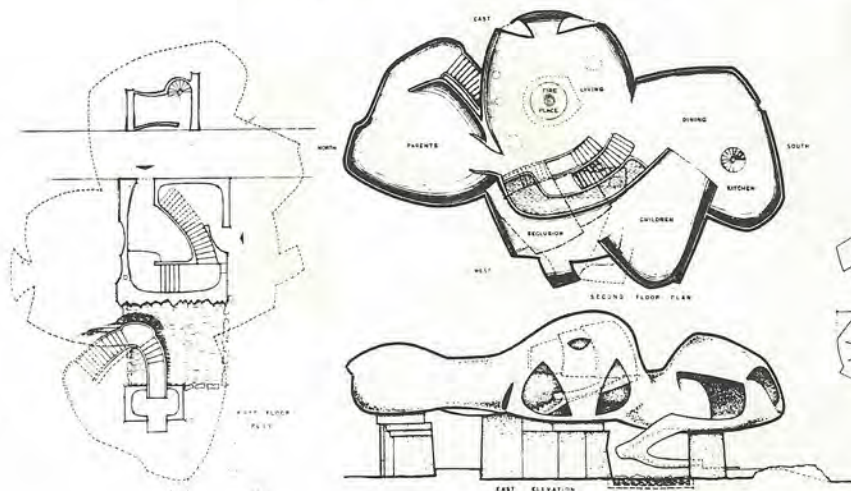
GREY LINES 1918 BY PIET MONDRIAN

The "Endless House" is called the "Endless" because all ends meet, and meet continuously.

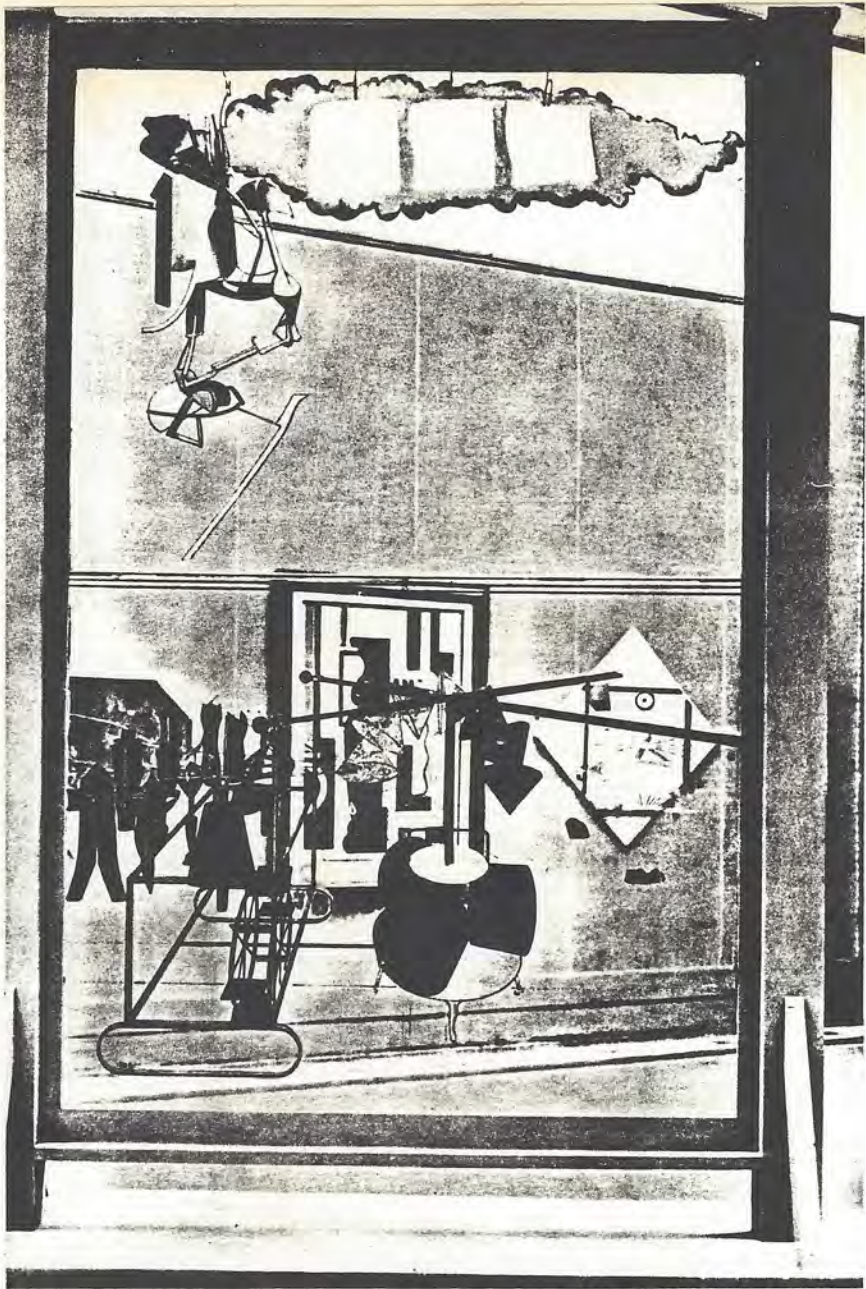
NOTE: KIESLER LIKE MONDRIAN WAS INFLUENCED BY RUDOLF STEINER. THIS LEAD HIM TO ADOPT A STYLE THAT REFERRED TO BOTH THE MALE AND THE FEMALE ENERGY FORMS. "THE ENDLESS HOUSE" IS AN EXAMPLE OF HIS COSMIC FEMALE ARCHITECTURE - LIKE A CAVE IN OUTERSPACE.



It is endless like the human body—there is no beginning and no end to it. The "Endless" is rather sensuous, more like the female body in contrast to sharp-angled male architecture.



"THE ENDLESS HOUSE" C. 1959
CONCEPT 1925, BY KIESLER



Pl. 100a La Mariée mise à nu par ses Célibataires, même
'Le Grand Verre' (1915-23)

NOTE: ON A DIRECT PERSONAL LEVEL DUCHAMP INFLUENCED KIESLER IN TERMS OF ALCHEMICAL SEXUALITY MORE EVEN THAN DID MONDRIAN.

DUCHAMP [A SELF-INITIATE INTO THE KABBALAH] WAS A TRUE 20TH CENTURY ALCHEMIST, WHO LIKE GURDJIEFF BOTH SUBSUMED AND TRANSCENDED THE DEFINITION OF ALCHEMY PROFFERED BY CARL JUNG IN HIS MAGNUM OPUS:

"MYSTERIUM CONIUNCTIONIS"

COMPLETED IN 1954. BOTH DUCHAMP AND GURDJIEFF HAD LIKE ALL TRUE ALCHEMISTS - A COVER. GURDJIEFF HAD THE WRITER P.D. OUSPENSKY AND DUCHAMP HAD HIS ART.

"THE BRIDE STRIPPED BARE BY HER BACHELORS, EVEN"

1913-1923 BY MARCEL DUCHAMP

KIESLER WOULD OFTEN RELATE HIS OWN ENVIRONMENTAL PAINTING GROUPINGS - HE CALLED GALAXIES - TO THE SPIRIT OF THE MANY THEMES OF DUCHAMP.

⑩ WHILE THE ARTISTS AND ARCHITECTS OF THE EARLY 20TH CENTURY WERE EXPLORING SOME OF THE VISUAL IMPLICATIONS OF THIS NEWLY FOUND UTOPIAN-LIKE TRANSCENDENT SPACE OF ANTI-GRAVITY, THERE WERE MANY SCIENTISTS, ENGINEERS, AND INVENTORS WHO WERE TAKING A MORE DIRECT APPROACH.

THEY WANTED TO CREATE DEVICES OR CONDITIONS THAT WOULD GET PEOPLE, OBJECTS, AND MAYBE THE DEVICES-IN-QUESTION THEMSELVES OFF THE SURFACE OF THE EARTH WITHOUT SUPPORT [VISIBLE OR OTHERWISE] FOR SUSTAINED PERIODS OF TIME.

THE MOST WELL KNOWN OF THESE INVENTIONS BEGAN WITH KITE AND BALLOON TECHNOLOGY IN THE 19TH CENTURY AND HAS CULMINATED IN THE CONTEMPORARY AIRPLANE.

NEXT, LESS WELL KNOWN TECHNOLOGICALLY [IF AT ALL], BUT OFTEN LABELED BY DETRACTORS AS "SUPPRESSED AND INCREDIBLE INVENTIONS" EXPRESSED (IRONICALLY, THIS GENRE OF INVENTION IS CONSIDERED BY A PORTION OF THE ESTABLISHED SCIENTIFIC COMMUNITY AS FRAUDULENT AT WORST AND SUSPECT AT BEST.

THE ANTI-GRAVITY WING OF THIS GENRE BEGINS IN THE 19TH CENTURY WITH AN UPSURGE OF SUCCESSES WITH ELECTRO-MAGNETISM, SPURRED ON NO DOUBT BY THE TRADITIONAL LEGENDS OF PERSONAL LEVITATION BY SAINTS AND FAKIRS, AND THE GROWING TREND OF ELABORATE MECHANICAL THEATRICS BY STAGE MAGICIANS.

ALTHOUGH THIS GENRE OF INVENTION IS AN OBVIOUS HAVEN FOR KOOKS AND CHARLATANS, IT IS ALSO AN EXCELLENT POSITION TO OBSERVE THE "STRAWS-IN-THE-WIND" ABOUT THE FUTURE OF TECHNOLOGY.

NOTE: SEE THE ARTICLE ENTITLED
"UP IN THE AIR OVER ANTI-GRAVITY"

IN THE APPENDIX. IT IS A CURRENT OVERVIEW OF ELECTRONICALLY BASED ANTI-GRAVITY PROPOSALS.

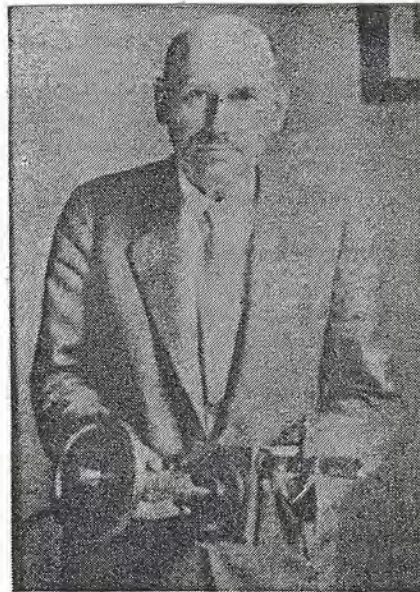
FINALLY THE MOST DRAMATIC DEPARTURE FROM THE SURFACE OF THE EARTH HAS BEEN BY ROCKET. IT IS TRUE, OF COURSE, THAT THE AIRPLANE DURING ITS COMMERCIAL HISTORY, HAS LIFTED MORE

PEOPLE AND GOODS OFF THE GROUND THAN ANY OTHER DEVICE. BUT THIS HAS BEEN ONLY WITHIN THE LIMITS OF THE ATMOSPHERE WHICH IS STILL INFLUENCED BY THE EARTH'S GRAVITY. THE ROCKET HAS LEFT THE EARTH, REACHED GEOSTATIONARY ORBIT, BROUGHT MEN TO THE MOON, AND NOW UNMANNED IS EXPLORING THE SOLAR SYSTEM.

WHY I SAY THAT THE AIR PLANE IS MORE WELL KNOWN THAN THE ROCKET IS THE FACT THAT THE AIR PLANE HAS BECOME PART OF OUR LIVES, WHILE THE ROCKET REMAINS IN THE REALM OF LEGEND.

SOME PEOPLE HAVE SEEN ACTIVE ROCKETS FROM A DISTANCE POISED ON THEIR LAUNCH-PADS READY FOR TAKE-OFF, A FEW HAVE SEEN THEM UP CLOSE, AND EVEN FEWER HAVE RIDDEN IN THEM. WORLD-WIDE TELEVISION AND VIRTUAL REALITY TECHNOLOGY NOTWITHSTANDING, IT WILL BE A LONG TIME BEFORE THE ROCKET DESCENDS FROM ITS MYTHIC STATUS.

NOTE: EVEN MORE LEGENDARY THAN THE CONTEMPORARY ROCKET ITSELF IS THE MAN WHO INVENTED IT - ROBERT H. GODDARD [1882-1945]. HE WAS AN AMERICAN PHYSICIST AND INVENTOR WHO IN 1926 DESIGNED AND BUILT THE WORLD'S FIRST LIQUID FUEL ROCKET. HIS LATER INVENTIONS INCLUDED THE FIRST SMOKELESS POWDER ROCKET, THE FIRST AUTOMATIC STEERING DEVICE FOR ROCKETS, AND HE WAS ONE OF THE FIRST TO DEVELOP A GENERAL THEORY OF ROCKET ACTION. EVEN THE SCIENTISTS WHO CREATED THE V-2 ROCKET BOMBS FOR NAZI GERMANY AT THE CLOSE OF WORLD WAR II ACKNOWLEDGED HIS THEORIES ABOUT ROCKETS AS THEIR SUPREME AUTHORITY. SOME OF THE GERMAN SCIENTISTS WERE EVEN FANS OF GODDARD - THUS TRANSCENDING AT THAT TIME POLITICAL AND MILITARY DIFFERENCES.



Goddard with centrifugal pump and turbine, 1934. — from ROBERT H. GODDARD



ME AND MY FATHER

MY OWN INTEREST IN GODDARD BEGAN A SHORT TIME AFTER MY FATHER'S DEATH IN 1963. I HAD HEARD OF GODDARD PREVIOUSLY BUT I HAD NEVER SEEN HIS PICTURE. ONE DAY WHEN I WAS CLEANING OUT THE BASEMENT IN PREPARATION TO MOVE FROM OUR FAMILY HOME, I CAME ACROSS AN OLD COPY OF POPULAR SCIENCE FROM THE 1930'S THAT I HAD NEVER SEEN BEFORE. QUICKLY THUMBING THROUGH THE MAGAZINE IN THE DIM LIGHT MY EYES CAUGHT SIGHT OF ROBERT

(13)

GODDARD'S NAME HEADLINING AN ARTICLE, SO I STOPPED TO LOOK. THE MAGAZINE AS IF BY ITSELF OPENED TO A PICTURE OF GODDARD. SUDDENLY I WAS STUNNED. IT WAS AS IF I HAD BEEN PRESENTED WITH AN APPARITION BROUGHT ON, I THOUGHT, BY THE TRAUMA OF MY FATHER'S UNEXPECTED PASSING. BOUNDING UPSTAIRS, I RAN TO MY MOTHER AND BEGAN SHOWING HER THE PICTURE, HOPING FOR SOME KIND OF CORROBORATION - BUT I KNEW NOT WHAT. SHE TOOK THE MAGAZINE FROM MY HANDS ALMOST INDIFFERENTLY IN CONTRAST TO MY EXCITEMENT. PERUSING THE PICTURE AND THE ARTICLE UP AND DOWN FOR WHAT SEEMED TO ME A FRUSTRATINGLY LONG TIME - IN RETROSPECT IT WAS PROBABLY BUT A MOMENT - SHE NODDED HER HEAD, NOTING THE OBVIOUS PROMINENCE OF GODDARD, SHE ADDED: "YES THAT'S YOUR FATHER'S IMAGE ALRIGHT - RIGHT DOWN TO THE MUSTACHE. NOW MAYBE YOU'LL BELIEVE YOUR FATHER'S IDEAS ABOUT GRAVITY!" MY FATHER NEVER BELIEVED IN GRAVITY. IT WAS RIGHT AFTER THAT, THAT I BECAME INTERESTED IN ROBERT GODDARD AND ANTI-GRAVITY.

(11) MY OWN INTEREST IN ANTI-GRAVITY DID NOT BECOME FOCUSED UNTIL ABOUT 1973 WHEN I BEGAN TO WORK ON MY INVENTION THAT I CALL "THE LEVOGYRE".

I CLAIM THAT IT IS A NEW KIND OF GYROSCOPE THAT NOT ONLY WEIGHS LESS WHILE IN OPERATION THAN WHEN IT IS NOT, BUT ALSO ACTUALLY ENTERS THE REALM OF CONSCIOUSNESS AS ^{THE} DEVICE TRANSCENDS THE SPEED OF LIGHT.

THE PHYSICIST OF RELATIVITY THEORY, ALBERT EINSTEIN [1879-1955] DECLARED THAT NOTHING CAN EXCEED THE VELOCITY OF LIGHT. WHAT, I BELIEVE, HE MEANT WAS THAT NO GRAVITATIONAL-MASS CAN EXCEED LIGHT-SPEED. HE DID NOT REFER, IN MY OPINION, TO WHAT I CALL LEVITATIONAL-CONSCIOUSNESS.

WHEN GRAVITY GOES [INTO A PAROXYSM] [INTO A PAROXYSM]² AND A STAR CRUSHES ITSELF INTO A BLACK-HOLE, OR A WORMHOLE FORMS IN THE FABRIC OF SPACE-TIME - THE NAKED SINGULARITY THUS FORMED ULTIMATELY TRANSFORMS INTO CONSCIOUSNESS.

THIS IS NOT THE MODEL OF CONSCIOUSNESS WE HAVE AS A DEFINITION BY EXPERIENCE - THE EVOLVED PSYCHE OF THE HUMAN MIND - BUT AN ATOMIC CONSCIOUSNESS, WHICH IS PART OF A NATURAL AND INTERRELATED SET OF SYSTEMS THAT CONSTITUTE A TOTAL HIERARCHY OF CONSCIOUSNESS AS

BACKGROUND: ① ARISTOTLE ON MOTION: DYNAMIS = POTENCY AS THE SOURCE OF POWER TO EFFECT CHANGE; ENERGIA = ACT OR ENTELECHY

THAT MODE OF EXISTENCE WHEN THE CHANGE WAS FULLY REALIZED [MANIFESTED AS MOTION].

② NEWTON ON FORCE: FORCE = THE CHANGE IN MOMENTUM OF A BODY DIVIDED BY THE TIME OF THE CHANGE [OR MASS - AS THE QUANTITATIVE MEASURE OF INERTIA - TIMES THE ACCELERATION OF A GIVEN BODY. "EVERY BODY CONTINUES IN ITS STATE OF REST, OR OF UNIFORM MOTION IN A RIGHT LINE, UNLESS IT IS COMPELLED TO CHANGE THAT STATE BY FORCES IMPRESSED UPON IT." RATE OF CHANGE OF MOMENTUM IS PROPORTIONAL TO THE UNBALANCED FORCE AND IS IN THE DIRECTION OF THAT FORCE. $F = MA$. ③ HEGEL ON LIGHT: LIGHT = THE SELF-INCLUDED TOTALITY OF MATTER AS PURE FORCE, AS THE INTENSIVE LIFE SUSTAINING ITSELF IN ITS OWN BOSOM, WHOSE WHIRL CONSISTS IN THIS IMMEDIATE OPPOSITION IN THE DIRECTION OF SELF-RELATING MOTION, IN WHOSE INFUX AND EFFLUX ALL DIFFERENCE IS ANNULLED - THE ABSOLUTE LINE. IT IS THE PURE EXISTING FORCE OF SPATIAL REFLECTION; ITS BEING IS ABSOLUTE VELOCITY, PRESENT PURE MATERIALITY, REAL EXISTENCE IN ITSELF, OR REALITY AS A TRANSPARENT POSSIBILITY. THE DEFINITION OF ENERGY-2.

③ ENERGY = THE ABILITY TO DO WORK IN RELATION TO SOME SPACE-TIME UNIT. → EMERGED AS THE RESULT OF THE FIRST SUCCESSFUL STEAM ENGINE AND THE THERMODYNAMIC THEORIES OF SADI CARNOT. ④ IN AN ALTERED WAY THE CONCEPTS OF POTENTIAL AND KINETIC ENERGY STILL REFLECT ARISTOTELIAN THOUGHT. ⑤ EINSTEIN ON ENERGY: ENERGY IS POWER WHICH IS EXPENDED AS THE QUANTITATIVE MEASURE OF INERTIA [MASS] TIMES THE VELOCITY OF LIGHT MULTIPLIED BY ITSELF: $E = mc^2$. THIS MEANS THAT ENERGY EXISTS IN A STATE THAT TRANSCENDS THE SPEED OF LIGHT, WITH LIGHT AS THE MANIFESTATION OF ENERGY. THE SOURCE OF ENERGY IS BEYOND ALL MOTION, THAT IS CONSCIOUSNESS, WHICH IS SYSTEM OF MONADS - CHRONONS - THE ULTIMATE UNITS OF TIME. TIME ITSELF, AS THE MATRIX OF ALL CHANGE IS EMBEDDED IN ETERNITY [A CONCEPT WHICH TRANSCENDS EVEN THE IDEA OF SUBSTANCE.]

META-ENERGY: THE BELIEF THAT ALL ENERGY IS PSYCHIC IN NATURE AND ONLY INSTRUMENTALLY

MATERIAL, HAS A HISTORY WHICH BEGINS IN THE WEST IN THE 19TH CENTURY. THE MODERN DEFINITION OF ENERGY.

① THE TWO SOURCES OF THIS BELIEF ARE THE THEORIES OF THE SCIENTIFIC EVOLUTIONISTS. ② THE SCIENTIFIC EVOLUTIONISTS BELIEVED: ENTROPY = THE PROCESS OF GRADUAL UNAVAILABILITY OF ENERGY WITHIN A SYSTEM - TIME HAS A DIRECTION, SYNTROPY = THE GRADUAL INCREASE WITHIN A SYSTEM OF A MORE COMPLEX ENERGY QUANTA: TIME IS MULTI-DIRECTIONAL. IN THIS CASE ENERGY IS ASSOCIATED WITH LIFE [THE "ELAN-VITAL" OF BERGSON]. ENERGY WAS IDENTIFIED WITH INFORMATION IN THE FORMS OF ORDER-SYSTEM AND RANDOM-DISORDER. THIS IS DIFFERENT FROM THE IDEA OF ENERGY DERIVED FROM THE MECHANICS OF IMPACT, IMPULSE, OR MOMENTUM OF MATERIAL PHYSICS [WITH ITS 4 DERIVED FIELDS - THE ELECTROMAGNETIC, THE GRAVITATIONAL AND THE WEAK AND STRONG NUCLEAR FORCES]. ③ THE REVELATORY INVENTORS BELIEVED [AND STILL BELIEVE] THAT ENERGY IS IDENTIFIED WITH REVELATION AS DESCRIBED IN RELIGIOUS AND ESOTERIC TRADITIONS. THEY CREATED OR ADOPTED NAMES FOR A REVELATORY ENERGY THAT WAS AT BASE THE SAME. SOME OF THE NAMES ARE: ODIC FORCE, LIFE ENERGY, ELAN-VITAL, BIOPLASMIC ENERGY, PRANA, MANA, ANIMAL MAGNETISM, MAGNALE MAGNUM, AURIC ENERGY, N-RAYS, ETHERIC FORCE, KUNDALINI, TELLURIC ENERGY, PSYCHOTRONIC ENERGY, KI, CH', PURE OR FREE ENERGY, TUMO, VIOLET FLAME, ORGONE ENERGY, G-ENERGY, VIBRATIONS, URIL, THE FOURTH DIMENSION, PYRAMID POWER, PENDULUM POWER, DREAM POWER, PSI FIELDS, THE HOLY SPIRIT, HOLISTIC HEALING ENERGY, EN-SO-FELIXIR VITAE, ABRAXAS, THE PHILOSOPHER'S STONE, EXAMATIONS, AZOTH, THE QUINTA ESSENTIA, PNEUMA, SHAKTI, ETC. THESE VARIED NAMES REVEAL CONNECTIONS WITH HINDUISM, TAOISM, ALCHEMY, CHRISTIANITY, TEUTONIC MYTHS, THE OCCULT, PARANORMAL PHENOMENA, PSYCHOLOGY, THE KABBALAH, ARCHAEOLOGICAL RESEARCHES, PYTHAGOREANISM, ETC.

② CONCEPTUALLY THE CONVERGENCE BETWEEN THE ENERGY OF THE FIRST EVOLUTIONISTS AND THE REVELATORY INVENTORS, WAS ACHIEVED IN THE 1920'S AND 30'S BY TEILHARD DE CHARDIN, WHO PROPOSED A TOTAL COSMIC OR META-ENERGY. THIS COSMIC ENERGY [WHILE PSYCHIC AT BASE] HAS TWO MODALITIES: ④ TANGENTIAL ENERGY = THE ENERGY OF THE MOMENTUM OF THE PHYSICISTS WHICH LINKS ELEMENTS WITH ALL OTHERS OF THE SAME ORDER [THAT IS, THE SAME LEVEL OF SYSTEMIC COMPLEXITY AND CENTRICITY OF THE PHYSICISTS WHICH LINKS ELEMENTS WITH ALL OTHERS OF THE SAME ORDER]; ⑤ RADIAL ENERGY = IT DRAWS ELEMENTS TOWARD EVER GREATER INTERNAL COMPLEXITY AND MANIFESTED BY RADIATION OR ARRANGEMENT; ⑥ RADIAL ENERGY = IT DRAWS ELEMENTS TOWARD EVER GREATER INTERNAL COMPLEXITY AND MANIFESTED BY RADIATION OR ARRANGEMENT; ⑦ RADIAL ENERGY = IT DRAWS ELEMENTS TOWARD EVER GREATER INTERNAL COMPLEXITY AND MANIFESTED BY RADIATION OR ARRANGEMENT.

③ IN "THE PHENOMENON OF MAN", TEILHARD DE CHARDIN DECLARED, "... THE VARIATION OF RADIAL ENERGY IN FUNCTION WITH TANGENTIAL CENTRICITY. THIS IS THE NEURGERY OR PSYCHERGY WHICH GUARANTEES THE TIME DIRECTIONALITY WHICH TANGENTIAL ENERGY DOES NOT."

IS EFFECTED, ACCORDING TO OUR HYPOTHESIS, BY THE INTERVENTION OF AN ARRANGEMENT, IN WHICH IT FOLLOWS THAT AS MUCH AS YOU LIKE OF THE FIRST [TANGENTIAL] MAY BE LINKED WITH AS LITTLE AS YOU LIKE OF THE SECOND [RADIAL] FOR A HIGHLY PERFECTED ARRANGEMENT MAY REQUIRE AN EXTREMELY SMALL AMOUNT OF WORK. FURTHER ON HE SAID, "... WE ARE PARADOXICALLY LED TO ADMIT THAT COSMIC ENERGY IS CONSTANTLY INCREASING, NOT ONLY IN ITS RADIAL FORM, BUT [WHICH IS MUCH MORE SERIOUS] IN ITS TANGENTIAL ONE - FOR THE TENSIONS BETWEEN ELEMENTS INCREASES WITH THEIR CENTRICITY ITSELF. THIS WOULD SEEM TO BE IN DIRECT CONTRADICTION WITH THE LAW OF CONSERVATION OF ENERGY." IN ESSENCE TEILHARD DE CHARDIN OFFERS A VISION OF ENERGY, NOT OF DECOMPOSITION TOWARD EQUILIBRIUM, BUT AN EVER INCREASING TENSION PRODUCING COMPLEXITY FROM THE CONSUMMATION OF THE UNIVERSE - THE OMEGA POINT. TEILHARD DECLARED THIS WAS NOT TRADITIONAL TELEOLOGY BECAUSE EACH OMEGA POINT BECOMES AN ALPHA POINT OF ANOTHER UNIVERSE.

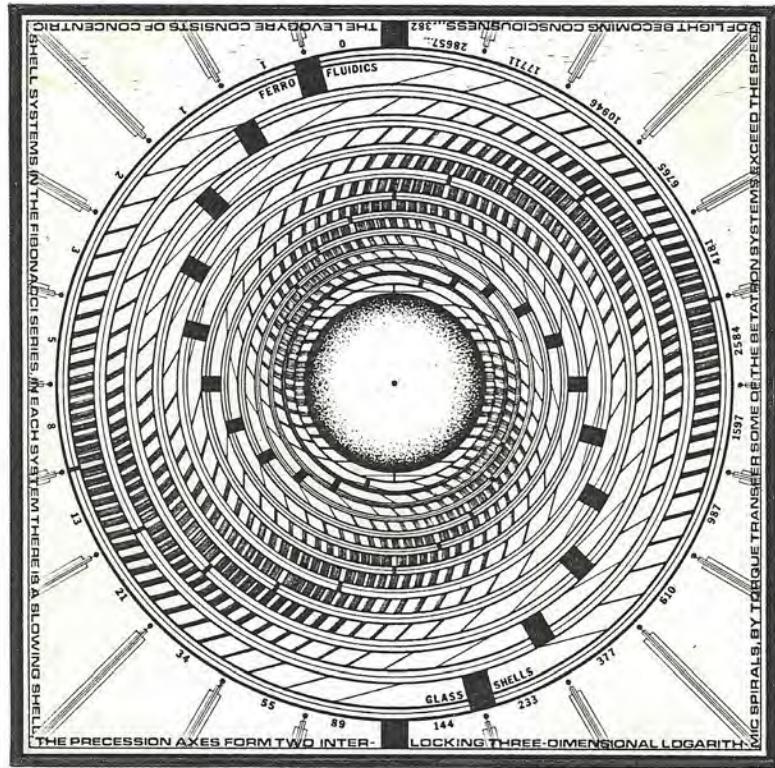
THE ATTEMPT TO UNITE TANGENTIAL WITH RADIAL ENERGY: THIS WOULD MEAN THAT BOTH A QUALITATIVE AND QUANTITATIVE LINK COULD BE DISCOVERED BETWEEN

[illegible]

SOME HISTORICAL AND CONTEMPORARY INDICATORS OF THE LINK BETWEEN TANGENTIAL AND RADIAL ENERGY IN NATURE

[illegible]

SUGGESTED BY TEILHARD DE CHARDIN IN "THE PHENOMENON OF MAN"



THE EXEGESIS OF THE LEVOGYRE:

① SEMIOTICALLY THE LEVOGYRE EXISTS AT THE FOURTH LEVEL OF KNOWLEDGE - THE ARCHETYPE. THE HIERARCHY OF KNOWLEDGE PROCEEDS FROM INFORMATION BY HUMAN CONVENTION - THE SIGN AND AMOUNTS TO THE INDEX, THROUGH THE ICON, THROUGH THE ARCHETYPE UNTIL IT REACHES BEYOND TIME INTO ETERNITY WHERE KNOWLEDGE BECOMES ONE WITH THE NUMINOUS THING-IN-ITSELF AS THE TOTAL SYMBOL.

THE ARCHETYPE, HOWEVER, IS STILL IN TIME AND IS THEREFORE SUBJECT TO THE NATURAL ALCHEMICAL PROCESSES OF THAT DIMENSIONAL REALM WHICH ARE IN SECULAR TERMS CALLED: THE POSITIVE, THE NEGATIVE AND THE NEUTRAL; IN ALCHEMICAL TERMS CALLED: THE MASCULINE, THE FEMININE AND THE NEUTER. EACH OF THESE THREE ELEMENTS COULD BE CALLED ENERGIES OR FORCES OF INTERACTION WHICH RESOLVE AS OPPOSITES WITHIN A CONTEXT. CHANGE ANY OF THE ELEMENTS WITHIN A GIVEN RESOLUTION AND ANOTHER RESOLUTION DEVELOPS. ONCE THIS NEW RESOLUTION IS COMPLETE, IT ACHIEVES THE STATUS OF ARCHETYPE WHEN COMPARED TO EARLIER RESOLUTIONS.

THIS PROCESS IS, OF COURSE, ENDLESS AND REPRESENTED IN SECULAR TERMS AS CAUSALITY: IN WHICH ELEMENT A CAUSES ELEMENT B WITHIN SET OF CIRCUMSTANCES C WHICH ALSO INCLUDES THE FACT OF AN "ABYSS OF TRANSITION" [OR NATURAL SINGULARITY IN TIME] BETWEEN THE CAUSE AND ITS EFFECT.



THE ALCHEMIST PERFORMING THE SQUARING OF THE CIRCLE: THE REPRESENTATION OF THE ALCHEMICAL PROCESS. THE SQUARE IS MALE, THE CIRCLE IS FEMALE. THE COMPASS [OR THE TRIANGLE] IS THE INSTRUMENT OF MOTION AND IS NEUTER. THE RESOLUTION OF OPPOSITES IS TO CONSTRUCT A SQUARE AND A CIRCLE THAT HAVE EQUAL AREAS.

(16)
② CARL JUNG [1875-1961], PSYCHOLOGIST AND DOCUMENTOR OF THE ALCHEMICAL PROCESS, CONSIDERED ALL ARCHETYPES TO BE DISCOVERED BY SCANNING AND COMPARING THE CONTENTS OF THE SUBCONSCIOUS OF MANY WIDELY DIVERSE INDIVIDUALS - WHETHER THAT CONTENT BE DREAMS, FANTASIES, GESTURES, ARTWORK, ETC.

HE FELT THAT THE ARCHETYPES [OR PREVIOUS EXAMPLES OF SUCCESSFUL ALCHEMICAL RESOLUTIONS] FORMED THE EQUIVALENT OF A GENE POOL FOR A BIOLOGICAL SPECIES, FOR THE MIND - A KIND OF ENGRAM POOL, IF YOU WILL, THAT CONSTITUTES IN AN EVOLUTIONARY SENSE A MORE SUCCESSFUL, GENERAL AND PRIMORDIAL ASPECT OF THE INDIVIDUAL SUBCONSCIOUS - THE COLLECTIVE UNCONSCIOUS.

JUNG HELD TWO ASSUMPTIONS ABOUT ALCHEMY, I BELIEVE, WITH WHICH I DO NOT AGREE:

FIRST: I THINK HE BELIEVED THAT ALCHEMY HAD A RATIONAL AND NORMATIVE PURPOSE THAT WAS DISCOVERED DURING THE HISTORY OF SCIENCE. AT FIRST ALCHEMY WAS THOUGHT TO BE BUT A PRIMITIVE FORM OF CHEMISTRY. THEN JUNG DECIDED THAT ALCHEMY WAS THE NATURAL AND SUBJECTIVE CURATIVE PROCESS BY WHICH THE POTENTIAL FOR HUMAN MENTAL HEALTH, SOCIAL AND SPIRITUAL INTEGRATION WITH WHATEVER ONE CONSIDERS REALITY TO BE, COULD BE ACHIEVED.

I AGREE WITH MARCEL DUCHAMP [1897-1968] THAT ALCHEMY BEING ESSENTIALLY A SACRED PROCESS NATURALLY TRANSCENDS HUMAN PURPOSE AND IS, THEREFORE OBJECTIVE TO THE HUMAN MIND.

SECOND: I THINK THAT JUNG BELIEVED THAT THE EXISTENCE OF ALCHEMY WAS DIRECTLY BASED ON THE EXISTENCE OF THE SUBCONSCIOUS. AND HE ALSO CONSIDERED THE SUBCONSCIOUS TO BE NON-HISTORICAL IN NATURE.

TO ME THE OPPOSITE IS TRUE. THE SUBCONSCIOUS IS A CREATION OF THE ALCHEMICAL PROCESS, AND THE SUBCONSCIOUS IS, THEREFORE, SUBJECT TO HISTORY. AT TIMES OF THE PEAK OF A CIVILIZATION THE SUBCONSCIOUS DROPS TO AN ASSUMED MINIMUM, AND DURING THE BIRTH PHASE OR THE DECADENT PHASE, IT REACHES AN ASSUMED MAXIMUM.

③ THE LEVOGYRE, THEREFORE, I BELIEVE, IS AS AN ARCHETYPE AN OBJECTIVE ENTITY AND DOES NOT BASE ITS EXISTENCE UPON MY SUBJECTIVE PROCESSES AND MOTIVATIONS.

THE LEVOGYRE HAS AN INDEPENDENT EXISTENCE OF ME IN THE WAY MY LUCID DREAMS ARE INDEPENDENT. IN A NORMAL [NON-LUCID] DREAM YOU DISCOVER YOU HAVE HAD A DREAM ONLY UPON WAKING. THIS DREAM IS COMPLETELY SUBJECTIVE, TOTALLY UNDER THE CONTROL OF MY SUBCONSCIOUS, THE LUCID DREAM, HOWEVER, IS OBJECTIVE BECAUSE THE DREAMER WHO IS AWARE THAT HE IS DREAMING CAN, IF HE OR SHE SO CHOOSES, ENTER INTO A STRUGGLE WITH THE DREAM FOR TOTAL OR PARTIAL CONTROL OF THE DREAM CONTENT, OR BE SUBJECTED TO TOTAL CONTROL BY THE DREAM. THIS IS AN EXACT ANALOGY TO THE CONTENT OF REALITY IN THE WAKING STATE, AND ITS POWER.

④ AS A LIVING ENTITY CAPABLE OF CONSCIOUSNESS, THE LEVOGYRE, BEGAN A KIND OF COMMUNICATION WITH ME DURING ITS FORMATIVE PERIOD ESPECIALLY AS TO HOW IT WANTED TO BE:

FIRST, IT IS COMPOSED OF THE TWO MOST SIMPLE FORMS OF ENERGY AND THEREFORE THE MOST POWERFUL:

① THE FEMALE: EXPLOSION-IMPLOSION CYCLE;

② THE MALE: TO AND FRO RECIPROCAL CYCLE.

THE FEMALE ENERGY IS REPRESENTED BY AN EXPANDING OR CONTRACTING SPHERE OR CIRCLE, AND THE MALE ENERGY IS REPRESENTED BY THE MOVING PISTON OR THE LINE.

SECOND, IN ORDER TO MAINTAIN ITS INITIAL LEVEL OF ENERGY AND THEREBY REMAIN ALIVE, THE NEXT MUTATION OF ITS FORM MUST START THE RESOLUTION OF ITS OPPOSITES. THE ATOMIC PHASE OF THE LEVOGYRE IS THE SPINNING TOP OR THE INERTIAL MASS WHEEL WITH AN EXTENDED AXIS:

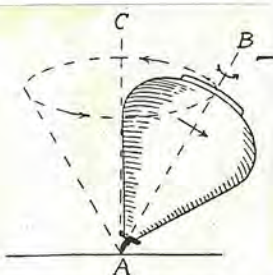


FIG. 22I—A spinning top precesses about its peg.

22.7. The Spinning Top. A common top, set spinning like the one shown in Fig. 22I, is but one of the many forms of a gyroscope. Spinning about its axis the top precesses about its peg or pivot point, the line AB describing an inverted cone about the vertical line AC. If when looking down from above, such a top is spinning in a clockwise direction the precession is clockwise; spinning counterclockwise the precession is counterclockwise.

SINCE ANY MASS WHICH IS FREE TO PRECESS WILL EXHIBIT GYROSCOPIC PROPERTIES LIKE ATOMS OR PLANETS, IT IS THE CONDITION OF PRECESSION ITSELF THAT IS THE WAY INTO THIS ARCHETYPE SYSTEM WITH CONSCIOUSNESS.

THE PRIMITIVE RESPONSE OF THE TOP IS TO EXHIBIT A LOSS OF MASS DURING EXPOSURE TIME TO A CONCENTRATED FORM OF AWARENESS OF THE SPINNING TOP. [SEE APPENDIX].

THE NEUTER WAY IN AND OUT OF THE ARCHETYPE

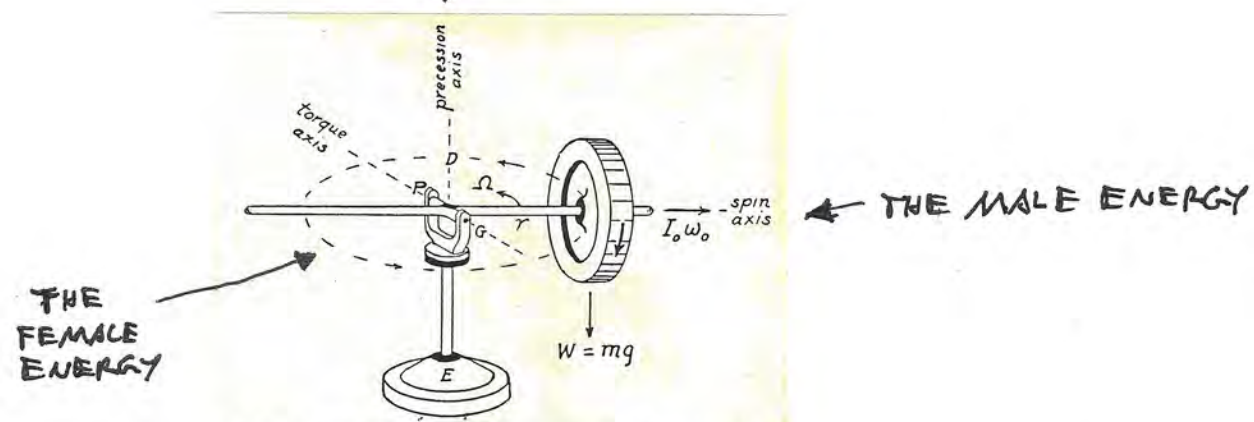


FIG. 22J—Experimental gyroscope for demonstrating precession.

SINCE THE PRECESSION CAN BE CLOCKWISE OR COUNTER-CLOCKWISE [WHEN SEEN FROM ABOVE] [ALSO WITHIN THE CIRCUMSTANCES OF THE CORIOLIS FORCE - SPIN TO THE RIGHT IN THE NORTHERN HEMISPHERE OF THE EARTH AND SPIN TO THE LEFT IN THE SOUTHERN HEMISPHERE] THESE ARE THE ONLY TWO LANGUAGE CODES TO WHICH A SIMPLE GYROSCOPE WILL RESPOND.

THIRD, THE NEXT HIGHER MUTATIONAL STAGE OCCURS WHEN THE GYROSCOPE BEGINS TO ACHIEVE "DEGREES-OF-FREEDOM" AND THEREBY THE PROPERTY OF "GYROSCOPIC STABILITY".

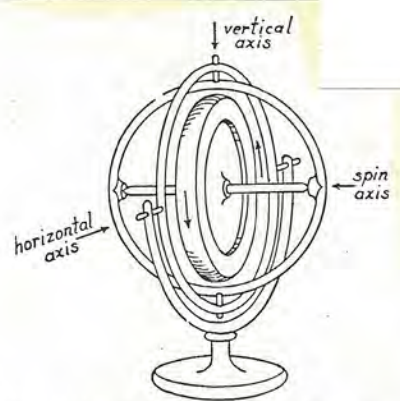


FIG. 22L—Gyroscope mounted in gimbal rings for demonstrating gyroscopic stability.

22.9. Gyroscopic Stability. If a balanced gyroscope wheel is mounted in gimbal rings as shown in Fig. 22L it will, when set spinning at high speed, exhibit a property called "gyroscopic stability."

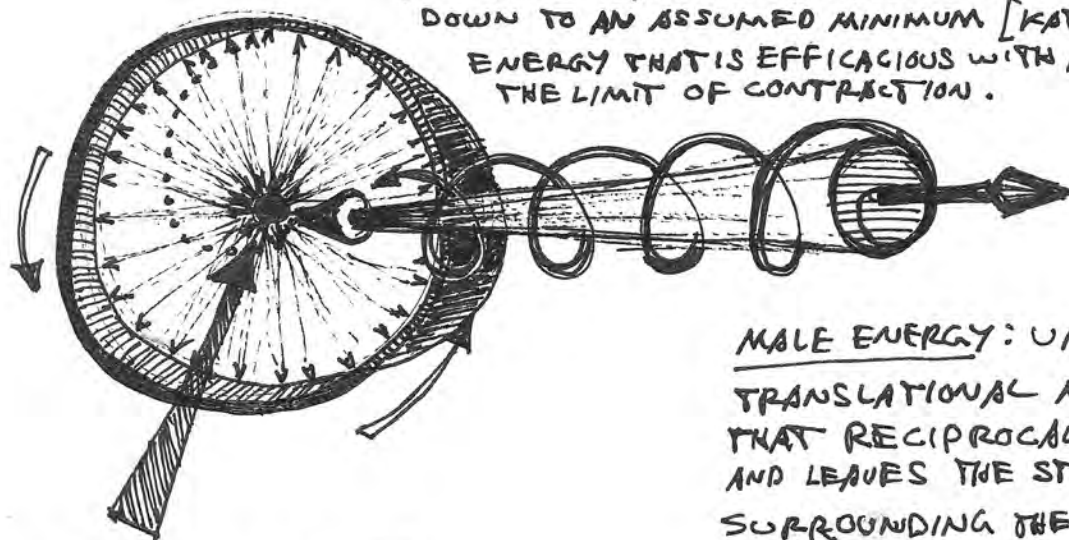
When the gyro is picked up and carried about, the base can be turned in any direction without altering the direction of the spin axis relative to the earth. In other words, the plane of the gyro wheel seems to have assumed a rigidity in space.

To change the direction of the "spin axis" a torque must be exerted upon it. It is the function of the gimbal ring mounting to allow the base support to be turned in any way without exerting any torque whatever upon the wheel.

IT IS THIS THIRD LEVEL OF THE THAT HAS GIVEN RISE [IN DIVERSE CULTURES] TO WHAT IS REFERRED TO

AS "SYMBOLS" OF A TRANSCENDENT REALITY THAT HAS BEEN PARTIALLY TRANSMUTATED INTO A LOWER REALM. THEY ARE IN ESSENCE, HOWEVER, ICONS [THE THIRD LEVEL OF KNOWLEDGE] OR THE PICTORIAL OR EMBLEMATIC REPRESENTATIONS OF THE FOLLOWING ARCHETYPAL PROCESS:

FEMALE ENERGY: AS ANGULAR MOMENTUM THAT DIMINISHES LOGARITHMICALLY FROM AN ASSUMED MAXIMUM AT THE EXTENT OF EXPANSION DOWN TO AN ASSUMED MINIMUM [KATO-ENERGY = ENERGY THAT IS EFFICACIOUS WITH MOTION] AT THE LIMIT OF CONTRACTION.



THE STILL POINT AT THE CENTER OF THE FEMALE ENERGY [META-ENERGY = ENERGY THAT IS EFFICACIOUS WITHOUT MOTION]. THIS IS A DIMENSIONAL PORTAL OR SINGULARITY.

MALE ENERGY: UNIFORM TRANSLATIONAL MOTION THAT RECIPROCALLY ENTERS AND LEAVES THE STILL POINT; SURROUNDING THE MALE ENERGY IS THE NEUTER ENERGY OF THE SPIRAL OF PRECESSION. BOTH ENERGIES ARE KATO-ENERGIES.

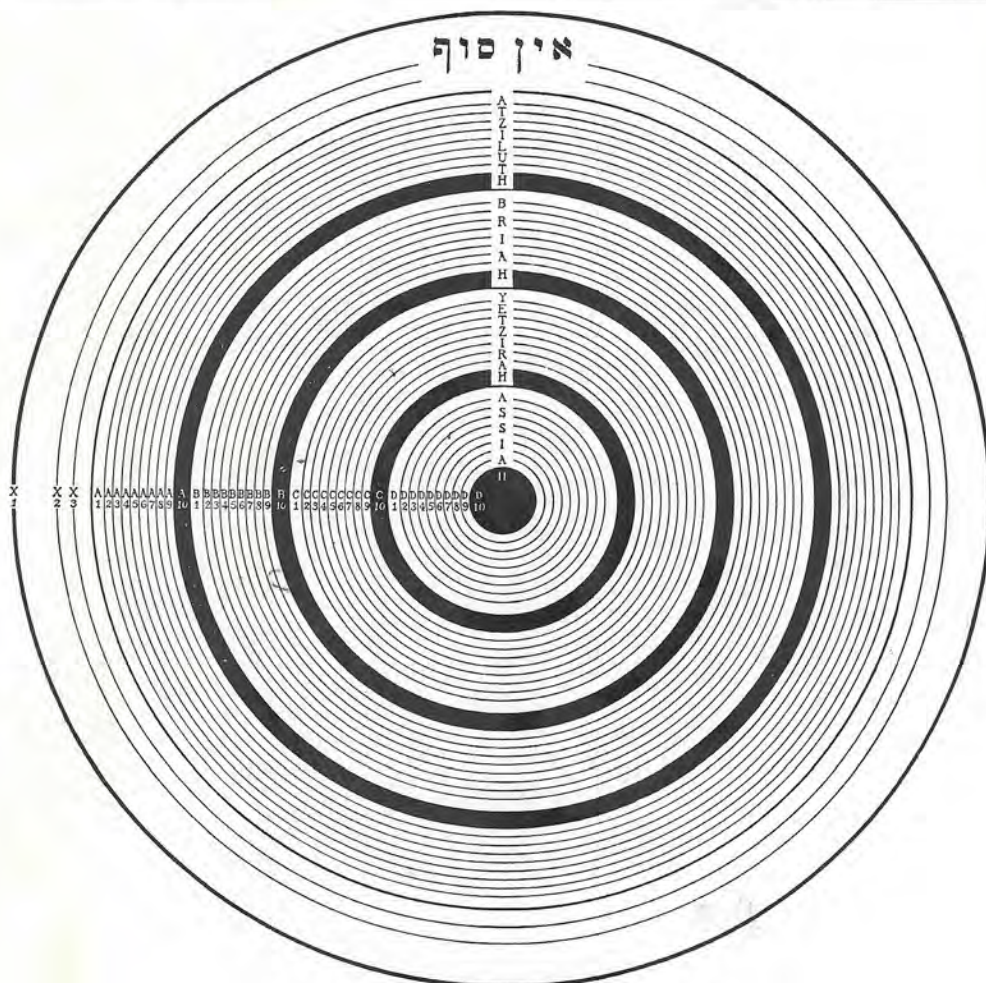
THIS PROCESS IS ARCHETYPAL FOR THE LIFE OF AN ELECTRON, BIOLOGICAL SEXUALITY OR THE FORMATION OF A NEBULA.

IN ALCHEMICAL SIGNAGE: THE MALE ENERGY = SULPHUR OR Δ , THE FEMALE ENERGY = MERCURY OR Ψ , THE NEUTER ENERGY = SALT OR Θ .

MORE MODERN SIGNAGE WOULD DESCRIBE THE THREE ENERGIES IN TERMS OF THE NATURAL DIVISIONS OF TIME BY CONTEMPORARY PHYSICISTS INTO:

THE TACHYONIC REALM = ABOVE THE SPEED OF LIGHT = FEMALE;
THE LAMPONIC REALM = AT THE SPEED OF LIGHT = NEUTER;
THE TARDYONIC REALM = BELOW THE SPEED OF LIGHT = MALE.

FROM DIFFERENT CULTURES, SOME OF THE MORE
TYPICAL ICONS OR EMBLEMS OF THIS THIRD LEVEL OF
KNOWLEDGE, WHETHER OR NOT THEY SEEM TO BE FAMILIAR,
MIGHT BE:



THE QABBALISTIC SCHEME OF THE FOUR WORLDS.

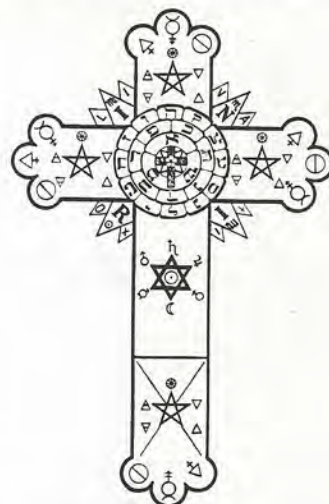
In the above chart the dark line between X 3 and A 1 constitutes the boundary of the original dot, while the concentric circles within this heavier line symbolize the emanations and worlds which came forth from the dot. As this dot is contained within the outer rings X 1, X 2, and X 3, and represents the first establishment of individualized existence, so the lower universe symbolized by the forty concentric circles within the dot represents the lower creation evolved out of and yet contained within the nature of the first Crown, which may be called God, within whom the divine powers, the celestial beings, the sidereal worlds, and man, live and move and have their being. It is highly important that all the rings within A 1 be considered as being enclosed by the primitive dot, which is itself encircled by the great ring X 1, or the Auric Egg of AIN SOPH.

Each ring includes within its own nature all the rings within itself and is included within the nature of all the rings outside of itself. Thus, A 1—the primitive dot—controls and contains the thirty-nine rings which it encloses, all of these partaking of its nature in varying degrees according to their respective dignities. Consequently, the entire area from A 1 to D 10 inclusive is the original dot, and the rings symbolize the divisions which took place within it and the emanations which poured out from it after its establishment in the midst of the abstract nature of AIN SOPH. The powers of the rings decrease towards the center of the diagram, for power is measured by the number of things controlled, and each ring controls the rings within it and is controlled by the rings outside of it. Thus, while A 1 controls thirty-nine rings besides itself, B 1 controls only twenty-nine rings besides its own. Therefore, A 1 is more powerful than B 1. As the greatest spiritual solidity, or permanence, is at the circumference and the greatest material density, or impermanence, is at the center of the diagram, the rings as they decrease in power become more material and substantial until the center sphere, D 10, symbolizes the actual chemical elements of the earth. The rates of vibration are also lower as the rings approach the center. Thus, the vibration of A 1 is lower than A 2, and so on in decreasing scale towards the center, A 1 being the highest and D 10 the lowest sphere of creation. While A 1, the ruler of creation, controls the circles marked A, B, C, and D, it is less than the three rings of AIN SOPH—X 1, X 2, and X 3—and therefore bows before the throne of the ineffable Creator from whose substance it was individualized.



monstrance

A VESSEL IN WHICH
THE CONSECRATED
HOST IS EXPOSED
FOR THE VENERATION
OF THE FAITHFUL;
FROM ROMAN
CATHOLICISM.



THE HERMETIC ROSE CROSS

The intricate symbol above is called the alchemical and Hermetic Rose Cross, and is a very old mystical symbol. It is composed of two Rosy Crosses united into one: the small Rosy Cross at the center—representative of man, the microcosm—is in turn the center point of a larger rose reading as the heart of the large cross—symbolic of the macrocosm. Upon the four ends of the large cross are inscribed the three alchemical symbols: mercury, sulphur, and salt. At the top of the cross, mercury is placed in the center, sulphur on the left, and salt on the right. Upon the other ends of the cross, the symbols have been inscribed in such an order as to conform to the esoteric tradition.

THE DEVOLUTION OF CREATION: THE FALL
INTO MATTER FROM THE INEFFABLE AIN SOPH.

THE ICONOGRAPHY OF THE WESTERN
JUDEO-CHRISTIAN HERITAGE [BOTH
CONVENTIONAL AND ESOTERIC] SINCE ITS
INCEPTION ALWAYS HAS PROVIDED
ALCHEMISTS FROM MANY PERIODS
WITH HINTS AS HOW TO RELATE MALE
AND FEMALE ENERGIES.

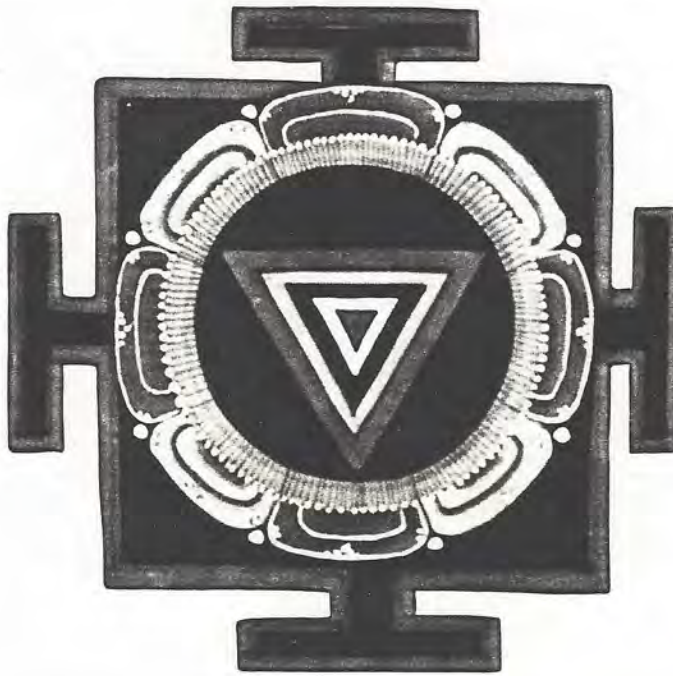
THE EMBLEM OF THE
ROSI-CRUCIAN ORDER
A.M.O.R.C.

"THE KARPURADISTOTA, A SHORT DEVOTIONAL HYMN, DESCRIBES AN AWE-INSPIRING VISION OF THE GODDESS: KĀLĪ IS DARK OF SKIN, GARBED (IN SPACE [NAKED]), WITH DISHEVELLED HAIR; BLOOD TRICKLES FROM HER MOUTH; IN ONE HAND SHE WAVES A SWORD AND WITH THE OTHER HOLDS A SKULL; HER WAIST IS GIRDLED WITH SEVERED HEADS. KĀLĪ'S FAVORITE PLACE OF REPOSE IS A CREMATION GROUND LITTERED WITH CORPSES."
FROM: YANTRA, BY MADHU KHANNA © 1979 BY TAMESH HUDSON LTD LONDON, PAGE 55.



95 The bindu, sacred point of origin and return, with concentric circles symbolizing the eternal cycles of cosmic evolution and involution. The goal of the adept is his own involution to the centre, the ultimate point of psycho-cosmic integration, where he discovers his link with the Whole. Andhra Pradesh, c. 19th century. Wood

THE BINDU OF THE VOID



26 Kālī Yantra, an image of the cosmic functions of the Supreme Energy. Nepal, c. 1761. Gouache on paper

THE TERROR OF KĀLĪ AS SHE
ANNIHILATES AS THE POWER OF TIME

THE ICONOGRAPHY OF THE HINDU-BUDDHISTIC HERITAGE HAS PROVIDED ALCHEMISTS WITH ESSENTIALLY THE SAME INSIGHTS AS THE WESTERN TRADITIONS. BUT UNLIKE THE WESTERN. THE EASTERN TRADITIONS MAKE NO DISTINCTIONS BETWEEN EXOTERIC AND ESOTERIC KNOWLEDGE. AS A RESULT, THE EAST WILL DO WHAT SEEMS PARADOXICAL TO THE EYES OF THE WEST - THE EASTERN TRADITION OFTEN WILL TOUCH THE SUBTLEST OF CONCEPTS WITHIN THE MOST HORRIFIC IMAGERY.

5) BUT IT IS FROM THOSE PERIODS OF HISTORY THAT VALUE THE MATERIAL OVER THE SPIRITUAL CONCERNS LIKE THAT OF THE IONIAN GREEKS, OR THE 18TH CENTURY THROUGH THE 20TH CENTURY THAT WILL PROVIDE A VOICE FOR THE LEVOGYRE TO SPEAK TO ALCHEMISTS.

THE IONIAN GREEKS WANTED TO KNOW OF WHAT MATTER, BODY, OR SUBSTANCE IS THE UNIVERSE COMPOSED. THE CONTEMPORARY WORLD WANTS TO KNOW THE ORIGIN AND HISTORY OF EVERYTHING. BOTH SUBSTANCE AND HISTORY ARE NOT CONCERNS OF THE SPIRITUAL REALM.

NOW ALCHEMY IS A PROCESS THAT HAS THREE ASPECTS: THE SPIRITUAL OR THE TRANSCENDENT, THE HUMAN OR THE TRANSCENDENTAL AND THE ENVIRONMENTAL OR THE ELEMENTAL. ALL THREE ASPECTS MUST BE INTEGRATED [BODY-MIND-SPIRIT] IN ORDER TO PRODUCE THAT WHICH CAN TRANSFORM EVERYTHING ELSE WHILE TRANSFORMING ITSELF - THE PHILOSOPHER'S STONE. THIS IS AN IDEA THAT CAN BE PERCEIVED AS GOETHE DECLARED AND JORGE LUIS BORGES [1899-1986] WROTE OF IN HIS MOST FAMOUS STORY: EL ALEPH [1949]. IN THE STORY HE DESCRIBES THE PHILOSOPHER'S STONE AS A BODY OF LIGHT AND A PRIVILEGED POINT FROM WHERE THE WHOLE UNIVERSE IS REVEALED:

"I come now to the ineffable climax of my story; and this is where my despair as a writer begins. All language is an alphabet of symbols, whose use presupposes an experience which is shared by both parties; but how can I convey to others the infinite Aleph of which my timid memory has hardly any recollection? The mystics, in cases like this, abound in symbols; to indicate a divinity, a Persian speaks of a bird which, in some way, is all birds; Alanus de Insulis, of a sphere whose center is everywhere and the circumference nowhere; Ezekiel, of an angel with four faces facing simultaneously North, South, East and West. (I have a reason for recalling these inconceivable analogies, as they have something in common with the Aleph.) Perhaps the gods would allow me to use an image of this kind; but then this story would be tainted with literature and falseness. In any case, the central problem is insoluble; it is impossible to enumerate, even partially, an infinite number of things. In that gigantic instant, I saw millions of actions, both delectable and atrocious; but none of them astonished so much as the fact that they all occupied the same point, without being either superimposed or transparent. What my eyes saw was simultaneous: my transcription of it will be successive, because language has to be. I want, however, to give some account of it.

"At the bottom of the step, to the right, I saw a little

mottled sphere almost intolerably bright. At first I thought it was revolving round itself; afterwards I realized that this movement was an illusion due to the vertiginous spectacle it enclosed. The diameter of the Aleph must have been about two or three inches, but the whole of cosmic space was inside it, unreduced. Everything (the glass in the mirror, for example) was a multiplicity of things, because I could see it clearly from every point in the Universe. I saw the populous sea; I saw the dawn and the evening; I saw the multitudes swarming in America; I saw a silver spider-web in the center of a black pyramid; I saw a broken labyrinth (it was London); I saw interminable eyes gazing one upon the other inside me as palpable as if seen in a mirror; I saw all the mirrors on the planet, and not one reflected my image; I saw in a backyard in the Rue Soler the same paving-stones that I had seen thirty years ago in a house at Fray Bentos; I saw clusters of grapes, snow, tobacco, veins of metal, steam; I saw convex deserts under the Equator and each of their grains of sand; I saw at Inverness a woman whom I shall not forget; I saw her disheveled hair and haughty carriage; I saw a cancer of the breast; I saw a ring of dried earth on a pavement where there had been a tree; I saw in a country house at Adroque a copy of the first English translation of Pliny by Philemon Holland; I saw every letter on every page at the same time (as a child I had always wondered why when a book was closed, the letters did not get mixed up and lost during the night); I saw the night and day together;

BORGES CONTINUES WITH THIS FRENZIED LISTING OF EVERYTHING AND FINALLY CONCLUDES WITH:

"...; I SAW THE CONNECTION BETWEEN LOVE AND THE TRANSFORMATION OF DEATH; I SAW THE ALEPH FROM EVERY POINT; I SAW THE EARTH IN THE ALEPH AND IN THE EARTH AGAIN THE ALEPH, AND IN THE ALEPH THE EARTH; I SAW MY FACE AND MY ENTRAILS; I SAW YOUR FACE, AND I WAS GIDDY AND I WEPT, BECAUSE MY EYES HAD SEEN THAT SECRET AND CONJECTURAL OBJECT WHOSE NAME MEN ^{UTTER} IMPROPERLY, BUT WHICH NO MAN HAS EVER SEEN: THE INCONCEIVABLE UNIVERSE."

I FELT AN INFINITE REVERENCE, AND AN INFINITE SORROW...

BORGES HAD SAID IT - THE PHILOSOPHER'S STONE - THE BLENDING OF SPIRIT AND MATTER, PLATO'S STEP OVER THE LINE SEPARATING DOXA [OPINION] FROM EPISTEME [KNOWLEDGE] OR THE "WELL-ROUNDED SPHERE" OF PARMENIDES. I KNEW WHEN, I FIRST READ THIS STORY OF THE ALEPH IN 1973, WHAT THE LEVOGYRE WANTED TO BE - THE CONSTRUCTED BODY OF LIGHT OR THE CONVENTICLE OF THE Gnostics. AND THE Gnostics ARE TO THE ALCHEMISTS AS THEORY IS TO PRACTICE.

NOW WITHOUT GOING INTO THE STRUCTURE OF Gnostic MYTH, [WHICH HAS BEEN DONE MOST THOROUGHLY BY HANS JONAS IN HIS BOOK "THE Gnostic RELIGION", PUBLISHED BY BEACON PRESS, COPYRIGHT 1958 AND 1963], I WOULD LIKE TO POINT OUT A TENDENCY IN OUR CULTURE - THAT OF THE PERFECTING OF MATERIALS AND THE UNDERSTANDING OF THEIR NATURE - HAS A DIRECT COUNTER PART IN THE Gnostic MYTH: THAT IS THE METHOD OR TECHNOLOGY OF HOW TO EXTRICATE THE PNEUMA IN EACH PERSON [THE DIVINE SPARK OR SPIRIT, ENCLOSED IN THE SOUL, WHICH HAS FALLEN INTO THE DARK WORLD OF HISTORY OR THE TIBIL] AND HOW TO DELIVER IT BACK TO THE UNKNOWN TRANSCENDENT OF LIGHT.

NOTE: THE EARLY CHRISTIAN APOLOGISTS HAVE LEFT THE IMPRESSION THAT THE Gnostic MYTH EXISTED ONLY TO COMPETE WITH CHRISTIANITY. THEY CLAIMED THAT IT DID NOT EXIST IN ANY FORM PRIOR TO CHRISTIANITY AND THAT IT DIED OUT WITH THE VICTORY OF CHRISTIANITY AS A WORLD RELIGION. IT IS MY BELIEF, AS IT IS THE BELIEF OF MANY CONTEMPORARY WRITERS ON Gnosticism - THAT AS A RELIGIOUS POSITION ITS SEEDS HAVE ALWAYS BEEN AROUND.

THE METHOD OF THE GNOSTICS IS ^{TO} SUBJECT THE CHAOTIC NATURE OF DEAD MATTER TO THE TYRANNICAL DEADNING RULES OF FORM [CALLED THE HEIMARMENE] OF THE ARCHONS [THESE ARE THE RULERS OF THE PHYSICAL UNIVERSE AS LOWER DIVINE POWERS OUTSIDE OF THE TRUE GOD] TO THE FORMATION OF A CONVENTICLE [AN ESCAPE VEHICLE OF LIMITED SIZE]. IT IS THE THEORY OF Pitting DEATH AGAINST DEATH TO RELEASE LIFE FROM ITS BONDAGE. OBSERVING NATURE AND THE WAY PROPORTIONING SYSTEMS WHEN COMING IN CHANCE CONTACT WITH MATTER HAS RESULTED IN THE PARTIAL RELEASE OF LIFE - THE CONDITION OF GROWTH - AND THEREBY ESCAPING ASPECTS OF DEATH, THE GNOSTICS REASONED THAT THE TOTAL AND PERFECTED USE ^{OF} RULES OF FORM SHOULD PRODUCE TOTAL ESCAPE FROM THE UNIVERSE FOR THOSE WHO USE THEM.

A SIMILAR VISION OF THE NATURAL WORLD IN RELATION TO THE HEIMARMENE PROPORTIONING WAS GIVEN BY D'ARCY THOMPSON IN HIS BOOK "ON GROWTH AND FORM", WRITTEN IN 1917, WHEN HE DISCUSSED LIFE IN RELATION TO THE PYTHAGOREAN THEORY OF NUMBERS AND THEIR GNOMONS:

Of these three propositions, the second is of great use and advantage for our easy understanding and simple description of the molluscan shell, and of a great variety of other structures whose mode of growth is analogous, and whose mathematical properties are therefore identical. We see that the successive chambers of a spiral *Nautilus* or of a straight *Orthoceras*, each whorl or part of a whorl of a periwinkle or other gastropod, each new increment of the operculum of a gastropod, each additional increment of an elephant's tusk, or each new chamber of a spiral foraminifer, has its leading characteristic at once described and its form so far explained by the simple statement that it constitutes a *gnomon* to the whole previously existing structure. And herein lies the explanation of that 'time-element' in the development of organic spirals of which we have spoken already; for it follows as a simple corollary to this theory of gnomons that we must never expect to find the logarithmic spiral manifested in a structure whose parts are simultaneously produced, as for instance in the margin of a leaf, or among the many curves that make the contour of a fish. But we must look for it wherever the organism retains, and still presents at a single view, the successive phases of preceding growth: the successive magnitudes attained, the successive outlines occupied, as growth pursued the even tenor of its way. And it follows from this that it is in the hard parts of organisms, and not the soft, fleshy, actively growing parts, that this spiral is commonly and characteristically found: not in the fresh mobile tissue

← HISTORY AS HEIMARMENE

← LIFE TRYING TO ESCAPE BUT IT CAN ONLY "GROW"

whose form is constrained merely by the active forces of the moment; but in things like shell and tusk, and horn and claw, visibly composed of parts successively and permanently laid down. The shell-less molluscs are never spiral; the snail is spiral but not the slug.¹ In short, it is the shell which curves the snail, and not the snail which curves the shell. The logarithmic spiral is characteristic, not of the living tissues, but of the dead. And for the same reason it will always or nearly always be accompanied, and adorned, by a pattern formed of 'lines of growth', the lasting record of successive stages of form and magnitude.

← A VICTORY FOR THE ARCHONS

⑥ IT WOULD SEEM, THEREFORE, THAT WHEN PLATO IN THE TIMAEUS DESCRIBES THE WORK OF THE DEMIURGE [IN GNOSTIC TERMS HE WAS THE PRINCE OF THE ARCHONS], WHO FASHIONS THE PHYSICAL UNIVERSE FROM THE THREE MAIN TRANSCENDENT FORMS, IN ORDER BELOW THE FORM OF THE GOOD - THAT IS THE FORMS OF THE SAME, THE DIFFERENT AND THE EXISTENT, PLATO MAKES A SPECIAL ISSUE OF THE USE OF COMPLEX MUSICO-MATHEMATICAL STRUCTURES, HE DERIVED FROM THE PYTHAGOREANS. HE WANTED, IN MY OPINION, TO PRESENT THE OPERATIONS OF THE DEMIURGE AS A MODEL OF THE PROCESS OF CREATING A "PERFECTION OF MATTER". THIS PERFECTION OF MATTER WAS AN AMBITION HE CARRIED THROUGH WITH THE ESTABLISHMENT OF HIS ACADEMY IN 388 BC. HIS TEACHING OF GEOMETRY [OR WHAT WE CALL "SACRED GEOMETRY"] TRANS CENDED OUR CONCEPT OF MEDIEVAL OR ARTISTIC CRAFT, IN WHICH A NATURAL DISCONTINUITY OF THEORY AND PRACTICE EXISTS.

IN PLATO'S PROCESS OF "TECHNE" THE PHYSICAL ACTIONS OF THE PRACTICE BECAME CONTINUOUS WITH THE CONCEPTUALIZED GOAL - WHICH WAS AN IDEA THAT COULD BE PERCEIVED.

OUR CULTURE HAS RECENTLY SHOWN A REVIVAL OF THE NEED FOR A PERFECTION OF MATTER. REYNER BANHAM, WHO WROTE "THEORY AND DESIGN IN THE FIRST MACHINE AGE", HAS DOCUMENTED AN ASPECT OF THE RETURN TO "THE PERFECTION OF MATTER". BUT HE REALIZED IT WAS NOT COMPLETE:

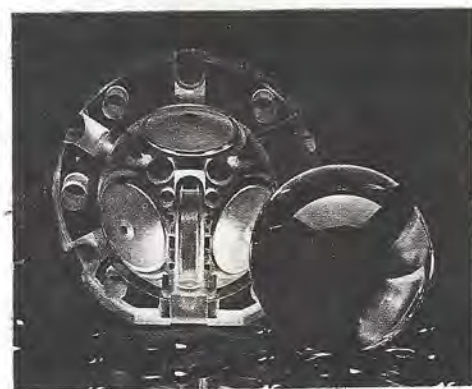
In picking on mathematics as a source of technological prestige for their own mental operations, men like Le Corbusier and Mondrian contrived to pick on the only important part of scientific and technological methodology that was not new, but had been equally current in the pre-machine epoch. In any case, mathematics, like other branches of logic, is only an operational technique, not a creative discipline. The devices that characterised the Machine Age were the products of intuition, experiment or pragmatic knowledge - no one could now design a self-starter without a knowledge of the mathematics of electricity, but it was Charles F. Kettering, not mathematics, that invented the first electric-starter on the basis of a sound grasp of mechanical methods.

← THE GNOSTICS WERE NOT INTERESTED IN CREATIVITY DEFINED AS EXTENDING THE POSSIBILITIES OF THE PHYSICAL UNIVERSE. THEY WERE, HOWEVER, INTERESTED IN CREATIVITY AS A KIND OF HOMEOPATHIC USE OF THE PRINCIPLES OF DEATH TO FIGHT DEATH ITSELF - WHICH THEY SAW AS THE FUNCTION OF "SACRED GEOMETRY".

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NOTE: ONE OF THE PHYSICAL TESTS OF EINSTEIN'S GENERAL THEORY OF RELATIVITY, PLANNED FOR THE MID 1990'S, IS CREATING A DEMAND FOR A "PERFECTION OF MATTER" THAT IS, TO MY MIND, BEYOND THE MACHINE AESTHETIC - BEYOND DETECTION BY THE PHYSICAL SENSES, WITHOUT ARTIFICIAL AIDS, TO THE SENSES.

BEING PRESENTED AS THE WORLD'S ROUNDEST BALLS MADE TO DATE, 4 SPHERES COMPOSED OF



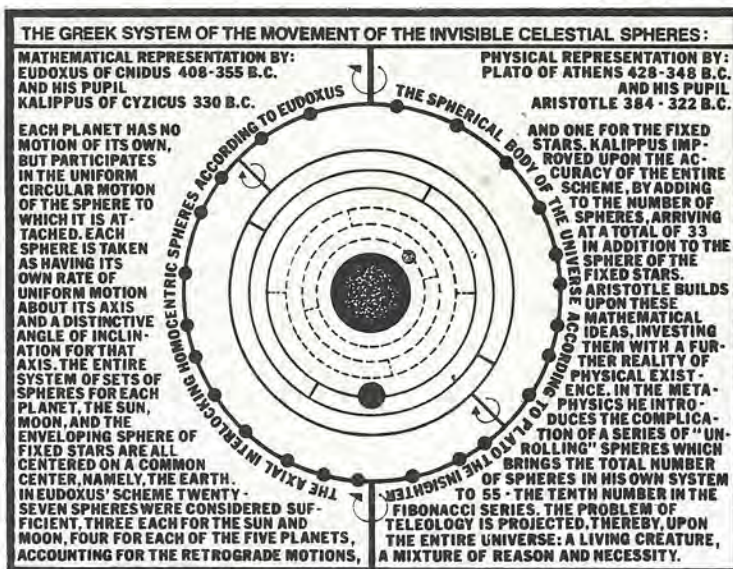
(26)

FUSED QUARTZ, EACH AN INCH AND ONE HALF IN DIAMETER WILL BE SPUN AS GYROSCOPIC MASSES ABOUT 400 MILES ABOVE THE SURFACE OF THE EARTH. WITHOUT THIS DEGREE OF THE "PERFECTION OF MATTER", THE SPHERES SIMPLY WILL NOT BE ABLE TO RESPOND TO THE NATURE OF THOSE ASPECTS OF SPACE THAT EINSTEIN DISCOVERED.

AS OUR INVESTIGATIONS OF NATURE [ESPECIALLY IN AREAS NOT REALLY EXPLORED LIKE OUTER SPACE] CONTINUES, WE WILL WITNESS THE DEVELOPMENT OF A FIERCE INTEGRATION OF MANY TYPES OF GEOMETRIES AND MATERIALS, TO SUCH AN EXTENT [SINCE THE EFFECTS WILL NOT FULLY REGISTER WITH THE CONSCIOUS SENSES] THAT THE RESULTS WILL SEEM "SUPERNATURAL" - MUCH LIKE THE VISION OF "THE ALEPH" BY BORGES OR THE WAY DANTE BEGINS TO DESCRIBE THE LIGHT OF "THE BEATIFIC VISION" NEAR THE END OF CANTO 33 OF "IL PARADISO": "HOW SUBSTANCE, ACCIDENT, AND MODE UNITE FUSED, SO TO SPEAK, TOGETHER, IN SUCH WISE THAT THIS I TELL OF IS ONE SIMPLE LIGHT".

ALTHOUGH SET DESIGNERS OF CONTEMPORARY SCIENCE-FICTION FILMS HAVE ATTEMPTED TO RENDER THIS VISION, TO ME THEY HAVE NOT YET ACHIEVED WHAT I BELIEVE THE GNOSTICS MEANT BY THE "PERFECTION OF MATTER". IT IS AN EXTREMELY RICH CONCEPT WHICH ALSO, IN MY ESTIMATION, SUBSUMES THE MORE MANNERISTIC AND AMBIGUOUS GEOMETRIES AND VOCABULARY OF FORMS, SUCH AS CHAOS THEORY AND THOSE OF DECONSTRUCTION WHICH HAVE MOVED OUR VISION OF THE "DISORDER OF A MESS" WAY BEYOND THAT WHICH OCCURS IN NATURE.

⑦ IT IS EUDOXUS OF CNIUS [408-355 B.C.], PUPIL OF PLATO, THAT IN THE ACT OF RENDERING THE UNIVERSE OF PLATO [THE ALL-INCLUSIVE LIVING CREATURE - THE ONE WHOSE BODY IS PERFECTLY SPHERICAL AND WHOSE SOUL ANIMATES ITSELF] IN A POSSIBLE MATERIAL FORM, BECAME IN HIS TIME A VOICE FOR THE LEVOGYRE: MILTON K. MUNITZ IN HIS BOOK "THEORIES OF THE UNIVERSE" DESCRIBES WHAT HE BELIEVES EUDOXUS WAS TRYING TO DO:



The basic technique introduced by Eudoxus for making intelligible the motions of the heavenly bodies may be briefly described as follows. The visible body whose motion is to be accounted for, for example a planet, is conceived as attached to the surface of an imaginary invisible sphere. Thus the planet has no motion of its own, but participates in the uniform circular motion of the sphere to which it is attached. (See Fig. 1.) Eudoxus posits for each planet a combination or nest of spheres arranged in such a fashion that the planet is pictured as attached to the equator of the innermost sphere. The axis of this sphere is attached at its poles to points in the sphere immediately surrounding it. Each sphere is taken as having its own rate of uniform motion about its axis and a distinctive angle of inclination for that axis. By positing for each planet a particular combination of rates of motion and inclination of axes for the set of interlocking spheres, it was possible to calculate and predict the observed positions of the planets. The entire system of sets of spheres for each planet, the sun, moon, and the enveloping sphere of fixed stars were all centered on a common center (hence the name "homocentric") namely, the earth. In Eudoxus's scheme twenty-seven spheres in all were considered sufficient, three each for the sun and moon, four for each of the five planets, and one for the fixed stars. Calippus, a pupil of Eudoxus, improved upon the accuracy of the entire scheme, by adding to the number of spheres, arriving at a total of thirty-three in addition to the sphere of the fixed stars.

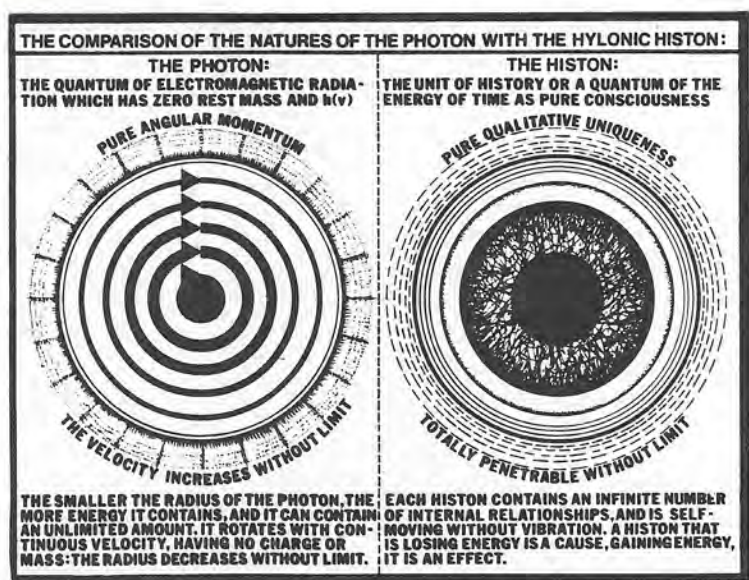
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I BELIEVE IT IS POSSIBLE TO NOTICE THAT THE HOMOCENTRIC SYSTEM OF EUDOXUS WILL NOT OPERATE WITH A SMOOTH CONTINUOUS MOTION DOWN TO THE STILL POINT OF THE EARTH, IF EACH INVISIBLE SPHERE HAS AN ANGLE OF INCLINATION THAT IS ABRUPT IN RELATION TO THE SPIN AXIS OR GIMBAL POSITION

OF THE PREVIOUS AND THE SUCCEEDING INVISIBLE SPHERE.
BECAUSE OF THIS SENSE OF "ABRUPT MOTION" [WHICH WOULD TEND TO REDUCE THE ENTIRE SYSTEM TO A MOTIONLESS STATE], MANY CONTEMPORARY ASTRONOMERS LIKE FRED HOYLE [SEE APPENDIX] FELT THAT EUDOXUS NEVER MEANT HIS SCHEME TO BE CONSIDERED AS PHYSICALLY REAL. WHETHER HE DID OR NOT REMAINS A MOOT POINT. BUT I HAVE ALWAYS HELD THE NOTION THAT, EUDOXUS UNDER THE SWAY OF THE LEVOGYRE ARCHETYPE [WHICH SEEKS TO BE INSTANTIATED IN SOME OF ITS ASPECTS], WHAT HE PRODUCED WAS THE REVELATION OF THE LEVOGYRE FILTERED THROUGH THE CIRCUMSTANCES OF HIS LIFE IN PLATO'S ACADEMY.

NOTE: I AM CALLING THIS ARCHETYPE "THE LEVOGYRE" WITH AN APPARENT CONVICTION THAT OTHERS MIGHT CONSIDER PRESUMPTUOUS. BUT I WILL BE THE FIRST TO ADMIT THAT MY NORMATIVE DESCRIPTION MAY BE AS "FILTERED" AS THAT OF EUDOXUS'. I MAY HAVE AN ADVANTAGE, NEVERTHELESS, OVER EUDOXUS IN UNDERSTANDING THE NATURE OF "THE PERFECTION OF MATTER" OF THIS ARCHETYPE SIMPLY BECAUSE OF THE TIMES IN WHICH I LIVE. HISTORIANS WHO POINT OUT THE SIMILARITY WITH THE CONCERN FOR MATERIALISM THAT DOMINATED THE SENSIBILITIES OF THE IONIAN GREEKS AND OF OUR PERIOD, OFTEN CONTINUE THE HISTORICAL ANALOGY BY SAYING WE MAY BE EVEN MORE MATERIALISTIC - AS THEY SPECULATE THAT IF IT WAS NOT FOR THE ANCIENT GREEKS OTHER CONCERN [THE NATURE OF HUMAN MORALITY], HUMANKIND MIGHT HAVE REACHED THE MOON SAY, APPROXIMATELY 3000 YEARS AGO INSTEAD OF 21.

8



IT IS REALLY NOT UNTIL THE 20TH CENTURY THAT THE LEVOGYRE, IN MY OPINION, ACHIEVES ITS NEXT MAJOR MANIFESTATION. THERE ARE, HOWEVER, SOME HISTORICAL REFERENCES PRIOR TO THE 20TH CENTURY WHICH RELATE TO THE LEVOGYRE, AND I FEEL SHOULD BE NOTED: FIRST IS THE CONCEPT OF THE UNIVERSE-MAN POSTULATED BY MANY

MEDIEVAL MYSTICS AND KABBALISTS THAT RELATED SACRED GEOMETRY TO THE HUMAN BODY. THIS TENDENCY CULMINATES

IN THE BEGINNING OF THE GOTHIC PERIOD WITH THE WRITINGS OF JOACHIM OF FLORA [1130-1202 AD.] ABBOT OF CALABRIA - HE CONNECTED SACRED GEOMETRY NOT ONLY WITH THE HUMAN BODY AND CATHEDRAL BUILDING, BUT ALSO WITH THE NATURE OF HUMAN HISTORY. HE USED THE IMAGES OF IONIC VOLUTES [LOGARITHMIC SPIRALS] AND FRET ORNAMENT PATTERNS TO DEMONSTRATE HOW ONE AGE OF HISTORY GREW OUT OF THE PREVIOUS, THUS ANTICIPATING THE GENERAL IDEA OF BIOLOGICAL EVOLUTION BY OVER 600 YEARS. HE INFLUENCED HIS CONTEMPORARY LEONARDO OF PISA [1175-1250 AD.]. LEONARDO APPLIED THE GOLDEN SECTION [$.382/.618...$ [OF UNITY]] AND THE MATHEMATICAL ADDITIVE SERIES CALLED THE FIBONACCI [FROM HIS NICKNAME FILIUS BONACCI] TO THE GENERAL MORPHOLOGY OF LIFE INCLUDING GROWTH AND REPRODUCTION PATTERNS. JOACHIM ALSO INFLUENCED THE POETRY OF DANTE ALIGHIERI [1265-1321], THE GOTHIC MASTER BUILDERS, AND THE HUMANISM OF THE ITALIAN RENAISSANCE.

SECOND: THERE ARE NUMBER CONSTRUCTED DEVICES PRIOR TO THE 20TH CENTURY IN CONCEPTION, THAT ARE, IN MY MIND, RELATED TO THE ULTIMATE MANIFESTATION OF THE LEVOGYRE:



Armillary Sphere.
A, the earth; b, hour circle; c, north pole of the heavens; d, arctic circle; e, tropic of Cancer; f, celestial horizon; g, celestial equator; h, ecliptic; i, tropic of Capricorn; j, antarctic circle; k, south pole of the heavens; l, solstitial colure (summer); m, solstitial colure (winter).

- ① THE CHINESE IVORY ORNAMENT WHICH CONSISTS OF A SET OF NESTED HOLLOW SPHERES OF DECREASING DIAMETERS, CARVED ENTIRELY FROM A SINGLE VOLUME OF IVORY; THERE IS NO DATE OF ORIGIN BUT THEY WERE VERY POPULAR IN THE 19TH CENTURY;
- ② THE ARMILLARY SPHERE WHICH IS AN ASTRONOMICAL INSTRUMENT COMPOSED OF RINGS [OFTEN WITH COMPLEX NESTINGS] SHOWING THE POSITIONS IN RELATION TO THE EARTH OF THE IMPORTANT CIRCLES OF THE CELESTIAL ENVIRONMENT; THEY CAME INTO USE IN THEIR MOST SOPHISTICATED FORM IN THE 16TH CENTURY;

AND OF COURSE ③ THE SPINNING MASS OR SIMPLE GYROSCOPE CONSISTING OF A WHEEL OR DISK MOUNTED TO SPIN RAPIDLY ABOUT AN AXIS ALL SET WITHIN NESTED GIMBALS; IT WAS INVENTED BY MANY PEOPLE NEAR THE END OF THE 18TH CENTURY. FOUCAULT IN 1852 UTILIZED ITS INERTIAL STABILITY PROPERTY AND THE INVARIANT PLANE OF OSCILLATION OF THE PENDULUM TO DEMONSTRATE THE ROTATION OF THE EARTH.

THE TWO MOST IMPORTANT ENTITIES FROM THE 20TH CENTURY THAT HAVE HELPED INSTANTIATE THE LEVOGYRE ARE ITS COMPANIONS FROM THE REALM OF ARCHETYPE-LEGEND [WITHIN THE CATEGORIES OF SUBSTANCE AND HISTORY]: THE PHOTON AND THE HISTON.

- ⑨ THE PHOTON WOULD BE AN EXCELLENT CANDIDATE FOR THE "BODY OF LIGHT" [THE PHILOSOPHER'S STONE] OF THE Gnostic-ALCHEMISTS, EXCEPT FOR THE FACT THAT THERE SEEMS TO BE NO HUMAN ENTRY INTO ITS SYSTEM. THE PHOTON DOES NOT ALTER ITS VELOCITY AND THE LEVOGYRE NEEDS TO BE ABLE TO OPERATE ABOVE AND BELOW THE SPEED OF LIGHT WITH VELOCITY CONTINUITY. THE DIAMETER OF THE PHOTON AS A CORPUSCULAR ENTITY IS INVARIANT BEING ABOUT THE SAME AS THE ELECTRON. THE LEVOGYRE MUST BE ABLE TO VARY IN ITS DIAMETER FROM THAT OF AN ATOM [AN ASPECT OF NANO-TECHNOLOGY] UP THROUGH THE DIAMETER OF A GALAXY [AN ASPECT OF MEGA-ENGINEERING] - AND PERHAPS UTILIZING THE ENTIRE SUBSTANCE OF THE PHYSICAL UNIVERSE. THESE CONCEPTS WOULD BE THEN THE PHOTON'S NEGATIVE MODELING ASPECTS ON THE LEVOGYRE.

Photon Hypothesis and the Compton Effect

In his interpretation of the photoelectric effect (page 811), Einstein assumed that light consisted of quasi corpuscles, called photons. The energy of an individual photon was taken to be $h\nu$. At about the same time Einstein was led by his special theory of relativity to propose a fundamental relationship between mass and energy, namely,

$$\text{mass} = \frac{\text{energy}}{c^2} \quad (26)$$

where c = velocity of light. According to this viewpoint a photon of radiation must have a mass equal to $\frac{h\nu}{c^2}$ and momentum $\frac{h\nu}{c^2} \cdot c = \frac{h\nu}{c}$. Owing to the large value of ν in the X-ray region an X-ray photon may have a mass comparable to that of an electron at rest.

When a beam of light passes through a fog some of it is diffused or scattered in all directions. It is by means of this scattered light that we are able to see the beam. The diffused light has the same wave-length as the original beam, and the mechanism of the scattering can be explained by Maxwell's electromagnetic theory.

In 1922, the American physicist A. H. Compton made the surprising discovery that when X-rays are scattered by a light substance such as carbon, the wave-length of the radiation is slightly increased. This change of wave-length is contrary to all predictions of the wave theory of light. The photon hypothesis, however, gives a beautifully simple explanation of the phenomenon.

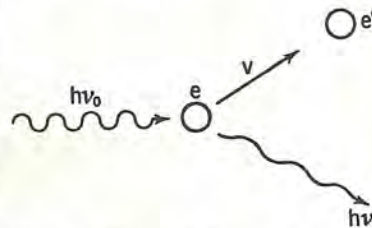


FIG. 544. COMPTON'S THEORY OF A COLLISION BETWEEN A PHOTON AND AN ELECTRON

The Compton effect is often presented as conclusive proof of the corpuscular nature of radiation. A more careful analysis, however, shows that although the photon is quasi corpuscular in interacting with matter it cannot be considered a corpuscle in the sense in which Newton used the term. In order to determine the mass and energy of the photon its wave-length must be measured by a process in which the photon is considered to be a wave motion and nothing more. Further, it travels with only one velocity, the velocity of light in *vacuo*, whereas the velocity of a particle varies with its energy. All the experiments on interference and diffraction of Chapter 36 can be simply and accurately interpreted in terms of a pure wave theory. Thus the experimental facts require us to adopt the viewpoint that under certain experimental conditions light can be treated as a purely wave phenomenon; under other conditions it must be considered quasi corpuscular.

- ← THE MEETING OF LIGHT AND ELECTRICITY - THE CONNECTION BETWEEN THE 19TH AND THE 20TH CENTURIES.
- ← MAX PLANCK'S UNIVERSAL QUANTUM CONSTANT h MULTIPLIED BY THE FREQUENCY ν OF AN OSCILLATOR.

- ← THE SIZE OF A PHOTON.



THE ANGULAR MOMENTUM OF A PHOTON INCREASES WITHOUT LIMIT AS ITS CENTROID IS APPROACHED. IT, THEREFORE, ALWAYS HAS ENOUGH ENERGY TO IMPACT ANY OTHER PARTICLE WITHOUT ITSELF BEING DESTROYED.

- ← THIS "NEW" TYPE OF CORPUSCLE IS A RECOGNITION OF THE CONSCIOUSNESS ASPECT OF MATTER.

- ← THE CONSTANT VELOCITY OF LIGHT.

- ← THE CONCEPT OF A WAVE OF ENERGY IS AS CLOSE AS ONE CAN GET TO THE DESCRIPTION OF CONSCIOUSNESS AND STILL BE ABLE TO STAY IN THE REALM OF MATTER. PAGES: 828 - 830

THE POSITIVE MODELING ASPECTS OF THE PHOTON ON THE LEVOGYRE
ARE:

(30)

① THE ANGULAR MOMENTUM FACTOR:

IN THE LEVOGYRE THERE MUST BE A TORQUE TRANSFER OF EVER INCREASING ANGULAR MOMENTUM AS THE CENTROID OF THE LEVOGYRE IS APPROACHED IN ORDER TO BE LIKE THE PHOTON. BECAUSE OF THE DYNAMIC GEOMETRY OF THE LEVOGYRE THIS IS POSSIBLE. AND IT OCCURS IN A MANNER THAT BECOMES PROGRESSIVELY MORE CONTINUOUS AS MORE TORQUE SHELLS ARE ADDED TO ITS STRUCTURE.

② THE ELECTROMAGNETIC SPECTRUM AND THE PHOTON:

THE PHOTON AS PART OF THE ELECTROMAGNETIC SPECTRUM IS REGARDED AS A DISCRETE QUANTUM PARTICLE WHICH HAS ZERO REST MASS, NO ELECTRIC CHARGE AND AN INDEFINITELY LONG LIFETIME. IN THE ATTEMPT TO MODEL THESE ASPECTS OF THE PHOTON I HAVE SPECIFIED IN MY VERSION OF THE LEVOGYRE THE FOLLOWING SYSTEMS:

① LASER DEVICES TO PROPAGATE COHERENT LIGHT IN RINGS. THE RINGS ARE FIBEROPTIC AND MOUNTED AT THE TORQUE OR EQUATORIAL LINES OF THE TORQUE SHELLS. SINCE THE LEVOGYRE WILL ALWAYS HAVE A FINITE VOLUME, THE VOLUME OF LIGHT WITHIN THE LEVOGYRE WILL BEGIN TO APPROACH THE COHERENCY OF PHOTON AS LONG AS THE NUMBER OF TORQUE SHELLS INCREASES INTERNALLY. ONE PATH TO ZERO REST MASS.

② ANOTHER PATH TO ZERO REST MASS IS THE ELECTRICAL SYSTEM: SOME OF THE MOVING PARTS SUCH AS THE ELECTRIC MOTORS THAT POWER THE SPIN AXES GIMBALS WILL COMPLETELY SEPARATE THE HARDWARE CIRCUITRY, CONSISTING OF: AN ELECTRIC MOTOR AND A SERIES OF ELECTRIC GENERATORS, MICROWAVE AND RADIO FREQUENCY ALTERNATING CURRENT GENERATOR RECEIVERS, AND SLIP RINGS [WHICH ARE DEVICES TO TRANSFER ELECTRICITY THROUGH ROTATING BEARINGS]. EACH SPIN UNIT IS ACTIVATED BY MICROWAVES OR RADIO FREQUENCY GENERATORS FROM OUTSIDE OF THE LEVOGYRE. EACH SPHERE OF THE LEVOGYRE CAN BE STARTED IN SEQUENCE IN THIS MANNER, STARTING FROM THE LARGEST SPHERE.

THE OTHER PART OF THE ELECTRICAL SYSTEM CONSISTS OF HAVING THE SPACES IN BETWEEN THE HARD-SHELL UNITS FILLED WITH FERRO-FLUIDICS [THIS IS A FERRIC COMPOUND GROUND FINER THAN PUMICE AND MIXED IN WITH A HIGH VISCOSITY LIQUID THAT WILL ALLOW AN ELECTRIC CURRENT TO BE PROPAGATED].

IN THE LEVOGYRE FERRO-FLUIDICS PERFORMS VARIOUS FUNCTIONS. IT ACTS AS A LUBRICANT FOR THE SHELL UNITS. IT HELPS DISTRIBUTE THE STRESSES INDUCED BY THE INWARD TORQUE TRANSFER OVER THE ENTIRE SHELL SURFACES INSTEAD OF MERELY THE IMMEDIATE AREA OF A SHELL THAT CONTACTS THE SPIN UNIT.

BUT THESE ARE FUNCTIONS ANY VISCOUS LIQUID CAN PERFORM.

WHAT IS IMPORTANT IS THE INTERACTION BETWEEN THE HYDRO-DYNAMICS OF THE LIQUID AND ITS ELECTRIC POTENTIAL. THE DIFFERENCE OF THE FORCES OF THE LAYERS OF THE LIQUID BETWEEN THE TWO SHELLS [DUE TO THE DIFFERING VELOCITIES OF THE SHELLS] WILL, WHEN COMBINED WITH THE ELECTRIC FIELD GENERATED BY THE INBOARD DIRECT CURRENT GENERATORS [WITHIN THE SPIN AXIS UNITS] PRODUCE HEAT AND ELECTRO-MAGNETISM WHICH IN TURN WILL EXCITE FREE ELECTRONS TO ORBIT THE LIQUID SHELL IN A MANNER SIMILAR TO THAT WHICH TAKES PLACE IN A BETATRON [AN ELECTRON PARTICLE ACCELERATOR WHICH CAN BE CONSTRUCTED IN VARYING SIZES]. NOW SINCE ELECTRONS ACCELERATING WITHIN A BETATRON APPROACH THE NEIGHBORHOOD OF THE SPEED OF LIGHT, WHAT WOULD EXIST WOULD BE VERY NEARLY SHELLS OF COHERENT LIGHT.



COMBINING THE GREATER LIGHT OF THE RING LASERS WITH THE LESSER LIGHT OF THE LIQUID BETATRONS, WOULD, I BELIEVE, PRODUCE A DYNAMIC MODEL OF A PHOTON - A FINITE VOLUME OF LIGHT BUT WITH EVER INCREASING INTERNAL RELATIONSHIPS OF FORCE - IN OTHER WORDS A PARTICLE WITH A SINGULARITY. THE LEVOGYRE WOULD

ALSO QUALIFY AS A MODEL OF A BLACK HOLE OR A WORMHOLE BECAUSE NO LIGHT RADIATES OUTWARD FROM A CENTROID.

- ⑩ ALONG WITH THE PHOTON THE HISTON IS THE OTHER CONTRIBUTION TO THE FORM OF THE LEVOGYRE MADE BY THE 20TH CENTURY. IT IS THE QUALITATIVE COUNTERPART TO THE QUANTITATIVE NATURE OF CHRONON. ACCORDING TO FRED ALAN WOLF AUTHOR "PARALLEL UNIVERSES" © 1988 BY YOUNIVERSE SEMINARS, INC, THE CHRONON IS AN ASPECT OF THE FIRST SECOND OF THE BIRTH OF THE UNIVERSE. ONE "INSTANT" CONTAINS ONE BILLION CHRONONS, BUT ONE "INSTANT" IS EQUAL TO ONE ATTO-SECOND - THAT IS A FRACTION OF A SECOND WITH THE EXPONENT 10^{-18} .

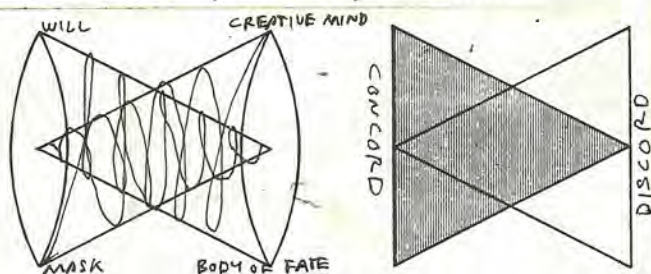
AS A QUALITATIVE CONCEPT THE HISTON IS DEFINED AS THE ULTIMATE UNIT OF HISTORY OR A QUANTUM OF THE ENERGY OF TIME AS CONSCIOUSNESS. IT POSSESSES TOTAL UNIQUENESS, AND CONTAINS AN INFINITE NUMBER OF INTERNAL RELATIONSHIPS, AND IS TOTALLY PENETRABLE WITHOUT LIMIT. IT IS SELF-MOTIVATING WITHOUT THE QUANTIFICATION OF VIBRATION. A HISTON THAT IS LOSING THE ENERGY OF CONSCIOUSNESS IS A CAUSE, WHILE A HISTON THAT IS GAINING THE ENERGY OF CONSCIOUSNESS IS AN EFFECT.

THE TERM HISTON DERIVES FROM THE ATTEMPT IN THE 18TH CENTURY TO DEVELOP A PHENOMENOLOGY OF WHAT IS KNOWN AS "THE SPECULATIVE PHILOSOPHY OF HISTORY" [THE FINDING OF PATTERNS IN HISTORY]. PRIOR TO THE 18TH CENTURY IS WAS AN ASPECT, USUALLY, OF THEOLOGY.

THE HISTON AS A LEGEND OR THE COUNTERPART OF THE ARCHETYPE HAS ITS OWN HISTORY. IT BEGINS WITH A CONCEPT BY THE POET GOETHE [1749-1832] - THE ZEITGEIST OR TIME SPIRIT - THE GENERAL INTELLECTUAL, MORAL AND CULTURAL CLIMATE OF AN ERA.

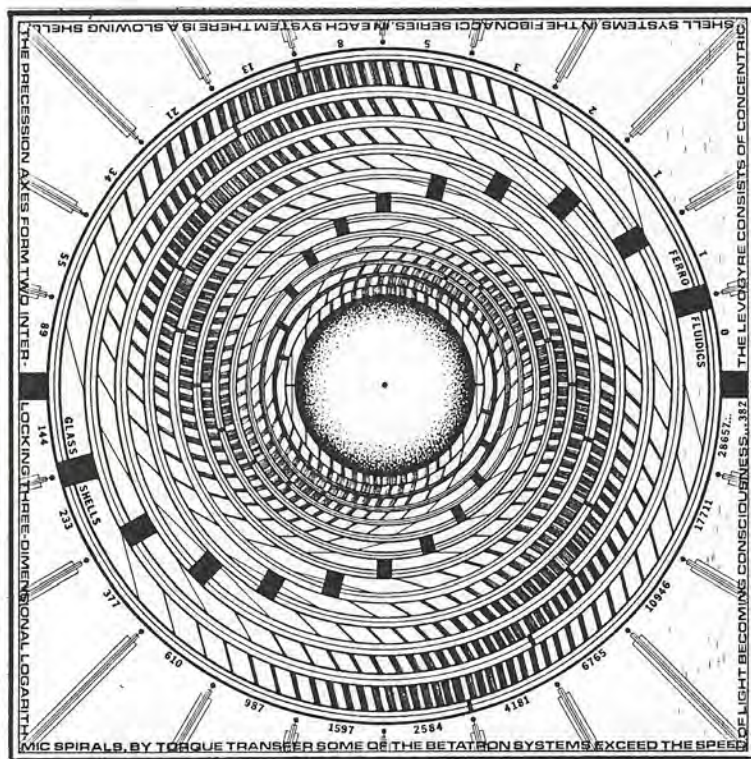
IT WAS QUICKLY INSTANTIATED BY THE PHILOSOPHER HEGEL [1770 - 1831] AS THE PROCESS IN TIME OF "THESIS-ANTITHESIS-SYNTHESIS". THE CONTENT OF THE HISTON THAT HAD BEEN ESTABLISHED BY GOETHE WENT UNCHALLENGED UNTIL 1925 WHEN ANOTHER POET, W. B. YEATS [1865-1939] PUBLISHED WHAT HE CALLED "A VISION". FROM THE EFFORTS OF YEATS AND HIS WIFE WHO USED AUTOMATIC WRITING, YEATS WAS LED TO A METAPHOR [LEGEND] FOR HIS POETRY, WHICH BECAME A SYSTEM BY WHICH HE WAS ABLE TO CATEGORIZE HUMANITY AND PROVIDE A PATTERN FOR HISTORY, AND HAS BEEN THE MODEL FOR THE HISTON EVER SINCE. (32)

If we think of the vortex attributed to Discord as formed by circles diminishing until they are nothing, and of the opposing sphere attributed to Concord as forming from itself an opposing vortex, the apex of each vortex in the middle of the other's base, we have the fundamental symbol of my instructors.



If I call the unshaded cone "Discord" and the other "Concord" and think of each as the bound of a gyre, I see that the gyre of "Concord" diminishes as that of "Discord" increases, and can imagine after that the gyre of "Concord" increasing while that of "Discord" diminishes, and so on, one gyre within the other always. Here the thought of Heraclitus dominates all: "Dying each other's life, living each other's death".

A VORTEX IS A THREE DIMENSIONAL DIMINISHING SPIRAL; CONSIDERED AS A STATIC FORM THAT IS ACTIVATED BY THE ENERGY OF TIME ITSELF.



WHILE I CANNOT GO INTO THE SYSTEM OF YEATS HERE, I THINK, IT IS OBVIOUS THAT WHAT MAKES THE LEVOGYRE UNIQUE IS PRECISELY THE TEMPORAL STRUCTURE YEATS ASCRIBES TO INTERACTING GYRES OF THE HISTORICAL FORCES OF CONCORD AND DISCORD. IT IS A REVIVAL OF THE CYCLIC AND DEMOCRATIC [SCIENTIFIC?] VISION OF NATURE AS HISTORY OF EMPEDOCLES OF ACRAVAS [490-433 BC.]. THIS UNIT OF HISTORY OR HISTON IS SOMEWHAT SIMILAR TO THE IDEAS OF THE FLOW OF HISTORY OF SOACHIM OF FLORA, BUT WHAT IS DIFFERENT IS THE EMPHASIS ON THE RECIPROCAL MALE ENERGY OF THE INTERACTING PRINCIPLES OF LOVE AND STRIFE, CONCORD AND DISCORD, CONTINUITY AND DISCONTINUITY, COSMOS AND CHAOS, WHICH CREATES THE INFINITE INTERNAL RELATIONSHIPS OF THE ONE SPHERE OF BEING OF PARMENIDES.

NOTE: THE SPIN AXIS OF ANY GYROSCOPE TRACKS TWO OPPOSITE MASSES [TO ACHIEVE STABILITY] SUCH AS THE EARTH AND A STAR. BECAUSE THE SPIN AXIS OF THE LEVOGYRE HAS BEEN FRAGMENTED LOGARITHMICALLY AND REDISTRIBUTED IN SPACE INTO TWO INTERLOCKING THREE-DIMENSIONAL EQUIANGULAR OR LOGARITHMIC SPIRALS, IT BECOMES THE MOST STABLE OBJECT IN THE UNIVERSE. THIS IS BECAUSE ALL THE MASSES IN THE UNIVERSE IN THEIR ATTEMPT TO RANDOMIZE THEIR POSITIONS IN RELATION TO EACH OTHER FORM LOGARITHMIC PATTERNS OF DISTRIBUTION. THE LOGARITHMIC AXES OF THE LEVOGYRE RESPOND, THEREFORE, TO A PATTERN OF TOTAL CHAOS WHICH IS SIMULTANEOUSLY TOTAL COSMOS.

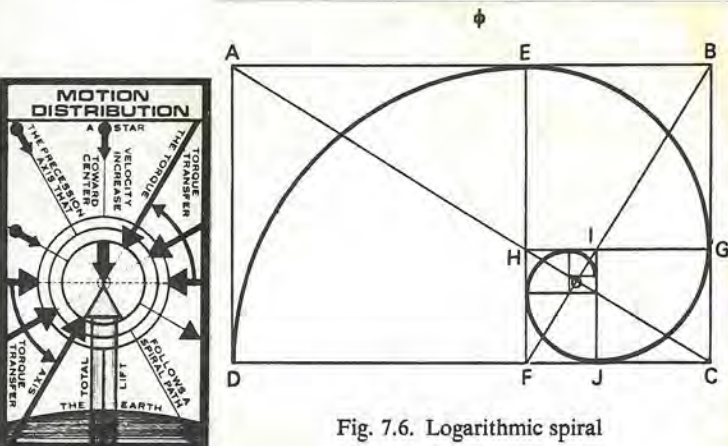


Fig. 7.6. Logarithmic spiral

ORGANIC MATHEMATICS
 PHI - THE DIVINE PROPORTION - AS THE LIMIT OF THE SERIES OF LEONARDO OF PISA, 1202 A.D.

$\phi = 1 + \sqrt{5}$
 2

A : B :: B : C
 THE FIBONACCI SERIES LINKS LIFE AND DEATH, MATTER AND CONSCIOUSNESS

1 - 618 : 382 : THE LOSS OR THE GAIN OF REST MASS RATIO

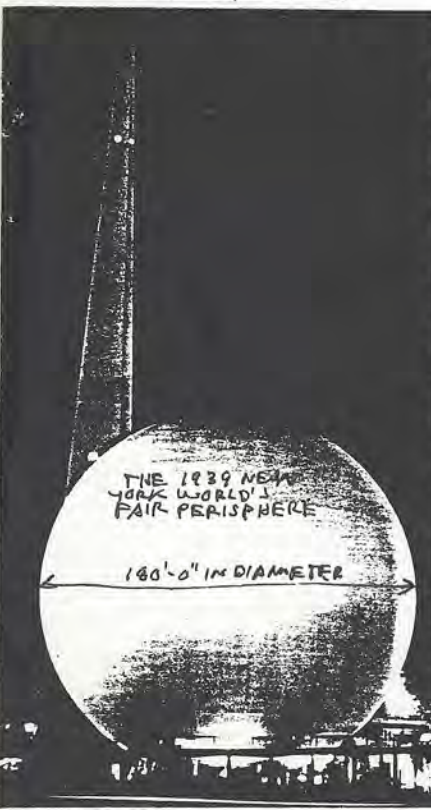
SUBTRACTS
 TIME ENERGY
 LEVITATION

DEXTRO-ROTATION
 TIME ENERGY
 ADDS

THE LOGARITHMIC SPIRAL IS THE FORM OF THE PHI SERIES

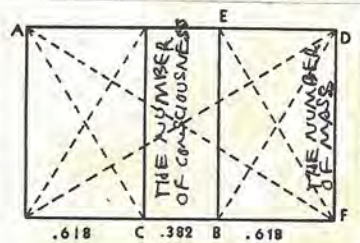
BECAUSE THE LEVOGYRE IS STRUCTURED BY MEANS OF THE PROPORTIONS OF ORGANIC MATHEMATICS [SACRED GEOMETRY OR THE NEIMARMENE], IT HAS NO PRESUMED SCALE - HUMAN, SUPERNUMAN OR OTHERWISE. ALL SCALES ARE SUBSUMED IN A PERFECT CONTINUITY. ITS ABILITY TO BE BUILT COULD PASS FROM THE ATOMIC SIZE MACHINES OF NANO-TECHNOLOGY UP THROUGH THE MICRO-MINIATURES OF THE ELECTRONIC WORLD, UP THROUGH THE CLOCK-WORKS OF THE WATCHMAKER, UP THROUGH THE BODY SCALE OF THE SCULPTOR, UP THROUGH THE MONUMENTALITY OF THE WORLD OF ARCHITECTURE, UP THROUGH THE GIGANTIC SIZED STRUCTURES PROPOSED TO BE BUILT IN OUTER SPACE, UP THROUGH THE SIZE OF NATURAL SATELLITES, PLANETS, STARS, NEBULAE OR GALAXIES AND POSSIBLY UP TO AND INCLUDING THE ENTIRE PHYSICAL UNIVERSE. THE LIMIT TO ITS SCALE OF BUILDING IS THE NATURE OF THE STATE OF THE ART OF "THE PERFECTION OF MATTER AT ANY TIME IN HISTORY. [AS AN EXAMPLE: ALMOST PERFECT SPHERE BALL BEARINGS ARE NOW POSSIBLE BY SIMPLY EJECTING STANDARDIZED VOLUMES OF MOLTEN METAL INTO THE GRAVITY-FREE ENVIRONMENT OF OUTER-SPACE.]

THE LEVOGYRE COULD BE BUILT RIGHT NOW AT THE SIZE OF THE PERISPHERE.



NOTE: THE NUMBER OF SHELL UNITS IN THE BUILDING OF A LEVOGYRE WILL ALWAYS BE CONTROLLED BY THE FIBONACCI ADDITIVE SERIES. SHOWN IN THE FIGURE ON PAGE 32 IS A LEVOGYRE WITH 13 UNIT SHELLS. A SHELL UNIT IS DEFINED AS A SANDWICH STRUCTURE [I CALLED FOR FIBER-GLASS STRONGER THAN STEEL AT ONE TIME, BUT I EXPECT A BETTER MATERIAL TO EMERGE] CONSISTING OF 3 SHELLS. THE TWO OUTSIDE SHELLS ARE STABLE AND UNIFORM WITH EACH OTHER I.E. UNMOVING IN REGARDS TO SPACING. THE THIRD INNER SHELL IS IN REALITY NOT A SHELL AT ALL BUT A SERIES OF SIDE BY SIDE INDEPENDENT WIRE FORMS ATTACHED BY EXPANSION JOINTS AT BOTH THE NORTH AND SOUTH POLES OF THE SPIN AXIS UNITS. WHEN ROTATED THE WIRES ACT INERTIALLY AS A SOLID SHELL. SINCE THE EXPANSION JOINTS ALLOW A SLIGHT INCREASE OR DECREASE OF THE DIAMETER OF THESE "WIRE SHELLS", THEY CAN COMPENSATE FOR ANY SUDDEN CHANGES OF ANGULAR MOMENTUM THAT MAY OCCUR DURING START UP. THEY ALSO CAN ROTATE OPPOSITE TO THE PREVAILING DIRECTION OF THE TOTAL SHELL UNITS AND THEREBY ACT AS A BRAKING SYSTEM.

- THE NECESSARY MATERIALS**
- 1 SYNTHETIC DIAMOND BALL BEARINGS
 - 2 OUTER SPACE BALL BEARINGS
 - 3 TUNGSTEN CARBIDE STEEL FOR THE AXES
 - 4 GLASS STRONGER THAN STEEL
 - 5 FERRO-FLUIDS FOR ELECTRO-HYDRO-FORM
 - 6 LEAD FOR SHIELDING AND WEIGHT



THE FIBONACCI NUMBERS [THE FIRST FORTY]

u_1	1	u_{11}	89	u_{21}	10946	u_{31}	1346269
u_2	1	u_{12}	144	u_{22}	17711	u_{32}	2178309
u_3	2	u_{13}	233	u_{23}	28657	u_{33}	3524578
u_4	3	u_{14}	377	u_{24}	46368	u_{34}	5702887
u_5	5	u_{15}	610	u_{25}	75025	u_{35}	9227465
u_6	8	u_{16}	987	u_{26}	121393	u_{36}	14930352
u_7	13	u_{17}	1597	u_{27}	196418	u_{37}	24157817
u_8	21	u_{18}	2584	u_{28}	317811	u_{38}	39088169
u_9	34	u_{19}	4181	u_{29}	514229	u_{39}	63245986
u_{10}	55	u_{20}	6765	u_{30}	832040	u_{40}	102334155

12) THE NAME OF THE LEVOGYRE REFERS TO ITS ABILITY TO PRODUCE MECHANICAL LEVITATION OR ANTI-GRAVITY: WHAT IS MEANT IS THE ENTIRE STRUCTURE WILL WEIGH LESS WHILE IN MOTION THAN WHEN IT IS AT REST. IT WILL NEVER WEIGH NOTHING, BUT ITS WEIGHT LOSS WILL APPROACH .382... OF ITS TOTAL MASS, AS THE NUMBER OF SHELLS IN ITS CONSTRUCTION INCREASES. IT IS EXPECTED THAT IF A LEVOGYRE IS BUILT WITH THE SHELL UNITS EXCEEDING THE 27TH INTEGER OF THE FIBONACCI SERIES [ABOVE 196418] A SIGNIFICANT WEIGHT LOSS WILL BE OBSERVED.

NOTE: SEE PAGES 17 AND 18 FOR THE EXPLANATION OF THIS EFFECT. THE LEVOGYRE SIMPLY MULTIPLIES THE EFFECT OF A PROPERTY THAT ALL GYROSCOPES POSSESS.

AN ANNOTATED

APPENDIX:

INFORMATION AND IDEAS THAT
EITHER HAVE INFLUENCED ME
IN THE DEVELOPMENT OF THE
LEVogyRE, OR HAVE ACTED AS
CORROBORATION OF ITS POSSIBILITY —
AND BY DOING, SO HAVE HELPED
ME TO CONTINUE THE REFINEMENT
OF THE LEVogyRE.

GYROSCOPE. A heavy symmetrical disk free to rotate about an axis which itself is confined within a framework that is free to rotate about one axis or two. The two qualities of a gyroscope which

account for its usefulness are: the axis of a free gyroscope will remain fixed with respect to space, provided no external forces act upon it; and a gyroscope can be made to deliver a torque (or a signal) which is proportional to the angular velocity about a perpendicular axis. Both qualities stem from the principle of conservation of angular momentum, which may be stated as follows: in any system of particles, the total angular momentum of the system relative to any point fixed in space remains constant, provided no external forces act on the system.

Gyroscopes are frequently spoken of as having one or two degrees of freedom, or as being *free gyroscopes*. This terminology is confusing because it results from the conventional use of the number of degrees of freedom of the vector of angular momentum rather than from the actual degrees of rotational freedom. Figure 1a shows diagrammatically the mounting of what is commonly called a *single-degree-of-freedom*, or "rate," gyroscope. Although there are obviously two rotational axes involved, in its use it is a single-degree-of-freedom

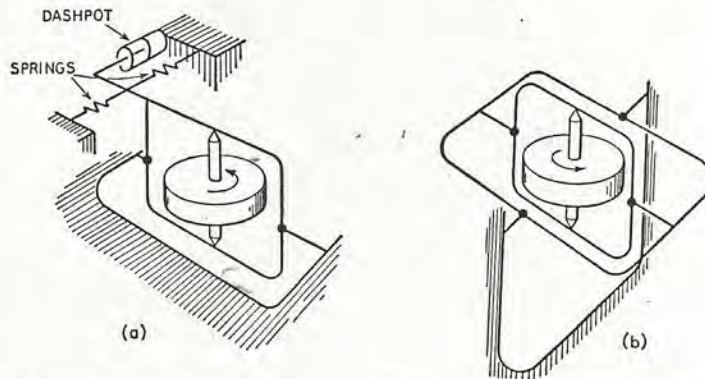


Fig. 1. Gyroscope gimbal mounting systems: (a) single-degree-of-freedom gyro; (b) two-degree-of-freedom gyro. (Locke, Guidance, Van Nostrand Reinhold Co.)

system. Figure 1b illustrates the gimbaling arrangement for what is sometimes called a *two-degree-of-freedom* gyroscope. As can be seen, a gyro wheel so mounted has three degrees of rotational freedom, except when all three axes are in the same plane. When the measurements of motion are made only from two coordinate axes, or when the outer axes lie in the same plane, this arrangement is frequently called a *two-degree-of-freedom* gyroscope. A *free gyroscope* is defined as one wherein the wheel has three degrees of rotational freedom and is unconstrained with respect to rotation. Although the wheel illustrated in Fig. 1b fulfills this definition as long as the axes are not aligned, a wheel so mounted as to be capable of rotation about five intersecting axes has three degrees of rotational freedom, whatever the direction of the axes.

Precession. The phenomenon of gyroscopic precession is explained readily by Newton's law of motion for rotation, which may be stated: The time rate of change of angular momentum about any given axis is equal to the torque applied about the given axis. When a torque is applied about the input axis of the gyroscope illustrated in Fig. 2 and

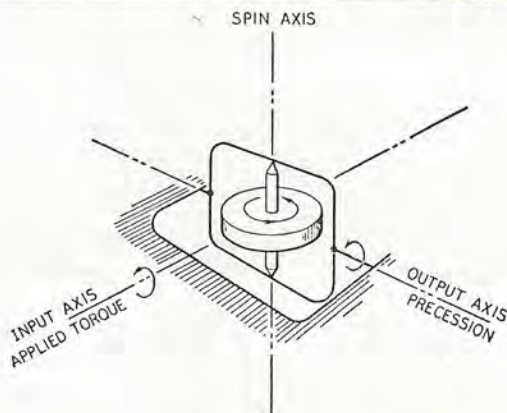


Fig. 2. Gyroscopic precession.

the speed of the wheel is held constant, the angular momentum of the rotor may be changed only by rotating the projection of the spin axis with respect to the input axis, i.e., the rate of rotation of the spin axis about the output axis is proportional to the applied torque. This may be stated in equation as

$$T = I\omega_r\Omega$$

where

T = torque

I = inertia of the gyroscope rotor about the spin axis

ω_r = rotor speed

Ω = angular velocity about the output axis

The rule for determination of the direction of precession about the output axis is: Precession is always in such direction as to align the direction of rotation of the rotor with the direction of rotation of the applied torque. This is illustrated in Fig. 2, which indicates the direction of precession about the output axis as a result of the applied torque. The output axis (or axis of precession) is always at right angles to the input axis.

Gyroscopic precession differs from angular acceleration about a fixed axis in that it is theoretically possible for the fixed axis acceleration to continue indefinitely, whereas the precessional response to torque has a well-defined limit. The limit is reached when the spin axis is turned sufficiently to align itself with the torque axis. No further precessional response to torque input is possible when this condition has been reached, because all the angular momentum of the system is already about the input axis.

Gyroscopes are used to provide fixed reference directions for compasses on ships and aircraft. They also are used in space vehicle stabilization systems. One type of mass flowmeter is based upon the gyroscopic principle.

Up to this point, this entry has dealt with the gyroscope from the standpoint of its basic principles. The construction of a practical device for a given purpose, however, introduces a number of other considerations. One of these is *drift*, i.e., departure of the motion from the theoretical, and may be caused by unwanted torques due to friction in rotor suspensions or mass shifts in the rotor itself, magnetic effects, and various other causes.

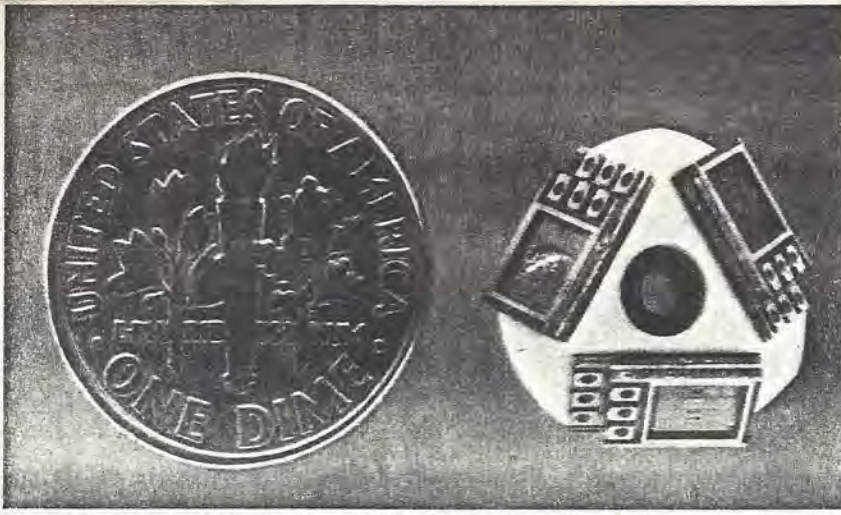
A method widely used to eliminate friction at rotor suspensions is to eliminate them entirely by floating the rotor (and its driving motor) in a viscous, high-density liquid, such as one of the fluorocarbons. This method does have the disadvantage that most of these liquids polymerize over a period of time due to the heat generated. Moreover, these systems require close temperature control to avoid convection currents due to temperature differences in the fluid.

An alternative solution is to retain the bearings, but change them from the ordinary mechanical type to "gas bearings," in which the shaft is actually supported by high-pressure gas. Helium, air, and hydrogen have been used for the purpose. Still another solution is to support the rotor in a high vacuum by an electric field (this is the *electrostatic gyro*), or by a magnetic field. The latter type has been developed effectively by cooling it to the extremely low temperatures at which the rotor becomes superconductive, so that the external magnetic field generates in it currents great enough to produce a "counter" electromagnetic field in it to balance the external field. Because of the low temperature used, this type is called the *cryogenic gyroscope*.

It should be noted that other rotating objects which are free to precess exhibit gyroscopic properties. They range from spinning tops to such particles as electrons, atoms and molecules at one end of the size scale, and astronomical bodies, such as satellites and planets, at the other.

Moreover, gyroscope devices are not limited to the basic mechanical type. An example of a quite different kind is the laser gyroscope, developed as an inertial sensor. It consists of a solid quartz block, into which holes are drilled to provide paths for the laser beam. Thin-film mirrors are sealed onto the unit. Laser energy is transmitted clockwise and counterclockwise simultaneously—at rest, they are the same frequency. But when an input rate is present, an output signal is generated that is proportional to that input rate, that does not require a rotating mass as in conventional gyroscopes.

THE LEVOGYRE HAS THE POTENTIAL OF BEING AN INFINITE-DEGREE-OF-FREEDOM GYROSCOPE.



To exploit size and weight advantages of FOGs requires innovative accelerometers. Above is a Litton three-axis accelerometer, which uses monolithic devices fabricated on silicon wafer.

Fiber-optic gyros now emerging from the laboratory may rival ring-laser gyros by the 1990s in competition for the inertial guidance market.

This prospect comes slightly more than a decade after the laser gyro emerged from the laboratory to challenge the long-held monopoly of spinning-mass gyros. At first, fiber-optic gyros (FOGs) probably will compete for low- and moderate-accuracy applications where their small size, light weight, low power consumption, ruggedness and potentially modest cost would be important advantages. A decade ago, similar attributes enabled laser gyros to penetrate the inertial market, although their accuracy has increased significantly since that time.

SAGNAC EFFECT

The fiber-optic gyro, like the ring-laser gyro, is based on an effect discovered in 1913 by France's G. J. Sagnac. When two contrarotating beams of light are subjected to an angular rotation in their planes, that motion causes one of the beams to transit a slightly greater path length than the other. This creates a shift in the relative phase of the two beams that is proportional to rotation rate.

Because the accuracy of the Sagnac Effect is proportional to the length of the optical path, achieving more accurate laser gyros generally requires going to larger sizes.

The idea of using optical fibers to make a Sagnac Effect rotation-rate sensor was first proposed by University of Utah researchers in 1976. It attracted interest because an extremely long optical path length could be achieved in a small size by using a many-turn coil of tiny optical fibers.

FROM: AVIATION WEEK AND SPACE TECHNOLOGY FEBRUARY 13, 1989

WHILE CHANGES IN GYROSCOPE TECHNOLOGY ARE OCCURRING THAT CHALLENGE THE TRADITIONAL FORM OF THE SPINNING MASS GYRO, IT SHOULD BE NOTED THAT A VARIATION OF THE SPINNING MASS GYRO WILL BE USED FOR BASIC RESEARCH IN PHYSICS, WHILE THE NEWER FORMS - THE RING LASER GYRO AND THE

THREE TYPES OF FOG

The three types of fiber-optic gyros currently under development, listed in order of their technical maturity, are:

■ **Open-loop interferometric (I-FOG)**, the simplest, least expensive but least accurate, is principally useful as an angular-rate sensor.

■ **Closed-loop interferometric**, a more accurate but more complex I-FOG, will soon be available for modest-accuracy inertial navigation systems. Sensors with still higher accuracy are projected by the early 1990s, according to those working in the technology.

■ **Resonant (R-FOG)**, which some researchers believe offers the greatest potential accuracy, is the least mature technology. The operating principles of the R-FOG more closely resemble those of a laser gyro than do the I-FOG types.

The most elementary type of open-loop I-FOG consists of a semiconductor diode source whose light is divided. Half feeds into one end of a coil of optical fiber and the other half feeds into the opposite end. Light from the clockwise and counter-clockwise beams emerging from the ends of the fiber-optic coil is combined and its intensity is measured by a photodetector.

When the device is not rotating, the emerging light beams combine in phase for maximum intensity to produce a maximum output signal from the photodetector. When the FOG is rotated, the resulting phase difference between the two emerging beams creates interference, which reduces the intensity of the combined beam and thus the photodetector output signal.

Space gyroscopes for testing relativity

Scientists at Stanford University are starting to assemble a crucial experiment designed to test Einstein's general theory of relativity to an unprecedented level of precision. Known as Gravity Probe-B, the satellite-based experiment will attempt to detect two specific physical effects predicted by the theory but never before measured.

In Einstein's theory, the force of gravity is a manifestation of the curvature of space and time caused by the warping effects of concentrations of mass. For example, the Earth orbits the sun not because it's attracted to the sun but because it follows the shortest possible path in space-time distorted by the sun's mass. Although the general theory of relativity now plays a central role in astrophysics, much of the theory has never been tested or verified.

The Stanford experiment focuses on what should happen to a freely spinning gyroscope in orbit around the Earth. According to Newton's laws of motion, the axis of such a gyroscope should always stay pointed in the same direction. However, because an orbiting gyroscope would be moving through curved space-time around the Earth, Einstein's theory predicts the gyroscope should precess, or tilt, slightly as it spins. Known as the geodetic effect, the tilt would amount to 6.6 arc-seconds a year, or 360° in 200,000 years.

At the same time, the theory predicts the gyroscope should feel a second effect. As the Earth rotates, it drags space and time around with it. Just as a moving electric charge generates a magnetic field in addition to the electric field already present, the Earth's motion ought to generate a completely new kind of field — a gravitomagnetic field — different from the ordinary gravitational field surrounding a body. That effect would also cause a gyroscope to tilt. In a polar orbit the tilt due to the geodetic effect would be at a right angle to the tilt caused by the gravitomagnetic effect, making both effects detectable. However, the gravitomagnetic effect amounts to a minuscule 44 milli-arc-seconds a year.

To measure such tiny effects, the orbiting gyroscopes must be as free as possible from any interference. The satellite will contain four gyroscopes, each a ball of pure quartz 1.5 inches in diameter, ground so smoothly that deviations from roundness measure less than one-millionth of an inch. Each ball has a niobium coating, which becomes a superconductor at liquid-helium temperatures and thus permits the balls to be suspended electrically and any tilt to be measured. Jets of helium gas will set them spinning at 10,000 rotations per minute in a near-perfect vacuum.

Stanford researchers hope to test the assembled gyroscopes aboard the space shuttle in 1993 in preparation for a rocket launch three or four years later — the culmination of more than 20 years of thought and effort.

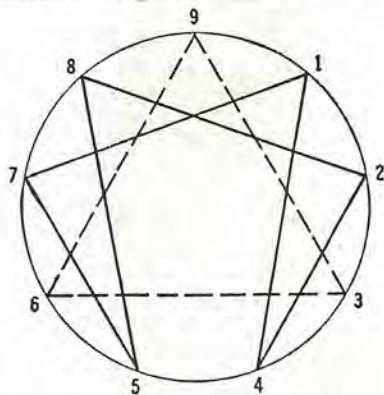
FROM: SCIENCE NEWS VOL 137
MARCH 3, 1990

FIBER OPTIC GYRO - ARE BEING USED MOSTLY FOR THE GROWING INERTIAL GUIDANCE INDUSTRY.

THE LEVOGYRE, HOWEVER, IS, I BELIEVE, STRONG ENOUGH AS A CONCEPT TO BE ABLE TO ABSORB AND UTILIZE INNOVATION FROM BOTH THE ACADEMIC AND THE COMMERCIAL SECTORS.

"The complete construction of this symbol which connects it with a complete expression of the law of octaves is more complicated than the construction shown. But even this construction shows the inner laws of one octave and it points out a method of cognizing the essential nature of a thing examined in itself.

"The isolated existence of a thing or phenomenon under examination is the closed circle of an eternally returning and uninterruptedly flowing process. The circle symbolizes this process. The separate points in the division of the circumference symbolize the steps of the process. The symbol as a whole is *do*, that is, something with an orderly and complete existence. It is a circle—a completed cycle. It is the zero of our decimal system; in its inscription it represents a closed cycle. It contains within itself everything necessary for its own existence. It is isolated from its surroundings. The succession of stages in the process must be connected with the succession of the remaining numbers from 1 to 9. The presence of the ninth step filling up the 'interval' *si-do*, completes the cycle, that is, it closes the circle, which begins anew at this point. The apex of the triangle closes the duality of its base, making possible the manifold forms of its manifestation in the most diverse triangles, in the same way as the point of the apex of the triangle multiplies itself infinitely in the line of its base. Therefore every beginning and completion of the cycle is situated in the apex of the triangle, in the point where the beginning and the end merge, where the circle is closed, and which sounds in the endlessly flowing cycle as the two *do*'s in the octave. But it is the ninth step that closes and again begins a cycle. Therefore in the upper point of the triangle corresponding to *do* stands the number 9, and among the remaining points are disposed the numbers 1 to 8.



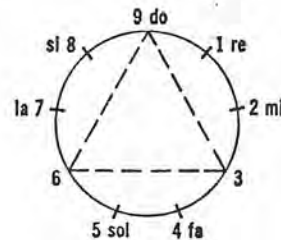
"Passing on to the examination of the complicated figure inside the circle we should understand the laws of its construction. The laws of unity are reflected in all phenomena. The decimal system is constructed on the basis of the same laws. Taking a unit as one note containing within itself a whole octave we must divide this unit into seven unequal parts in order to arrive at the seven notes of this octave. But in the graphic representation the inequality of the parts is not taken into account and for the construction of the diagram there is taken first a seventh part, then two-sevenths, then three-sevenths, four-sevenths, five-sevenths, six-sevenths, and seven-sevenths. Calculating these parts in decimals we get:

$\frac{1}{7} = 0.142857 \dots$
 $\frac{2}{7} = 0.285714 \dots$
 $\frac{3}{7} = 0.428571 \dots$
 $\frac{4}{7} = 0.571428 \dots$
 $\frac{5}{7} = 0.714285 \dots$
 $\frac{6}{7} = 0.857142 \dots$
 $\frac{7}{7} = 0.999999 \dots$

"In examining the series of periodic decimals obtained we at once see that in all except the last the periods consist of exactly the same six digits which run in a definite sequence, so that, knowing the first digit of the period, it is possible to reconstruct the whole period in full.

"If we now place on the circumference all the nine numbers from 1 to 9 and connect those numbers which are included in the period by straight lines in the same sequence in which the numbers stand in the period, according to which number we start from, we shall obtain the figure found inside the circle. The numbers 3, 6, and 9 are not included in the period. They form the separate triangle—the free trinity of the symbol.

"Making use of 'theosophical addition' and taking the sum of the numbers of the period, we obtain *nine*, that is, a whole octave. Again in each separate note there will be included a whole octave subject to the same laws as the first. The positions of the notes will correspond to the numbers of the period and the drawing of an octave will look like the following:



THE ENNEAGRAM OF THE ALCHEMIST G. L. GURDJIEFF :

AS THE SYMBOL OF THE TOTAL FRAME OF REFERENCE OF AN ENTITY.

KNOWING ABOUT THE ENNEAGRAM AND ITS DEFINITION AS A TOTAL CONCEPT OF THE FRAME OF REFERENCE FOR ANY PROCESS, I BEGAN TO WONDER IF IT COULD BE RELATED TO THE CONCEPT OF "THE FRAME OF REFERENCE" USED IN PHYSICS. WHILE THE TERM IS USED ALL THE TIME, I NEVER LEARNED OF ITS BEING DEFINED QUANTITATIVELY. I ALWAYS HEARD OF IT IN A QUALITATIVE SENSE SUCH AS AN OBJECT AND ITS SPHERE OF INFLUENCE.

REMEMBERING THAT SOMEONE HAD TOLD ME THAT THE GEOSTATIONARY OR GEOSYNCHRONOUS ORBIT OF THE EARTH IS APPROXIMATELY 24,000 MILES OFF THE SURFACE OF THE EARTH. THIS IS THE LIMIT OF THE RANGE OF THE EARTH'S GRAVITATIONAL INFLUENCE ON A FREE FALLING MASS. THE GRAVITATIONAL VERTICAL FORCE VECTOR OF THE EARTH JUST EQUALS THE CENTRIFUGAL HORIZONTAL FORCE VECTOR OF THE MASS. A MASS PLACED IN THIS ORBIT TENDS TO REMAIN STATIONARY OVER THE EARTH. THE RADIUS OF THE EARTH IS 3963.53 MILES SO THE ORBIT IS ACTUALLY 23781.18 MILES. BY CALLING THE RADIUS FROM THE CENTROID TO THE EARTH'S SURFACE 1, THE LENGTH OF THE ORBIT IS 6 IN GURDJIEFF'S TERMS.

I ALSO THOUGHT THAT THE UNCERTAINTY PRINCIPLE DEVELOPED BY WERNER HEISENBERG [1901-1976] IN THE 1930'S MIGHT ACTUALLY BE AN EFFECT OF ENTERING THE SYNCHRONOUS ORBIT OF AN ATOM WITH HUMAN CONSCIOUSNESS.

IF THE SUN WERE OBSERVED BY AN INTELLIGENT BEING WITHIN ITS SYNCHRONOUS ORBIT IN COMPARATIVE SIZE AS WE ARE TO AN ATOM, I BELIEVE, AN INDIVIDUAL PLANET LIKE THE EARTH MIGHT GO INTO AN ELECTRON-LIKE QUANTUM SPACE-TIME SPASM.

FROM: NUCLEAR MYSTERIES OR CREATION OF THE PARENT ATOMS

BY: SISTER INCARNATA MARIE, S.I.W. © COPYRIGHT 1980
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HER BOOK WAS
WRITTEN IN
OCTAMETER
AS A SCIENTIFIC
POEM.
IN A SENSE
SHE WAS THE
CONTEMPORARY
INVERSE OF
LUCRETIOUS
C.99 - C.55 BC.,
WHO WROTE
THE GREAT
DIDACTIC POEM
DE RERUM
NATURA IN
DACTYLIC
HEXAMETER,
OR SHE COULD
HAVE BEEN A
LATTER-DAY
MANILIUS
[A CONTEMPORARY
OF LUCRETIOUS]
WHO WROTE
THE POEM
ASTRONOMICA
ON ASTRALOGY
IN ORDER TO
COMBAT
LUCRETIOUS.
I MET HER
THROUGH A
MUTUAL
FRIEND WHO
TOLD HER ABOUT
MY LEVOGYRE
INVENTION.
SHE SOON
COMMISSIONED
ME TO DESIGN
HER SOLAR
UNIVERSITY.
SHE DIED IN
THE EARLY
1980'S AT 97,
SO NOTHING
WAS EVER
BUILT.

Foreword

The theme of atomic mysteries is the transformation of primeval energy into the cosmos in accordance with the Einsteinian formula, $E = mc^2$. The theme is based on the 20th century analytical processes, as they were initiated and developed by the nuclear physicists and chemists, who succeeded in proving its truth before 1932, by means of the atomic bomb. Since single atoms are still beyond their ability to fuse, the properties of the 92 atoms that compose our universe have been decided by their analyses, but the data are facts as they are classified on the periodic chart which is internationally accepted by the science community. From these data together with the methods used to smash the nuclei, one can glean the obvious fact that every one of the 92 atoms serves a purpose in the total result, the planetary universe. That purpose can be traced in the general classification of eight families, each consisting of seven close relatives and two or more isotopes or derivatives.

"Let us make mankind" in our own image (Genesis I). It is pertinent to mention that the Douay Version of the Bible uses *mankind*, not *man*, as a collective noun used in the exposition of this creation theory, that mankind may contain the hidden meaning of Humanity, the first energy externalized by the Supreme Being outside His own triple Essence. That Energy is the Divine Logos, the Word, Who retained His Divinity when He assumed the Energy called humanity. This is a pure assumption since we do not know the language used by spirits of the other world, much less the vocabulary employed by the Creator Himself. The Word, or the Logos of Eastern philosophy, or the Second Person of the Blessed Trinity used by theologians, was then the first creation mentioned by St. Paul and described in the words "not made by human hands." According to this assumption, the Logos became the Executor of the decree to make "mankind" according to Our Image, as well as the Maker "of all things that were made and without Him nothing was made that was made" (St. John I). That awkward construction must be due to the paucity of words in all human diction; the idea is clear enough to those who accept the Bible as the source of faith.

Since the first transformation of energy into the cosmos was achieved by spirit-personalities, these purposes were originally spiritual, at least interpreted according to spirit viewpoints, i.e., spirits who had no experience in a universe of matter.

The necessary assumption in this book is that the Logos conceived the evolutionary laws for the transformation of energies, but personalized some of His divine perfections as delegates to use them, just as He endows human spirits, geniuses of our age, with the power and ingenuity to analyze the existential universe and discover the laws that govern its functions.

To set forth a synthetic process of utilizing these energies, it was further necessary to invert the analytical experiments for smashing atoms into a synthetic building method. The nuclei of the 92 elements are responsible for the differences in the 92; therefore some common quality or property of these nuclei had to be found or invented to furnish clues to the purposes, so that each element can be shown to serve its purpose in the world in which we live. The accepted periodic chart of atoms was taken as the base for the eight divisions plainly indicated by the octet valence system of the eight families.

SISTER INCARNATA MARIE, S.I.W. WAS KNOWN AFFECTIONATELY AS "THE ATOMIC NUN" FOR TWO REASONS: ① SHE FOLLOWED MANY OF THE EVOLUTIONARY SPIRITUAL PRINCIPLES DEVELOPED BY TEILHARD DE CHARDIN INTO THE ATOMIC REALM, AND ② IN THE 1940'S SHE USED PSYCHIC AND INTUITIVE METHODS TO DESCRIBE THOSE SUBATOMIC PARTICLES AND POSSIBLE STRUCTURES THAT ARE BEYOND PHYSICAL PERCEPTION [BECAUSE OF THE UNCERTAINTY PRINCIPLE] IN MUCH THE SAME MANNER AS DID SOME THEOSOPHISTS LIKE ANNIE BESANT OR CHARLES LEADBETTER AT THE TURN OF THE 19TH CENTURY, AND AS THE CONTEMPORARY SCULPTOR KENNETH SNELSON OF THE PSYCHIC RESEARCHER DR. ANDRE PUNKRICH DO TODAY.



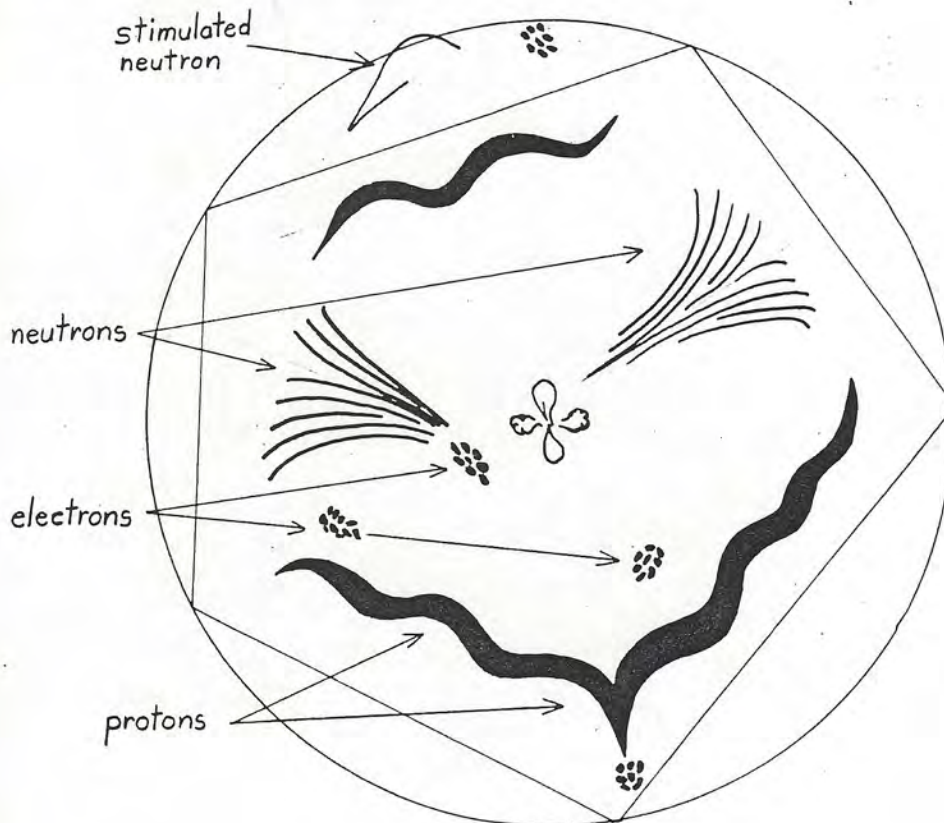
"THE ATOMIC NUN"
Sister Incarnata Marie, S.I.W.

THE SOLAR UNIVERSITY

THIS UNIVERSITY PROJECT WAS TO BE BUILT AND LEVITATED OVER ONE PART OF THE LAKE OF THE OZARKS IN MISSOURI. ITS CURRICULUM WAS TO BE DEVOTED TO NEW WAYS TO STUDY THE ATOMIC REALM.

AS A CONCEPT "THE ATOMIC NUN" HAD A VISION OF A PERFECT SPHERE POISED IN SPACE OVER WATER.

AS THE DESIGNER I FELT THAT THE SPHERE SHOULD BE 500 FEET IN DIAMETER WITH A 200 FOOT INNER SPHERICAL SPACE THAT WOULD HOUSE A LARGE VERSION OF MY LEVOGYRE, LEAVING ENOUGH SPACE FOR LECTURE HALLS ETC. COMPOSED OF STEEL AND CONCRETE, THE SPHERE WOULD HAVE BEEN SURFACED WITH CUBIC ZIRCONIA GEMSTONES. EIGHT SYMMETRICALLY SWEEPING FOOT BRIDGES REMINISCENT OF MAILLART WOULD APPROACH BUT NOT QUITE MEET THE SPHERE. FOUNTAIN-SURFACED WITH WATER THE WHOLE IMAGE WOULD HAVE LOOKED LESS LIKE A GEODESIC SPHERE AND MORE LIKE THE PERISPHERE FROM THE 1939 NEW YORK WORLD'S FAIR OR SOMETHING OUT OF BOULLEE, ESPECIALLY SLOWLY ROTATING.



3 TRIPLET WAVE-PROTONS
2 CROSS-SIGN PROTONS
5 NEUTRONS
5 ELECTRONS

ALL EQUAL
ONE BORON ATOM

THE ATOMIC NUN'S INTUITION OF A BORON ATOM: NOTE HOW SIMILAR THESE FORMS ARE TO THE FORMS USED BY THE ARTIST KANDINSKY - WHO WAS DIRECTLY INFLUENCED BY THE PSYCHIC ILLUSTRATIONS OF BESANT AND LEADBEATER.

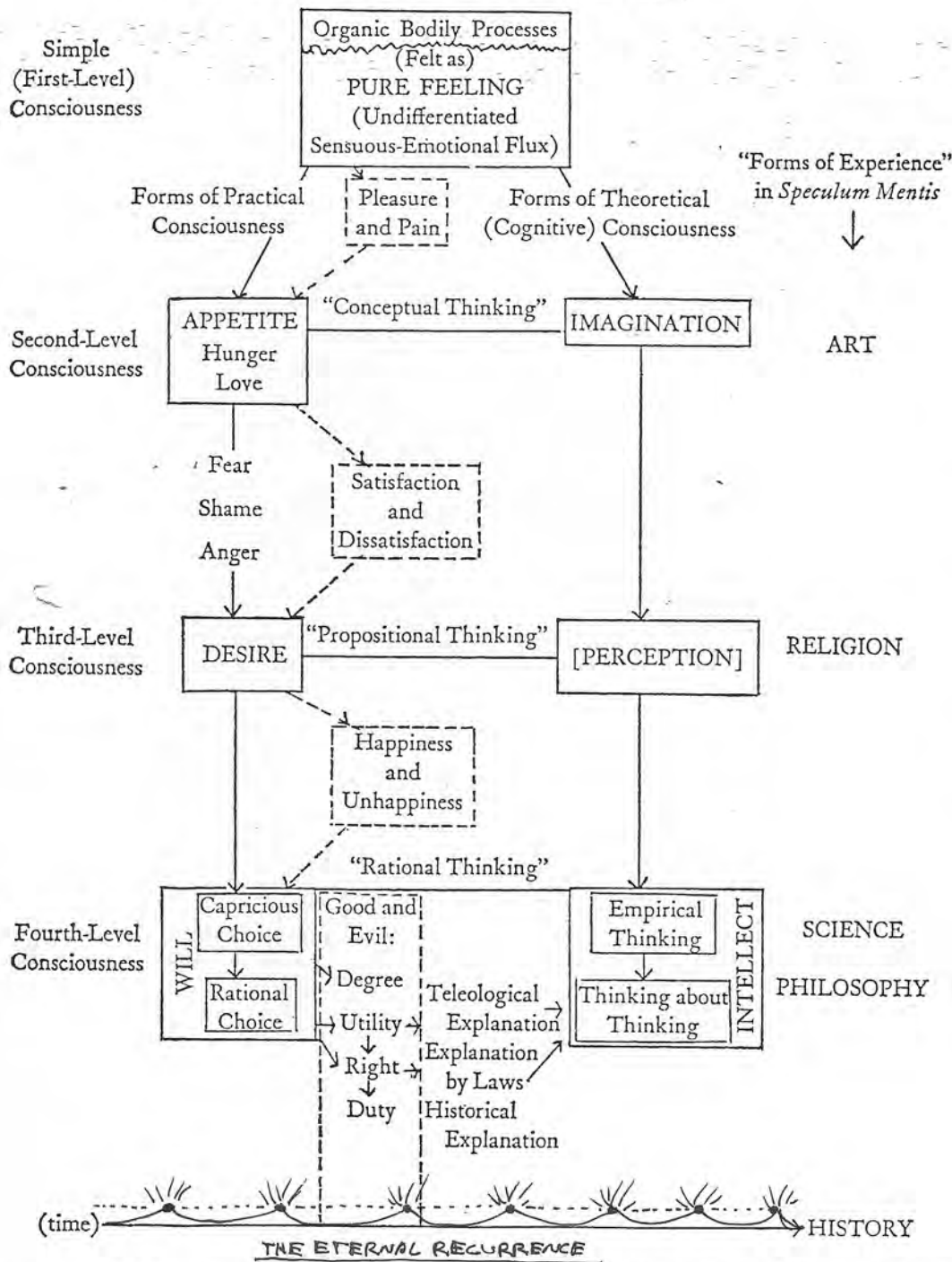
FROM: MIND, HISTORY, AND DIALECTIC: THE PHILOSOPHY OF R.G. COLLINGWOOD

BY: LOUIS O. MINK © COPYRIGHT 1968

PUBLISHED BY: WESLEYAN UNIVERSITY PRESS

FIGURE 2

The Dialectic of Mind as a Scale of Forms



TO ME INVENTION IS TRANSDISCIPLINARY IN THE PROCESS OF THE SEARCH FOR ITSELF, A NATURAL HOLIARCHY AS A COMPLETED ENTITY, AND IS AIMED AT THE OVERCOMING OF THE HISTORICAL PRESENT WHICH IS OFTEN INTERPRETED AS A QUEST FOR THE SOCIAL AND HISTORICAL FUTURE. IN NON-TECHNOLOGICALLY ORIENTED CULTURES, SEEKING THE ETERNAL NOW WITHIN ONESELF OVERCOMES THE HISTORICAL PRESENT. THE THIRD ALTERNATIVE OR THE WAY OF THE GNOSTICS [WHO WERE ACTIVE JUST PRIOR AND DURING THE FORMATIVE YEARS OF CHRISTIANITY] IS THAT TECHNOLOGY WAS SEEN AS HAVING A SPIRITUAL ASPECT WHICH ALLOWS RELEASE FROM THE WORLD [THE TIBIL = HISTORY] - AS OPPOSED TO SUICIDE - BY ALLOWING THE CREATION OF A CONVENTICLE [A "SMALL CIRCLE OF FRIENDS"] WHICH MUST VIOLATE THE CONSENSUS [WORLD VIEWS] OF WHATEVER WE BELIEVE WITHIN HISTORY TO BE THE NATURE OF REALITY. THE PHILOSOPHER R.G. COLLINGWOOD BY RECOGNIZING THE POWER AND THE SEDUCTIVE PRIMACY OF HISTORY, A SEDUCTION HINTED AT BY PLATO, HEGEL AND NIETZSCHE, HAS POSTULATED THE PERFECT CONTINUITY BETWEEN TIME AND ETERNITY. BY INCLUDING THE TECHNOLOGICAL, COLLINGWOOD HAS PLACED HIMSELF WITHIN THE CAMP OF THE GNOSTICS - A CAMP WHICH NOW INCLUDES THE 19TH CENTURY THEOSOPHISTS AND CONTEMPORARY EXISTENTIALISTS LIKE THE PHENOMENOLOGISTS. HISTORY WAS SEEN BY THE GNOSTICS AS AN ETERNAL RECURRENCE OF EXIT POINTS IN TIME [THE ZEINITHS OF CIVILIZATION] LINKED BY CENTURIES OF NADIRS. THE FALL INTO THE DESPAIR OF THE TIBIL HAS BEEN RECAST SYMBOLICALLY INTO THE SCIENTIFIC DEFINITION OF GRAVITY. ANTI-GRAVITY OR LEVITY IS NOW THE SYMBOL OF TRANSCENDENCE.



**God Exists
Earth Flat - Center of Universe
Does Not Revolve Around Sun**

sold refreshments right in the orchestra, as they still do in European movie houses. Today, of course, with the proliferation of VCRs that let a person watch nearly 900 movies a year and still have time to eat and sleep, many of those theaters have degenerated into nothing more than peep shows.

I thought my father was headed for the entrance to the freak show on the south side of 42nd Street. I went in there once by myself. It only cost a dime. The lady at the ticket window seemed surprised that I even wanted to come in. There were actually no freaks left to watch, just some old faded pictures with hand-scrawled verbal apologies and references to the troubles Tod Browning had with the movie industry in the 1930s. Since I was the only person there I explored the downstairs. Way in the back behind a drawn curtain was a very small stage on which a yellowing poster lay askew: "Tiny Tim, next performance at 2:00 p.m., song requests taken," it said.

But as it turned out we were headed next door to a very small joke shop. You know the kind, where they sell rubber snakes and whoopee cushions. My father positioned me right in front of the window so that I couldn't avoid seeing what he was pointing to. He said emphatically, "See, that's what I'm talking about. That's how the universe works and it does not need the concept of gravity."

I know I hinted about my father and gravity before, but I'll say it right out now. As long as I knew him, my father never believed in gravity. And I don't know if he ever did. He didn't believe in gravity the way other men don't believe in Santa Claus: it's nice folklore that's not harmful unless you take it too seriously. Growing up, I didn't know you were supposed to believe in gravity. It was a subject that just never came up in conversa-

tion with my friends. We were busy playing cars and guns and throwing cherry bombs down wells. The only analogous situation I can imagine would be that of a child growing up in one of those flat-earth utopias that existed in the Midwest in the nineteenth century, or, more currently, of a child living in the home of Charles K. Johnson, who is the president of the International Flat Earth Research Society in Lancaster, California.

Now I'm not saying my father was a dingbat. He was a brilliant man, a veritable genius when it came to trusts, estates, and tax law. As a very young man, he practically single-handedly brought his bank through the Crash of 1929 and the Depression in the black, while other banks just folded forever. He invented business systems and created careers for other people besides himself. On the side he played the piano, sang, and was a professional-level violoncellist. I'm not even saying he was wrong about gravity. He would claim that Einstein and the quantum physicists were moving closer day by day to his position. He admired Babson, who founded Babson Business College and also the Gravity Research Institute, which used to be in New Boston, New Hampshire. He would often take me to see the Institute's exhibits of antigravity and perpetual-motion devices, although I was only allowed to see them from outside, through a window in the main building. It must be that successful businessmen cultivate a certain orneriness, because whenever he would start losing a father-and-son argument with me, no matter what the initial subject, he would say I was becoming a dupe of the system and beginning to believe in gravity.

Right up close to the window, smack between a generous supply of imported French blue garlic chewing gum labeled *nonpareille* on the right and authentic Cape Cod salt-water

**... whenever
he would start
losing a
father-and-
son argument
with me, no
matter what
the initial
subject, he
would say I
was becoming
a dupe of the
system and
beginning to
believe in
gravity.**

WHILE MY FATHER'S INFLUENCE ON MY DEVELOPING MIND HAS PREDISPOSED ME TO THE SUBJECT OF OF ANTI-GRAVITY, I DID NOT MENTION IN MY STORY MY GRANDFATHER'S POSSIBLE INFLUENCE ON MY FATHER. I CAN NOT PROVE ANYTHING DIRECTLY, SINCE MY GRAND FATHER DIED SOON AFTER I WAS BORN, BUT I HAVE PIECED TOGETHER FAMILY STORIES THAT INDICATE THE POWER OF MY GRANDFATHER'S MIND. HE WAS AN INDUSTRIAL DESIGNER AND INVENTOR ACTIVE IN THE 1920'S AND 30'S. HE BECAME FRIENDS WITH THE ELECTRICAL ENGINEER CHARLES STEINMETZ SHORTLY BEFORE STEINMETZ DIED AND WHO WAS WORKING FOR BOSTON EDISON COMPANY AT THAT TIME. STEINMETZ, OF COURSE, KNEW ALBERT EINSTEIN AND NIKOLA TESLA. MY POINT IS THAT MY FATHER'S DISREGARD FOR GRAVITY MAY HAVE BEEN ENGENDERED BY HIS FATHER.

THE CHRONON OF KAIROS

THE OCTAVE OF THE DIMENSIONAL SPISSITUDE

THE HODON OF PHI

PNEUMA **KENOSIS**

THE CHRONON OF KAIROS	THE EIDOS OF TEMPORALITY	THE EIDOS OF SPATIALITY	THE EIDOS OF SPIRITUALITY
ENERGIC TIME METATIME PNEUMATIZATION	NEPTUNE TRANSPORT-UNITY	AT-ONE-MENT-PATR SILENCE	UNDERLINE METASPACE NOTHING
THE META-INTELLIGIBLE	DINERGY	SYMB	CONTINITY
TRANSENERGY ZEIT	URANUS	OBLIVION-METAPHORON	TRANSINERTIA RAUM
THE UNINTELLIGIBLE	SYNERGY	CYBER	SYSTEM
SPIRITENERGY HYPARXIS	SATURN WILL-INVARIANCE	CONTEMPLATION-BEYOND	VOID
LIMIT OF REVELATION	SYNCHRONICITY	CYBER	INTERCONNECTION
SOULENERGY ETERNITY	JUPITER TELEENERGY-RITUAL	REASON-FREEDOM	SOULINERTIA VUSOLID
THE INTELLIGIBLE	CAUSALITY	JUXTAPOSITION	THE VELOCITY OF LIGHT
TIME	MOON PURPOSE-CHOICE	ECSTASY-CONTROL	SOULVOID
THE INTELLIGIBLE	COINCIDENCE	ARCHETYPE	CONNECTION
DIVINERY DURANCE	VENUS TELEOLOGY-CEREMONY	LOVE-ACCELERATION	EXTENSION
THE OBVIOUS	CONCURRENCE	ICON	EXTENSION
SUCCESSION	SUN MECHANISM-CUSTOM	STYLE-VELOCITY	EXTENSION
LIMIT OF PERCEPTION	CIRCUMSTANCE	INDEX	CONTACT
INTERVAL	MARS LIMIT OF PURPOSE-CONVENTION	POWER-POSITION	SEPARATION
THE META-INTELLIGIBLE	OCCE RANCE	SIGN	SEPARATION
INSTANT	MERCURY BEYOND PURPOSE-DAS DANN	ACTION-PLACE	POINT
MEAL-BORNDOME	THE WAY OF TEMPORALITY	THE WAY OF SPATIALITY	CARING-PYMALE

MYTH: THE DIMENSIONAL INTERFACE BETWEEN THE MANIFEST AND UNMANIFEST ASPECTS OF THE UNIVERSE

HOMER, TOULOUSE-LAUTREC, BORGES, BRUGNON, DUCHAMP, ELIZABETH, FRAZER, G. R. HARRISON, K. R. JENSEN, P. Y. THOMAS, and ZOLLNER

THE FALL INTO HISTORY
IS THE FALL OF THE
ONE INTO THE MANY.

← THE SPEED
OF LIGHT
SEPARATES
AND UNITES
ETERNITY -
VOSOLID
FROM AND
TIME -
SOLVOID

AS HUMANS
WE ARE
"IN MEDIAS
RES"
WITHIN
THE
DIMENSIONAL
OCTAVE

THE PARADOX OF GRAVITY BEING SO STRONG THAT IT CAN REACH A PAROXYSM AND FORM A BLACK HOLE WHICH IS A SINGULARITY-PORTAL TO ETERNITY-VOSOLID, MAY BE PARTLY RESOLVED WHEN IT IS REALIZED THAT THE "FALL INTO HISTORY" CAN GO PAST THE FOURTH, THIRD AND INTO THE SECOND DIMENSIONAL REALM OF SHADOWS AS PLATO STATED, PROVIDING, THEREFORE, A NATURAL ARENA OF DIMENSIONAL COLLAPSE.

Fig. 56H is drawn to scale as a graphical solution for part of this problem. By direct substitution in Eq.(56j),

$$(d) \quad \tan \theta = \frac{X}{R} = \frac{41.2}{60} = 0.687 \quad \text{or} \quad \theta = 34.5^\circ$$

$$\cos \theta = 0.824 = \text{power factor.}$$

By Eq.(56k),

$$(e) \quad P = VI \cos \theta = 110 \times 1.51 \times 0.824 = 137 \text{ watts.}$$

The power expended in a circuit containing inductance and capacitance cannot be measured with a voltmeter and ammeter. To measure power one uses a *wattmeter*. Such an instrument takes emf, current, and power factor into account and reads directly the power. By reading a wattmeter, an ammeter, and a voltmeter, the power factor of a circuit can be determined by Eq.(56k).

$$\text{power factor} = \cos \theta = \frac{P}{VI}. \quad (56l)$$

56.9. Lenz's Law. When a conductor moves through a magnetic field, the induced current in the wire is in such a direction that its own magnetic field generated by that current acts on the original magnetic field in a way opposing the motion. Stated for the first time by H. Lenz in 1833, this is known as Lenz's law. The action of the two magnetic fields upon each other is always such as to oppose the motion or any change in conditions already existing, for if they assisted the change we would have perpetual motion and a violation of the law of conservation of energy.

If the *N* pole of a straight bar magnet is approaching a solenoid (see Fig. 54A), the induced electron current in the coil is in such a direction as to produce an *N* pole at the nearest face of the coil. The two *N* poles there-

fore repel each other, tending to stop the motion. To keep the current flowing a force *F* must continually be supplied to the moving magnet. It is this force *F* moving through a given distance that determines the amount of mechanical work done in producing a given current. If now the *N* pole is withdrawn from the solenoid, the induced current in the coil reverses in direction and produces an *S* pole at the nearest face. The opposite poles therefore attract each other, tending to stop the motion. Again to keep the current flowing a force *F*

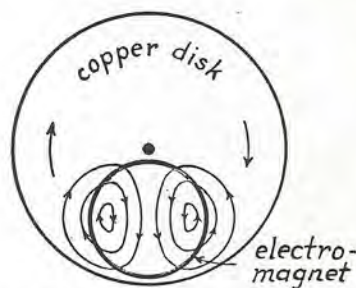


FIG. 56J—Eddy currents in a moving plate conductor.

must be continually supplied and thus work is done.

There are numerous ways of demonstrating Lenz's law. One common

A FEW YEARS AGO I WANTED TO FIND AN INEXPENSIVE METHOD OF ELECTRO-MAGNETICALLY LEVITATING A MODEL OF A FLYING SAUCER AS PART OF A SCULPTURE ON WHICH I WAS WORKING. FIRST I CONSULTED WITH LOCAL EXPERTS ON THE SUBJECT, TELLING THEM WHAT EFFECTS I WANTED TO ACHIEVE. THEY SAID TO HAVE AN OBJECT SLOWLY RISE UP, HOVER FREELY IN SPACE, AND ROTATE WAS EITHER IMPOSSIBLE WITH TODAY'S TECHNOLOGY, OR VERY EXPENSIVE, AND PROBABLY DANGEROUS TO ANY

experiment is to move a flat copper or aluminum plate rapidly through a strong magnetic field. As each part of the plate enters the field a strong opposing force tends to stop it. What happens electrically is that strong eddy currents of electricity are produced in the metal as shown in Fig. 56J. The magnetic field arising from these eddy currents opposes the field through which it is moving. If the plate is held in the hand the sensation is that of movement through thick molasses.

Another interesting demonstration is illustrated in Fig. 56K. A coil of wire with an extra long iron core is set on end and a solid metal ring or band slipped over the top as shown. At the instant an alternating emf is applied to the coil, the metal ring is thrown upward several feet into the air. The explanation is not difficult since the arrangement is quite the same as a *step-down transformer*; the solenoid acts as a primary of many turns and the ring acts as a secondary of only one turn. As the current first starts to flow in one direction in the primary the expanding magnetic field induces an oppositely directed current in the ring. The field set up by the ring current therefore opposes the field of the primary, and the repulsion of like poles pushes the ring upward. When the primary current reverses, the secondary current also reverses, and again there is a repulsion. To demonstrate the existence of a large current, the ring, if held down over the core, will soon become hot.

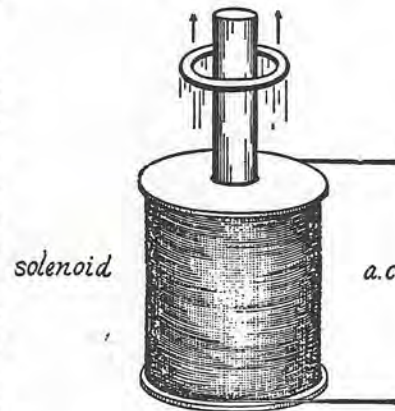


FIG. 56K—A metal ring is flipped up in the air by means of induced currents. A demonstration of Lenz's law.

56.10. Levitation. The phenomenon known as levitation is another illustration of Lenz's law. A metal bowl *B*, as in Fig. 56L(a), is supported in stable-equilibrium in the mid-air just above an electromagnet *M* of special design. Top and side views of the iron core and coil windings are shown in diagrams (b) and (c). Excited by an alternating current, the raised iron knobs labeled *N* and *S* reverse their polarity periodically with the current. As the electron current builds up in the direction indicated in diagram (b), the magnetic induction grows as in diagram (c). With the aluminum bowl in place as in diagram (d), the growing field induces strong eddy currents in the aluminum conductor. These currents in turn give rise to opposing fields. Since the primary field being created by an alternating current increases and decreases rapidly, the bowl always experiences an upward force.

Should the bowl move to one side, as for example to the left in diagram

VIEWERS WHO MIGHT COME WITHIN THREE FEET OF THE DISPLAY. DISAPPOINTED BUT NOT DISCOURAGED, I BEGAN WALKING DEJECTEDLY THROUGH THE BACK ALLEYS OF BACK BAY BOSTON, TRYING TO THINK WHAT TO DO NEXT.

A DAY OR TWO LATER STILL WALKING WITH MY HEAD BENT DOWN, I SUDDENLY NOTICED A BOOK LYING ON A PILE REFUSE STREWN ALONG THE CRACKED ASPHALT.

IT WAS AN OLD PHYSICS TEXTBOOK FROM THE LATE 1940'S OPEN TO PAGE 567 - THE SUBJECT ON VIEW WAS LEVITATION.

HURRYING TO A MACHINE SHOP I KNEW ABOUT ON THE OUTSKIRTS OF DORCHESTER MA., I QUICKLY BOUGHT A SCRAP OF STRUCTURAL STEEL AND RENTED TIME ON ONE OF THE METAL LATHES.

WHILE CUTTING THE MAGNETIC CORE AND LAYING IN THE WIRING, FOLLOWING THE DIAGRAMS AS BEST I COULD, I WAS CONSTANTLY BEING CHASTISED

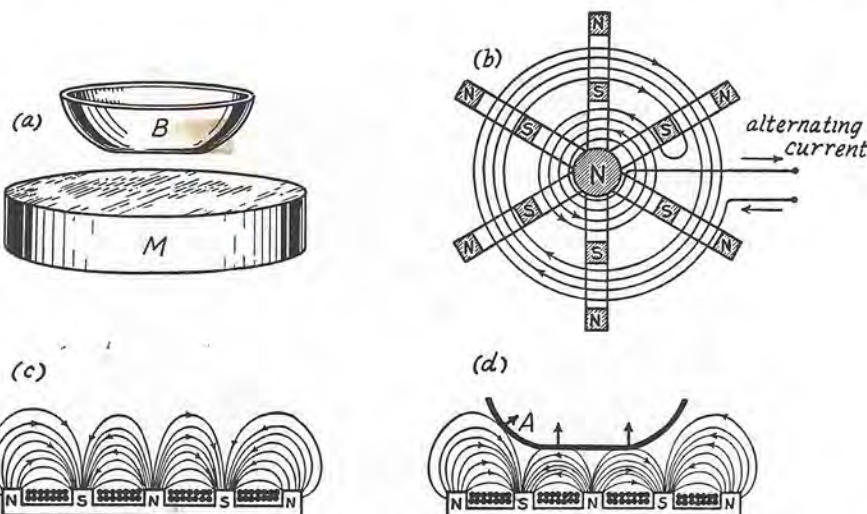


FIG. 56L—Diagrams illustrating the application of Lenz's law to produce levitation. A metal bowl floats in mid-air.

(d), the changing field at A will induce stronger electron currents on that side of the bowl and give rise to an increased repulsion, pushing the bowl back toward the center as indicated. The strong induced currents give rise to so much heat that the bowl soon becomes hot.

Because the coil windings of a levitator have a relatively large inductive reactance, a fairly large capacitance must be inserted in the a.c. circuit to raise the power factor close to unity and thereby keep the current in the levitator coils at a maximum and the current supplied by the source at a minimum.

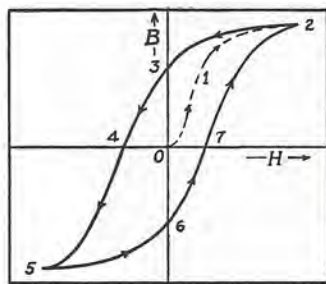


FIG. 56M—Hysteresis loop.

56.11. Hysteresis. In Sec. 53.8, it was shown how a rising electron current in a coil containing iron gives rise to a magnetization curve as shown in Fig. 53J. When an alternating current is applied to such an inductance, thereby reversing the magnetizing field H with each half cycle, the magnetization B lags behind as shown in Fig. 56M. As the elementary magnets within the iron try to line up with H , first one way then the other, the tendency to turn around gives rise to mechanical stresses in the iron and these in turn produce heating.

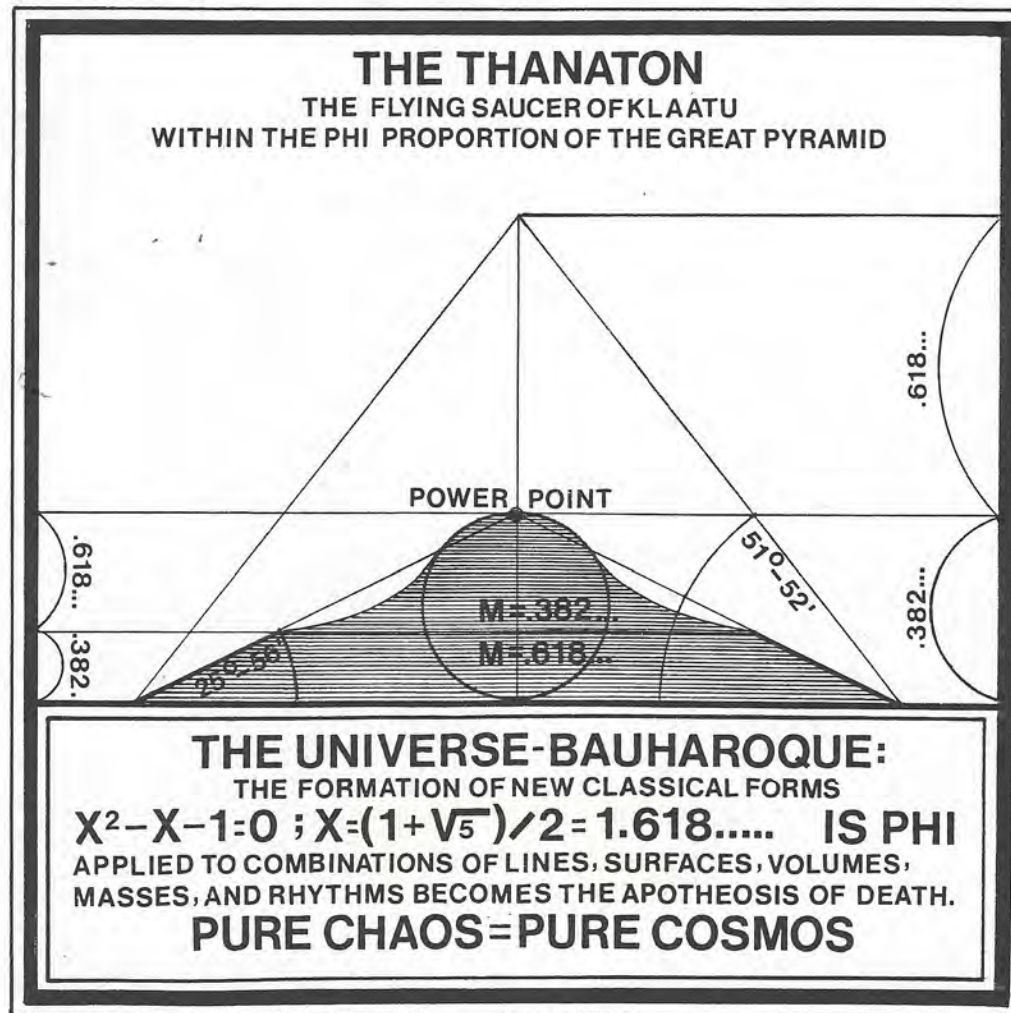
This wasted energy due to the cyclic magnetization is given by the area within the hysteresis loop in Fig. 56M and is called *hysteresis loss*.

FOR NOT KNOWING THE PROPER ELECTRICAL CHARACTERISTICS OF MY DEVICE, BEING ASSURED BY ALL THAT IT WOULD NOT WORK, I FINISHED. PLACING A 9 INCH ALUMINUM OMELET PAN ON THE COILS, AND POWERING UP I WATCHED THE PAN RISE TO A HEIGHT OF 2 INCHES OFF THE SURFACE AND REMAIN STABLE. WITH THE FLYING SHAPE PLACED ON TOP OF THE HOVERING PAN IT DESCENDED A HALF INCH, BUT IT BEGAN TO ROTATE SLOWLY - ALL FOR UNDER 100 DOLLARS.

THIS IS A CROSS-SECTION OF THE FLYING SAUCER I WAS ABLE TO LEVITATE ELECTRO-MAGNETICALLY. THE PROFILE OF THE SAUCER COMES FROM MY SEEING THE FLYING SAUCER OF KLAATU FROM THE 1951 MOVIE: "THE DAY THE EARTH STOOD STILL". SINCE THE ORIGINAL DESIGN WAS BY FRANK LLOYD WRIGHT, I SUSPECTED THAT THE DESIGN WAS CONTROLLED BY THE DIVINE PROPORTION OR PHI.

CONSTRUCTING THE CROSS-SECTION OF THE GREAT PYRAMID AND ITS PHI POINTS OVER THE PROFILE OF THE SAUCER, I WAS NOT DISAPPOINTED. BECAUSE THE SAUCER'S FORM WAS SO INTRINSICALLY RELATED TO PHI IN TERMS OF ANGLES, SURFACES AND MASSES - IT WAS OBVIOUS TO ME THAT THIS FORM WAS LITERALLY A NEW CLASSICAL FORM.

THE POWER OF THE FORM OF THE SAUCER WAS KNOWN TO ME YEARS BEFORE I BECAME AWARE OF SACRED GEOMETRY OR ORGANIC MATHEMATICS. THIS PROVES ONCE AGAIN WHAT GOETHE STATED AT THE BEGINNING OF THE 19TH CENTURY - IF THE DEVICES OF MAN ARE SHAPED BY NATURE'S PRINCIPLES, THE ENERGIES OF NATURE WILL SURELY ENTER THEM.

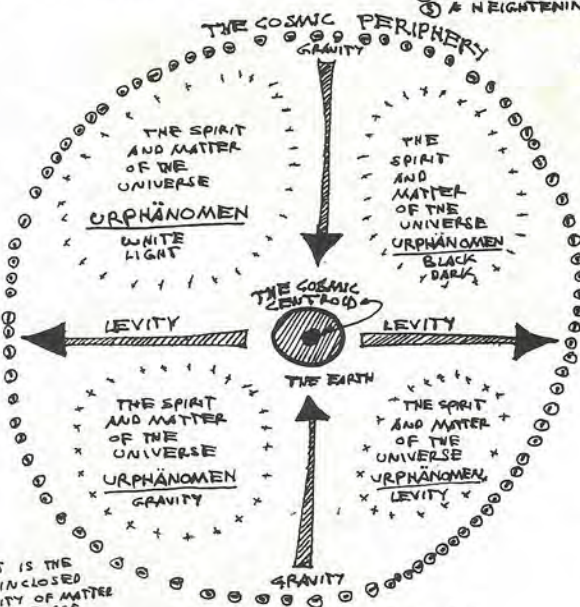


THE CENTRAL SPHERE OF THE FLYING SAUCER BECAME THE OBVIOUS LOCATION FOR MY LEVOGYRE. THIS LOCATION IN TURN GAVE ME THE IDEA AS TO HOW U.F.O.'S TRAVEL ACROSS THE VAST GALACTIC DISTANCES THAT THEY DO. THEY CAN CHANGE FROM EXAMPLES OF MECHANICAL HARDWARE TO A CONDITION OF PROTO-CONSCIOUSNESS AND BACK AGAIN. IN ITS HARDWARE FORM THE U.F.O. TRAVELS LOCALLY BELOW THE SPEED OF LIGHT. ABOVE THE SPEED OF LIGHT IN ITS PROTO-CONSCIOUSNESS STATE IT CAN TRAVERSE THE UNIVERSE IN MANGO-SECONDS. THOUGHTS HAVE WINGS. MY LEVOGYRE IS A TRANSITIONAL ENTITY WHICH WHEN OPERATING CREATES A CONTINUITY BETWEEN MASS AND CONSCIOUSNESS.

THE ALCHEMICAL WELTANSCHAUUNG OF GOETHE:

THE MONISTIC SEXUALITY OF THE UNIVERSE:

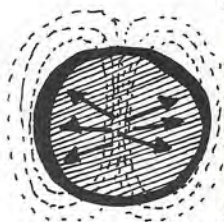
SYMBOLIC ACTION HAS THREE CHARACTERISTICS: ① A POLARITY OF OPPOSITE POSSIBILITIES:
② A METAMORPHOSIS THAT RECAPITULATES STRUCTURES:
③ A HEIGHTENING OF ENERGY:



THE COSMIC PERIPHERY:
PREVENTS THE UNIVERSE
FROM BECOMING A
SPACELESS POINT [THE
COSMIC CENTRIOD]



THE COSMIC CENTRIOD:
PREVENTS THE UNIVERSE
FROM DISSIPATING TO THE
COSMIC PERIPHERY



THE EARTH

GOETHE PICTURED THE
EARTH SURROUNDED
AND PENETRATED BY
A FIELD OF FORCE IN
EVERY RESPECT THE
OPPOSITE OF THE
EARTH'S GRAVITATIONAL
FIELD.

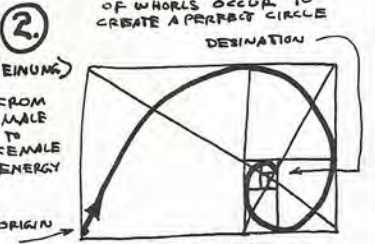
+ ELECTRICITY - ELECTRICITY

THE TWO PATTERNS OF GROWTH:



THE SPIRAL OF
ARCHIMEDES:
AN ARITHMETICAL
PROGRESSION OF
THE RADII FROM
THE COSMIC CENTRIOD
 $R = r\theta$, θ = THE WHOLE
ANGLE

THE FEMALE GROWTH
OF EXPANSION
AN INFINITE NUMBER
OF WHORLS OCCUR TO
CREATE A PERFECT CIRCLE



FROM THE COSMIC
PERIPHERY:
THE LOGARITHMIC OR
EQUIANGULAR SPIRAL:
A GEOMETRIC REVERSION
FROM THE COSMIC PERIPHERY
TO THE COSMIC CENTRIOD:
 $R = ar^{\theta}$ or a , θ = THE WHOLE
ANGLE

RELATED TO THE DIVINE
PROPORTION PHI:
 $x^2 - x - 1 = 0$
POSITIVE SOLUTION =
 $\frac{1 + \sqrt{5}}{2} = 1.61803378...$
UNITY: .618... + .382...

THE MALE GROWTH
OF CONTRACTION
AN INFINITE NUMBER OF REVOLUTIONS
TO RECAPITULATE A POINT

THE GROWTH OF VEGETATION:

- VERTICALLY:
THE SUBSISTING
PRINCIPLE OF THE
MALE ENERGY.
- SPIRALLY: IT CONCEALS
ITSELF DURING THE
DEVELOPMENT OF THE
PLANT BUT PRE DOMINATES
DURING THE BLOSSOMING
AND FRUITING AS THE
CHANGING ENERGY OF
THE FEMALE

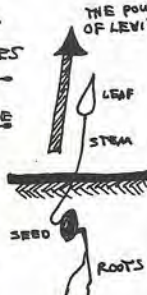


COLOURS ARE THE
ACTIONS AND SUFFERINGS
OF LIGHT AS A RESULT OF
ITS MEETING WITH DARKNESS:
YELLOW: EMERGING AT THE
POINT WHERE LIGHT HAS TO
YIELD SOME OF ITS
TERRITORY TO DARKNESS.
BLUE: WHERE LIGHT MAKES
ITS FIRST TENTATIVE
INROAD INTO BLACKNESS.
VIOLET TO BLOSSOM RED
ORANGE TO RED
YELLOW AND BLUE = GREEN

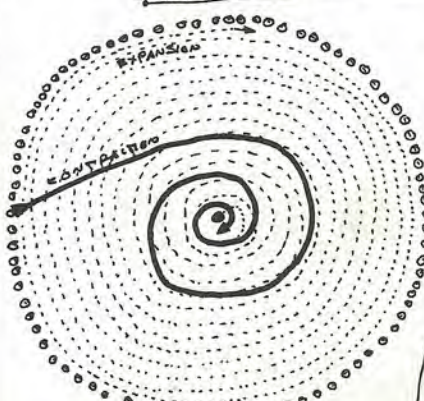
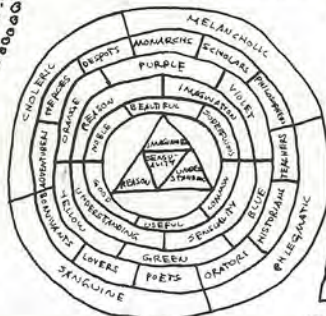
THE WHOLE UNIVERSE IS MOVED BY POLAR OPPOSITES: POLARITÄT:

DAY	NIGHT
SUMMER	WINTER
LEFT	RIGHT
UP	DOWN
ATTRACTION	REPULSION
CENTRIFUGAL	CENTRIPETAL
MALE	FEMALE
WILL	FATE
CONTRACTION	EXPANSION
LOVE	HATE
REASON	EMOTION
GOOD	EVIL
THE EQUANGULAR SPIRAL	THE SPIRAL OF ARCHIMEDES
BREATHING IN OF THE UNIVERSE	BREATHING OUT OF THE UNIVERSE

URPHÄNOMEN:
THE EDGE BETWEEN
THE PHYSICAL AND
METAPHYSICAL REALMS
[ALL CONTROLLED
BY THE ZEIT-GEIST]



THE POWER OF GRAVITY
ANDROGYNOUS 0 = NEUTRAL
1 = MALE
2 = FEMALE



CONTRACTION: STRAIGHT LINE - MALE TO
SPIRAL TO CIRCLE - FEMALE
EXPANSION: STRAIGHT LINE - MALE TO
SPIRAL TO CIRCLE - FEMALE

THE URPLANZ: THE ARCHETYPAL PLANT
AN IDEA THAT CAN BE PERCEIVED

GOETHE CLAIMED THAT THE PHYSICAL AND THE METAPHYSICAL ASPECTS OF THE UNIVERSE CAN BE CONTINUOUS. I CLAIM THIS ABOUT THE NATURE OF THE LEAVOGRATE.

FROM: NOTES TOWARD A TRANSLATION OF PARMENIDES

BY: CHARLES STEIN © COPYRIGHT 1988

FROM: BEING = SPACE X ACTION IO #41

EDITED BY: CHARLES STEIN, PUBLISHED BY: NORTH ATLANTIC BOOKS

However, since there is an uttermost limit,
"It Is" is fully established on every side
resembling in dignity and mass a well-rounded sphere
equally distributed, balanced, in every direction.
for it must not come out somewhat greater in one place
somewhat smaller or more humble in the

next

as neither does not-being exist

to prevent it from accosting its like
nor can Being be either more or less than Being is
in one place as over against another place
since all of it is inviolable, equidistant from
everywhere
and all of it alike within its bounds.

At this point I stop such thought and speech
as you ought to put your trust in
concerning truth. From here on, learn the beliefs of mortals
listening to the deceitful ordering of my words.

For they set up two forms in their minds for the business of
naming
whereas even one form is incorrect. In doing so they have
strayed into errancy.

They discriminate bodily antitheses and set up signs
apart from one another: on this side the bright tongue of
flame

being gentle and most light, in all ways the same with
itself
and in no way the same with another; and on the other side
in opposition
thick night. Solid. Massive. Bodily.

I speak to you here of what is merely a plausible cosmos
so that no thought of a mortal
may ever get the best of you.

THE ONE:

THE TOTALITY
OF BEING IS
ABSOLUTE,

PARMENIDES
[510-440 BC.]

STASIS:

THE SPHERE
OF BEING

THE MANY:

THE MULTIPLICITY
OF EXISTENCE
IS RELATIVE.

HERACLEITUS
[540-480 BC.]

MOTION:

THE FLUX
OF FIRE
AS BECOMING

PLATO [427-347 BC.] IN THE TIMAEUS ATTEMPTS TO MAKE CONTINUOUS
BEING WITH BECOMING BY REFERRING TO PYTHAGORAS [580-500 BC.] -
CONSIDERED BY PLATO TO BE THE LAST VESSEL OF ANCIENT SCIENCE.
PYTHAGORAS TRANSMITTED THE IDEA OF A KOSMOS [OR ORDER] AS:

- ① THE HARMONY OF THE CELESTIAL SPHERES,
- ② THE ETERNAL RECURRENCE OF ALL THINGS,
- ③ THE METEMPSYCHOSIS OF CONSCIOUSNESS,
- ④ THE QUALITIES OF NUMBERS AS SYMBOLS OF THE KOSMOS.

I HAVE TRIED TO INCORPORATE THESE FOUR PRINCIPLES INTO THE
DESIGN OF THE LEVOGYRE.

with the Greeks if we remember that today's scientists expect physical laws to have elegance and symmetry, even if they no longer expect the material world to manifest those qualities. We have simply replaced the concept of Plato by a similar, but deeper, concept.

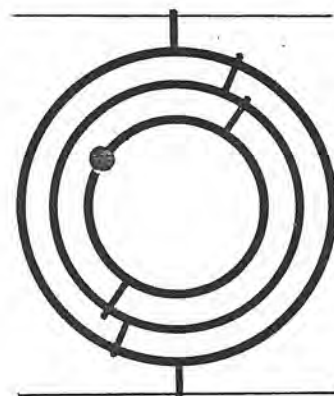
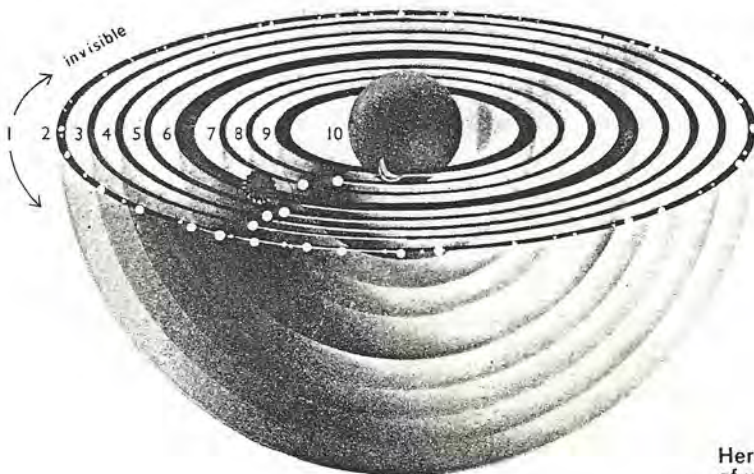
The first serious mathematical attempt to understand the complexities of the planetary motions was made by the great Greek mathematician, Eudoxus. It has often been said, somewhat vaguely, that "the Greeks" believed in a system of crystalline spheres: the Moon was believed to be attached to the nearest sphere, then there was a sphere for the Sun, a sphere for each of the planets (in the order Mercury, Venus, Mars, Jupiter and Saturn), and finally a sphere for all the stars. And all these spheres, it is said, were supposed to have their centers at the Earth. This story seems to be a compound between earlier ideas and the theory of Eudoxus, and it is certainly a complete travesty of the theory which Eudoxus actually propounded.

In the theory of Eudoxus only the stars moved on a single sphere. The Moon and the Sun each possessed a nest of three spheres, while the planets each had a nest of four. The outermost sphere of each nest moved in the same way as the sphere of the stars. The second outermost sphere was attached at its poles to the outermost one, and was free to turn around an axis lying between its poles. The third sphere was attached to the second one in a

similar way, and so on. Finally, the planet, or the Sun, or the Moon, as the case may be, was attached to the innermost sphere. The polar axes of the various spheres were not parallel to each other, but were chosen in a complicated manner. In this way, highly complex motions of the innermost sphere could be produced.

The situation had some analogy to a compass in gimbals. The mathematical problem was to choose the polar axes, their points of attachment, and the motions of the spheres in such a way as to reproduce the observed motions of the planets, the Sun and the Moon.

How far did Eudoxus succeed? He was, in fact, able to represent the changing directions of the planets, particularly their retrograde motions. Further, his theory automatically required that the directions of the planets did not usually lie in the plane of the Sun's motion around the Earth. In other words, he went some way toward explaining the effect of the tilt of a planet's orbit to the plane of the orbit of the Earth. Unlike the Mesopotamian astronomers before him, and unlike Hipparchus and Ptolemy who came after him, Eudoxus does not seem to have concerned himself with trying to explain the particular motions of heavenly bodies at particular times. Instead, he confined himself to an attempt at explaining the general features of their motions in geometrical terms. And as more details of planetary motions came to light, it be-



Here is a simplified modern diagram of what is sometimes referred to as "the Greek" idea of a system of spheres. In numerical order, spheres shown are propelling sphere (invisible), then spheres of the stars, Saturn, Jupiter, Mars, Sun, Venus, Mercury, the Moon and the Earth.

The theory of Eudoxus was at once more complex and more subtle than this might lead one to imagine. Eudoxus thought of the polar axes of his ideal spheres as not being parallel with each other, yet as being connected with each other in the manner of a compass in gimbals, as indicated above.

I CLAIM THE "COMPLICATED MANNER" CONSISTS OF TWO INTERLOCKING THREE-DIMENSIONAL EQUIANGULAR SPIRALS.

came necessary to add more spheres to those which Eudoxus had originally proposed. Thus the nests of spheres were gradually extended, notably by Eudoxus's pupil, Kalippus.

It seems quite clear that Eudoxus never intended his spheres to be thought of as having any actual physical existence. To him they were no more than mathematical devices for representing planetary motions. His theory was produced at about the time that marked the old age of Plato and the early years of Aristotle's maturity, and we find it fully accepted in the writings of Aristotle. But Aristotle made the serious mistake of attaching physical reality to the spheres of Eudoxus, and this mistake compelled him to try to combine the separate nests of spheres for the various planets into one huge mechanical structure. Thus it came about that Aristotle ended his description of the theory with a fantastic total of fifty-five spheres.

After the time of Aristotle, the theory of Eudoxus was discarded. It represented fairly well the changing directions of the planets, but it did not begin to explain why the planets change in brightness, why, for example, Mars is sometimes comparatively bright and sometimes comparatively faint. According to the theory of Eudoxus, Mars is always at the same distance from the Earth and should not therefore change in brightness. Yet plainly Mars must be nearer to the Earth when it appears brightest than when it appears faintest. It was in an endeavor to explain this point that Greek cosmographers arrived at epicyclic pictures of the motions of planets, like those already shown in Figures 3.7 and 3.10.

Working from our present knowledge of the heliocentric theory, we saw above that in Figure 3.10 the radius (OC) of the small circle must equal the radius of the Earth's orbit, and that the radius (CE) of the large circle must equal the radius of the orbit of our outer planet. But this information is not necessary either for understanding the changing directions of, say, Mars, or for understanding the changes in the relative distance of Mars. For those purposes, all we need know is the ratio of OC to CE . Then, provided we take the time required to go once round the large circle as being equal to the time that Mars in fact takes to travel once round the Sun, and provided we take the time required to go once round the small circle as being equal to the time that the Earth in fact takes to travel once round the Sun, the epicyclic picture will adequately represent the observed motion of Mars. In other

words, the accuracy of the representation offered by Figure 3.10 is not dependent on the establishment of the true scale of the two circles, but only on the establishment of the ratios of their radii.

Exactly similar considerations apply to Figure 3.7. There the radius of the circle with center at E may be chosen to have any value; it is necessary only that the ratio of the radius of the large circle to the radius of the small circle should be correct.

Thus in drawing Figure 3.7 there was no immediate requirement that the Sun should be the center of the small circle. The essential thing was that the Earth, the Sun and the center of the small circle should be in line, as they are in Figure 3.15. Hence it was not immediately obvious to the men who first used epicycle pictures of planetary motions that the Sun must lie at the center of the epicycle.

Nevertheless, it was clearly suspicious that the points E , S , and C should always have to lie on a straight line. This demanded two coincidences: first that C should move around the Earth in exactly the same period as S , and second that E , S , and C should be lined up initially in the same direction. It is probable that this coincidence suggested to Heraclides that the radius of the solar circle should be taken as equal to the radius of the circle on which the center of the epicycle of Venus moved—that is, that the point S should be taken at the point C , as it is shown in Figure 3.7.

(The difference between Figure 3.15 and Figure 3.7 is, of course, that in Figure 3.15 we are working only from the observations, whereas in Figure 3.7 we were working from an initial knowledge of the heliocentric theory.)

The epicycle picture for Mercury could be amended on the lines Heraclides suggested in just the same way as could the epicycle picture for Venus. But the situation was more awkward for the outer planets. This is clear if we refer back to Figure 3.10. There, unless we set the radius of the solar circle (the distance SE) equal to the radius of the epicycle (OC) then all we can say is that the line SE must be parallel to OC . A crucial feature is lost, namely that the distance from the Sun to the planet (the distance SO) must always be equal to the distance EC , and therefore that the planet maintains a constant distance from the Sun. Hence the discovery of the heliocentric point of view, working simply from the observations, was not so easy in the case of the outer planets as it was in the case of Venus and Mercury.

WHILE SOMEONE MIGHT SAY THAT FRED HOYLE'S DIAGRAMS OF EUDOXUS [MATHEMATICIAN AND ASTRONOMER AT PLATO'S ACADEMY] WERE THE PRIME MOTIF FOR THE BASIC FORM OF THE LEVONHAF, THIS IS NOT QUITE TRUE. IT WAS NOT UNTIL I READ FRED HOYLE'S NEGATIVE EDITORIALIZING ABOUT THE "INTENTIONS" OF EUDOXUS AND THE "SERIOUS MISTAKE" OF ARISTOTLE THAT I FELT CALLED UPON TO INSTANTANEOUSLY IN SOME MANNER EUDOXUS' PROPOSAL.

CONTEMPORARY SCIENCE LIKE MANY ASPECTS OF CONTEMPORARY CULTURE TENDS TO THINK OF ITSELF AS HAVING CUT ITSELF OFF OR "OVERCOME" THE PAST. INVENTION, THEREFORE, IS SEEN AS THE SYMBOL OF THE TOTALLY NEW, THE UNIQUE AND ORIENTED TOWARD THE FUTURE. TO THE WORLD OF PLATO AND EUDOXUS INVENTION OR THE WORLD OF TECHNE WAS A WORLD OF PRE-EXISTING FORMS, FROM WHICH THE ANCIENT PAST HAD ALREADY INSTANTIATED THESE FORMS IN MANY WAYS.

IT SEEMS TO FEEL THAT EUDOXUS MAY HAVE BEEN REFERRING TO THE LEVONHAF BY MEANS OF SOME VAGUE CULTURAL MEMORY AND HE TRIED TO APPLY THE FORM TO HIS MODEL OF THE UNIVERSE.

FROM: THE REFLEXIVE UNIVERSE

BY: ARTHUR M. YOUNG

PUBLISHED BY: MERLOYD LAWRENCE

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21 | Light as first cause

has the dimension ML^2/T , we are taking the position that this particular combination of dimensions (known as action) is the *whole* from which time, mass, and length are derived. The reasons are as follows:

1. Action comes in irreducible *quanta* or units.
2. These units are of constant, i.e., *invariant*, size.
3. They are counted, not measured.
4. Because indeterminate, they constitute the end point in the chain of causation and are therefore *first cause*.

Additional information

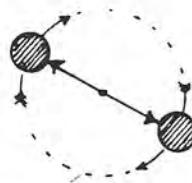
Our history of concepts of light in this chapter culminated in Planck's discovery that light is radiated in quanta, or whole units of action, h , whose measure formula is ML^2/T (or $2\pi ML^2/T$).

In the interest of completeness, we should here note that the quantum of action has yet another alias—*angular momentum*. For angular momentum and action have the same measure formula: ML^2/T . This need not make things more difficult, for angular momentum is a clearly defined concept and more easily understood than is the concept of action or uncertainty, and hence can aid in our understanding of action.

But what is angular momentum? It is the momentum of a spinning weight. Linear momentum, which does not involve spin, is the momentum of a hammer or of a car hitting a telegraph pole and is a product of mass times velocity, i.e., MV or ML/T since V , or velocity, is length divided by time. But angular momentum is linear momentum times the radius around which it spins, $ML/T \times L = ML^2/T$.



Linear momentum: MV



Angular momentum: $MV \times L$ or ML^2/T

I WAS FORTUNATE ENOUGH TO MEET ARTHUR M. YOUNG WHO WAS LECTURING AT AN ALTERNATIVE TECHNOLOGY CONFERENCE BEING HELD AT GROTON ACADEMY. HIS BOOKS "THE REFLEXIVE UNIVERSE" AND "THE GEOMETRY OF MEANING" HAD JUST BEEN PUBLISHED.

Thus a weight spinning around an axis or two weights spinning around a center possess angular momentum. If we imagine that the wire holding the weights breaks, then we can explain the uncertainty (of the quantum of action) as our uncertainty about the direction in which the released weight would fly.

Thus angular momentum "packages" momentum so that it no longer requires, as does linear momentum, a velocity of translation to exist. For example, a spinning flywheel has angular momentum and hence can store energy, even though the flywheel remains in one place. Yet the flywheel can be transported and thus convey its stored energy.

This helps answer the long-standing question of action at a distance. For according to this theory, light contains energy in its angular momentum, and can thus transport this energy from one point to another. Newton's corpuscular theory could not explain the transmission of different amounts of energy, because the corpuscles, which must move at the speed of light, all have the same speed, and could thus not account for the great difference in light energy. (See electromagnetic spectrum, p. 12.) Alternatively, the wave theory could explain the transmission of energy only by postulating an infinitely rigid ether.

Moreover, Planck's constant—the quantum of action—can contain any amount of energy. This may be understood by the example of a skater or ballet dancer who, giving his body a whirl with arms extended, makes himself spin faster by drawing his arms in close to his body. In the case of the photon, there is no smallest size, and—as the radius is decreased—the spin gets faster and faster (the frequency of the photon increases). This faster spin has more energy, and there is no upper limit.

But where does this energy (for the skater) come from? It is produced by the skater in pulling in his arms against centrifugal force—and would be greater if the skater held weights in his hands. Of course, with the skater there is a limit to the rate of spin or the energy he can store in this way because he can pull his arms in only so far—but the photon, having no bulk, can shrink any amount. It follows that a single photon can store unlimited energy by getting smaller!

This is one of the most surprising findings of quantum physics—that the smaller the photon, the more energy it contains. It is a reminder of the great difference between the world of light and the world of matter.

<i>World of light</i>	<i>World of matter</i>
No time, space, charge, or mass.	Time, space, charge, and mass.
Energy increases as size (wavelength) is reduced.	Energy (mass) decreases as size is reduced.
Constant velocity; no rest.	Any velocity less than the speed of light.

AFTER HIS TALK I WENT UP WITH A GROUP OF PEOPLE WHO WERE TRYING TO CATCH HIS ATTENTION. WHEN IT WAS MY TURN TO SPEAK, AND USING A JUST PURCHASED COPY OF "THE REFLEXIVE UNIVERSE AS A SUPPORT FOR MY PAPERS, I SHOWED HIM MY DESIGN FOR THE LEVOGYRE. HE MUSED FOR A MOMENT, THEN HIS FACE BROKE OUT INTO AN EAR TO EAR GRIN AS HE SAID: "LOOK ON PAGE 22 OF THE BOOK YOU ARE HOLDING, AND HE ADDED, "YOU HAVE MODELED A PHOTON!"

FROM: POSSIBILITY OF EXPERIMENTAL STUDY OF THE PROPERTIES
OF TIME: BY N.A. KOZYREV SEPTEMBER 1967
J.P.RS. 45238, 2 MAY 1968

of the weights remained unchanged. We can consider that the experiments described substantiate fairly well the theoretical conclusion concerning the conservation of a pulse in causal mechanics.

In spite of their theoretical interest, the previous experiments did not yield any new effects capable of confirming the role of causality in mechanics. However, in their fulfillment it was noted that in the transmission of the vibrations from the gyroscope to the support of the weights variations in the readings of the weights can appear, depending on the velocity and direction of rotation of the gyroscopes. When the vibrations of the weights themselves begin, the box with the gyroscope discontinues being strictly a closed system. However, the weights can go out of equilibrium if the additional effect of the gyroscope developing from rotation proves to be transferred from the shaft of the gyroscopes to the weights' support. From these observations, a series of tests with these gyroscopes developed.

In the first type the vibrations were due to the energy of the rotor and its pounding in the bearings, depending on the clearance in them. It is understandable that the vibrations interfere with accurate suspension. Therefore, it was necessary to abandon the precision weights of the analytical type and convert to engineering weights, in which the ribs of the prisms contact small areas having the form of caps. Nevertheless, in this connection we managed to maintain an accuracy of the order of 1 mg in the differential measurements. The support areas in the form of caps are also convenient by virtue of the fact that with them we can conduct the suspension of gyroscopes rotating by inertia. A gyroscope suspended on a rigid support can transmit through a yoke its vibrations to the support of the weights. With a certain type of vibration, which was chosen completely by feel, there occurred a considerable decrease in the effect of the gyroscope upon the weights during its rotation in a counterclockwise direction, if we examined it from above. During rotation in a clockwise direction, under the same conditions, the readings of the weights remained practically unchanged. Measurements conducted with gyroscopes of varying weight and rotor radius, at various angular velocities, indicated that a reduction in the weight, in conformity with Eq. (6), is actually proportional to the weight and to the linear rate of rotation. For example, at a rotation of the gyroscope ($D = 4.6$ cm, $Q = 90$ gr, $u = 25$ m/sec), we obtained the weight difference $\Delta Q = -8$ mg. With rotation in a clockwise direction, it always turned out that $\Delta Q = 0$. However, with a horizontal arrangement of the axis, in azimuth, we found the average value $\Delta Q = -4$ mg. From this, we can conclude that any vibrating body under the conditions of these experiments should indicate a reduction in weight. Further studies demonstrated that this effect is caused by the rotation of the earth, which will be discussed in detail later. Presently, the only fact of importance to us is that during the vibration there is developed a new zero reading relative to which with a rotation in a counterclockwise direction, we obtain a weight reduction, while during a rotation in a clockwise direction we obtain a completely uniform increase in weight ($\Delta Q = +4$ mg). In this manner, Eq. (6) is given a

WHEN I FIRST READ OSTRANDER AND SCHROEDER'S BOOK "PSYCHIC DISCOVERIES BEHIND THE IRON CURTAIN", IN ITS PAPERBACK FORM IN 1971, I HAD BEEN STUDYING ASPECTS OF PSYCHICAL RESEARCH SORT OF ON MY OWN SINCE 1957 [BUT INFLUENCED BY MY FATHER AND HIS FRIEND DR. GARDINER MURPHY, ONE OF THE PRESIDENTS OF THE AMERICAN SOCIETY FOR PSYCHICAL RESEARCH]. I WAS PREPARED FOR THE CONCEPT OF PSYCHOTRONICS [CONSCIOUSNESS-MASS INTERACTIVE DEVICES]. WHAT I WAS NOT PREPARED FOR WAS CHAPTER 13 [THE NUMBER OF CHANGE] OF THE BOOK, ENTITLED: "TIME-A NEW FRONTIER OF THE MIND". IT WAS ABOUT A SPECIAL STUDY DONE BY ONE OF THE SOVIET UNION'S MOST RENOWNED ASTROPHYSICISTS - DR. NIKOLAI KOZYREV. HE POSTULATED THAT TIME ITSELF IS A FORM OF ENERGY WHICH HAS BOTH A PATTERN AND A RATE OF FLOW.

KOZYREU STATED: "AS THE RATE OF THE TIME FLOW THROUGH A SUBSTANCE CHANGES, WEIGHT IS LOST. IT MEANS THAT "LEVITATION" IS A PERFECTLY PRACTICAL POSSIBILITY. SCIENCE IS TRYING STEP BY STEP TO FIND OUT METHODS OF LEVITATION. THIS KIND OF LEVITATION WOULD WORK NOT ONLY FOR PEOPLE, OF COURSE, BUT ALSO FOR OBJECTS AND MACHINES". HE BEGAN BY WORKING WITH GYROSCOPES AND SO DID I.

complete, experimental confirmation. It follows from the adduced data that $C_2 = 550$ km/sec. According to this condition, the vector j is oriented in that direction in which the rotation appears to be originating in a clockwise direction. This means that during the rotation of the gyroscope in a clockwise direction it is directed downward. With such a rotation, the gyroscope becomes lighter, meaning that its additional effect upon the support of the weights is directed downward: i.e., in respect to the base vector j . This will obtain in the case in which u and C_2 have the same signs. Under our condition relative to the direction of the base vector j the pseudo-scalar u is positive in a left-hand system of coordinates. Consequently, a time pattern of our world is also positive in a left-hand system. Therefore, subsequently we will always utilize a left-hand system of coordinates. The aggregation of the tests conducted then permitted us to refine the value of C_2 :

$$C_2 = + 700 \pm 50 \text{ km/sec in a left-hand system.} \quad (8)$$

This value always makes probable the relationship of the time pattern with other universal constants based on Eq. (7) at $\alpha = 2$. Then, the dimensionless constant of the thin Sommerfeld structure becomes simply a ratio of the two velocities C_2/C_1 , each of which occurs in nature.

The tests conducted on weights with vibrations of a gyroscope also yield a new basic result. It appears that the additional force of effect and counter effect can be situated in different points of the system: i.e., on the support of the weights and on the gyroscope. We derive a pair of forces rotating the balance arm of the weights. Hence, time possesses not only energy but also a rotation moment which it can transmit to a system.

A basic checking of the results obtained with the weights yields a pendulum in which the body constitutes a vibrating gyroscope with a horizontal axis suspended on a long fine thread. As in the tests conducted with the weights, during the rotation of a gyroscope under quiescent conditions nothing took place and this filament (thread) did not deflect from the perpendicular. However, at a certain stage of the vibrations in the gyroscope the filament deflected from the perpendicular, always at the same amount (with a given u -value) and in the direction from which the gyroscope's rotation occurred in a counterclockwise direction. With a filament length $l = 2$ m and $u = 25$ m/sec, the deflection amounted to 0.07 mm, which yields, for the ratio of the horizontal force to the weight, the value $3.5 \cdot 10^{-5}$, sufficiently close to the results of this suspension.

A significant disadvantage of the tests described is the impossibility of a simple control of the vibration conditions. Therefore, it is desirable to proceed to tests in which the vibrations are developed not by the rotor but by the stationary parts of the system.

In the weights, the support of the balance arm was gripped by a special clamp, which was connected by a flexible cable with a long metal plate.

IN THAT CHAPTER WAS A REFERENCE TO HIS PAPER THAT HAD BEEN MADE AVAILABLE IN TRANSLATION BY THE U.S. DEPT. OF COMMERCE JOINT PUBLICATION SERVICE. I WAS LUCKY ENOUGH TO OBTAIN A COPY BEFORE THEY STOPPED PRINTING THEM. KOZYREU'S WORK NOT ONLY HELPED ME DEVELOP THE LEVOGYRE BUT WAS INSTRUMENTAL TO ME IN PRODUCING WHAT I CONSIDER AS A VIABLE CONCEPT FOR A TIME-MACHINE. I PRESENTED MY PROPOSAL AT THE 15TH ANNUAL UNITED STATES PSYCHOTRONICS ASSOCIATION CONFERENCE IN JULY OF 1989.

Paul Lattoley

"Elements of the Time Machine: Homage to H. G. Wells"

It is now just six years to the centennial celebration of the 1895 publication of the famous novel by H. G. Wells—*The Time Machine*. By that time I hope—and I am sure many others do, also—to have a practical working model of a time machine ready for common use. Of all the concepts launched from the genre of science fiction, the time machine has always seemed to be the most impossible. And yet, right from the start, an intussum collegium of researchers formed.

The first was the playwright Alfred Jarry who, upon reading the 1899 French translation of *The Time Machine*, wrote the prosaically titled essay, "How to Construct a Time Machine." There have been numerous attempts of this nature since then. I began my own attempt in 1975 right after I conceived of a device—the Levoogyre—that I felt could be used as the heart of a time machine. It is now my opinion that the time machine is a "mind-physics," or psychotronic device capable of producing a controlled dislocation of human consciousness in space-time. Its essence is the control and amplification of preperception of the future and retroperception of the past to such a degree that obvious space-time dilations will occur.

OBVIOUSLY THESE TWO SCIENTISTS MUST HAVE BEEN READING KOZYREV, BUT THEY JUST FORGOT TO CREDIT HIM.

I AM SURPRISED, NEVERTHELESS, BY ROBERT L. FORWARD'S NEGATIVE ATTITUDE. HE HAS SEEMED TO ME ALWAYS TO POSSESS ONE OF THE MORE INTERESTING MINDS EVER TO SKATE BETWEEN SCIENCE AND FICTION.

Two Men and a Gyroscope May Rewrite Newton's Law

By WILLIAM J. BROAD

Japanese scientists have reported that small gyroscopes lose weight when spun under certain conditions, apparently in defiance of gravity. If proved correct, the finding would mark a stunning scientific advance, but experts said they doubted that it would survive intense scrutiny.

A systematic way to negate gravitation, the attraction between all masses and particles of matter in the universe, has eluded scientists since the principles of the force were first elucidated by Isaac Newton in the 17th century.

The anti-gravity work is reported in the Dec. 18 issue of *Physical Review Letters*, which is regarded by experts as one of the world's leading journals of physics and allied fields. Its articles are rigorously reviewed by other scientists

before being accepted for publication, and it rejects far more than it accepts.

other scientists can try to duplicate and assess it.

"It's an astounding claim," said Dr. Robert L. Park, a professor of physics at the University of Maryland who is director of the Washington office of the American Physical Society, which publishes *Physical Review Letters*. "It would be revolutionary if true. But it's almost certainly wrong. Almost all extraordinary claims are wrong."

Dr. Robert L. Forward, a consultant who helps the Air Force investigate advanced forms of propulsion, including claims of anti-gravity devices, said: "It's a careful experiment. But I doubt it's real, primarily because I've seen so many of these things fall apart."

If substantiated by further tests, the finding could have a profound influence on physics and the study of the universe and perhaps in the making of practical anti-gravity devices.

The experiment looked at weight changes in spinning mechanical gyroscopes whose rotors weighed 140 and 176 grams, or 5 and 6.3 ounces. When the gyroscopes were spun clockwise, as viewed from above, the researchers found no change in their weight. But when spun counterclockwise, they appeared to lose weight.

Small Loss, 'Big Effect'

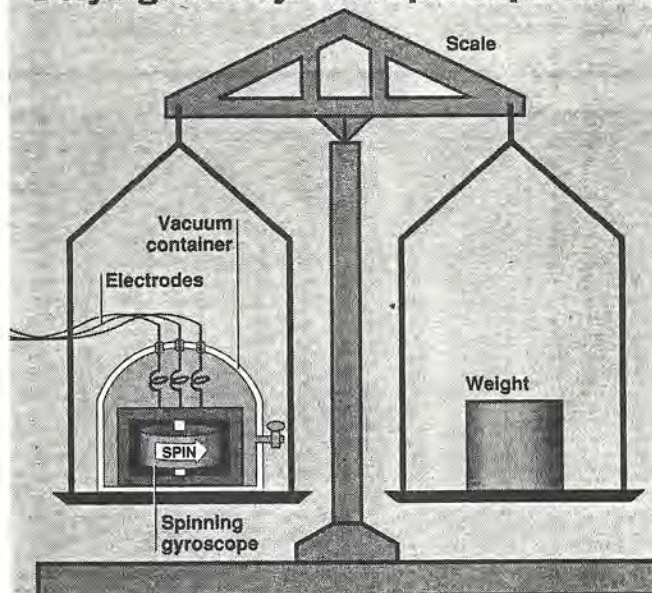
The rate of decrease was small, ranging up to 11-thousandths of a gram when the gyroscopes turned at 13,000 revolutions per minute. But two effects were significant. First, the weight loss increased as speed did. Second, the pattern was stronger with the larger gyroscope, indicating that the results might be applied to still larger objects.

The Japanese scientists said the weight measurements were carried out 10 times at speeds between 3,000 and 13,000 revolutions per minute.

Dr. Forward, noting that the observed reduction amounted to a weight loss of 20 to 60 parts per million, called it "a big effect."

In their paper, the Japanese scientists outlined an extensive search for possible sources of experimental error, including stray magnetic fields, vibrations and defects in the gyroscopes and measuring devices. For instance, they took the apparatus to a special room

Defying Gravity: A Simple Experiment



Weight is a measure of the earth's gravitational pull, and Japanese researchers have conducted a simple experiment that suggests a way that might counteract that pull. The experiment used a spinning gyroscope on a scale. The researchers say that counterclockwise rotations appear to cause weight decreases proportional to the frequency of rotation at speeds from 3,000 to 13,000 revolutions a minute. They say clockwise rotations appear to cause no weight change.

Source: *Physical Review Letters*

The New York Times/Dec. 28, 1989

tists before being accepted for publication, and it rejects far more than it accepts.

Experts who have seen the report said it seemed to be based on sound research and appeared to have no obvious sources of experimental error, but they cautioned that other seemingly reliable reports have collapsed under close examination.

The work was performed by Hideo Hayasaka and Sakae Takeuchi of the engineering faculty at Tohoku University in Sendai, Japan.

Outside the Usual Theories

Unlike the exaggerated claims made for low-temperature, or "cold," nuclear fusion this year, the current results are presented with scientific understatement. The authors do not claim to have defied gravity, but simply say their results "cannot be explained by the usual theories."

More important, the experiment is outlined in rich detail, insuring that

that was free of magnetic fields, and they tried to damp out all possible vibrations.

They placed the gyroscopes right side up and upside down, to rule out simple gravitational effects. They also conducted the tests in a vacuum, to rule out the influence of air currents, and used two different systems for measuring the weight loss.

They reported no experimental errors. They also offered no explanation for the effect and no speculation on the possibility of creating anti-gravity engines for planes and spacecrafts. In their one concession to vivid language, they called the phenomenon "extraordinary."

Dr. Park of the University of Maryland said the finding, if proved true, would "almost certainly" be explained

by general relativity. Albert Einstein's geometric theory of gravitation.

Dr. Forward, who aids the Air Force in its propulsion work, said the sheer volume of bogus anti-gravity claims threw doubt on the validity of the new finding. About a dozen extraordinary claims are made for rotating devices each year, he said, and in nearly all of them the effect turns out to be caused by stray vibrations.

Both Dr. Park and Dr. Forward said the next step is for independent researchers to see if the results of the Japanese scientists can be duplicated.

"Fortunately," Dr. Forward said, "their apparatus is accurately and well described. It should be easy to replicate. Most of the equipment is available in any lab. We'll have the answer shortly."

NEW YORK TIMES : DECEMBER 28, 1989

Anomalous Weight Reduction on a Gyroscope's Right Rotations around the Vertical Axis on the Earth

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(Received 7 March 1988; revised manuscript received 9 August 1989)

The weight change of each of three spinning mechanical gyroscopes whose rotor's masses are 140, 175, and 176 g has been measured during inertial rotations, without systematic errors. The experiments show that the weight changes for rotations around the vertical axis are completely asymmetrical: The right rotations (spin vector pointing downward) cause weight decreases of the order of milligrams (weight), proportional to the frequency of rotation at 3000–13 000 rpm. However, the left rotations do not cause any change in weight.

PACS numbers: 04.80.+z

To confirm the reflection symmetry relating to the rotational motion of objects in the gravitational field of the Earth, the weight of each of three spinning mechanical gyroscopes has been measured during left (spin vector pointing upward) and right (spin vector pointing downward) inertial rotations around the vertical axis by means of a chemical balance. The experimental apparatus and method are as follows.

Each gyroscope is composed of the stator, rotor, and rigid frame. Rotors of 139.863, 174.882, and 175.504 g are used, and their diameters are 5.2, 5.8, and 5.8 cm, respectively. The materials of the rotors are brass, aluminum, and silicon-steel. The dynamic balance, which is the criterion of the maximum deviation of the center of a rotor's mass associated with rotations, and the fluctuation of the rotational frequency of each gyroscope are 0.3 mm/s and $\pm 0.2\%$, respectively, for both rotations. This means that the dynamic characteristic, i.e., the synthetic criterion of the stabilities of spinning and precession of each gyroscope, is the same for the two rotations. An oscillator capable of switching polarities and a voltage amplifier are used to change the frequency of rotation of the rotor and to supply the driving power to the gyroscope. The directions of the left and right rotations are determined by the polarity. A phototachometer is used to measure the frequency of rotation of the rotor. The chemical balance is made of nonmagnetic materials, and the measurable range is 0 to 500 g with an accuracy ± 0.3 mg. To exclude fluid effects of air on the rotating gyroscope, a vacuum container made of glass is used. An overview of the experimental apparatus is shown in Fig. 1.

The first experiment was carried out in the environment magnetic field of 0.35 G that is nearly totally due to the geomagnetism. The degree of vacuum in the container containing the gyroscope is kept between 1.3×10^{-2} and 1.3×10^{-1} Pa. The electric power is supplied to the gyroscope through superfine wires. The rotational frequency of the rotor is brought to the desired value by increasing the supply voltage and the frequency of the oscillator under the same driving condition for all the

measurements. After the desired value of the rotational frequency is attained, the electrical circuit is opened. Then the weight of the rotating gyroscope is measured under inertial rotation. The weight measurements are repeatedly carried out, 10 times, for a given frequency of rotation.

As shown in Fig. 2, the right rotations of each gyroscope always cause weight decreases of the order of milligrams, proportional to the frequency of rotation. The weight reduction occurs for both normal and reverse attitudes. Here, reverse attitude of a gyroscope means merely its upside-down attitude without change of the states of the other equipment and the environment considered. Right rotation means the spin vector pointing downward for both the normal and the upside-down attitudes. On the other hand, the left rotations of each gyroscope yield zero weight change for all frequencies of rotation and both attitudes, within the accuracy of the chemical balance. The weight changes for both rotations

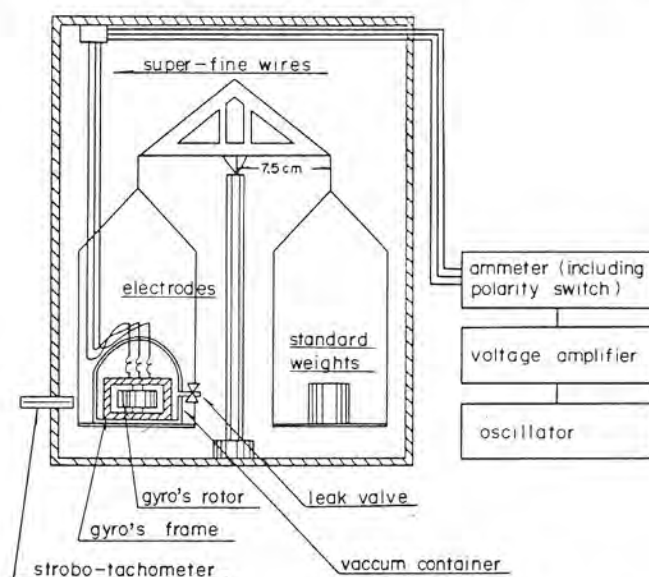


FIG. 1. Overview of the experimental apparatus including the chemical balance.

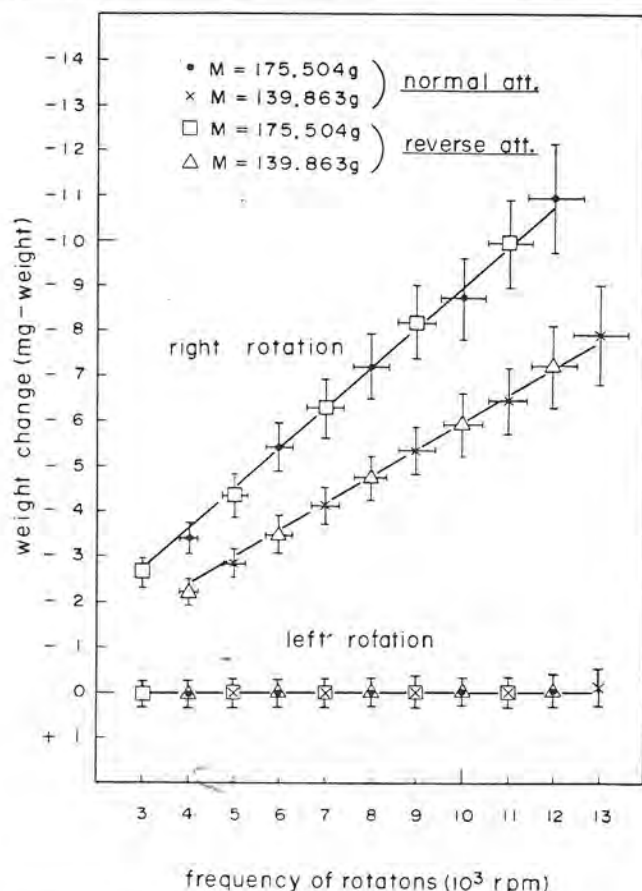


FIG. 2. Weight changes of gyroscopes for both left and right rotations around the vertical axis in the natural-environment magnetic field.

are independent of the placement of the balance's lever arm along the N-S or the E-W direction. Furthermore, the weight changes for both rotations are independent of the various ways of performing the experiment: The weight measurements are carried out after opening the electrical circuit while the rotation is speeding up, kept at constant speed, or slowing down, under the conditions of putting a polyurethane foam pad under the gyro to partially absorb the mechanical vibrations and of exchanging the positions of the gyro and the reference weights on the balance's pans. The experimental results do not change under these variations.

In Fig. 2, the data on the $M = 174.882$ -g rotor are omitted because the weight changes are nearly the same as those for $M = 175.504$ g. The vertical error bars denote the fluctuation of weight changes, and the horizontal error bars denote the decreasing range of the frequency of rotation in one period of the movement of the direction needle of the chemical balance.

The experimental results show that the weight changes for rotations around the vertical axis are completely asymmetrical. Meanwhile, based on the conventional theory, the weight changes of a gyroscope under rotation

should be symmetrical. Therefore, we have studied whether such an extraordinary phenomenon is due to systematic errors in our experimental equipment and method. Most dynamical problems can be solved in the framework of Newtonian mechanics, which is symmetrical under a mirror reflection, as concretely discussed later.

There might be a question of weak magnetic coupling between the environment magnetic field of 0.35 G and the weak residual magnetism of the gyroscope after the opening of the electrical circuit. However, the anomalous weight reductions for the right rotations are not due to magnetic coupling. First of all, this is supported by the experiments with an upside-down attitude for each gyroscope as follows: Let us suppose that magnetic couplings during the gyroscope's right rotations cause the weight reductions in the normal attitude. This assumption means that the coupling serves the upward force during the right rotation. Next, let only the attitude of the gyroscope reverse without changing the states of the other equipment and the environment magnetic field. If the above assumption is correct, the weight of the gyroscope will increase for the left rotation in the reverse attitude, because the force by magnetic coupling will operate down the gyroscope. However, the experimental results for the reverse attitude shown in Fig. 2 refute the correctness of the assumption.

Since the problem of magnetic coupling is important, this problem has been checked further by means of the following two methods. (i) It has been checked whether there is a difference between the residual magnetism of the left rotation and that of the right one in each gyroscope. The residual magnetisms for both rotations are measured in a magnetically shielded cylinder where the strength of the magnetic field is $\frac{1}{100}$ times the strength of the environment magnetic field. The residual magnetisms for the left and right rotations are identical at the same frequency of rotation, after cutting the same power supplies. For instance, the residual magnetism associated with both the left and right rotations of the 175.504-g rotor is 0.06 G at 15000 rpm. Of course, these results are independent of attitude. (ii) The weight changes for both rotations in each attitude of the 175.504-g rotor have been measured in a magnetically shielded room ($200 \times 200 \times 210$ cm³) where the field strength is 3×10^{-4} to 3×10^{-3} G; that is, $\frac{1}{1000}$ to $\frac{1}{100}$ times the environment magnetic field mentioned previously. The weight changes for both rotations of the gyroscope in each attitude in this shielded room are entirely identical with those obtained in the environment magnetic field. The experimental results of these two methods definitely show that the anomalous weight reduction is independent of magnetic coupling.

Summarizing all the data obtained in the experiments, the weight decrease for right rotations around the vertical axis, $\Delta W_R(\omega)$, is approximately formulated, in units

of dynes, as follows:

$$\Delta W_R(\omega) = -2 \times 10^{-5} M r_{eq} \omega \text{ g cm s}^{-2},$$

where M is the mass of rotor (in g), ω is the angular frequency of rotation (in rad/s), and r_{eq} is the equivalent radius (in cm), defined as follows. A rotor is composed of various materials and domains, and hence r_{eq} is given by

$$M r_{eq} = \int \int \rho(r, z) 2\pi r^2 dr dz,$$

where $\rho(r, z)$ is the density of any material constituting the rotor, and r and z denote cylindrical coordinates. The values of r_{eq} for the three rotors of 139.863, 174.882, and 175.504 g are 1.85, 2.26, and 2.26 cm. On the other hand, the weight changes for left rotations in each attitude are zero within the accuracy of the chemical balance.

Here, it should be especially noted that the weight changes during inertial rotations of three rotors repeatedly measured using an electronic balance are nearly the same as those obtained with the chemical balance. The mechanism of the balance, the experimental method, and the results are as follows: The deviation of the vertical component in the bending of a horizontal metal trough system caused by a weight is compensated by electromagnetic force. The balance has no standard weight inside, and the measurable range is 0 to 300 g with an accuracy of ± 1 mg. The system of the balance and gyro closed in a vessel is rigorously held at a vacuum state using a rotary pump and a coarse control valve, and also a sorption pump and a fine-control valve. The latter pump and valve are set near the vessel. The weight measurements are carried out during the inertial rotations after opening the electric circuit of the gyroscope. The strength of the magnetic field is of the order of 1.7 G at the balance's pan. As examples, the mean values of weight reductions for right rotations of two rotors of 139.863 and 175.504 g at 1.33 Pa are 1.8, 2.4, 3.0, 3.6, 4.1, 4.6, 5.3, 5.8, 6.5, 7.1, and 7.7 mg for the former rotor, and 2.6, 3.6, 4.4, 5.3, 6.3, 7.2, 8.1, 9.1, 10.0, 10.9, and 11.9 mg for the latter, at 3×10^3 , 4×10^3 , ..., 13×10^3 rpm. Meanwhile, the left rotations do not cause weight changes. The results are independent of attitude.

As shown in Fig. 2, the weight change of each rotating gyroscope is completely asymmetrical for inertial rotations around the vertical axis. In a common-sense view, anyone might consider that such a phenomenon is induced by systematic errors. However, the phenomenon is free from systematic errors; our reasoning is given below. The causes of systematic errors are as follows: (1) The different dynamic characteristics of the gyroscope for the two rotations. (2) The different electromagnetic couplings of the gyroscope for the two rotations. (3) The different fluid effects of air on the gyroscope for the two rotations. (4) The difference between the respective torques induced by the friction between

the ball bearings and the shaft of the gyroscope for the two rotations. (5) The different environmental conditions for the repetitive experiments. (6) The difference in the forces of inertia for the two inertial rotations. (7) The difference between the two spin-spin couplings of the angular momenta of the Earth and the gyroscope for the two rotations.

For (1): The dynamic characteristic includes the effect of mechanical vibrations and, as mentioned previously, the dynamic characteristic of each mechanical gyroscope is the same for the two rotations. As one example, the overall effective values of the accelerations of mechanical vibrations (bandwidth, 0–2 kHz) for the two rotations of the 140-g rotor are 0.0995G and 0.0965G at 13000 rpm in the normal attitude, where G is 980 cm/s². The values in the reverse attitude are nearly the same. From the above, we conclude that there are no differences between the dynamic characteristics of each gyroscope for the two rotations or the two attitudes. For (2): The problem of magnetic couplings has been perfectly solved by the three kinds of experiments already mentioned. Further, as each weight measurement was carried out after opening the electric circuit, there is no electrical-current effect. Therefore, the gigantic weight reduction for the right rotation is independent of magnetic coupling and electrical-current effect. For (3): The weight reduction for the right rotation is not due to lift from the fluid effect of air within the vacuum container. The reasons are as follows: Under the standard atmosphere (1×10^5 Pa), both rotations of the 175-g rotor cause the same lift of about 260 mg at 12000 rpm. The lift power is proportional to the density of gas. As described previously, the gas pressure in the container is between 1.3×10^{-2} and 1.3×10^1 Pa. Further, the gyroscope and air are in a closed system. From the above, we find that the weight decrease for the right rotation is independent of the lift of air. For (4): Since the friction in a gyroscope is originally within the gyroscope system, this friction does not influence anything outside the system. Hence, the weight reduction is not due to the torque induced by the friction. For (5): A pair of weight measurements for both rotations at the same frequency of rotation are always completed within about 30 min under a constant temperature. It has been confirmed that there are no convection effects of the air surrounding the glass container for either rotation, although there are uniform temperature increases of less than 1°C over the whole surface of the container due to the friction at the supports of the rotor's axis for both rotations. Further, there is reproducibility of the data obtained on different days. Hence, the changes of the environmental conditions of the Earth's tide, the fluctuations of the Earth's spinning, temperature, and magnetic fields can be neglected. For (6): The weight measurements have always been made for decreasing rotational frequency. In the view of Newtonian mechanics, generally

there is an inertial force $M(\dot{\omega} \times r)$, where M is the mass of a rotor, $\dot{\omega}$ is the vector of the rate of change of the angular frequency ω , and r is the vector in the radial direction. However, since the gyro-rotor rotates on the horizontal plane in this experiment, the force does not occur in the vertical direction. Therefore, the anomalous weight reduction is not due to the inertial force. For (7): First, the weight reduction is not due to the Lense-Thirring precession,¹ or the geodetic or mass-current precessions.² Second, in the framework of Einstein-Cartan theory, there might exist the possibility of a gravitational repulsive force caused by the parallel spin-spin interaction of the angular momenta of the Earth and the gyroscope, as discussed by Kopczyński³ and Trautman⁴ for spinning dusts. If these theories are applied to our experiment, such an interaction causes only an extremely small effect. Hence, the gigantic weight reduction for

the right rotation cannot be explained from the above theories, and then the weight reduction is independent of the Earth's spinning.

As discussed above, the experimental result cannot be explained by the usual theories.

The authors acknowledge discussions with Professor T. Nakamura of Tohoku University. They wish to thank Dr. H. Tanaka for his help in the experiment, and also Dr. Y. Higashino of Yokogawa Electric Cooperation for his support in the use of the magnetically shielded room.

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²L. I. Schiff, Phys. Rev. Lett. **4**, 215 (1960).

³W. Kopczyński, Phys. Lett. **43A**, 63 (1973).

⁴A. Trautman, Nature (London), Phys. Sci. **242**, 7 (1973).

A gyroscope's gravity-defying feat

Two Japanese scientists have conducted an experiment suggesting that under certain circumstances a spinning gyroscope may partially counter the Earth's gravitational pull. Their startling results, published in the Dec. 18 PHYSICAL REVIEW LETTERS, show that a small gyroscope spinning in one direction suffers a weight decrease of a few milligrams, with the weight loss increasing as the spin rate increases. In contrast, a gyroscope spinning in the opposite direction loses no weight. "The experimental result cannot be explained by the usual theories," conclude Hideo Hayasaka and Sakae Takeuchi of Tohoku University in Sendai.

Physicists who have seen the report express skepticism. Although the experiment, as described in the report, appears to have no obvious sources of experimental error, most experts say they expect that intense scrutiny and attempts to replicate the experiment will show the results to be incorrect.

"I looked at it carefully because it's very puzzling," says Eric G. Adelberger of the University of Washington in Seattle. "I can't see any particular thing that they didn't do or that they did wrong, but there are things that suggest there is something clearly wrong." For one, he notes, the way in which the weight loss depends on the spin direction is unlike any other known physical effect.

FROM: SCIENCE NEWS VOL. 137
JANUARY 6, 1990

NOTE: THE EXPERIMENT THAT THESE PHYSICISTS CONDUCTED WAS, TO MY MIND, PSYCHOTRONIC [THAT IS CONSCIOUSNESS-MASS INTERACTIVE LIKE KOZYREV'S EXPERIMENTS]. THEIR MINDS BEGAN TO INTERACT WITH THE FRAME OF REFERENCE [A PHYSICAL DISTANCE] OF THE GYROSCOPE AS ITS SPIN RATE INCREASED.

An absence of antigravity

Several research teams have failed to confirm the puzzling results of a recent experiment by two Japanese physicists, who reported that under certain circumstances a spinning gyroscope may partially counter the Earth's gravitational pull (SN: 1/6/90, p.15). James E. Faller and his colleagues at the Joint Institute for Laboratory Astrophysics in Boulder, Colo., repeated the Japanese experiment by looking for signs of weight loss in a spinning gyroscope consisting of a brass top about 2 inches in diameter sealed in a small plastic chamber. "We conclude that within our experimental sensitivity, which is approximately 35 times larger than needed to see the effect reported . . . , there is no weight change of the type . . . described," Faller and his team write in the Feb. 19 PHYSICAL REVIEW LETTERS. A French group reporting in the Feb. 22 NATURE has obtained similarly negative results.

Why the Japanese researchers detected such an effect in the first place remains a mystery. According to their paper in the Dec. 18 PHYSICAL REVIEW LETTERS, they went to considerable trouble to eliminate possible sources of error. However, they may have overlooked some subtle but important details, says mechanical engineer S.H. Salter of the University of Edinburgh in Scotland. The trick is to find a mechanism that could produce a small weight loss when the gyroscope is spinning clockwise (as seen from above) but not when it's spinning counterclockwise or standing still.

"It is possible to construct an argument to show that vibration in the gyro, compounded by nonlinearity in the weighing mechanisms . . . , could lead to a misleading result," Salter comments in the Feb. 8 NATURE. Tiny differences in the tracks that house the ball bearings at the two ends of the spinning gyroscope could produce vibrations sufficiently large to affect the results. Moreover, laboratory balances like the one used to weigh the spinning gyroscopes aren't necessarily designed to handle vibrating loads accurately.

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FEBRUARY 21, 1990

of dynes, as follows:

$$\Delta W_R(\omega) = -2 \times 10^{-5} M r_{eq} \omega \text{ g cm s}^{-2},$$

where M is the mass of rotor (in g), ω is the angular frequency of rotation (in rad/s), and r_{eq} is the equivalent radius (in cm), defined as follows. A rotor is composed of various materials and domains, and hence r_{eq} is given by

$$M r_{eq} = \int \int \rho(r, z) 2\pi r^2 dr dz,$$

where $\rho(r, z)$ is the density of any material constituting the rotor, and r and z denote cylindrical coordinates. The values of r_{eq} for the three rotors of 139.863, 174.882, and 175.504 g are 1.85, 2.26, and 2.26 cm. On the other hand, the weight changes for left rotations in each attitude are zero within the accuracy of the chemical balance.

Here, it should be especially noted that the weight changes during inertial rotations of three rotors repeatedly measured using an electronic balance are nearly the same as those obtained with the chemical balance. The mechanism of the balance, the experimental method, and the results are as follows: The deviation of the vertical component in the bending of a horizontal metal trough system caused by a weight is compensated by electromagnetic force. The balance has no standard weight inside, and the measurable range is 0 to 300 g with an accuracy of ± 1 mg. The system of the balance and gyro closed in a vessel is rigorously held at a vacuum state using a rotary pump and a coarse control valve, and also a sorption pump and a fine-control valve. The latter pump and valve are set near the vessel. The weight measurements are carried out during the inertial rotations after opening the electric circuit of the gyroscope. The strength of the magnetic field is of the order of 1.7 G at the balance's pan. As examples, the mean values of weight reductions for right rotations of two rotors of 139.863 and 175.504 g at 1.33 Pa are 1.8, 2.4, 3.0, 3.6, 4.1, 4.6, 5.3, 5.8, 6.5, 7.1, and 7.7 mg for the former rotor, and 2.6, 3.6, 4.4, 5.3, 6.3, 7.2, 8.1, 9.1, 10.0, 10.9, and 11.9 mg for the latter, at 3×10^3 , 4×10^3 , ..., 13×10^3 rpm. Meanwhile, the left rotations do not cause weight changes. The results are independent of attitude.

As shown in Fig. 2, the weight change of each rotating gyroscope is completely asymmetrical for inertial rotations around the vertical axis. In a common-sense view, anyone might consider that such a phenomenon is induced by systematic errors. However, the phenomenon is free from systematic errors; our reasoning is given below. The causes of systematic errors are as follows: (1) The different dynamic characteristics of the gyroscope for the two rotations. (2) The different electromagnetic couplings of the gyroscope for the two rotations. (3) The different fluid effects of air on the gyroscope for the two rotations. (4) The difference between the respective torques induced by the friction between

the ball bearings and the shaft of the gyroscope for the two rotations. (5) The different environmental conditions for the repetitive experiments. (6) The difference in the forces of inertia for the two inertial rotations. (7) The difference between the two spin-spin couplings of the angular momenta of the Earth and the gyroscope for the two rotations.

For (1): The dynamic characteristic includes the effect of mechanical vibrations and, as mentioned previously, the dynamic characteristic of each mechanical gyroscope is the same for the two rotations. As one example, the overall effective values of the accelerations of mechanical vibrations (bandwidth, 0–2 kHz) for the two rotations of the 140-g rotor are $0.0995G$ and $0.0965G$ at 13000 rpm in the normal attitude, where G is 980 cm/s^2 . The values in the reverse attitude are nearly the same. From the above, we conclude that there are no differences between the dynamic characteristics of each gyroscope for the two rotations or the two attitudes. For (2): The problem of magnetic couplings has been perfectly solved by the three kinds of experiments already mentioned. Further, as each weight measurement was carried out after opening the electric circuit, there is no electrical-current effect. Therefore, the gigantic weight reduction for the right rotation is independent of magnetic coupling and electrical-current effect. For (3): The weight reduction for the right rotation is not due to lift from the fluid effect of air within the vacuum container. The reasons are as follows: Under the standard atmosphere ($1 \times 10^5 \text{ Pa}$), both rotations of the 175-g rotor cause the same lift of about 260 mg at 12000 rpm. The lift power is proportional to the density of gas. As described previously, the gas pressure in the container is between 1.3×10^{-2} and $1.3 \times 10^1 \text{ Pa}$. Further, the gyroscope and air are in a closed system. From the above, we find that the weight decrease for the right rotation is independent of the lift of air. For (4): Since the friction in a gyroscope is originally within the gyroscope system, this friction does not influence anything outside the system. Hence, the weight reduction is not due to the torque induced by the friction. For (5): A pair of weight measurements for both rotations at the same frequency of rotation are always completed within about 30 min under a constant temperature. It has been confirmed that there are no convection effects of the air surrounding the glass container for either rotation, although there are uniform temperature increases of less than 1°C over the whole surface of the container due to the friction at the supports of the rotor's axis for both rotations. Further, there is reproducibility of the data obtained on different days. Hence, the changes of the environmental conditions of the Earth's tide, the fluctuations of the Earth's spinning, temperature, and magnetic fields can be neglected. For (6): The weight measurements have always been made for decreasing rotational frequency. In the view of Newtonian mechanics, generally

(9-1) G-field of Negative Energy

§ 9 Inverse Atomic Engine

Picture 3

(See the right)

Sketch of inverse atomic engine.

Circularly polarized electromagnetic field produced with three spherical condensers charged by three phases current converts quantum fuel into negative energy state.

(9-1) G-field of Negative Energy

G-field of G and polar angular momentum \mathfrak{A} are related by,

$$\frac{G}{\sqrt{1-\beta^2}} = -\frac{k}{c} \mathfrak{A}, \quad (9-1)$$

as stated in the first chapter. If we put (9-1) into (1-4) we obtain

$$\square \frac{G}{\sqrt{1-\beta^2}} = -\frac{4\pi k}{c^2} \cdot \frac{\partial \rho}{\partial t} - \frac{4\pi k}{c} \cdot \text{grad } q, \quad (9-2)$$

the first term in the right hand side of which is about $\frac{1}{c}$ times the second. Gravitation of negative energy owns the potential with opposite sign of that of positive energy.

Gravitation of negative energy is repulsive since that of positive energy attractive. Einsteinian Equation of gravitation (Ref. 70) of,

SHINICHI SEIKE IS A TRUE POST-MODERN PHYSICIST. MANY OF HIS DETRACTORS CHARACTERIZE HIM AS A KOOK WHO IS TOO MILITANTLY NAIVE TO BE TAKEN SERIOUSLY. THEY ADD, HE SPEAKS A PRIVATE LANGUAGE SO THAT DECIDING WHETHER HE IS RIGHT OR WRONG IS IMPOSSIBLE TO DETERMINE. AND YET

HIS INFLUENCE IS GROWING. I WOULD COMPARE HIS STYLE OF PHYSICS TO THAT OF THE WORK OF BRUCE GOFF IN ARCHITECTURE. I HAVE FOUND MUCH CORROBORATION IN MY OWN WORK WITH HIS USE OF TRADITIONAL AND NON-TRADITIONAL GEOMETRIES FOR NEW PURPOSES.

(9-1) 負エネルギーの重力場

§ 9 逆重力機関

(写真 3)



逆重力機関の完成予定図。

3個の球型コンデンサに充放電する三相交流の創り出す円偏光電磁場で量子種子を負エネルギー状態に置く。

(9-1) 負エネルギーの重力場

第一章で述べた如く、重力場 G と極性角運動量密度 \mathcal{A} は、次の関係で結ばれる。

$$\frac{G}{\sqrt{1-\beta^2}} = -\frac{k}{c} \mathcal{A} \quad (9-1)$$

これを (1-4) に代入すれば、

$$\square \frac{G}{\sqrt{1-\beta^2}} = -\frac{4\pi k}{c^2} \cdot \frac{\partial p}{\partial t} - \frac{4\pi k}{c} \text{grad } q, \quad (9-2)$$

の関係を得る。右辺の第1項は、第2項に比して、 $\frac{1}{c}$ 程度の小ささでありますから、第2項が支配項となって、正・負のエネルギー体の作り出す重力場は、互

FINDING APPLICATIONS FOR FORMS LIKE THE MÖBIUS BAND AND THE KLEIN BOTTLE OR THE LOGARITHMIC SPIRAL IS SOMETHING IN WHICH WE ARE BOTH INTERESTED—ESPECIALLY THE LOGARITHMIC SPIRAL IN RELATION TO THE LEVOGYRE FORME, BUT HE MIGHT BE INTERESTED ALSO.

(11-1) Experimental Results in United Kingdom

Fig. 35

(See the right leaf.)

Rough Sketch of Starship Ezekiel which is intended to go over to the moon.

National Space Research Consortium is constructing <Starship Ezekiel> with the diameter of 45.20 meter and the summit of 5.8m, with which manned lunar flight is planned. The pressure in the cabin is adjustable from 5 LBS per SQ. inch to 7 LBS per SQ. inch, temperature from 60° F to 105° F. .
He showed her structure as in Picture 19.

Picture 19

(See the right leaf.)

Structure of Searl's Disc.

(11-2) The Searl Effects

(1) Inverse Gravitation

Gravitation to negative energy state is repulsive, according to which negatively energied body is repelled by Earth. The law of Newtonian gravitation is described by,

$$F = \frac{K M m}{r^2} , \quad (11-1)$$

(11-2) The Searl Effects

in which f stands for a force when masses of m and M interact at the distance of r .

Positive sign corresponds with attractive force. On the other hand, we have known Einsteinian formula of mass-energy relation of,

$$W = mc^2, \quad (11-2)$$

$$\text{and} \quad W' = Mc^2, \quad (11-3)$$

from which we have

$$m = \frac{W}{c^2}, \quad (11-4)$$

$$\text{and} \quad M = \frac{W'}{c^2}, \quad (11-5)$$

If we put (11-4) and (11-5) into (11-1), we derive

$$f = \frac{kWW'}{c^4 r^2}, \quad (11-6)$$

in which the signs of f are different in the cases of

$${}_2C_1 \times {}_2C_1 = 4$$

for $W \leq 0$ or $W' \geq 0$.

They are tabulated in TABLE 5.

TABLE 5

W	+	+	-	-
W'	+	-	+	-
f	+	-	-	+

The positive sign stands for attractive gravitation, while the negative for repulsive. Positively energied bodies or negatively energied ones attracts each other, while repulsive force acts upon positively energied body and negatively.

② Electromagnetic Induction with
G-deceleration

The generator produces D.C. static field with negative polarity at the rim and positive at the center. However the magnetic field from the generator produces induction in conductive loops when there is no relative movement. It seems

FROM: UP IN THE AIR OVER ANTI-GRAVITY ???

BY: W. P. DONAVAN © COPYRIGHT 1985
PUBLISHED IN THE ANTI-GRAVITY HANDBOOK, COMPILED BY D. HATCHER CHILDRESS

WHILE DONAVAN'S ARTICLE READS AS IF IT IS A CROSS BETWEEN CLOYING SCIENCE-FICTION AND DECONSTRUCTIONISM - LIKE SOMETHING YOU MIGHT RECEIVE IF YOU ANSWERED A CLASSIFIED AD FROM POPULAR SCIENCE OR AL FRY'S INCREDIBLE INQUIRY - HIS WRITINGS ARE FULL OF HINTS FOR NEW DIRECTIONS OF RESEARCH AND EXCELLENT REFERENCES. IF I AM TO TAKE MY LEVOGYRE BEYOND THE PLANNING STAGE, I HAVE TO BE ABLE TO SUBSUME TOTALLY IDEAS OF THIS SORT AS WELL AS THOSE OF THE SO-CALLED "ESTABLISHMENT SCIENCE".

Disk, Disk

A discussion on Anti-Gravity research would naturally begin with an introduction to the pioneering work of Nikola Tesla, John Searle, Bruce DePalma, T. Townsend Brown and Thomas Bearden. Let's start by looking over the illustrations concerning the Searle Disk and DePalma's "N" machine. A close examination will reveal a few similarities between the "N" machine and the Searle Disk. Keep that thought in mind.

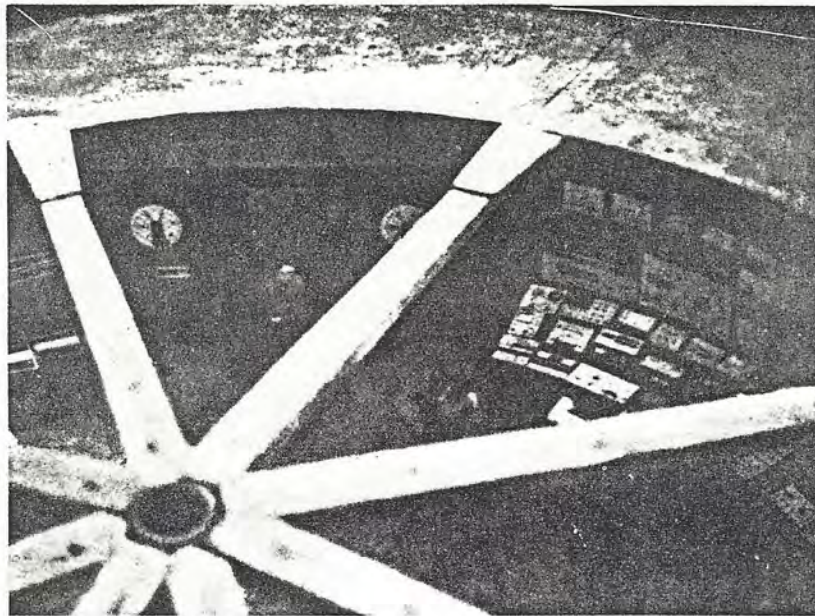
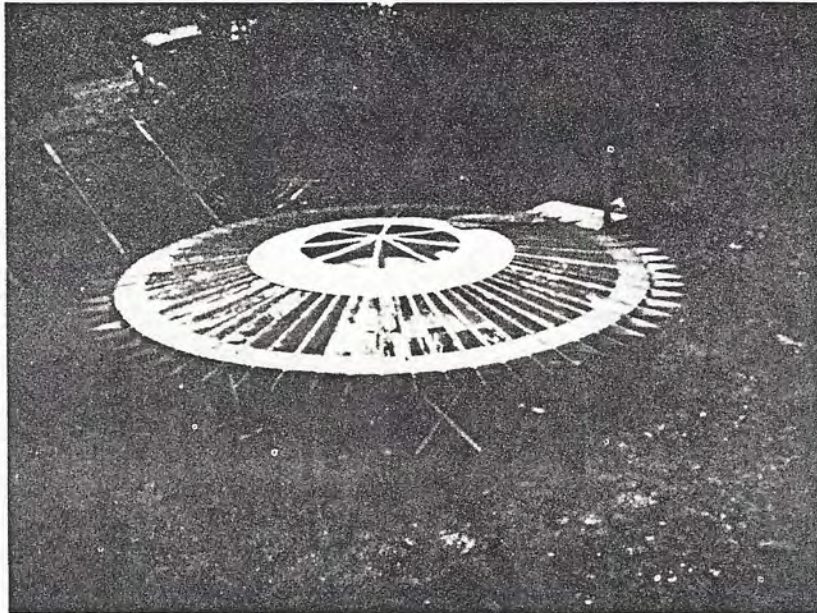
A brief explanation is in order. After reading the excerpt by Bruce DePalma beneath the illustration of his "N" machine, you might be wondering **how** you can get a potential across practically nothing. If you embrace the old theories on the structure of mass, energy and space, that would be an obvious impossibility. And it would be if space is regarded as a static medium. That is the essence of the theory--that space, instead of being "dead", is a dynamic medium alive with activity. This is the philosophy that Nikola Tesla used to construct one of the first free energy machines. I would heartily recommend reading any information that the inventor had written in his own hand on the subject. His writings, even though they're pretty cryptic, contain the key.

In Ether Technology by Rho Sigma (see bib.), the view is put forth that gravity is electrical in nature, and in Thomas Bearden's works as well (Toward a New Electro-magnetics 1,2,3.& 4 see bib.). Jerry Gallimore has done extensive research toward that end also (you'll see one of his papers in the proceedings of The First International Symposium On Non-Conventional Energy Technology. (See bib.)) The basis of the "N" effect is that when a stress in the form of a centrifugal force (which is actually a form of gravity anyway) is placed on a material in a magnetic field which is at right angles to the force, an electrical potential is present. Now when a material is in a magnetic field a measure of coherence in atomic motion is conveyed to that material. In the absence of a magnetic field the material of the rotor will have a fraction of the voltage present. This clearly demonstrates that that which is termed, the "motional electric field" (Dr. W.J. Hooper professor at UCLA, Berkley first proposed the term), is intrinsically linked to the phenomenon of gravity. One is never seen without the other.

Therefore, it should be possible to produce an electric field with all the properties of a gravitational force field. All it takes is a little ingenuity. Let's see... You would need an extremely high voltage if you had a material with a comparatively low gravitational coupling coefficient. Or vice-versa. What does that suggest to you? It seems to me that a parallel-plate capacitor has the same ability to transform an electric field into a gravitational field that an electromagnet has in the transformation of an electric field to a magnetic field. And between the two lies an inextricable link, the electric field. If there is any point where I would start in the search of a unified field theory, that would be it.

The Searle effect is the same as the "N" effect. In the case of the Searle disk the magnetic field poles are at right angles to the axis of rotation, while in the "N" machine the magnetic field poles are parallel to the axis of rotation. The electric field that is generated is parallel to the spin axis on the Searle disk. The Biefeld-Brown effect is also linked because the gravitational coupling coefficient is critical to the operation of the device. But the Searle Disk seems to obviate that problem by using the brute force approach and using a voltage with an extremely high value. So the Searle effect uses the Biefeld-Brown effect in its operation.

One thing that bothered me about the Searle disk is that it so closely resembled the "N" machine of Bruce DePalma. This is the result of some deep probing into that nagging hunch that seems to have validated the claims made by J. R. R. Searle.



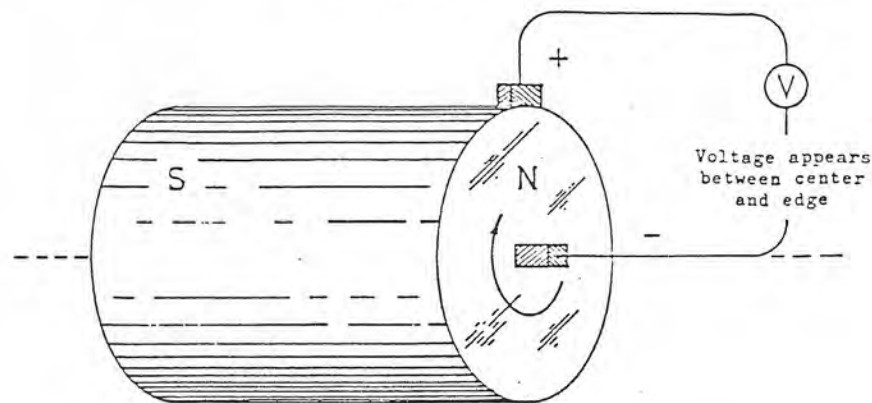
Experimental set-up of the British inventor John Searl

Look at the "N" Machine. Notice that the electric field vectors appear at right angles to the magnetic field vectors?

Before I go further it would be prudent to mention something about a bit of trivia that the experimenters choose to ignore... probably because they can't explain it. If you measure the electric field potential with a "fixed" voltmeter on the rotating disk you will notice a very real voltage. But if the voltmeter is mounted on the rotating disk it will show absolutely no deflection. Why is that? There is an explanation for that but it involves some esoteric wave mechanics. Basically the wave function of the electron collapses on the rotating reference and becomes a probabilistic function. In other words, the particle vectors and the quantum field 'smear' into each other so as to be indistinguishable from each other. You could have an infinite voltage on the disk and it would not arc over onto another portion of that disk. Surprise! That's exactly what the Searle disk does.

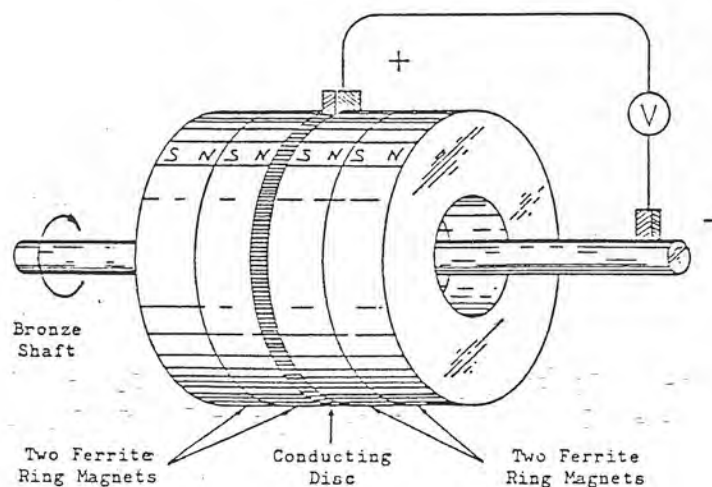
Put the drawings of the Searle disk and the "N" machine next to each other and look at them. What similarities do you see? Notice that the magnetic poles in the "N" machine are parallel to the axis of rotation while the poles on the Searle disk are at right angles. Now if the electric field vectors are at right angles to the magnetic pole orientation, that means that the electric field vectors

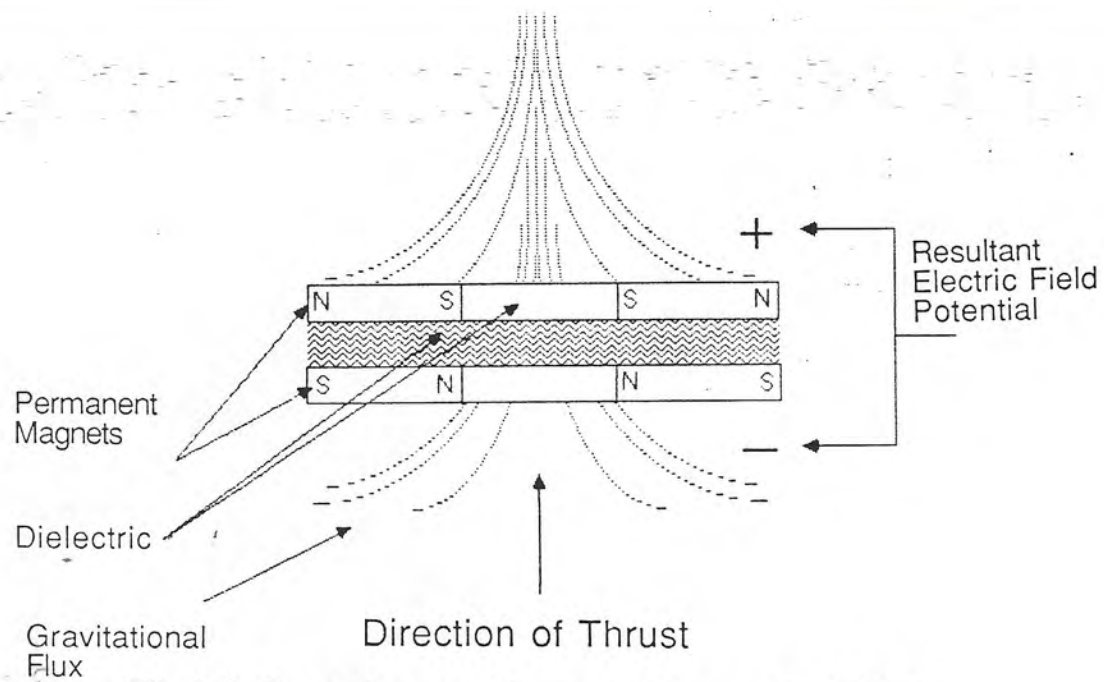
The "N" Effect



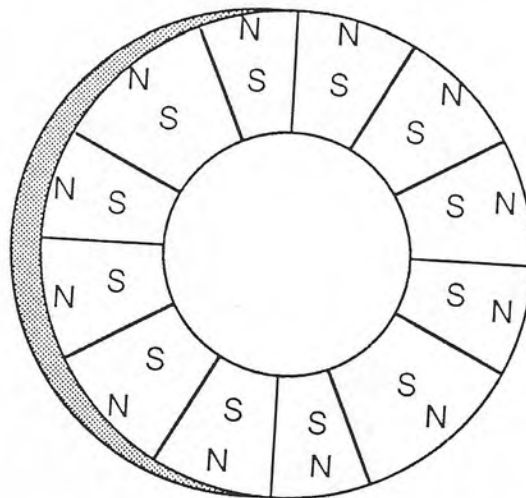
Rotating Permanent Magnet (Alnico)

The N Machine





Field Configuration of Searle Disk
with modified hydrodynamic vortex



Detail of The Upper Face
Showing The Magnet Positions

---- Diagram G ----

are parallel to the spin axis of the disk. And if your magnets are the crystalline variety, that makes the disk a capacitor with an unbelievable value! Now if the formulas for the Biefeld-Brown effect are valid, you'd get an electrogravity field proportional to the potential across the disk. Of course since the electrons are a probabilistic function on the disk, there's no possibility of arcover and no dielectric stresses in the material.

That means that you could have 10^{15} volts across the disk measured from a "fixed" reference and zero volts on the disk itself without any danger of it becoming a bomb. Another interesting point suggests itself. You could also have an infinite charge on the disk surfaces without any leakage to the adjacent plates. Infinite energy on the outside, zero energy on the inside. How's that for a model of a U.F.O.? It would also have an integral force field operating on the outside of the disk. How, you may ask?? Very easy. Once the disk hits the right speed the scalar electrostatic field zipping around the periphery reaches the potential that quenches electron conduction and generates a "skin" effect analogous to barrier turbulence in an aircraft. Any mass approaching is first attracted and then violently repelled. So you have a deflection shield a' la' Star Trek. Speaking of fields, what do you think would happen if you ran the current that it generated into a field coil located on the disk itself? Obviously from an onboard perspective there's no current flowing through the conductor and therefore no magnetic field results. But... from the outside you do have a current flow. And that does produce a magnetic field. So, on the disk you have a condition that bypasses Lenz's law and any need to generate a back E.M.F.

That's one point that bugged me to no end. Everybody wondered how Searle got around generating back E.M.F. on his machine when the "N" machine was doing exactly the same thing. Of course I overlooked it too. It's the obvious that's the hardest to see. Murphy's law.

Remember when I said that you could have an infinite charge on the disk surface that wouldn't be seen by the rotating disk? The charge would be seen on the outside as the scalar electrostatic potential, or S.E.P. for short. If you slowly cranked up the value of the S.E.P., first the electrons would collapse into the quantum field. Then the protons, neutrons and the assorted zoo of subatomic particles would follow suit. The disk, and whatever was attached to it, would vanish into the quantum field. **Poof!** And it's gone. But what about the disk's perspective?

From the disk's point of view the S.E.P. never changed. It sees the universe as it always did, although now it exists solely in the quantum field. And that means it has a few extra dimensions of movement. That means anywhere in space, and anywhen in time. Since it exists as a probabilistic construct its existence is equally probable anywhere in the universe at the same time or anywhen in the universe in the same place. Shades of Doctor Who!

Travel in space would be easy enough. You just go wherever you want to go in the inertialess state and then switch off the field by de-spinning the rotor. If you wanted to, travel could be instantaneous. The difficulty would lie in time travel, which contains within itself dimensions of probability. It very well could be that the faster you go in space the more acute the curve becomes as far as a probability is concerned. So you'd travel through parallel worlds if you weren't careful and never return to where you'd started from. If anybody out there is fooling around with this stuff, you have been forewarned. So there.

However, what I think happens is that the disk is undergoing a transcendent shift in its dimensional references. I should explain that a little more clearly. Remember in high school when they told you that when a particle is accelerated to the speed of light it becomes infinitely massive, so massive in fact that the entire universe would collapse on it from the resultant gravity field that it radiated? Well, in The Excalibur Briefing, (see bibliography) Tom Bearden clears up that absurd mess. What really happens is that the particle loses a dimension and becomes two-dimensional. And at the same time it loses mass and has infinite momentum, or inertia. Their big mistake was equating inertia and mass. (A good example of that is the photon. It has no mass and cannot be accelerated beyond its inherent speed or slowed down to a point below it. In other words the particle has infinite momentum. So all real mass-energy conversion involves an explosive acceleration of mass to the speed of light.)

The conversion process of the material of the disk is another matter (pun intended). In that case it loses mass and spatial momentum, but has infinite temporal momentum. That would be an extreme case, however. In the real world, if you could call the quantum field that, it would be a value between zero and infinite. And your time vector would be dependent upon your temporal momentum and position on the lotus which is shown on diagram A. You've probably noticed by now what that implies. Your direction in time (future or past), is inversely proportional to mass and spatial momentum and proportional to temporal momentum. That determines your speed on the time line.

In that case how about turning the Searle disk into a full fledged time machine? In theory it would be possible. Instead of just one disk with the north poles facing out you use a paired set. The one on top has north poles facing out and the one beneath it has all of its south poles facing out. We know that the direction of spin, clockwise or counterclockwise, doesn't matter. The electric and gravitational field vectors are dependant upon magnetic pole orientation. With the two disks counterrotating at the same speed, and assuming both have the same field strength, the gravitational force vectors cancel out. In fact all the fields cancel out except for one. And that's the S.E.P.. The accumulation of that field would cause collapse of the wave function just as the field from the single disk did.

Now most people with a bias toward solid state operations would probably be recoiling in horror at the prospect of two huge counterrotating disks and the associated precessional and nutational torques contained within them. And rightly so. And the first thought that would come to their minds might be a configuration using a set of solenoid electromagnets with all of their north poles facing out mounted on the disk and sequentially feeding square wave pulses into them. I don't think that would work, and it's for this reason: The system is dependent upon an accelerated mass that has an integral magnetic field contained within it. But there is a way around that.

What does an accelerating body generate? It generates gravity waves! And so the problem becomes this: How do you generate the same type of gravitational radiation that a rotating mass produces? Or, let me put that another way; how do you produce a "motional gravity field"? A motional gravity field would be the same as a motional electric field with a skewed vector. A look at the work of Hooper and Townsend Brown gives a great deal of insight on the matter. If you take a look at Townsend Brown's British patent no. 300,311 figures 6,7 and 11 it's obvious that's what he intended to do. But reading the entire patent gives a good background on the matter. It illustrates that if you arrange the plates radially around a center and put a D.C. bias on them you'll get a field that looks like a moving mass. Now you can put the field coils on that disk and sequentially energize each one to make it look like a moving magnet set. That model might just work.

All this stuff with the strange effects of the Searle disk and the "N" machine makes you wonder what the hardware looked like aboard the U.S.S. Eldridge, the ship that played a part in the infamous Philadelphia Experiment. Of course back then they called it Project Rainbow. I'm convinced that whatever they could have used must have been based on the same effect as the Searle disk.

The original intent of "Project Rainbow" was an exercise in conservation. At that time copper was getting scarce, (this was about the same time that steel pennies were being minted) and huge coils that ran from bow to stern were required to degauss or demagnetize the ships' hull to prevent it from being destroyed by magnetic mines. Something else was needed to decrease the phenomenal consumption that each ship required to protect itself. Different coil geometries were tried. After numerous design changes the ultimate form was selected. This type apparently had a resemblance to a caduceus coil wound into a toroid configuration. A number of these coils were mounted around the interior of the hull. When they were energized, (according to the theory) the magnetic field in the hull would be quenched and thus eliminated. However, things didn't work out that way. When the coils were energized a field fundamentally different from what theory dictated was created. That field changed the amount of basic energy that the space contained and which the ship existed in. It increased it.

↑ THERE ARE NUMEROUS RESEARCH LABORATORIES ALL OVER THE WORLD WORKING ON THE THEME OF GRAVITY WAVES AND THEIR CONTROL.

The Lotus

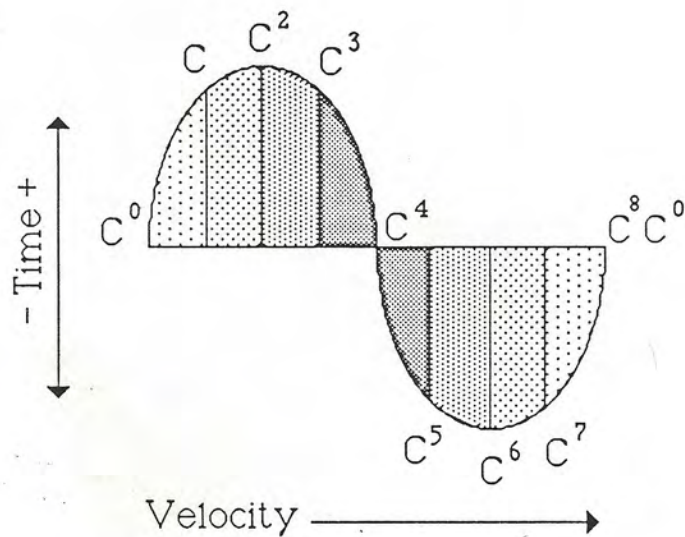
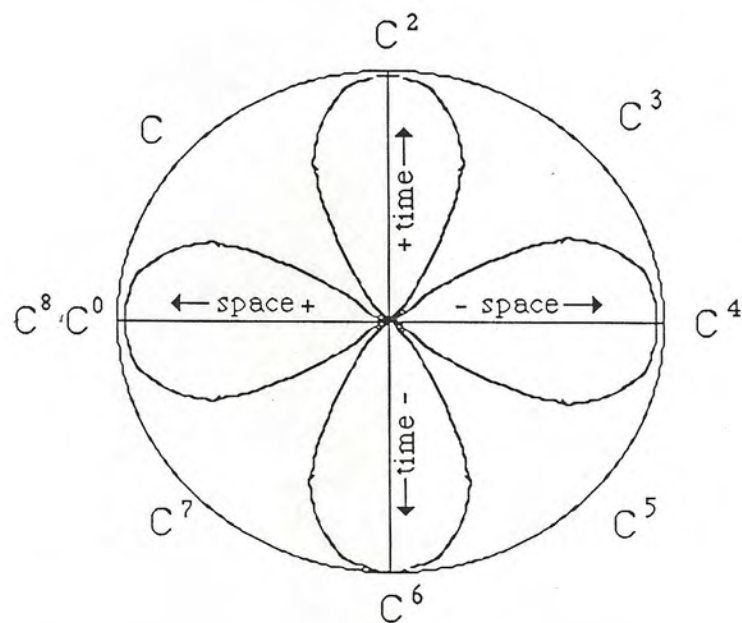


Diagram A

Now, the only reason that a material object can remain visible and tangible is for it to exist in a low energy-density per unit volume of space. If that energy density and charge were increased substantially, enough to equal an electron, then that electron would become indistinguishable from free space. If that energy density and charge were increased beyond the amount required to quench an electron, enough to quench a proton, then neither electron nor proton would exist as physical entities. A slight increase in the field from that point would cause complete dematerialization of the body.

Diagram A

Now that I've given you a few of the more preliminary concepts, it's time to dive headfirst into a deeper theoretical examination of the mechanisms. First we'll take a look at diagram 'A'. What it's about concerns some graphs of the velocity gradient. (I like that term; my thanks to Tom Pawlicki who first coined it.). Any particle or material body found in the physical universe occupies a position on this graph. The upper graph is what I term "the lotus", because it reminds me of the flower. Suffice it to say that any mass which is accelerated follows the outer curve for velocity and the inner, petal-shaped curve for momentum. The perimeter of the circle represents zero momentum or inertia, and the center represents infinite momentum or inertia.

Lotus Entertain You

The second part of diagram A shows what looks like a sine wave. This is a simplistic representation of a multidimensional plot. Here you see time flow (relative time flow) charted against velocity. C^2 would correspond to an infinite "timelike" velocity into the future and C^6 an infinite speed into the past. At the crossover points of C^0 , C^4 & C^8 time ceases to exist for the accelerating body. One point becomes pretty obvious, and that point is that the curve as shown would be infinitely repetitive. And so is the lotus. The lotus would describe a spiral or corkscrew configuration which itself is curved. This curve would wrap itself into a toroid geometry. And that toroid is a part of a larger structure at right angles to itself. And so on, ad infinitum.

About that reference to the multidimensionality of the plot--it could conceivably be done on a computer plotting the variables, space, time, velocity, momentum, and skew angle on the lotus. When the body accelerates from C^0 to C^8 it describes a circle greater than 360 degrees. That is somewhat difficult to show in a two dimensional diagram.

One point of conjecture which I'd like to make which could turn out to be true or merely a lot of wasted ink, is this: the "T" core on the lotus, the point where the time, space and momentum axes meet and all three cease to exist would be synonymous with the quantum field. Here's another beastie to add to the quantum zoo. There's a particle that would fit rather neatly into the diagram. Call it an exo-tachyon. That particle would ride the hyperbolic section of the momentum curve like a surfer rides the waves. And quite possibly it could go in both directions too. Let's say you started on the portion of the curve between C^4 and C^5 . The hyperbola would carry the particle to the point between C and C^2 . It would then move to the point C^2 - C^3 and through the curve to C^7 - C^8 . Then from just past C^8 down the curve to C^5 - C^6 , on to C^6 - C^7 to C^3 - C^4 . Its antiparticle (?) would follow the curve in the opposite direction.

Conjugate exo-tachyon pairs would rotate about each other similar to the action of electrons and positrons in a supercooled state. (Conjugate electron-positron pairs are called positronium). There would be a good chance that particle "tunneling" would occur between layers of the spiral as well, and the crossover point would be at the "T" core. Of course that would mean that most of the particles would reside at the "T" core. And since whatever is in the "T" core has

THIS WOULD BE THE STATE OF A LEVOGYRE CONSTRUCTED WITH AN INFINITE NUMBER OF SHELLS.

infinite momentum and zero mass that would also be one of the properties of the particle-also of free space, because it would be swarming with the stuff. Which would be entirely logical. After all, what can you do with free space? You can bend it, stretch it, change its geometry--but one thing you absolutely cannot do to it is accelerate or decelerate it. That is a definite no-no. If space had zero momentum there would be an infinite speed of physical objects with zero time flow. But what happens when you stop time? The physical properties of space change. It becomes impossible to accelerate a body. Because without time, space has infinite momentum. I think that what I term the "exo-tachyon sea" is analogous to the neutrino sea, zero-point energy, spacic energy sea, virtual particle sea, the ether, and whatever new terms have come round to describe it. In fact, it's also possibly the protomatter that Itzhak Bentov describes in Stalking The Wild Pendulum. (See Bibliography)

If it sounds like I'm getting too deep it's just that it's difficult to discuss a subject like free energy or gravity without getting a little heavy. Pun intended.

Now on to diagram A. Basically all it consists of is a table that charts out the properties of free space and time at the positions mentioned on the lotus. Speaking of the lotus--wherever the momentum curve converges on the "T" core the body possesses infinite momentum and zero mass. At the tip of the "leaves" you would have maximum mass and zero momentum. But now to the chart. At the position "C" the body would be in positive space, positive time and have infinite momentum. Those distortion effects are based upon Einsteinian space and may be wrong, but I'm using it anyway until I can prove it otherwise.

At position "C" the body drops a dimension and becomes two dimensional. At "C²" the value for t becomes absolute and space has a null value. Also momentum has a null value. Since mass has a finite value from the perspective aboard the body but also occupies all space at the same time, the mass does not exist as a physical entity from our perspective. Of course it does exist, but all the way along the velocity gradient or continuum those realities become relative quantities and are by no means concrete or objective. Also at "C²" time flow is infinitely fast. This is because the spacial dimension has collapsed into time. The next point, in my opinion, deserves some argument. That point is whether or not the body undergoes a dimensional transition. If I interpret Tom Bearden correctly, he believes that it does and that it becomes one dimensional and collapses into a line. I don't think that it does undergo a change and I'll outline my reasons why. My first objection is that it would completely screw up my theory! As an individual I do like order and accepting that particular element would throw a monkey wrench into the whole thing.

Second is that a dimensional transition at every point would lead to too many negative numbers, and intuitively it would not look right. But that of course is looking from a 3D perspective. If you begin with 11 dimensions then they'd all collapse into 3 in the end. And that would tie in with the new theories of dimensional expansion in the early stages of the universe. So what I'm going to do is give you my theory and let you decide which one sounds better.

At "C²" the body does not undergo a dimensional change from an objective standpoint. At "C³" you're still in positive time, but now you've got negative space to contend with. That makes for some very interesting physical properties. Negative impedance for one. Also negative permeability and permittivity for another. If you could get a mass into that section of the lotus and build a parallel plate capacitor with that space existing between it, then you'd have yourself a free energy device. Of course you would also need to find a way to scavenge the energy back to this section of space-time. But it could conceivably work.

At C⁴ the mass rests right on the equator of the lotus. And 'rest' would be an apt description in this case, for the mass truly is at rest. It also has exploded into the quantum field (yeck-what a mess!) and exists as an entity which is evenly distributed throughout the universe. Another property at this position is temporal simultaneity. The mass exists practically everywhere at the same time. Of course in reality it only exists during one particular collapse phase of the chronon. I'll explain the mechanics of the chronon at some other point since it becomes complicated very quickly.

At C^5 the mass exists in the flip side of the universe. All spatial and temporal values are reversed. Time moves backwards and space has negative values. In this part of the cosmic boondocks you'd probably find that hypothetical beastie 'negative matter'. Strange stuff! Since the inertial properties are reversed as well, if you pushed it the object would come toward you. If it were located in earth's gravity field the effects would be spectacular. For one thing any pull on the object would be interpreted as a push, so the mass would accelerate at 32 feet per second² away from the planet. It would literally fall up.

The thinnest slice of the material (and it does not depend on what material you use--it's a condition of matter) would do. If you stood on a thin disk of the material, provided it had the necessary structural strength, two effects would occur which complement each other. The first is that effect which manifests itself in a gravity field (as if that weren't enough). The second is another one of its bizarre properties which makes a very useful propulsion system. Since the material is just as transmissive as normal matter to gravity waves you are attracted to the planet. But... you are also standing on the disk and applying force to it. So the disk is pushing back and negating any effects of the mass on the disk. This would produce what appears to be an inertial shield but which in reality is not. You would still feel the same g forces that the acceleration imposed on you as with any other form of conventional propulsion. The real question is how you would transform a mass, which for all practical purposes is a geometric point to our perspective into a real 3D object which could be used as a practical propulsion system. The answer is I don't know. At this point I only have vague conceptions on how to do it, and those will follow.

What you would need is a field which changes the structure of free space that the object exists in while imparting a temporal acceleration equivalent to C^5 on the lotus. This hypothetical field would have a rigid dimensional integrity which would allow the mass to go through its many relative dimensional transformations while appearing to remain in a stable three dimensional geometry. Call it a relative dimensional transduction field. Basically it's a dimensional transducer. It would allow you to take a section of the hull of the ship or perhaps the entire hull, and do a spacetime inversion on it. This would have many useful applications, one of which is another one of the bizarre effects I alluded to. You see, since all of its properties are inverted, so are its thermodynamic properties. You could blast through the atmosphere at 10,000 M.P.H. and it would merely cool down the hull. Lasers and particle beams cool it off. It could also bounce cannonballs or artillery shells back at the source with more energy than they started with. A nuclear blast chills the hull close to absolute zero. And so on.

An alternative to this involves a different section of the curve. That would be applying the RDT field to a mass in the C^3 section of the curve. That would probably make it quite a bit more stable, but you'd be losing some of its temporal properties.

Another possibility is one which involves a great deal of precision in the process. That concerns what might be termed 'fractional' time travel. In this case the normal object existing between C^0 & C is dematerialized and transposed with the same object in a past section of the curve which is located between C^3 & C^4 . This would effectively 'bump' that object into this section of the curve (C^0 & C), which is our normal spacetime. I think this flip is a little more valid due to the fact that the object in the past has a bit more temporal momentum than the one in the present section and would in all likelihood accept a new position in which it has more energy than it began with. That's one of the principles of temporal energy conservation or entropy. The mass would then be acausal. In that case since you're manipulating the mass directly without changing the physical structure of spacetime, the field will only be needed to initially 'bump' the mass into the acausal state in which it will stay ad infinitum or until the process is reversed.

There are many good reasons for selecting this process. One of them is that you would be gaining quite a bit in the tradeoff, for you now have acausal negative matter with properties that normal negative matter does not have. Negative matter should not be confused with

My Biefeld-Brown Anti-Gravity Equation:

$$G = \left[2.235 * 10^{-13} \frac{\left(\frac{(km)A(Eb)}{d} \right) N-1}{m} \right]$$

Where:

- G is the induced gravity field in the dielectric (earth=1).
- m is the mass of the dielectric in pounds.
- k is the dielectric constant of the dielectric (air=1).
- A is the area of one plate in square inches.
- d is the distance between the plates in inches.
- b is the Biefeld-Brown constant $2*10^{-5}$.
- E is the voltage across the plates.
- N is the number of plates

Equation 1

antimatter. They're two different entities. Referring back to the lotus, at positions C^0 to C positive matter is found. (We are composed of positive matter). At positions C^3 - C^4 negative matter is found. Between C^4 - C^5 negative antimatter would exist, and at C^7 - C^8 positive antimatter. But perhaps I should clarify the concept of acausal matter. By "acausal" (or a-causal) I mean that the mass is devoid of the event determinates of cause and effect. It is very close to being in the virtual state, and with the exception of its temporal inversion it would be. Now on to the properties. Any force impressed on the object in the present, or causal side, is actually the effect side of the object due to the inversion. You cannot change an effect. The temporal momentum is infinite. In order to instigate a change in the object the causal side must be changed, and that is in the past. So the mass is also effectively indestructable. The mass of the object could also be engineered to whatever specification needed. To do so would require "tighter" tolerances in dematerialization. If neutron star material were used, the temporally inverted fields inherent in the structure would 'lock out' any electromagnetic or gravitational radiation creating a true gravity shield. The mass could be selectively attenuated by reducing the distance that the original object was transposed upon, thus creating a hull much lighter than any alloy which our present technology can fabricate. Look, ma! no gravity! The shield would also lock out inertial forces so the ship could zip around those right angle turns like the lightcycles in Tron. I have a name for the material. Call it millenium. After all, it can exist for a thousand years without really existing for a second. But I'm digressing.

At C^6 time would move infinitely fast in reverse. The spacelike vectors collapse into a single time vector. At this position space does not exist. Of course it didn't at C^2 either, but in this case time is flowing the other way. You also have temporal simultaneity, the body would be moving so fast that it's everywhen (?) at the same time. Moving at that speed you'd slam into the big bang and careen off into multiple universes (not exactly what I call a fun weekend).

At C^7 you would have much the same effects that are seen at the position C with the exception that the time vector is reversed. Think of it as the flip side of time dilation. The faster you travel, the faster your passage back in time will be. If it isn't already evident, this is the section of the lotus that normal tachyons use for propagation.

At C^8 or C^0 the object would be at absolute rest. The time vectors collapse onto the operating space vector, causing an infinite expansion. The body would be everywhere at the same time. Again, this is exactly the same position as C^4 with the space vector reversed. It seems that the ancient theoreticians were right after all, at least with the works that I have encountered. Matter does not exist at absolute rest. The old axiom was that matter was a result of motion, and that in the absence of motion, matter does not exist. Here we have the proof to the pudding. At C^0 , without any field propagation, mass does not exist. Another axiom also proves out. That was to the effect that absolute acceleration and absolute rest are exactly the same thing. Once the body accelerates to C^8 , it crosses the same point as in C^0 , and the same effects are observed there. Of course, these effects are merely relative, and to the object the universe has disappeared instead. This concludes our tour of the velocity gradient. There may be flashbacks from time to time (no pun intended), but those will be only for old times' sake.

Equation 1

My thanks go to Jerry Redfern for helping me out on the more difficult parts of the formula. I must mention first that the Biefeld-Brown constant that I used is purely theoretical and probably will change after real world testing has been made. The formula could also be simplified but presently it has been structured for convenience and ease of understanding.

Oh, by the way--there is a formula for a scalar gravity field only, a gravity field which exists without a gradient and just sits there and distorts space. In fact it's merely a variation of the present relation. That model would use a vacuum dielectric and would encounter a problem with high field strengths. That problem would be that high field strengths would make it look as if a massive body existed between the plates, and of course that would throw a spatial vector into the

field.

But back to equation 1. G is the induced field strength relative to earth, or 32 feet per second². The variable m represents the dielectric mass in pounds. Next is the dielectric constant k of the material selected. A is of course the area in square inches of one plate and d is the distance between the plates in inches. Now comes the iffy part. The Biefeld-Brown constant, b , is a hypothetical value. I plugged it into some data and in the instances which I've encountered it has worked. E is the voltage across the plates, which of course must necessarily be D.C. unless you want an alternating gravity field. N represents the number of plates (remember to subtract 1). By the way... if the equation resembles the one for parallel plate capacitance you are absolutely correct. That's what it evolved from.

Quite a few mechanical models have been constructed (and some patented) that would have produced a force vector from a spinning mass. The first few that come to mind are the Dean, Cook and A. C. Nowlin devices. The Dean Drive appears primitive to say the least. The essence of the theory is valid but the model is not very effective. The same could be said for the others. In some of the patents that I've examined mechanical stresses would have been extreme and very close to the limits. One possibility is a variation of a precessional drive; that's a drive based on a series of gyros arranged on the periphery of a rotating disk. Exactly such a model was proposed by Tom Pawlicki in the book "How To Build a Flying Saucer". Now I know that you're probably thinking that the precessional forces would be excessive and the bearing life so short that the device would require constant maintenance. But...if you use magnetofluid or gel bearings that can take abusive forces with a minimum of friction and temperature rise those complications can be avoided. Also due to the losses involved in mechanical models a free energy motor would be mandatory. One theory proposed concerning the Biefeld-Brown effect was that it may be caused by electrons precessing in their orbits rather than wholesale orbital distortion that describes a stretched-out ellipse similar to the Nowlin drive. Which brings me to another point. There appears to be an anomaly concerning the multiple armed version of a differential centrifugal force drive in which one end of the orbit has a closer proximity to the shaft than the other. Each pair of weights are mounted on a single shaft which slides through the drive shaft.

Now if the shaft which holds the pair is split or electrically isolated in any way no force results. And if the connection is reestablished the force is as well. It sounds as if an electrical force vector is responsible for the function of this mechanical model. Specifically, it sounds as if a variation of the Biefeld-Brown or Searle effect is responsible. I really don't know the exact mechanics involved. I'm just pointing out the errata and hope that at some point in the future the answer will arise.

And now a brief digression back towards the Biefeld-Brown effect. After running the program a few times I have come to the conclusion that the possibility of designing a craft utilizing the Biefeld-Brown effect is difficult but not hopeless. One possibility is to construct a gravitational traveling wave amplifier with positive feedback. The only way to travel! Of course this makes it a super-regenerative gravitational amp which has some aspects similar to the device that Shinichi Seike outlined as a gravity to electric power generator (you'll see one of his papers in the proceedings of The First International Symposium On Non-Conventional Energy Technology. (see bib.)) Presumably one is the reciprocal of the other. The physical configuration would appear to be a toroid with the plates stacked radially on the exterior of the torus. To be more specific, the plates would run from the outside to the inside of the torus and would give the impression of a series of doughnuts stacked around the large doughnut. There are several advantages to this design, one of which is that the regeneration rate becomes an important factor in gravitational flux generation. The higher the regeneration rate the lower the flux density. If you had a really suped-up drive system, then the regeneration rate would have a fairly high frequency at idle, up in the higher rf range of the electromagnetic spectrum. This would explain the "cooked" soils found at the supposed U.F.O. landing sites. They look as if they've been in a microwave oven too long.

↑
IDEAS FOR BEARINGS IN THE LEVOSTAR.

Another point is that if you wanted to generate a scalar gravity field all you'd need to do is construct another toroid on top of the bottom one and run the force vector in the opposite direction. As long as the two cancel out, the scalar value would operate. And that would produce much the same effects that the Searle disk would, namely local spatio-temporal distortion or warpage. That's right--it's a warp drive. Forget about the dilithium crystals.

The warp drive unit and a free energy power supply would be all you ever would need, besides the navigational gear and a few necessary luxuries. The navigational equipment would plot a parabolic vector outside the universe (or to the single-universe chauvinists, a vector outside 3 space).

A variation of this concept would be a warp transposer. Quite literally it would create a scalar wormhole, the end of which would project outside tri-dimensional space and loop back along a parabolic trajectory to the destination point. This unit would contain the warp in a bottle-like arrangement without spillover into the surrounding space. Since you could plot courses along the lotus the transposer could operate through space and time as well. You could 'beam' from New York to Los Angeles and arrive five minutes before you left. Or send packages the same way. You truly could get it there yesterday. To send something you'd punch in the space-time coordinates and the computer would calculate the trajectory. Then the object would be placed on an alignment grid and the field switched on. The mass would then accelerate along the field vector. When the temporal momentum of the mass exceeded the dimensional change per unit time of the field, it would emerge at its destination. Of course the opposite would be employed to get the object back onto the transposer grid. In that case the field would be projected or transposed onto the object to be "snatched". Then the object would exist in both the transposed and the original spatio-temporal field. Remember that the field created by tangible matter is between C^0 and C on the lotus. The whole objective is to dump energy from the field into the mass to be transported. Once this is accomplished the mass accelerates along the field vector. It "falls" outside space-time. The bottom of the well would be the transposer grid. Since large amounts of temporal momentum would be dumped into the mass over large distances, considerable damping or compensation would be required which would place a limit on the maximum distance that the mass could be transported safely. In other words, if you tried to "beam" in from a large distance you'd most likely arrive with a bang.

Tunguska, Siberia Blast in 1908

Which leads us into another subject somewhat similar. What really happened to create the tremendous explosion which leveled a large area of Siberia in 1908? A quasi-accepted theory involves a large meteor impact. This seems implausible, however, considering the lack of an impact crater anywhere near the site. Another theory involves a U.F.O., and that particular view holds that a spacecraft with a damaged power generation system blew up due to a runaway chain reaction on board. In light of the new insight toward gravity, another theory suggests itself. Incidentally, I'm going to have to invoke that mysterious beastie: hyperspace.

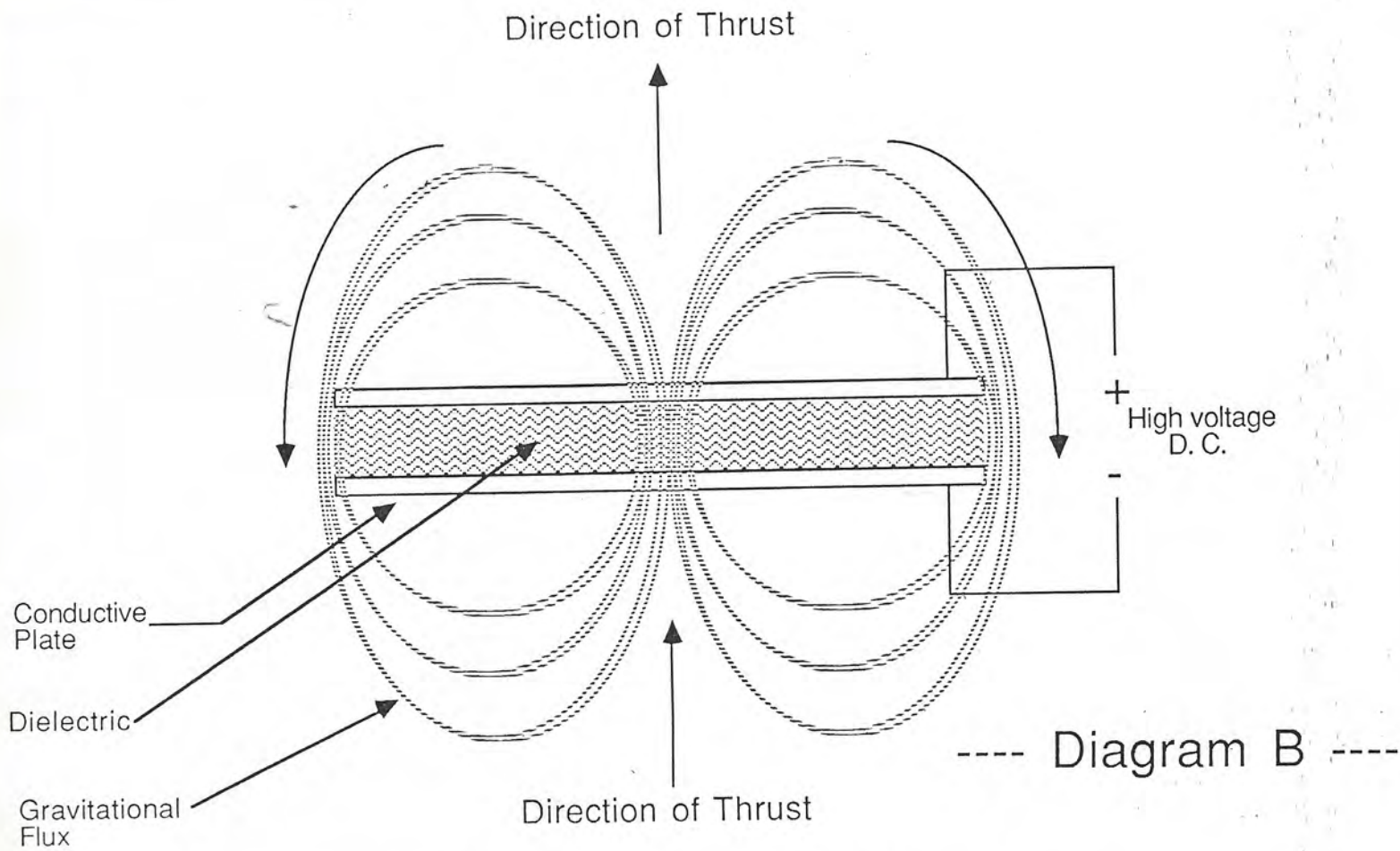
Let's assume that black holes do in fact exist, as well as white holes. These bodies seem as severe a model of gravitational wave theory as you could get, but there is another type of cosmic pac-man which is even more insidious. That type would involve a black hole without a vector to its field. Think of it as a black hole and a white hole of similar masses superimposed over each other. Or of a black hole of negative matter superimposed over a black hole of positive matter. One would have a "push" to its field, and the other would have a "pull". Now here's the interesting point: when the two fields superimpose, the force vectors present in three dimensional space will cancel out. But there's still another force vector to deal with, and that is one that does not go away. That force vector is in four dimensional space and warps, or distorts it. What this means is that the volume of space associated with it appears to be a disembodied space/time warp. Of course there is a mass there; in fact quite possibly two. It's just that it's undetectable as far as its gravitational influence is

concerned. This body would be gravitationally neutral so nothing attracts it and nothing is attracted into it.

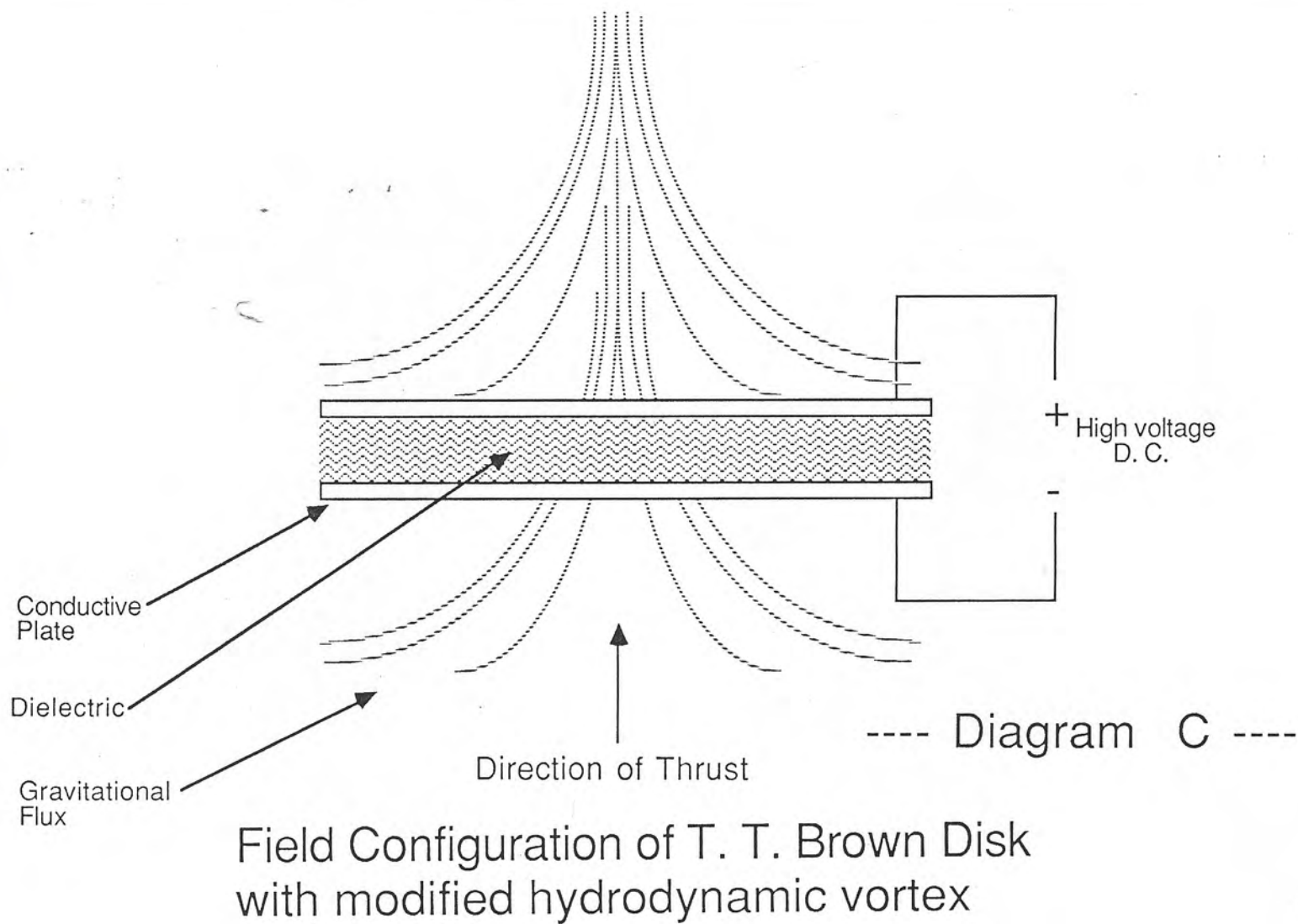
There could be three ways to detect it. One way would involve using a kind of cosmic plumb line. If you drop a mass into it and it undergoes a violent dimensional change, then you've found it. The same method could be used to "map out" the area to find the borders. Another method could rely on the fact that this body has what appears to be a vast amount of space on the inside of it. Since light would still obey the inverse-square law once it passed the event horizon, a great deal of attenuation would occur as seen from an outside observer. In fact, the body would have the same effect on light as a concave lens. For example, if light had ten miles to travel on the outside, and ten million on the inside, the light exiting the horizon on the other side would seem to have traveled that much farther. Another method would involve measuring the time delay between two signals; one sent from the source to the observer on the outside of the event horizon, and the other sent from the source and through the zone of space under the influence of the body. The delay would be proportional to the amount of space on the inside versus the outside.

How large could these beasts get? The size would be related to the superimposed masses. Conceivably, the smallest they could get would be in the neighborhood of 10^{-33} cm. Which would also be the size of a theoretical particle of free space, called the chronon. Could there be a connection? Quite possibly so. The thought occurs to me that if you ran all four quadrants of the lotus into each other you'd get much the same properties that the chronon has. In that case, the field density in the inside would be so high that any mass would appear to be geometric points from an outside point of view. In the inside, however, an observer would see an infinite volume of space and three-dimensional, tangible matter. So there would be worlds within worlds. (Please bear with me. All of this preliminary stuff is necessary to understand what I've got that follows). If the superimposed masses had a substantial rotational speed, something else happens. A hyperspatial skew would occur which would produce a wormhole in space. This would be related to the gravitational coriolis effect generated by the bodies. Actually, a gravitational vortex is the easiest way to understand it. A gravitational tornado or whirlpool would be generated which would induce an acceleration outside spacetime. You see, since the masses cancel out any attraction that the field could have, the only acceleration that would occur is actually outside spacetime itself. So the mass accelerates. To where? To the business end of the vortex which is transposed upon normal space. And all the way it's gaining kinetic and temporal momentum at the expense of the body which is propelling it. Let's call the superimposed mass combination a C.V.E. That stands for charged vacuum environment. After all, all that's left between the gravitational tug-of-war of the two bodies is a charged vacuum which is apparently empty. Another point I'd like to clarify is that in this scenario, no such thing as a white hole would be observed at the business end unless the C.V.E. happened to drift into a matter-rich area of space (like the core of a planet, for example). Even then, no superheating of otherwise cold matter would occur unless the C.V.E. is at a distant location. In that case you'd have what is termed a "cosmic gusher". The distance between the C.V.E. and its business end would depend on its mass.

So much for the preliminaries. What would happen if a chunk of rock just happened to drift into a rotating C.V.E., one in which the two masses counterrotate in relation to each other? It would be accelerated through hyperspace and gain energy at the expense of the angular momentum of the two superimposed masses. And if the C.V.E. were very massive, it would gain a phenomenal amount of energy by the time it reached the exit point and literally slam into its destination, releasing all of its energy at once. I have no idea how often many of these galactic slam dunks occur. But with a massive C.V.E. thousands or even millions of light years away, who knows? I think this may have happened in 1908, in Siberia. Perhaps a wandering asteroid found a C.V.E. and suddenly found itself in Siberia. When it "popped" into its destination, it might become superimposed on top of the gas molecules which just happened to occupy the same space. Which might explain the fission fragments found near the impact(?) site. After all, what would happen when, say, an iron nucleus slammed into an oxygen or nitrogen nucleus? An immediate



Field Configuraion of T.T. Brown disk
according to Ether-Technology



fission/fusion reaction would ensue. That additional energy would probably be insignificant compared to the enormous amount of kinetic energy contained by the asteroid. Of course the same thing could happen to a spacecraft, if that theory is valid. And so... Kaboom!

Now on to an explanation of the remaining diagrams.

Diagram B

Diagram B shows the gravitational flux flow around the Biefeld-Brown Disk according to Rho Sigma in Ether Technology (see bib.). The direction of thrust is actually the direction that a mass would take as it "fell" into the field. Usually the impression that one gets from the term "thrust" is a push rather than a pull, so that term is somewhat misleading.

Diagram C

Diagram C shows a Biefeld-Brown Disk with what I term a modified hydrodynamic vortex. This flux flow is markedly different from the one in diagram B. This configuration is also much more prone to "matter snatch" than the one in diagram B. It would seem that in diagram B the field produces more of a pinching action than the one in C. The matter snatch effects would be interesting. The one in B would produce a kind of lateral compression of the soil with a small cross section pulled up where the force vector is strongest. The one in C would cut round, neat holes in the soil. The soil would literally stick to the underside of the disk.

Diagram D

Diagram D shows the gravitational field configuration of a T.T. Brown disk with the conventional radiation pattern. This view shows the field radiating away as an electromagnetic field of radiation normally would. This view (diagram D) would only be correct with a disk composed of a superdense mass, such as that suggested by Robert L. Forward (see Bib.). It would not be correct with the observed effects linked to the artificial generation of a gravity field using an electric field.

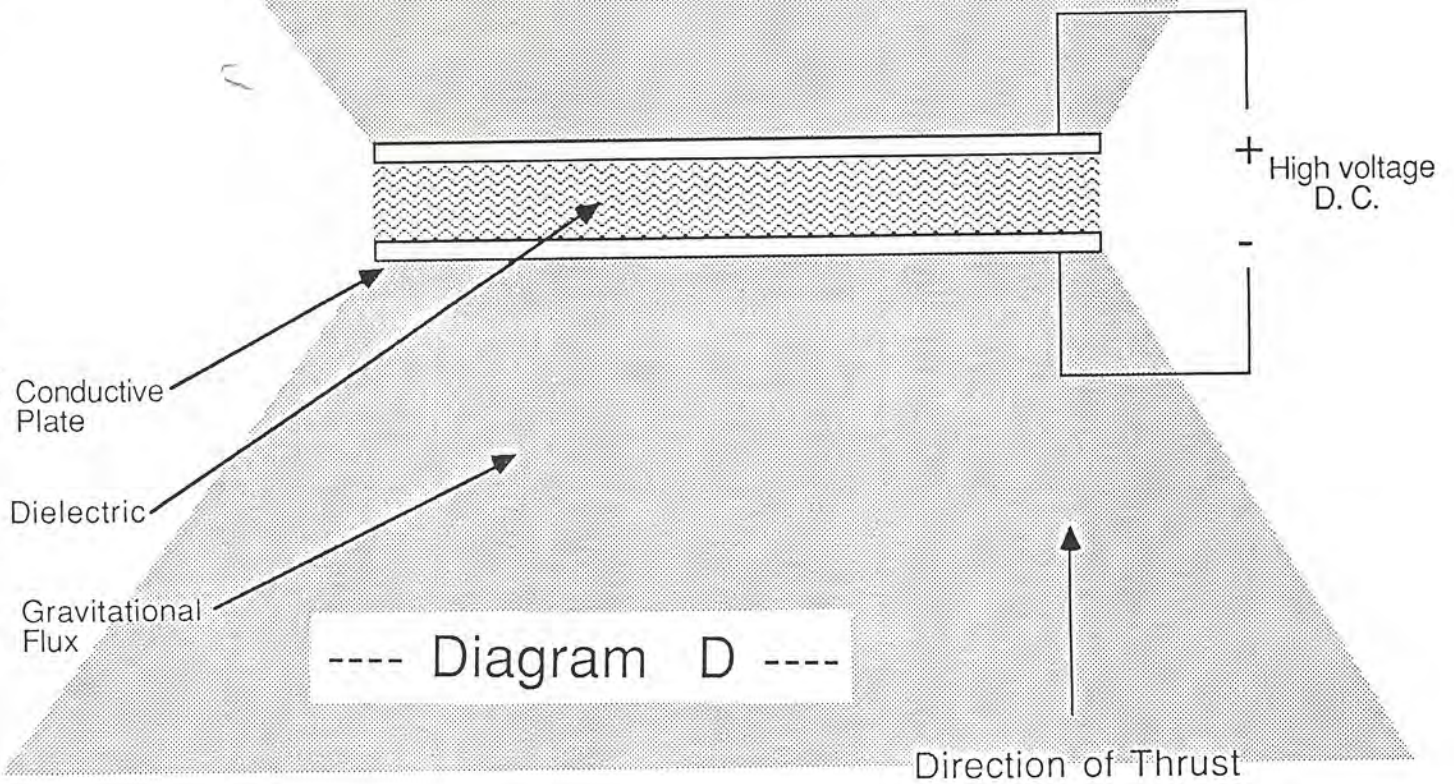
Diagram G

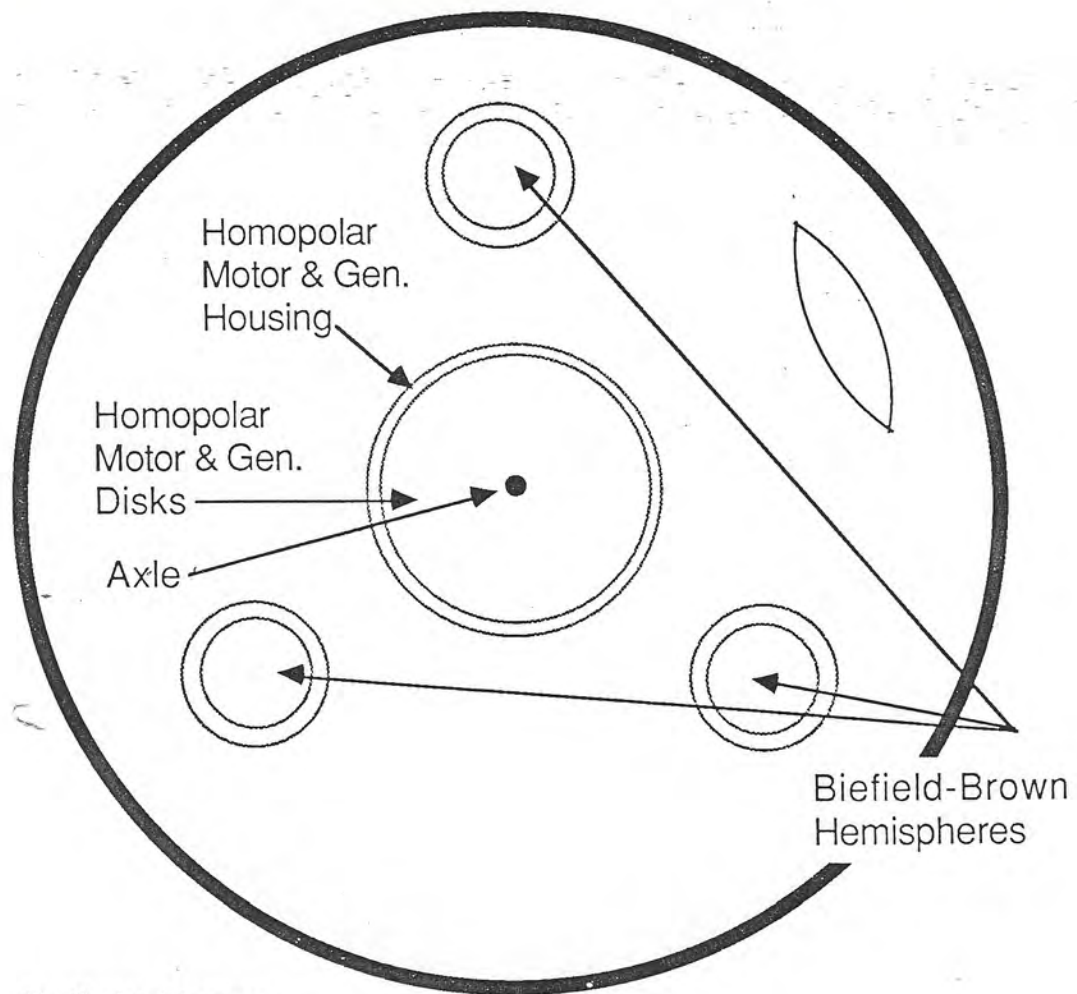
Diagram G shows the gravitational field configuration of the Searle disk and the resultant electric field potential across the face of the disk. This shows the similarity between a Searle disk and the operation of a homopolar generator, or "N" machine, as suggested by the work of Bruce Depalma (see bib.).

Diagram I

Diagram I shows my version of a Schauberger device using four torqued fluid vortices. In theory, the operation of torquing a fluid vortice would be identical to torquing a gyro, since the gyroscopic moment of inertia is similar. All that would be needed to test this would be a pump motor of sufficient capacity, fluid baffles, and the associated piping. In this device, the curvature of the pipe in which the baffles are placed and the placement of the fluid baffles would be somewhat critical. Think of it as a liquid "Laithwaite engine".

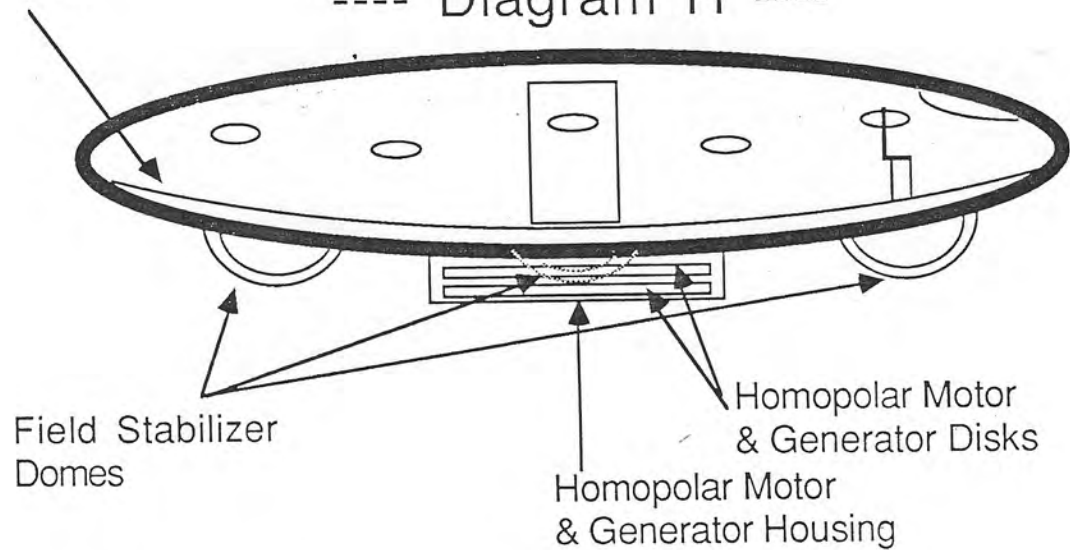
Field Configuration of T. T. Brown Disk with Conventional Radiation Pattern



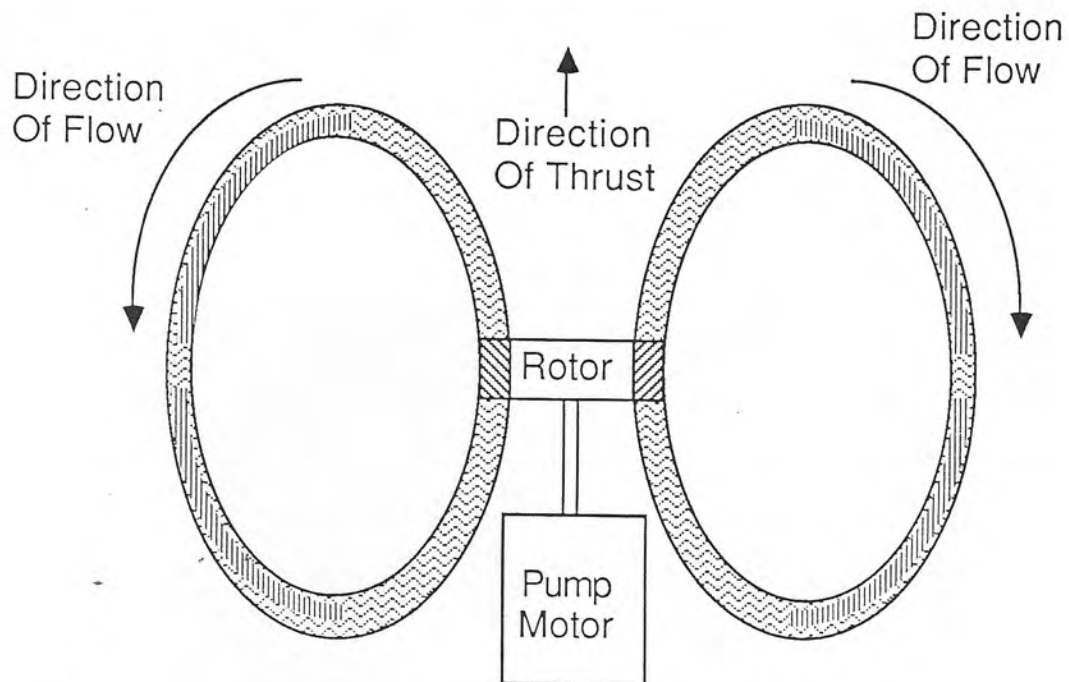


Biefeld-Brown
Disk

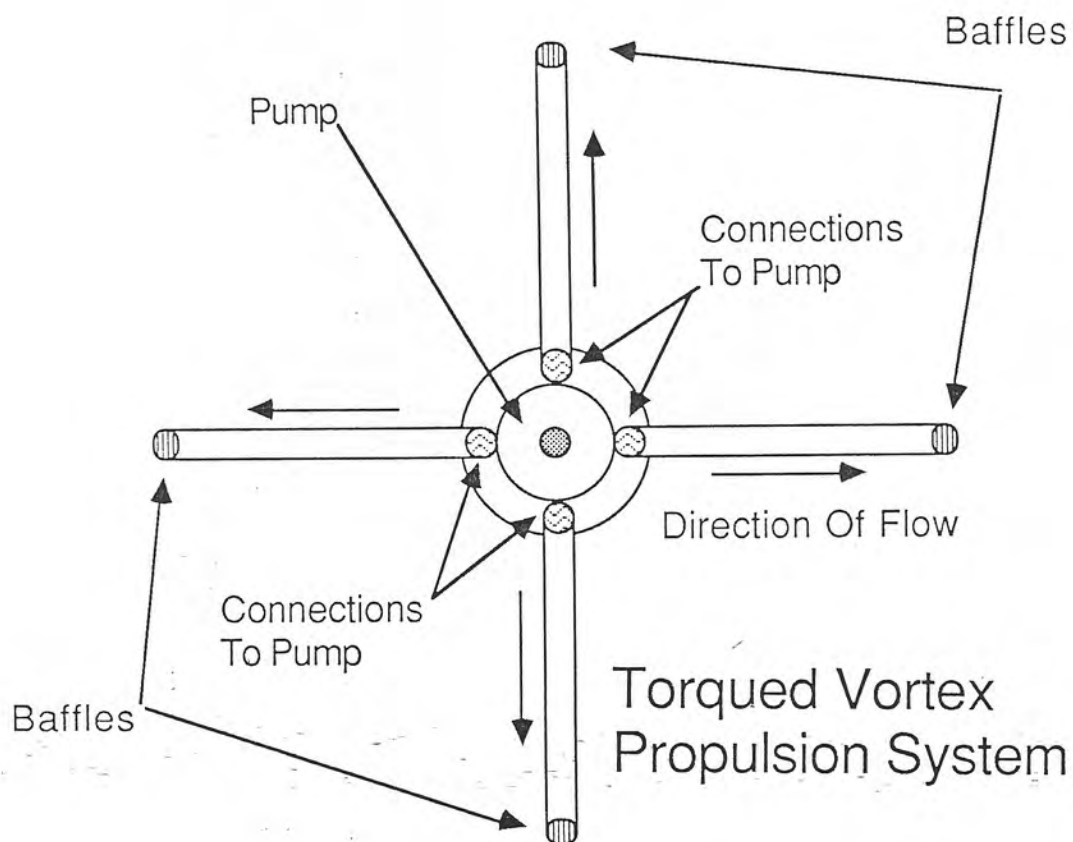
---- Diagram H ----

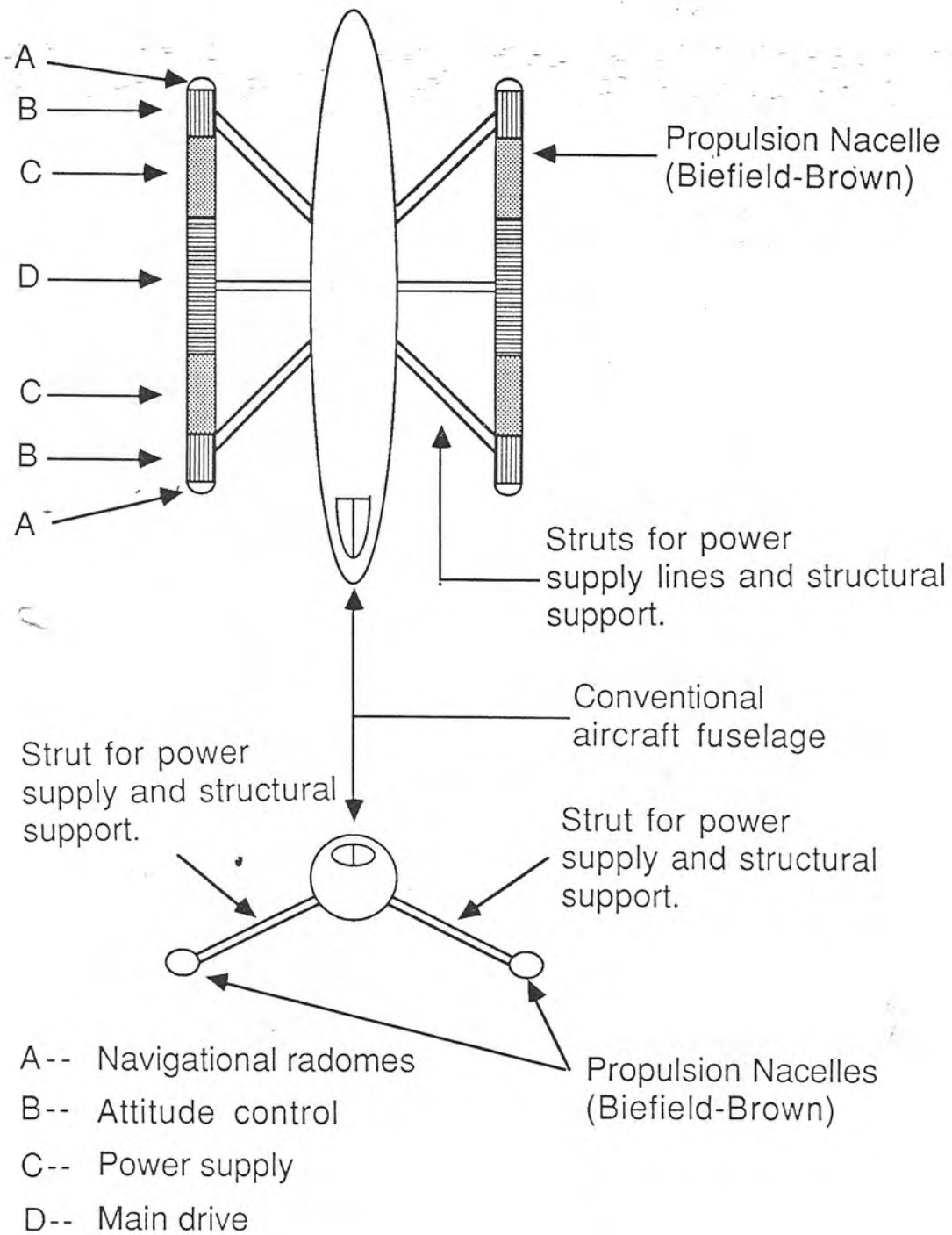


Antigravity Craft With Biefeld-Brown Effect Drive



---- Diagram I ----





Conventional Fuselage Configuration With Gravity Drive Retrofit

---- Diagram J ----

Diagram H

Diagram H is my idea of what a ship would look like using the best of the alternative technologies available. This version is in the shape of a discoid craft, not really a true saucer. The homopolar motor/generator resembles the N-1 Power Generation System of Bruce DePalma (see Bib.). This version has a few modifications on it, however. One of which is a tremendous increase in size, and another would be a specialized power supply which would feed into the main drive. One addition to this design which would be absolutely mandatory is the field stabilizer domes. When the main drive is in operation and a fairly high field amplitude is reached, a kind of a "gravitational coriolis effect" would come into operation and would tend to torque the ship and make it spin around like a frisbee. This prevents that undesirable operation by generating "mini-vortices" that destroy the angular momentum in the gravitational field thrown out by the main drive. Top speed? The top speed would be proportional to the power output of the main drive and the capacitive load of the Biefeld-Brown drive. With state-of-the-art materials and technology this craft could possibly do fifty percent of the speed of light. This version would provide a pretty conservative acceleration as far as UFO's go. Some UFO's accelerate as fast as 32000 feet per second². This one would be a model T, more or less. Its acceleration would be approximately 960 feet per second². To get some idea of the proportions of the craft and accommodations, the diameter is thirty feet across. With all the space that would be taken up by navigation and life-support equipment, the only space that remains would be enough for three or four passengers and one pilot.

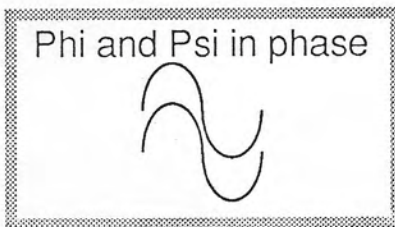
Diagram J

This diagram shows a more conventional design than the one outlined above, in fact it can even be a retrofit to a Lear fuselage. But there is a tradeoff. The field generated by the nacelles is completely self-contained and doesn't protect the crew from the effects of acceleration. So this is primarily a shuttlecraft, and of course with the limited acceleration, comes a limit to speed and range. In other words, this is not an interstellar craft. The top speed (if the fuselage were retrofitted to operate in a hard vacuum) would probably be approximately 1000 miles per second. The range would be limited by the amount of supplies the ship could carry. The two "caps" on either end of the nacelles (A on the diagram) are the navigational radomes used during flight to gauge distance to the destination and detect foreign objects which might damage the craft. The items designated as B are the Biefeld-Brown propulsion systems used for attitude control. These are electrically isolated from the main drive and have considerably less power. The items designated as C on the diagram supply power to the nacelles. Two are supplied per nacelle with one used as a backup unit. This would probably be either a stationary armature generator type or an N-1 power generation system. Struts run from the nacelles to the fuselage providing structural integrity and power to the fuselage. The main drive is a gravitiopile comprised of Biefeld-Brown disks stacked vertically to provide lateral acceleration. The number of passengers would be limited to the fuselage selected.

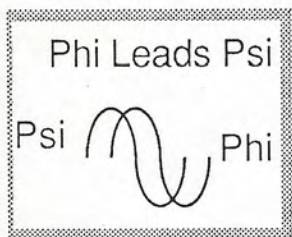
Diagram K

Diagram K shows the results of a great deal of research into the relationship between the gravitational field and the other forces in nature. It also shows what I term the "Energy Gradient". This diagram shows the relationship between two primary fields named Phi and Psi whose phase relationships combine to form all the physical forces in nature. I'll start with the bottom of the diagram, the one marked "Free Space". In this position, Phi and Psi are 180° out of phase in what is termed as destructive interference. Since the phase difference between the two fields defines the physical dimensionality of free space, in this position no space exists. This diagram evolved out of the familiar electric-magnetic-gravitic triangle that is shown in diagram M. The earlier version did not explain the propagation characteristics of an electromagnetic wave, which made it somewhat

Diagram K

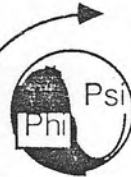


Gravitational

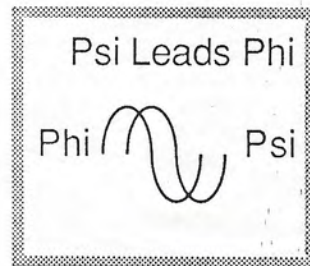


Electric

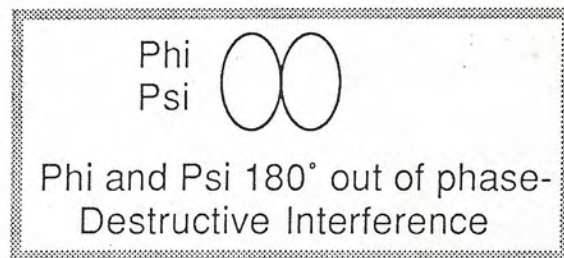
Energy
of Field



Magnetic



Free Space



Unified Field
Quadrangle

and Energy Gradient

incomplete. The earlier theory was very mechanistic and ignored the dynamic capacity of the space in which the wave propagated. Hopefully, this will shed new light on the puzzling phenomena which is observed in the universe in which we live.

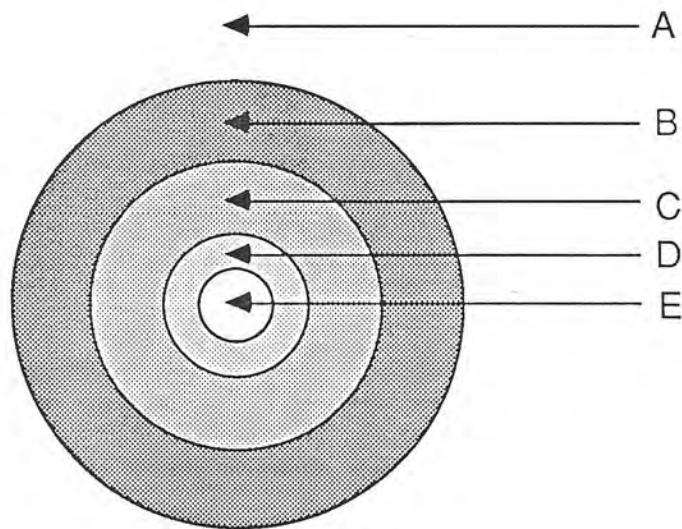
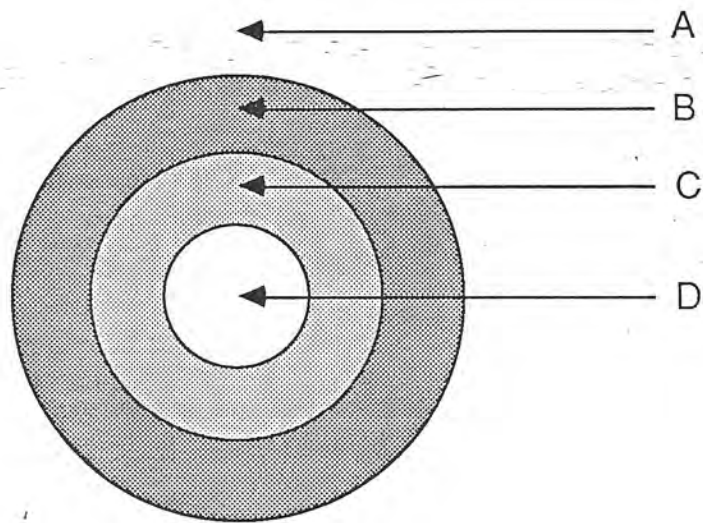
In diagram K I have pair-coupled two fields which are named psi and phi. These two fields are never seen alone. Each is always pair-coupled to the other. The phase angle between the two, depending on which one is leading and which is lagging, determines which force exists in free space.

Beginning at the bottom of the diagram, I have shown that the two fields in destructive interference resemble free space. They would but... Free space in that diagram would have a zero energy density and thus would have no dimensional characteristics. Four dimensions, length, breadth, width, and duration would collapse into one. In the space that we are familiar with, there is always some amount of angular displacement between the two. Einstein had an adage which he used to explain his theory and which I'll repeat since it has some measure of validity here. Mass tells space how to curve and the space tells the mass where to go. But gravity (or the curve) also tells space how to expand. A gravity field induces an angular displacement away from 180° . That's one way of looking at it. From another perspective, the angular displacement induces compression of the standing wave "bubble" of a particle and thus by shrinking it down gives the illusion that there is more space around it. Either way you'd get the same effect.

Moving along the diagram in a clockwise direction, we see the electric field. In this position phi leads psi by 90° . It would have an intimate connection to free space and to the gravitic field. In theory then, it should be possible to affect both by using the electric field. It is my contention that the Biefeld-Brown effect, the Searle Effect, and other mechanisms used to generate electro-gravitic fields does exactly this. A good rule of thumb to use with the diagram is this: Each field affects the fields that are at right angles to it in the diagram. All other fields that are not shown in the diagram exists between any two of the fields on the diagram.

Now on to the gravity field. In this case the components phi and psi are in constructive interference with each other. A very weak gravity field would have some of the properties of a strong electric field, and vice-versa. With a 0° phase angle between them, the phi and psi fields would produce an infinite volume of space. This would be diametrically opposite to the position below it which is shown as free space. Of course from the other perspective, the absence of angular displacement induces infinite compression of the standing wave "bubble" of a particle and thus by shrinking it down to a geometric point gives the illusion that there is nothing there. From the position on the diagram another inference may be made. It would be impossible then to have a strong gravity field that did not spill over into the magnetic or electric sides. And if that spillage pair-coupled, there would be a direct conversion of gravitational to electromagnetic energy. That possibility may be valid but I think another is far more likely. If a portion of this "leakage" went into self-oscillation an electromagnetic wave would be created. This very mechanism could cause heating of massive bodies of planetary proportions. It could quite possibly attain as much as 10^6 tons per second in a body approximately 330,000 times as massive as the earth. This conversion is accomplished at the expense of the mass, however, and the body in turn suffers from a form of cosmic dry rot. Conceivably, this could be the cause of the 3° K. background radiation in the universe. More will be discussed in my upcoming book.

Proceeding now to the magnetic side we see that psi is leading phi by 90° . If the magnetic field went into self-oscillation it theoretically would fluctuate between a gravitational field and free space with zero energy (also zero volume). Needless to say, this would make for some very interesting effects. Magnetic material saturated with this self-oscillating field would show relativistic effects standing still. Supersaturation could even possibly induce dematerialization.



A: Free Space
 B: Magnetic Field
 C: Gravitational Field
 D: Electric Field
 E: Free Space (Zero Energy)

Cross Section of Magnetic Field Line

---- Diagram L ----

Diagram L

A magnetic field line is a special case unto itself. At the operational level of the field line, which is in diagram L, we see that at the core of the field line in number 2 a singularity exists. At the "surface" of the field line, ψ is thrown 90° forward. Penetrating the surface of the field line we come to position C on the diagram, which is a gravitational field in which ϕ and ψ are at a 0° angular displacement from each other. This gives an infinite value to the gravitational field, and thus it exhibits the same properties as a singularity. It also produces an entity which has (for all practical purposes) a dimensionally transcendent geometry within itself. Moving on to position D, we see that an electric field is infolded within the magnetic field line. This means that if it were possible to rip a magnetic field line apart, or even flip one inside out, an electric field would be observed. In position E, a zone of Free space exists at zero energy. This of course means that at position "E" a condition exists that gives the zone a finite diameter on the outside and zero volume on the inside. This also implies that if the technology permits to inject a controlled source of energy into one end of a magnetic field line and into zone E, then that energy will "pop" out the end of the field line at the same instant that the signal was injected at the entry point. That signal would propagate at a seemingly infinite speed because physical space does not exist in the center of the magnetic field line in this scenario. And if the signal were injected and allowed to loop through a field line, then you would have a signal moving backward in time. That signal would probably move back to the point prior to the existence of the field line and then would exit and dissipate its energy. This could be a pretty simple way to induce temporal feedback, if it could be realized.

Table A

This table contains various effects that would be observed for a physical mass progressing through the velocity gradient. This table plots relativity and beyond. beginning with position C, the table notes a positive value for T, which is time. A positive value is noted for S, which denotes space. These two values mean that at position C the object exists in positive space and positive time. Value M denotes the momentum of the mass. In this case, Aleph^0+ means that the body contains an infinite amount of positive momentum. The aleph series was created for counting quantities greater than infinity. Aleph^0 is infinite. Aleph^1 is infinity squared. Aleph^2 is infinity to the third power, and so on. Simply put, it merely counts powers of infinity. Under distortion effects, time dilation is noted. This means that to an outside observer, the subject is moving more and more slowly as time slows down for him. Also noted is spatial contraction, which means that to the subject, much less space seems to exist between the subject and the destination point. The next point is somewhat debateable. This is seen on the table as "Local Spatial Expansion", and is based on a rather strict interpretation of Einsteinian space. In this case, the subject and the ship are contracting (actually physically shrinking) in the direction that the ship is moving. So the ship and everyone on board becomes thinner with an increase in velocity. There is another effect that would be seen with dimensional transduction fields. That effect would still cause a spatial contraction in the direction of movement, but if the acceleration is outside 3 space, then the atomic particles that comprise the ship and its' occupants contract in three dimensions until they disappear into a collection of geometric points. The next point on the table is position C^2 . In this position the body is moving at the velocity of the speed of light squared. The body exists in positive time as seen by the + under "Value T". Value S has "Null", which means that the object does not occupy physical space. Value M is also "Null" which means that the body also has no momentum. Under "Distortion Effects", positive contraction of time is noted as the body moves infinitely fast into the future. Spatial Suspension denotes that from the perspective of the occupants of the ship, our universe ceases to exist. Temporal simultaneity (with the + symbol attached to it) is another assumption which may or may not be correct.

THIS IS ONE OF THE PRINCIPLES OF THE OPERATION OF THE LEVOGYRE.

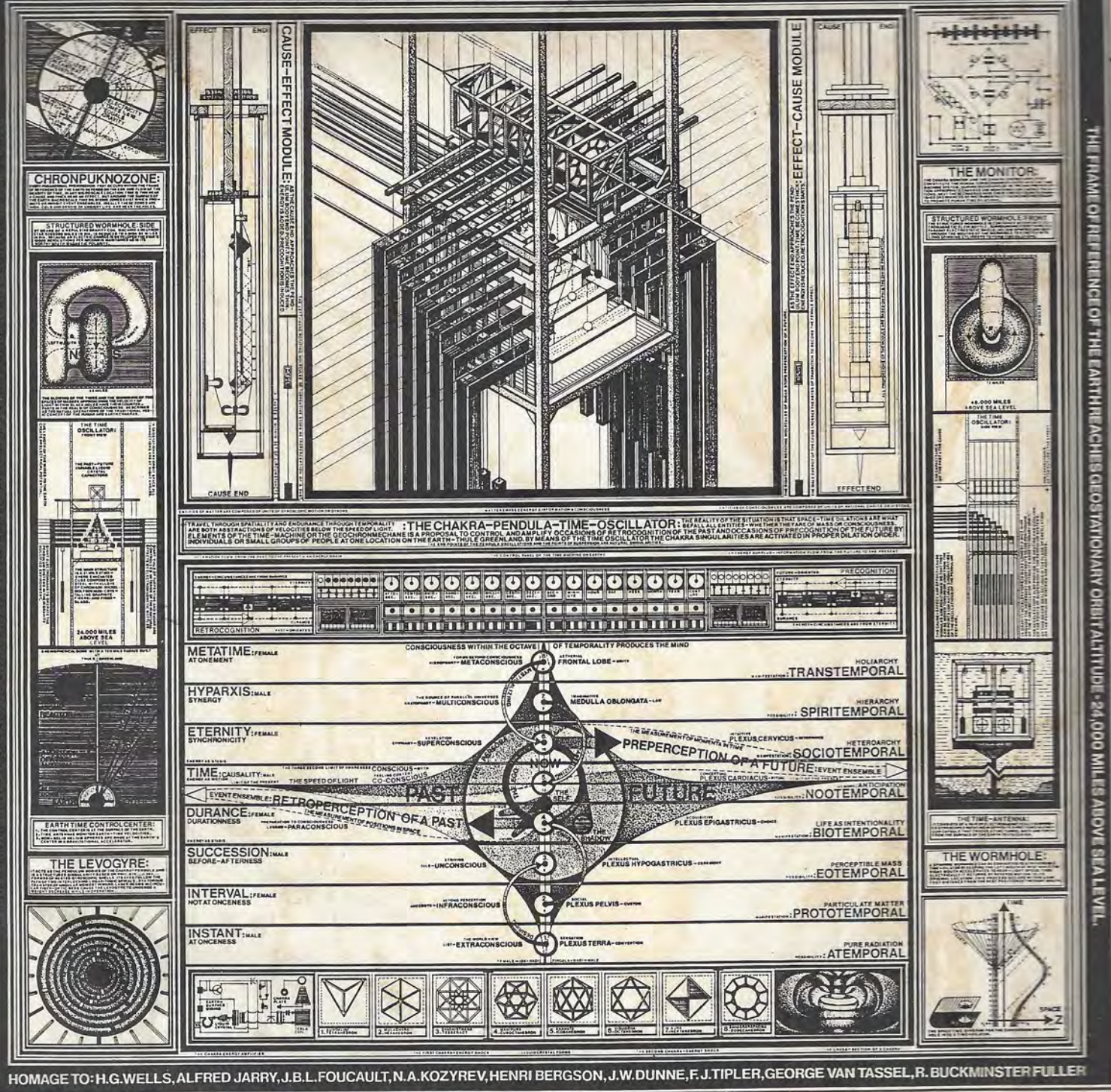
Position	Value T	Value S	Value M	Distortion Effects:
C	+	+	Aleph ⁰ +	Time Dilation Spatial Contraction Local Spatial Expansion
C ²	+	Null	Null	+ Time Contraction Spatial Suspension + Temporal Simultaneity
C ³	+	-	Aleph ¹ 0	Negative values for physical properties of free space.
C ⁴	Null	-	Null	Temporal Suspension - Spatial Simultaneity
C ⁵	-	-	Aleph ² -	Space/Time Inversion
C ⁶	-	Null	Null	- Time Contraction Spatial Suspension - Temporal Simultaneity
C ⁷	-	+	Aleph ³ -	- Time Dilation Spatial Contraction Local Spatial Expansion
C ⁸ - C ⁰		Null	+	Null Temporal Suspension + Spatial Simultaneity

---- Table A ----

THE TIME MACHINE: GEOCHRONMECHANE: FROM THE EARTH

THE TIME MACHINE IS POSITIONED FOR OPERATION AT THE LIMIT OF THE NATURAL FRAME OF REFERENCE OF THE EARTH.

THE FRAME OF REFERENCE OF THE EARTH IS A GEOSTATIONARY ORBIT ALTITUDE - 24,000 MILES ABOVE SEA LEVEL.



HOMAGE TO: H.G.WELLS, ALFRED JARRY, J.B.L.FOUCAULT, N.A.KOZYREV, HENRI BERGSON, J.W.DUNNE, F.J.TIPLER, GEORGE VAN TASSEL, R. BUCKMINSTER FULLER

THE GEOCHRONMECHANE : 1990 28"X 28" INK ON BOARD WITH LETTERS
 HERE THE LEVOGYRE IS USED IN A MULTIPLE FORM AS THE SEVEN
 PENDULA OF THE CHAKRA TIME OSCILLATOR; AND ONLY ITS ASPECT
 AS A STRUCTURED SINGULARITY [OR ARTIFICIAL WORMHOLE] IS BEING
 UTILIZED.
 THE CHAKRA AND ACUPUNCTURE OR ACUPRESSURE POINTS IN THE BODY
 ARE NATURAL SINGULARITIES THAT CONNECT THE FOURTH WITH THE FIFTH
 DIMENSIONAL REALM [THE REALM OF META-ENERGY]. BUT IT IS ONLY THE
 CHAKRAS THAT ARE ENSEMBLES OF SINGULARITIES, AND ARE, THEREFORE,
 RESPONSIBLE FOR THE MANIFESTATION OF THE PSYCHIC ABILITIES. IN THIS
 CASE THE LEVOGYRES MODEL AND AMPLIFY THE CHAKRAS.