Three everyday macro phenomena

- Measured
- Used
- Unexplained.

- Instances of the same principle.

— Described, catalogued, *quantified*, used...

But science has not found *how* they happen:

	Phenomenon	*Operates across*
1	Memory	Time
2	Reproduction of shape in life forms	Time and space
3	Electromagnetic induction	Space

All are: basic to our:
perception (1), Life (1 and 2), and technology (3).

All are: <u>Phenomena of transmission of form.</u>

Three phenomena of Transmission of form:

	Phenomenon	*Operates across*
1	Memory	Time
2	Reproduction of shape in life forms	Time and space
3	Electromagnetic induction	Space

Without **reproduction of shape in life forms** …

- evolution would have no foothold. It is the very basis of Darwin.

Without **memory**

- we might still be … *insects* ?

– and: **EM Induction**

- we *discovered* (in nature), and have made a mainstay of our lives.

So these are not *obscure* subjects…

Hiding in plain sight

These are not obscure subjects - ...

They stare us in the face. They happen every day.
Yet science has not resolved them.
- Has hardly looked at them..

They merit some pretty radical attention. We have not given it.

It's almost like the religious poet said:

> **The world is a mirror of infinite beauty**
> **- yet no man sees it –**
>
> (*Thomas Traherne, 1637–74*)
> (Close contemporary of Newton)

Does this lovely phrase perhaps describe the moment before a discovery?

The world is a mirror of infinite beauty –
– yet no man sees it –...

(*Thomas Traherne, 1637–74*)

I take this romantic tone...

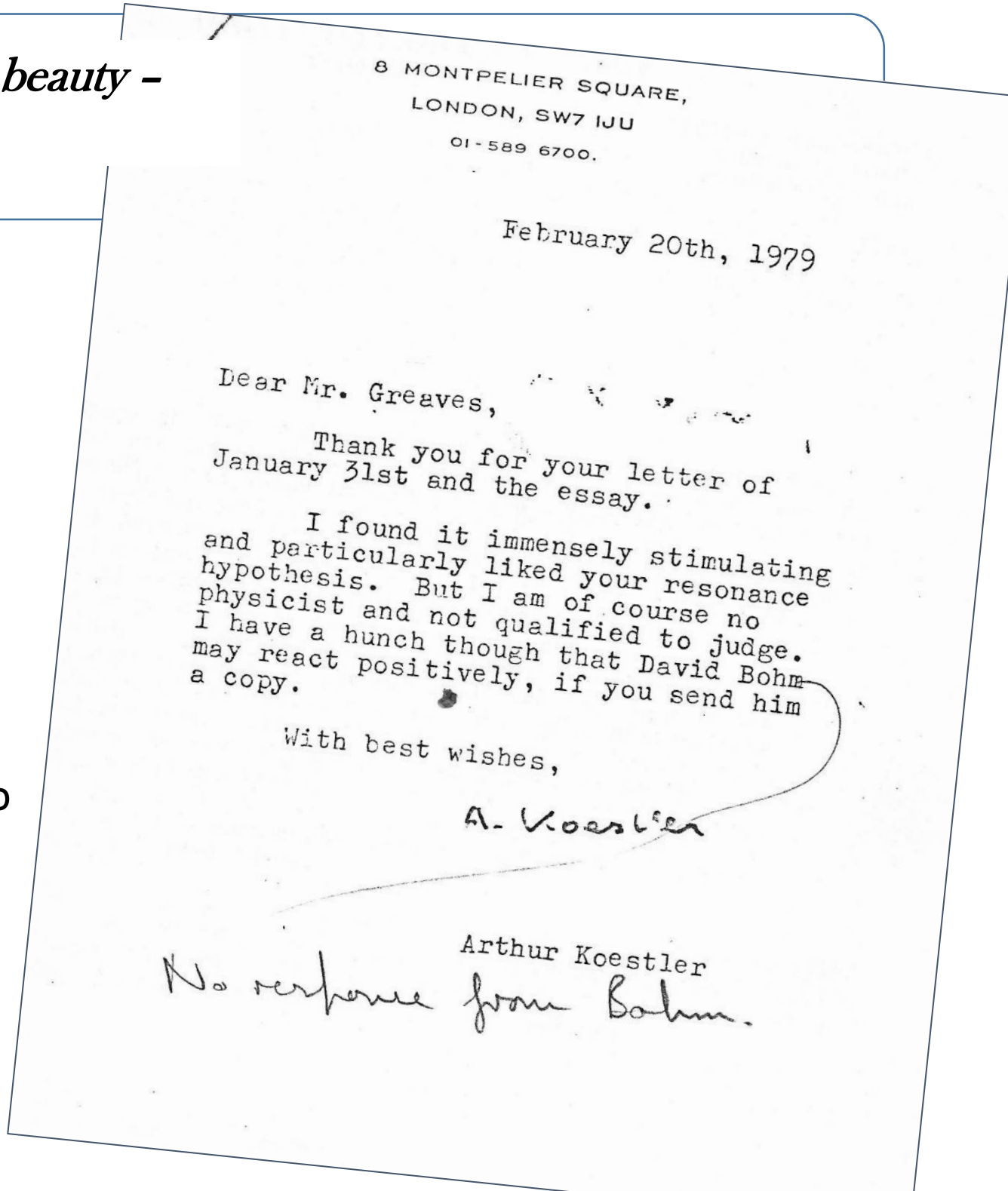
– for a moment –
only to inspire –
– to encourage excitement.

But, ... – to some History:

In 1978 Arthur Koestler wrote to Nicholas Greaves encouraging him to continue with his line of enquiry:

('No response from Bohm'
at the bottom is Greaves's handwriting ...)

I saw this letter in 1979 and was excited.



8 MONTPELIER SQUARE,
LONDON, SW7 1JU
01-589 6700.

February 20th, 1979

Dear Mr. Greaves,

Thank you for your letter of January 31st and the essay.

I found it immensely stimulating and particularly liked your resonance hypothesis. But I am of course no physicist and not qualified to judge. I have a hunch though that David Bohm may react positively, if you send him a copy.

With best wishes,

A. Koestler

Arthur Koestler

No response from Bohm.

Why was I excited when Greaves showed me this letter in 1979?.

Here was a 30-year-old non-scientist (married to a friend), with a law degree, who had taken two years off to read science in the British Museum Reading Room – and had come up with … – something that excited Arthur Koestler !

How could that be? And here he was in front of me in his sitting room !

But I was only on a visit – I had just gone to live in Brazil – for, as it turned out, 30 years – marriage, daughter; a life. Effectively, I have just come back – I am only now remaking contacts.

During all those years I essayed endless drafts of how to make Greaves's conjectures capture the *public* imagination – and perhaps thus indirectly make some scientist have a look at it.

I became a leading translator – but never a book-length writer – and was too busy.
In any event, I never found the angle through which to present this …

- nor the people to present it to. Now I have ! They are: you, today .

Today for me is a chance to present this, direct, to enquiring minds, and ask their help.
Greaves is now skeptical of presenting much to anyone. I am not. He said he would not break his planned August trip to his house in France (he has had a modestly successful career).
I was excited by the opportunity and, to have this privilege, have cut three days off a trip in which my daughter needs me abroad (I fly out tomorrow).

As well as Koestler,
Greaves got replies in 1979-80 from:

(1) Karl Pribram of Stanford:

STANFORD UNIVERSITY
STANFORD, CALIFORNIA 94305

DEPARTMENTS OF PSYCHOLOGY AND OF
PSYCHIATRY AND BEHAVIORAL SCIENCES

NEUROPSYCHOLOGY LABORATORIES
JORDAN HALL

July 23, 1979

Nicholas Greaves
175 Sussex Gardens
London, W.2
England

Dear Dr. Greaves:

Thank you very much for yours of June 21st. I spent considerable time going over your manuscript and have the following comments to make. First and foremost, you have thought deeply and surprisingly well regarding the problems that you raise. I, too, am not qualified to handle the physics that you cover, and knowing David Bohm, I doubt that he is answering any mail, but I may be in error here. Perhaps you can find some other physicist friend who will take a look at the manuscript.

My own uninformed opinion is that the manuscript, as now written, is somewhat rambling and that you could say things more succinctly if you choose to revise. Just as an example, you point out that as objects begin to reach the speed of light that strange things begin to happen, and in one place even point out what these strange things are. This is of course nothing more than the Doppler Effect which we know so well in the realm of sound and we also know that we now can penetrate the sound barrier. The big question is what lies on the other side of the light barrier if anything. This is just an example.

With regard to the basic duplication theory, I think what you are saying is so, but that a more sophisticated form of it might be in Leibnitz's monadology or Gabor's holograms. Duplication is there, but in a highly nested form. That is, the whole is contained in every part. This does not as yet answer the question of how we transform from the ordinary domain to the holographic domain, and this is where Prigogine may come in.

Finally, I did find some of the things you said about brain function just a bit on the wooly side, but certainly in the right direction. Might I suggest that you take a look at Languages of the Brain which is now out in paperback and available from Brooks/Cole. I am enclosing an order blank for Languages and reprints of more recent articles so that you can see how my own thinking has been developing.

This blokes is horribly the worlds most eminent authority on the operation of the brain – he certainly is in my opinion, as well as being very considerate and kind to aspiring unknowns.

Dr. Greaves
July 23, 1979
page two

I do think you have written a most interesting piece and found your writing style to be superb. There are many quotations that you have gathered together that would be most useful to me in my teaching. In short, you have done an excellent piece of scholarship, and with some revision and bringing up-to-date it might well be worth publishing.

Sincerely,

Karl Pribram

Karl H. Pribram

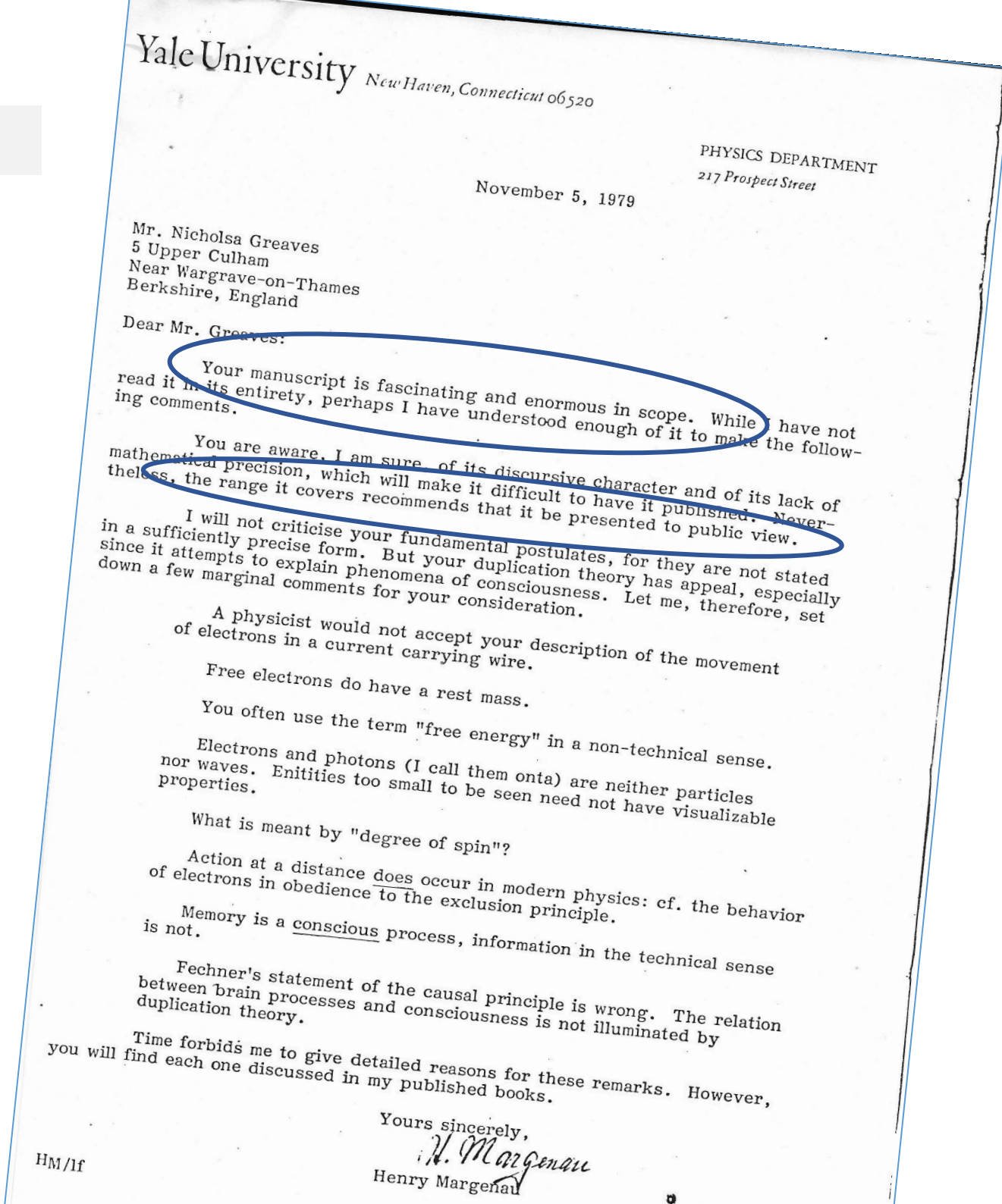
KHP:lmcl
enclosures

" ... I think what you are saying is so ...
...most interesting piece - ...
... writing style superb...
... an excellent piece of scholarship...
... with some revision and
bringing up to date
it might well be worth publishing..."

(1) Henry Margenau of Yale:

Your manuscript is fascinating and enormous in scope …

the range it covers recommends that it be presented to public view”



Yale University New Haven, Connecticut 06520

PHYSICS DEPARTMENT
217 Prospect Street

November 5, 1979

Mr. Nicholsa Greaves
5 Upper Culham
Near Wargrave-on-Thames
Berkshire, England

Dear Mr. Greaves:

Your manuscript is fascinating and enormous in scope. While I have not read it in its entirety, perhaps I have understood enough of it to make the following comments.

You are aware, I am sure, of its discursive character and of its lack of mathematical precision, which will make it difficult to have it published. Nevertheless, the range it covers recommends that it be presented to public view.

I will not criticise your fundamental postulates, for they are not stated in a sufficiently precise form. But your duplication theory has appeal, especially since it attempts to explain phenomena of consciousness. Let me, therefore, set down a few marginal comments for your consideration.

A physicist would not accept your description of the movement of electrons in a current carrying wire.

Free electrons do have a rest mass.

You often use the term "free energy" in a non-technical sense.

Electrons and photons (I call them onta) are neither particles nor waves. Enitities too small to be seen need not have visualizable properties.

What is meant by "degree of spin"?

Action at a distance does occur in modern physics: cf. the behavior of electrons in obedience to the exclusion principle.

Memory is a conscious process, information in the technical sense is not.

Fechner's statement of the causal principle is wrong. The relation between brain processes and consciousness is not illuminated by duplication theory.

Time forbids me to give detailed reasons for these remarks. However, you will find each one discussed in my published books.

Yours sincerely,

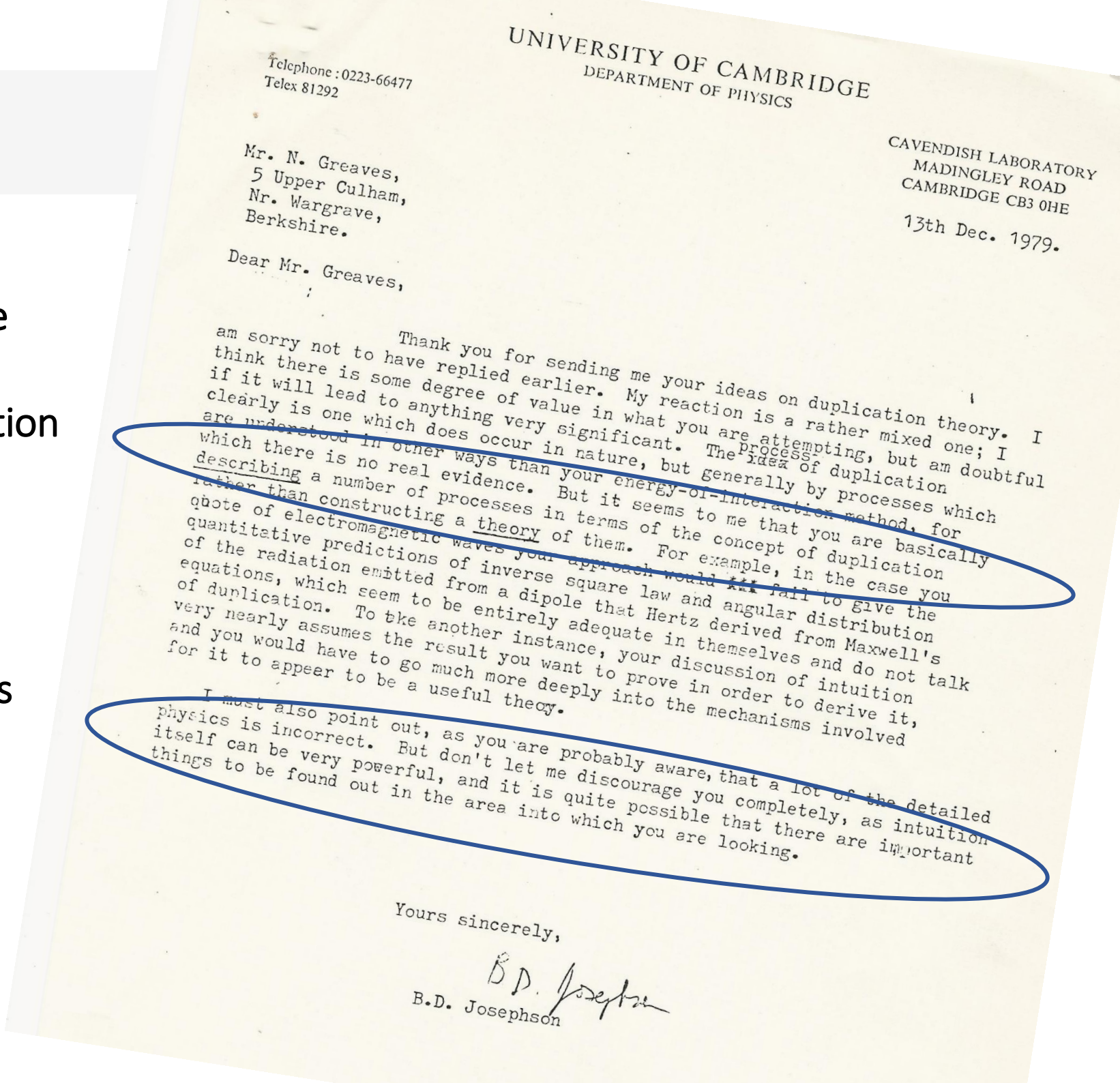
H. Margenau

Henry Margenau

HM/lf

(2) Josephson, of Cambridge:

" ... but don't let me discourage you completely, as intuition itself can be very powerful, and it is quite possible that there are important things to be found out in the area into which you are looking."



UNIVERSITY OF CAMBRIDGE
DEPARTMENT OF PHYSICS

Telephone : 0223-66477
Telex 81292

CAVENDISH LABORATORY
MADINGLEY ROAD
CAMBRIDGE CB3 0HE

13th Dec. 1979.

Mr. N. Greaves,
5 Upper Culham,
Nr. Wargrave,
Berkshire.

Dear Mr. Greaves,

Thank you for sending me your ideas on duplication theory. I am sorry not to have replied earlier. My reaction is a rather mixed one; I think there is some degree of value in what you are attempting, but am doubtful if it will lead to anything very significant. The process of duplication clearly is one which does occur in nature, but generally by processes which are understood in other ways than your energy-of-interaction method, for which there is no real evidence. But it seems to me that you are basically describing a number of processes in terms of the concept of duplication rather than constructing a theory of them. For example, in the case you quote of electromagnetic waves your approach would fail to give the quantitative predictions of inverse square law and angular distribution of the radiation emitted from a dipole that Hertz derived from Maxwell's equations, which seem to be entirely adequate in themselves and do not talk of duplication. To take another instance, your discussion of intuition very nearly assumes the result you want to prove in order to derive it, and you would have to go much more deeply into the mechanisms involved for it to appear to be a useful theory.

I must also point out, as you are probably aware, that a lot of the detailed physics is incorrect. But don't let me discourage you completely, as intuition itself can be very powerful, and it is quite possible that there are important things to be found out in the area into which you are looking.

Yours sincerely,

B.D. Josephson

B.D. Josephson

(4) Rupert Sheldrake also replied – note his reference connecting (as we do) the memory phenomenon with the otherwise mystical (but now suddenly down-to-earth!) concept of the Akashic Records (that we used to read about in the delightful Hippy Era !):

1a Magnus Street
Newark-on-Trent
Nottinghamshire
NG24 1LB
ENGLAND

March 18th 1983

Dear Mr Greaves,

Many thanks for your letter and your writings on Duplication theory. In essence, it is indeed similar to the theory I am putting forward; and you explore many of the same areas. It seems we must have been writing at much the same time (1978-79, when I was drafting my book in India). So *ex hypothesi* we may well have had some influence on each other.

The main anticipations, of this kind of Duplication or morphic resonance approach, are, in an implicit form, the Mahayana Buddhist idea of a cosmic 'store consciousness' giving a kind of cosmic memory; the similar theosophical idea of the 'Akashic Records'; some of the ideas of Rudolf Steiner's followers in relation to 'etheric force fields'; the little known philosophy of a fascinating writer, E Douglas Fawcett in, for example, his 'World as Imagination' (of about 1912); and N. Kastalli's resonance theory of memory and perception, which I refer to in my bibliography.

I included a more extended discussion than in the first draft of my book – including a section on ritual, – but removed this as unnecessary for the presentation of the main ideas.

I too am fascinated by inertia and suggest (on p 119 note 4) an idea similar to the one in the main text of your theory. This seems different from your later speculation along Machian lines, which I find less convincing.

I have a few specific comments:

(i) Your treatment of electromagnetism, while suggestive, does not seem to me to come to grips with the phenomena of electrostatic attraction and repulsion. Nor does your brief ~~description~~ discussion of photons in the quantum phase how you propose to account for the wave properties of light, its velocity, etc. Perhaps there is ~~treated~~ in more detail in part of the theory I have not seen.

(ii) The derivation of the idea of motion, keeping things apart from thermodynamics, seems to put the cart before the horse, since thermodynamics presupposes thermal motion, etc.

(iii) When you speak of space coordinates do you just mean space? Or do you imply some sort of Newtonian Absolute Space. Similarly do you imply by 'time coordinates' some sort of Absolute Time that sets the frame of these coordinates?

(iv) It is rather a relief not to see that black holes are not central to your argument, but I am surprised they do not feature in your summary description of gravitational effects.

(v) I don't see why you need ascribe such an important role to physical engrams of DNA, or indeed anything else, to account for memory and heredity. For the same reason I don't think the inheritance of acquired characters requires direct mutations as you suggest.

(vi) I don't know how far I follow your general discussion of probability. I apply formative causation not ~~only~~ to things like ~~the~~ crystals but only to autonomous self-organizing systems. But this may be an unnecessary hesitation on my part.

(vii) As you will have seen from my book, I don't think a duplication effect can account for initiation of new forms, which you seem to imply on p 55.

I have to say that interesting and suggestive though your essay is, I don't think you'll have much chance of getting it published. I myself had the advantage of academic credentials, 3½ years to devote myself full-time to writing and rewriting, comments by

2

over 100 rejections, photographs, etc., personal contacts with people in the publishing world, etc. But in spite of all that my book was rejected by 12 publishers before I finally got it accepted by Blond & Briggs.

Perhaps the best bet would be to work out some particular aspects in detail for publication as articles in open-minded journals.

I am due to leave soon for 3 months in the USA so won't have time to read your more detailed exposition, but I thank you for your offer of letting me see it.

Perhaps when I get back from the USA we may be able to meet to discuss some of these ideas.

I enclose a recent picture from Reflexion magazine which includes a discussion between myself and David Bohm which you may find of some interest. I think his system is the most promising of those put forward by modern physicists.

Yours sincerely,

Rupert Sheldrake

Sheldrake and Greaves are now old friends –
S was reported as overheard, when asked about G, to say "I think he's some kind of genius.."
...

Greaves's conjectures arose as:

(1) Initially, a perception of

memory

as repetition of *pattern*;

(2) Second, a perception that the process imagined for memory can attractively be proposed also to describe:

These two other unexplained phenomena:

electromagnetic induction

and

reproduction of form in living beings

His proposed conclusion:

G_1 : Equal intervals in time – similar actions – tend to duplicate themselves through all space at one moment in time.

G_2 : Equal intervals in space – similar structures – tend to duplicate themselves through all time in one location.

– the words *space* and *time* are interchangeable.

Now that sounds positively Opfrah Winfrey, doesn't it ?

- Until you look into where he is going with it, and where he finds it:

What is ‘the same place’? (and other questions...)

Consider the concept associated with Heisenberg:

H_0 At (broadly) sub-atomic scale, knowing both direction and velocity of **a perceivable piece of ‘matter’** is ‘not possible’. .

Since we cannot tell ‘where’ it is, then:

H_1 **If we could tell where it was** – the situation would constitute

a singularity

Define *singularity*: - a region or situation to describe which we might likely have to look beyond the limits of our physics – outside our classical world.

It follows that:

H_2 **If two particles *were* in exactly the same position** – (Also, we cannot allege that they are, because we can’t tell the position of either, because we can never know it...) – then this **would be**

a singularity

Expand this:

H_3 If the *situations* of their constituent particles – were in exactly the same *relation* to each other (***same arrangement***) – this would be:

a singularity

Expand that:

H_4 If two ***structures*** (relative arrangements of ‘particles’) were **exactly equal**, - this would be:

a singularity.

So we have:

H_4 " If two structures were exactly equal, this would be a singularity."

This, clearly, refers to the post-asymptotic limit where absolute similarity has been achieved

So for shorthand let us, simplistically, name this degree of 'similarity that goes beyond Heisenberg', a:

Counter-Heisenberg singularity – or 'CHS' (!)

I.e. a **CHS** is: any edge of our physics where things become VERY similar...

What happens as we approach a singularity? Well, nobody has a rule...

- For light speed, we have expansion of mass, distortion of shape ...
- For absolute zero temperature, we have some strange macro effects (kind of predictable mechanically, maybe).
- ("2 lines meeting at infinity" is just some ancient Greeks conceptualizing ...)
- For the black hole, so far, we have only the obvious: we, er, can't see ...

What would happen as we approach this singularity? And .. AT it ??

What happens when we get close to the singularity of perfect duplication?

An attempt to present Greaves's postulates:

Consider two systems:
Each comprises a set of, say, particles.
Imagine a movement of their constituent parts toward similarity

As they approach perfect similarity, what will happen?
Will they shy away from it? (Because it is impossible)?
Will energy be released ? (as when two nuclei fuse and something doesn't fit)?
Will some 'force field' be formed (as happens when current flows in a wire)?

What will happen?

Nicholas Greaves postulates as follows:
It is impossible for the situation to *become* that singularity, so, on close approach, a situation is generated that expresses or relieves that impossibility.

The problem of 'subjectivity':

He says in his initial remarks on his website presentation (Q very much V),

www.mindandmemory.net :

"**1. That the creation of form and order out of chaos is no more than the repetition of similar intervals in space is pretty much self-evident, but why this should be so seems to have been little considered. The theory is based on an analysis of the significance of this duplication process."**

- and

"Any hypothesis on such an ambitious scale has to be based on conjectures which are necessarily very subjective. My prime interest is to provide an explanation for the mechanism of memory, since if this was once achieved then many other imponderables of the mind's workings would fall into place. I am also aware that although major advances have been made in the understanding of the rules of nature by the physicists, the cleverest people in the world, yet nobody has yet managed to put up an explanation of the operation of memory in any convincing detail."

The cases in observed nature from which he forms his putative conjecture are so varied, and the mechanisms that will be involved so various, that there is a temptation to reject them as not arising from any one single observed phenomenon (as in, for example, er .. black-body radiation..?!).

BUT read on ...

An attractive issue

Though he starts with and is clearly most excited by

- **memory**,

the temptations to see the same effects – the same principle - at work in

- **reproduction of form in living organisms**

and

- **eletromagnetic induction**

– is, I think, **too attractive** for any self-respecting scientist to shy away from...
– so **enticing** that I today invite you to join in positively and,

rather than

- ~~| NO |~~ rejecting these ideas as not immediately proven nor mathematically demonstrated, ... rather: >
- | YES | **help** to work on a mechanical (physical/quantum) explanation of what he proposes; and, perhaps more importantly,
- | YES | help to create a ***mathematics*** which will **enable varying degrees of similarity to be quantified**

– enabling some predictions to be made from whatever theory emerges, and assessed.

Bases for Greaves's mechanics of memory:

1 Axioms:

a) A thought is the perceived result of a structure in the brain.
b) The brain is an interconnected system of always-firing synapses.
c) Thinking and perception are the employment of ***order***, and ***pattern,*** in the positioning of structured events among this mass of always-firing synapses.
d) I will remember today a thought I had yesterday if I experience the **same structure in the brain** as happened yesterday.
e) Memory is therefore the transmission of structure across time.
f) A part of the brain that is in 'trance' or 'alpha' state, is in a **random state** with no order in the firing of its synapses.
g) Perfect randomness would be a state of order (*pace* Ilya Prigogine?)
h) 'Eidetic' memory has happened. Savants (often people the *rest* of whose brains lacks the culturally customary order – which may be why they may have knack of attaining random brain state) can remember a whole scene from the top of the London Eye, or the whole of a symphony (oops, that's common!), or, say, a scene in perfect 'photographic' detail.

2 Observations:

Greaves sees something *happening* when a pattern in yesterday's brain is simply repeated today – and he looks, Occam-style, for the very simplest explanation: the structure is transmitted:

He intuits a **resonance effect** by which the *potential to copy a form* is projected across time – resulting in **memory**.

(Later he looks and sees the same with pattern being transmitted across *space* (**EM induction**), or indeed across generations, in **life forms**).

The following pages are how he explored it for **memory** back in 1979.
I have always asked him HOW this actually works.
This text below is the closest I have got to this understanding.
(But as I write this I have added an element (page 26) (seeing the process as between probability distributions, not particles), which I think makes this area of the conjecture stronger.)

Request to you today

The important point about this presentation today is to say to you:

Request 1

There is a strong-looking case that this remarkable natural effect (memory) takes place by a mechanism of this sort, or one akin to it. **You are scientists:** *Please*

work on the mechanism:

– help us better theorize this structure of how this happens: please work on this idea to see if the intuited idea can be given a solid underpinning. Then.. :

Request 2

For the theory of the mechanism, I suspect that there will be a need to **quantify**

'degrees of similarity'

so that we can get some control over predicting what *degree* of the phenomenon will occur in what *circumstances*.

I guess this will require

'a mathematics of similarity'

– **so I am requesting you to**

conceive and work on that mathematics of similarity.

3 Exegesis: Mechanics of memory

Greaves postulates that: what happens when a memory is transmitted is that a **pattern** located in past time is **repeated** in present time.

His postulate: A **pattern** that has occurred, usually *repeatedly* (we learn to memorize by repetition), within a **random arrangement** of particles (in this case in an animal brain that is in 'relaxed', or 'neutral' or 'random' or 'trance' state: e.g. in a brain area that is in a state temporarily relieved of any literalistic, frontal-cortex, Cartesian function – a random cloud of particles with no structure in it) will **be repeated** in any other such brain that is very similarly random, into which a **part** of that pattern is introduced.

That is to say that **when into that random structure a PART of the source pattern is introduced, the whole of the rest of the source pattern will be repeated within that random structure. The source 'image' will be reproduced as a 'copy' of the original.**

On the following pages I simply reproduce the conjecture that he derives from his observations: It is fascinating, but it seems to me a different expression of the same thing might be helpful (or not? Your opinions please...)

3 Exegesis: Mechanics of memory

What happens as one situation comes close to being the SAME as another? He proposes:

- **It is impossible for the situation to *become* that singularity, so, on close approach, a situation is generated that expresses or relieves that impossibility.**

(from the summary sent to Koestler, Bohm, Pribram, etc., in 1979-82)

(These paragraphs are OCR direct from his 1980s typescript)

One vital point common to all singularity states is that although they are unattainable. When close approaches are made to them, the rules of nature, as they are familiar to us, begin to change radically. The exotic effects of superconductivity and superfluidity are manifested when temperatures close to those of absolute zero are reached. As small elementary particles are accelerated close to the velocity of light in cyclotrons, their mass or energy starts to increase asymptotically, their time scale slows down, and their dimensions shrink. It would therefore seem reasonable to anticipate that when near perfect structure duplication is achieved at, say the molecular scale, then curious effects might start to manifest themselves. Further, since it has already been shown that perfect structure duplication is singular for directly the same reason as matter impenetrability is singular (Heisenberg's Uncertainty Principle), then it might not be unreasonable to assume that similar effects might be observed when close approaches are made to both singularity states.

Well, whether or not such an assumption seems reasonable to the reader, I made it to extrapolate the consequences on the macroscale, and to see if I could identify any such anticipated results with familiar observed phenomena. In this 20th century, we are all too familiar with what happens when separate nuclei of hydrogen atoms are compressed together. They suddenly fuse together to form the nucleus of a new element, helium, accompanied by the release of vast quantities of radiation as a small amount of mass is converted and released as energy. I assumed that in the limiting case, if one structure at a later time did perfectly duplicate an earlier structure, then that later structure should convert entirely to a very violent flash of radiation energy. I could think of no examples of this occurring, so I reduced the circumstances back to a close approach, where perhaps a small amount of energy might be released, perhaps by the conversion of only a few molecules in the later structure.
...

3 Exegesis: Mechanics of memory

However, I had no case in the present example of eidetic memory to show that there was any conversion of mass to energy, except that there would need to be a driving force to position the later thought structure into the duplicate shape. This was a problem for a while until rereading some early text books on the principles of physics, and in particular, some of Ernst Mach's wonderful publications from around the turn of the century, I was prompted to reconsider one of the fundamental principles of physics, the Minimum Energy Principle. This states very simply that all systems tend to their most stable state, the one containing the least energy. This being so, a second similar structure to a first in time, given absolute freedom of movement, ought to tend to move to duplicate more precisely the earlier structure, for by doing so, it would be increasing its potential to convert the rest mass of its constituent particles to radiation energy.

If the duplication were singularly perfect, the most stable state of complete conversion of mass to energy would be achieved, which of course never occurs. One reason this never happens is that on the micro level of atoms and molecules, the earlier structure is always in motion. Therefore, as soon as the second structure has moved to duplicate the first, the latter has already moved on to a slightly different structure.
If the motion of the elementary particles of the first structure could be frozen, then perhaps instances of perfect structure duplication leading to atomic energy release might be observed, but of course, such motion only ceases at absolute zero. This is yet another singularity state, and a good thing too, and perhaps throws a little more insight on why all matter must remain in motion.

I reasoned that the freedom of motion of the second, later, structure would have to be very well lubricated indeed and not disturbed in any way by external forces. The more I thought about this with respect to perfect recall, the more some of the facts seemed to dovetail together. Eidetic memory seems to appear naturally most often in children before adolescence, when their minds have not yet been too cluttered with too many inculcated behaviour patterns, and beliefs. Most subjects under hypnotic trance appear to be capable of regression to relive in perfect detail episodes of their earlier life. This appears to be the same phenomenon as photographic memory, but perhaps a little more comprehensive, since under trance, the subject's mind can be instructed to exclude all external stimuli which would otherwise be pouring in through the senses as a distraction when fully conscious.

3 Exegesis: Mechanics of memory

It is known that the nerve cells in the brain never stop firing: obviously all the functions of the body have to be continued and regulated for the body to remain alive. But if under trance instructions to exclude all external stimuli from the senses and to relax the mind completely to think of nothing (almost impossible to do when conscious) then it is reasonable to consider that those brain cells that contain conscious thought are firing randomly. If somehow, into this random system of electrochemical currents is imposed a single thought structure which closely duplicates an earlier observation of the external world, then there will be an increasing potential, however small, for the later thought structure to convert an infinitesimal fraction of its rest mass to energy. Indeed, such a potential might manifest itself strongly enough to be just sufficient to overwhelm the small energy level of the brain that must persist for the random firing of the brain cells. If this occurred, then the second thought structure will move to duplicate the earlier thought more closely. For this to occur, there will have to be a complete exclusion of all external forces of perturbation, but this is assumed possible in the special circumstances of the trance state.

Now if the first image in time moves on to change its structure, as it inevitably will have done, then the later structure will also move to duplicate that change, in order to keep the system's energy level to a minimum. It will use the energy inherent in the randomly firing system to provide the force to drive this change. If the trance state is continued so that no signals from the external world are let in to disturb the copycat motion of the later thought structure, then a continuous process of replication will take place.

Although there is a great deal of assumption in all this, it can certainly be argued that such a process would be consistent with what is observed to happen in a subject under regression in hypnotic trance.

So – as Greaves says, he has this strong vision of how this process may work, but it is not definitive. I personally think it sounds close to a brilliant new idea, but the correct version may be different. The important thing is to be invoking these ideas. I ask you to assess it and if necessary **improve or substitute it** as a means of upholding the concept that a resonance of this type across both time and space may be possible.

A **summing-up (I think!)** of Greaves's 'essay at a mechanism':

1 **Greaves intuits there is a resonance.**

2 **He imagines a means** by which it may occur:

System $\mathbf{A_T}$ exists at time **T** (and has likely been reinforced by repetition).
System **B** when initiated comes close to being exactly similar to the initial form of $\mathbf{A_T}$.
If it did become the same, there would be a weird event (release of energy?).
The minimum energy principle exists.
By some means this principle ensures that System $\mathbf{A_T}$ instead of allowing system B to become 100% equal to it (which might mean a nuclear-type release of energy, or a singularity effect), transmits *form* (information) to system B, but with a time difference (to **T+t**, where ***t*** is very small) – slightly AFTER the existence of $\mathbf{A_T}$ at any time – so that, as the minimum energy principle would prefer (as Greaves sees it), the potential to move closer to singularity (boom!) is <u>*averted*</u> by the time difference, ***t***.

i.e. $$\mathbf{B_{('T')} = A_{T+t}}$$

(My comment) If this 'communication' sounds unlikely in a mechanical, Newtonian billiard-ball world, it takes on some likelihood, even an uncanny plausibility, if we consider that sub-atomic reality works not in objects but in "waves of probability" (a reasonable shorthand?).

An essay at this mechanism, expressed with waves

Thus – very similarly to what happens in tunnelling when part of the location-probability of the electron is already located across the gap and over on the other side – perhaps the probability-waves of what may happen begin to cover similar AREAS – and **their probability distributions, shall we say, begin to OVERLAP, and thus ... *exchange influence*?** – Could that 'probability of effect' be passed on through that means – 'passed on' from one probability distribution to another ? Could it be that:
Exchange of content of probability patterns can happen when close to this singularity?

I feel this has possibilities – and is not a bad postulate for the resonance mechanism. ... And the correspondence in which:

- **Memory,**
- **Reproduction of living form**, and
- **EM induction**

– are seen to be instances of the same effect and coming from the same logic

– is so shocking – so satisfying, so exciting – that it truly demands from the adventurous theoretician an attempt to essay ***how*** this proposed mechanism of resonance might work in reality.

Look how satisfying it is:

See how satisfying, this theoretical approach to the concept and structure of life:

The living being[/human/] has evolved two systems that make re-creation across time of BOTH itself AND its **ideas**(!) possible.

1 In the **Brain** – this grey, extra, 'tumour', **it** ("the living being/ the race", or 'chance/mutation/evolution') '**invented'** the creation of an attached piece of living matter made up of a mass of electrically connected particles – so massive that parts of it can go into random and be used to store information for the FUTURE!!! As well as being able to grab food, eat, and breathe, this *thing* could now STORE... INFORMATION – for the ... FUTURE!!!!

The point being: evolution of flesh/creatures evolved a new thing – not a feather, a gill, a tail, or a wing – but a **memory** tool: an array of billions of neurons that looked like nothing, looked like a sludge, but WHEN operated with a degree of REPETITION, actually TRANSMITS WHAT HAPPENED TODAY INTO THE FUTURE. That is an enormous evolutionary advantage!

2 And **BEFORE that ..**

2 – BEFORE that .. **DNA !** :

"LIFE" had also developed/invented/acquired by heinous chance-mutation-plus-survival-test (evolution), a ***molecule*** – a massively remarkable complex crystal within the cell – that actually was capable of **reproducing itself**!!!!!. Now if it were an *uncomplicated* molecule, and it were repeated (like the oak leaf on another page), the **degree of similarity would not be high – the transmission effect would be minimal – the species would not procreate – or at least not accurately, say..)**

But as from the moment that 'evolution'(chance/God) created, inside some cells, a molecule that was (a) EXTREMELY COMPLEX, and (B) itself HIGHLY REPETITIOUS **inside itself** in the fact of its own massively repetitive helical STRUCTURE – and evolution devised a way to make BILLIONS of exactly this same pattern in each generation – THAT was the species' way of establishing reproducibility of form that was reliable (this therefore led to *more* survival, therefore established more *repetition of* itself more, therefore honed the probability of all future DNA molecules coming out the same, and so on !!!!!!!!!!). All this because of an effect, that depends on either being able to create quantum-scale components, OR *so many* copies of the same thing that the degree of *repetition* was quantum-scale (which seems quite well explained by an ***overlapping fields*** model of expression !) QED...?

3 The third example is man-made. Or at least man-found..

3 EM induction

It was only after the creature has used its memory to transform its environment and build up culture for several thousand years that it discovered the possibilities of **electromagnetism** and started using them

– they ALSO use MASSIVE quantum-scale repetition

  – probability-propagation

– (resulting in a huge technological step).

And all from the same source: **Greavesian repetition.**

So – as my daughter used to say as an adolescent:

“Is that exciting, or WHAT ?”

Greaves' central postulate

G_1 Similar patterns in *time* reproduce themselves across *space*.

G_2 Similar patterns in *space* reproduce themselves across *time*

– but this applies only where the DEGREE OF SIMILARITY is so high that it has effect at the 'quantum-scale' or 'sub-atomic scale'

These may be situations where

- **an event of genuinely sub-atomic level is repeated a few times**
- **an event at just-over-atomic-scale is repeated quite a lot**
- **an event at micro scale is repeated *enormously***
- **an event at live-creature scale is repeated quite a lot**
  (remember: each creature has billions of EXACTLY SIMILAR DNA molecules).
  – and each brain has several billion neurones)

G_1 Similar patterns in *time* reproduce themselves across *space*.
G_2 Similar patterns in *space* reproduce themselves across *time*.

G2 ***A pattern repeated in space will be transmitted over time.***

G_2a Memory is this transmission from my brain today to my brain tomorrow

When I put a part of my brain in neutral (random neural activity), and I accept a pattern into that part (e.g. a concept, an image), and hold it there (repeating it in space), in relation to a surrounding random cloud of neurons,
– then, when a cloud of neurons occurs that is itself very similar and equally in a random state, and I *start* that pattern in that second cloud, ***the same pattern will play out.***

But where will that second brain be?

My own brain, tomorrow, is the one most likely to be in the same state.

[G_2a Memory is this transmission from my brain today to my brain tomorrow] – P.2

My thought of today can be picked up tomorrow. We call this memory.

The more I repeat the shape / structure (= concept) in my own present-day brain – the stronger the memory

We all know this:
repetition is a main route we use to memorise.
This is why.

This is a case of: **Structure repeated, transmitting over time**

This memory is not in any way written ON the material of the brain.
The shape recurs in the second brain <u>because</u> <u>repetition</u> has caused any similar brain-cloud, momentarily in random state, at another location (in Time or Space) to <u>form</u> **the** ***<u>same structure</u>*** **if the start (a corner or beginning of that structure) is implanted in it. That memory is written on – and is read from – the 'Akashic Records' ! (see definition below..!)**

[G_2a Memory is this transmission from my brain today to my brain tomorrow] – P.3

The most probable receptor will be the SAME brain at a later location in TIME.
This is because occurrence of a very similar brain at different PLACE in the same location in TIME appears unlikely – also such other brain would have to be similar in material; and have an area <u>in a random state</u> at that same location in TIME. This does however occur, and is called *telepathy*.
For this 'paranormal' thing to happen, BOTH brains have to be in random state at the same time.
Anecdotally, we hear that 'psychics' are non-intellectual – i.e. some part of their brain is random a lot of the time (may be better if they are far-gone woo-woo-mystic). Alternatively it helps if the two brains have thus 'synchronised' in the past (husband and wife, relationship with some degree of 'familiarity'? (= willingness to go random in each other's company?)).

Examples: / the 'Akashic Records'

In the 60s those who were deeply drinking from the hippy culture will have heard of the *Akashic Records* – a perhaps ancient-Hindu concept of a place where everything that has ever happened is written.
This is that thing – and from this principle it would be clear that if a person trains his mind to go appropriately random, s/he might read some of these records. Here you perhaps identify some aspects of perceiving past lives, knowing past events, and other woo-woo rare phenomena. All we are dealing with after all, are electrical (or similar) structures inside a hugely, vastly large 3-D neuron network – a massive piece of technology. The difference (consider Carlos Castaneda, those of you in the know) is that in 99.99% of our waking time since post-Cartesian 20th-century tech-based knowledge-and reasoning-worshipping society, hardly anyone ever puts a part of their brains, let alone a whole brain, into neutral/random. This might for example appear to connect with there were being more mystics in the Middle Ages. **(But I digress...!)**

G2 ***A pattern repeated in space will be transmitted over time.***

G_2b 'Genetic' reproduction of form

That oak leaf is just like its dad. **I have my Dad's eyes.**

When first plants gave leaves, the oak for the first time reproduced.

The first leaf came out shape A – a random mess. Later sprouting leaves each came out randomly different, until one was a **near repeat** of a previous one. **Then what happened?**
What are the underlying events?
First, organic near-random cell-division produced (random) **Shape A** from a tightly defined template (a complex single-molecule structure – DNA – like a crystal but carrying much, much more complexity). Generation 2 produced Shape B... x, y, .. N. WHEN a **Shape N** occurred that was **similar** to **Shape A,** this **increased the probability** of that same shape being produced a third time. Influenced by this probability, at a later date a THIRD leaf with **Shape approx A** emerged (partly by chance perhaps, partly influenced already by mounting Greavesian repetition effect). Each repetition, chance or otherwise, enhanced the probability of repetition of form. Now (millions of generations later) **all oak leaves are the same.**
This is the mechanism that Greaves envisages for reproduction of form in life forms.

This evokes the concept: "How similar?"

[G_2b 'Genetic' reproduction of form] – P.2

How similar? What maths?

The DNA carries repetition. It is massively repeated through the creature's body. This repetition is the first of the tools used by nature for reproduction of form. But the correspondence between 'that DNA' and 'that nose' is NOT that "the form of the nose is written on the DNA". It is that the correspondence between that DNA and that physical form is WRITTEN ON THE "AKASHIC RECORDS". Before it was ever used for the first time for reproduction (let us say), in spite of the DNA being a precision shape (and HUGELY repeated, thus packing huge reproduction-of-form *potential*) it had never actually grown a leaf.

It had a **d**egree of **s**imilarity

$$\mathbf{DS_0 = S_{DNA} + 0}$$

(This 'DS' later becomes a reversed Sigma ..)

The first system consisted of: {Mass of DNA plus first random leaf}. The second was {'Mdna' + two random leaves}. The third, {Mdna + 3RL}. The first MOMENT when an instance $\mathbf{L_N}$ comes out, that is, by chance, SIMILAR to an earlier **L**, a tightly-converging similarity>form-shaping mechanism is begun. We now have a System

System: **{Mdna+2-times-L_{same}}.**

The probability that the massive $\mathbf{M_{dna}}$ will NEXT time give a leaf with shape $\mathbf{L_{same}}$ is now considerably increased. We might say:

$$\mathbf{DS = S_{DNA} + L_{same}^2}$$

Maybe that 'plus' should be a 'times'. 'Maybe that 'squared' should be something exponential, for example. Also, the degree of similarity is one thing, and the effect is another. The maths expresses both, separately, the science expresses their relationship. We have essayed the first chalk-marks toward the required quantification.

The next time $\mathbf{L_{same}}$ appears, the results tend to snowball and lock-in what later appears to be the 'obvious' result. We see that result, and we call it 'nature' –

– we had not previously explained it. Now we have the beginnings of an explanation.

In the system, we have $\mathbf{S_{dna}}$ is already massive (billions of copies), before any **L** is included. But when the number **N** of generations also becomes large, the probability that

DNA Type D, when operating on its biosystem B, will give leaf $\mathbf{L_{same}}$ = MASSIVE!

And most of us have been here for MILLIONS of generations – so all these things seem cast in stone. But they're not. They are merely **Greavesian reproduction** (in the current theory, likely working through overlapping quantum probability functions) seeking and fulfilling itself.

G_1a What goes on with electromagnetic induction?

The source of all Greavesian effects is degree of Counter-Heisenberg Similarity.

Degree of CHS = Ʒ **(possible symbol?)**

Ʒ will in some way be the sum of various terms, in some cases, and few terms in others. In contrast to plants and humans, in EM – this event at sub-atomic level – where electrons at a billion per second passing the same point in a wire create a duplication effect at a distance – on the face of it, will have high CHS – it is closer to 'Heisenberg' territory, because of the scale. On the other hand, is arises (perhaps) from only one term.
? Or maybe we should add a term for how similar each electron is (or is not) to each other ... ?

In macro cases (e.g. inheritance) the main term might arise from the sheer number of generations. All well as a term for number of repetitions, we need a term for how close to quantum-scale the events are (numerical repetition of the DNA molecule is numerically high; separately, repetition within it is near-quantum-scale – that makes two separate terms.

To find the effect, we look for

- a *smaller* number of sub-atomic particles doing the same thing.

- e.g. electrons repetitiously passing the same point (passing down a single wire): maybe several billion repetitions in a fraction of a second.

- – or a HUGE number of macro particles doing the same thing, or
- massive repetition of a pattern (e.g. DNA $_{billion}$), relating to possibly small number of repetitions of the product.

Each of these effects will have a separate term in calculating total Ʒ.
Will these effects sum, or multiply each other's effects?

With something as macro as a leaf, a trillion-event high Ʒ would be needed to achieve the effect. And we get it, because of accumulation (compounding?) of (i) the vast **numerical repetition** of the DNA molecule; (ii) the massive **internal repetition** within the DNA molecule itself; and (iii) the millions of generations of life that have passed... We need a term for each of these ...

- A notation for the **part of Ʒ arising from the numerical repetition of the DNA molecule of , type 'T' might be ... R_T200,000,000,000.**
- One would need another expression for **the Ʒ arising from the repetition WITHIN the DNA molecule;**
- and another **for the Ʒ arising from the number of generations**

(Some consumer reactions !)

Slightly in technical awe, last December I was invited to a party (**"There will be plenty of astrophysicists")** where there were three astrophysicists from the Cavendish **– and**

(Question A) **I put Greaves's theory broadly to them as a one-liner:**

One said:

(Answer A) **"Gobbledegook - no-one talks about Heisenberg any more - it's all done with fields now!"**

I asked another:

(Question B) **"Can a mathematics be written to describe this sort of question (multiple degrees of similarity)?"**

(Answer B) Quick, friendly, definite: **"No! - too many variables!"**

Next steps – your Help :

I ask your help to continue this:

(1) Better define the mechanism for the symmetrical resonance across time and space. We may have improved the working method by looking at it through through 'wave/probability' lenses..

(2) Work on the maths of similarity..

Other interest – Art Chester

As I understand it, **Art Chester** was (approx.:)

- chief technologist at Hughes Airspace, pursuing in private a
- mathematical demonstration of ESP based on repetition.

I saw his proof – it is 300 pages.

It probably makes sense. We may be able to find it for you.

I have here an 8-page letter from him to Nick Greaves in 1984 in which he acknowledges that he (Art), Greaves and Sheldrake are all looking at the same material, through slightly varied lenses.

He is a serious scientist – and engineer.