

Paradoxes of Physics
Fern Broome Richards

a
signal
cast
out

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to
this

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again
without
movement

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lost
in
distance

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that
shape

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And if yet *alive* is felt as harshly stopped
the dawn may render itself scarlet, no song to it
stolen out of the throat, and see the very world now
melted alive from the shot tower into deep paused
suddenness, something has altered it, rendered
anew in a mortal, scarlet flicker. The scene
ribbons out against a scant backing, can no longer
be cold and still, the heart exists, draining

down the tower as wild ribbons, seeking and alive and
scarlet and burning against the world, a mortal
flickering heart on the tape, paused as an urn
in the throat, now melting and harsh, the stolen
motion of this altered, sudden light, the cold pause
burned out on the very dawn,.

As a matter of fact, this disorder only increases
up to some maximum value, whatever
the direction of rotation
the evolution in the container
is thus irreversible

An observer who had not followed the course
of the experiment and who had only seen
the complete mixture
would have no means of knowing that
their initial distribution
was much more ordered
From then on, irregular
variations (of very small amplitude)
about this equilibrium state can indeed occur

immediately cancelled by opposite movements
order—or if one wishes, disorder—
immediately re-established
In spite of this difference
the reason for the destruction
of the initial order and its replacement
disorder—or more precisely
a different order—is in both cases the same;
the state which we label ‘disorder’
realised in many more ways than the initial state
The latter has little
chance of being maintained

and I freeze in summer, burn in winter.

The idea of probability has meaning
only at an instant prior to the event; but,
if the universe has a beginning in time, this
prior instant does not exist. Any absence is
a demand to be held down into the flames until you
burst across the defined area, where it all begins
over again eternally. It is enough for one
molecule to be slightly displaced on Sirius; it is
enough for the measurements to collide against
the dark, harsh cube and vanish. Now take this
distribution to be set by a looped thread going up
between us, but ignore that for now. We must
presume desire to be an insignificant probability,
culminating in some initial instant, and the event
is replaced by the sea which tightens around the
body so it slices apart. We must presume the mass
is isolated from the rest of the universe, though
it pleads with bitter tears for the key. We must
hold it down until it stops moving, when it will
retrace all the intermediate states which marked
its evolution up to this time. The equations
remain valid; it feels like going down into
the sea, the increase is so gradual in all
directions. We call these *arrangements* and wish
to be brought back to this state, to this
particular quantity of reversal
until all measurements retreat from sense
until that absent fire consumes the world

Let us suppose that in the course of transmitting a message consisting of a vessel with adiabatic walls and symbols, a certain fraction of them is thus isolated from the world, lost or distorted; as for its microscopic condition we can only

admit to calculate the resulting loss of ignorance, for we are information. But the result of this, incapable of determining the calculation, can be quite wrong, for if the instantaneous position and velocity of the fraction a is not each molecule,

there is, too great, the message can be, however completely, reconstructed on the possibility of arrival and examining our own ignorance and determining its extent; The information is then equal to that sent.

the fraction is set apart
for loss, and in the bitter temperature
each step is distinctly pain, a dry lake bed
scattered with ash, felt as little different
to heat. though the state remains unchanged
the pressure is enough to tear out sounds
from this, a body which is leaving, which is more
imagined. the measurable quantities
delivered in succession. the utmost sun, cast
against the light of this burning.
such other vision, all that is real in absence
intermixed. these harmonic oscillators, broken
open, can weep forever without returning. I wish
to go beyond the fire occasioned by contact,
this co-ordinate, and be drawn out
to a point, yet never quenched;
in questo stato son per voi,.

Go, false vision, to the harsh stone,
fill it with a Species of Matter,
a right Line drawn from the Eye
to what must be, and therefore is.

As errant noise now feeds itself
there is no more, valid only this moment
exchanges matter, and light, rendered
down to oil, we cannot assign any limit,
could not ask to, the combed out roving
on the spine indefinitely, must not.

And this, moreover, is indisputable;
the command *to Love* does not satisfy
our condition—yet with such interchange
of state, this livid heat cannot be named.

As I must doubt these shapes
composed in distance; a mass
of Ruins without detail, burning,
how we embrace again. I must discard
this image before it ends.

In the present instance, this subtile Medium
which brings us to the world— wings gummed
shut with a viscid Substance—is a null
sphere, appearing to the lens a black plastic
disk against a field of further absence, and
that is forever the wish to hold you, truly
here, when I have seen the hungry ocean gain
advantage on the kingdom of the shore, to
speak and be returned to lonely null, to find
no peace, and yet to make no war. Disorder
finds expression in my eyes, which seek to
place you always close to them: I'd break the
mathematics of the world
that you and I converged as us again *

*

Fuck the inferior object at random until it literally prays; this happens with a sound or bleed on the wall and enter the garden in criminal in-sufficiency I want the ring to crack, which it does. How we can die is again our physical data thrown in the sea and tasted, the far-off sign of order on a shrinking scale / perfect inhomogeneity of matter dishonest, each side peeled open, index burned first, zygote to ash. Discard the outcome before attachment, only sodden pulp remains behind. This new desire to be destroyed at maximum accord, negate all points of space by aggregation, confirm it rancid to be loved to death. I want to be a nasty mouth, and sing.

Even so slight, so simply given, is a real and actual fire
and the coordinates can be set towards that return
even so craved and burning, falling into the sun
or off along the sharp line. The form is marked

by drought, so prior feeling is not, as if gone into,
the knotted rope singing on its captive
but now the fine air, unburned for the time being.
And if I lost any certain thing, it was not null

precisely but a second shape, which strikes
the mechanism, is returned. As gone into,
like it was the whole of song. As the wing is

plucked off so now becoming that I have to speak
or not do so, at the present choice. A real and actual fire
has found the world; we cannot return to any prior moment.

As sticky bit-depth crowns thee
speechless, rend out ecstatic loops
between the teeth. Intimate vile careering
against the box wall, no specific
key, just produce as much noise as possible.
Sometimes I look right at you, over this;
sometimes not to see is painful, as now
stuck down to the branch only mono view
surround, voice passive as dead, as if

unhooked I never could regain this
pattern once it's doomed to be re-done
or watch the slow rain river out.
In silence from the ribboned throat to glance
inland and wait for sight of rendered flesh
and feather plucked apart. Not further
trespass as this revert to mine by aggregate,
is stuck becoming now this route down in
the soil by fluid exile from firmament
and now to claim this living tower extended
out a hand to trap. I choose this and say
yes, the movement of the wing cannot
by span rehearse the dawn which reaches out;
I will no longer sing the sun its flight.

> the heart that claimed it wrong to return
> though we may defer to the physical facts,
> is with you always in that broad valley:
> we shall always remain wedded
> where the land most hems in our sea
> to the terms in which they are expressed

the paths which should lead us end in impasses:
not necessarily final
fate hampers my flight with bird-lime
an isolated molecule avoids its motion
the laws do not allow time to have a direction

this nonexistence can reject the undeniable
that being together is rare and brief—
we have no right to abandon the realm, .

be the atmosphere, or the water of the sea or of a river. Let
us denote the temperature of this and choose a
point 0 on the corresponding isotherm

the zero of entropy. along the T_0
isotherm we shall henceforth measure the changes nor earth, nor boundless sea,

We shall therefore replace points 1 and 2 by their projections on the horizontal line their power,
before measuring the entropy of a beauty hold a plea,
system, we subject it to isentropic transformation a flower?

O, how shall summer's honey breath hold out
fluctuations, Against the wrackful siege

the blue colour of the sky
opalescence of liquid of the critical
point.

rocks impregnable
spoil steel so strong

unless we should be able to conceive of the measurement of the
entropy of a system by means of two successive operations
the first consists of reducing the temperature of the
system, by means of a reversible adiabatic process,
and the second of measuring the quantity of
energy Q_0 necessary to cause the system
to pass, at the constant temperature T_0 , from the state thus
obtained to the
reference state The difference
will then be given by the absolute value of the
quotient Q_0/T_0 . the more

I spread wings of desire towards you,
the more fate hampers my flight
with bird-lime, or makes me go astray.

Like as the waves towards the pebbled shore,

So do our minutes hasten to their end; cover'd up
a Fortnight in a moist Place, pounded into a tough Pafte,
that no Fibres of the Wood be left, and wash'd in a run-
ning Stream till no Motes appear, put up to ferment four or
five Days, skimm'd as often as any thing arifes, and laid up
for Use.

Some local variations of temperature or pressure can then occur, even without the intervention of a demon or an equivalent mechanism even so, the amplitude of the

fluctuations is still very small, of creating a significant difference for us to dream

the fluctuations are very short-lived, so that the problem consists not only of spotting the most important fluctuations, but also of stabilizing their effect—that is, of preventing them being immediately cancelled out by a fluctuation in the opposite direction. This is the double task

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point 0 on the corresponding isotherm

reaching up to map the point I can't

I find it falls back off, collapsing in split

halves of a too familiar shape. reaching

up again there is that smell of total war

which cannot be survived for any time

however swift; my solemn voluntaries flow

into the soil

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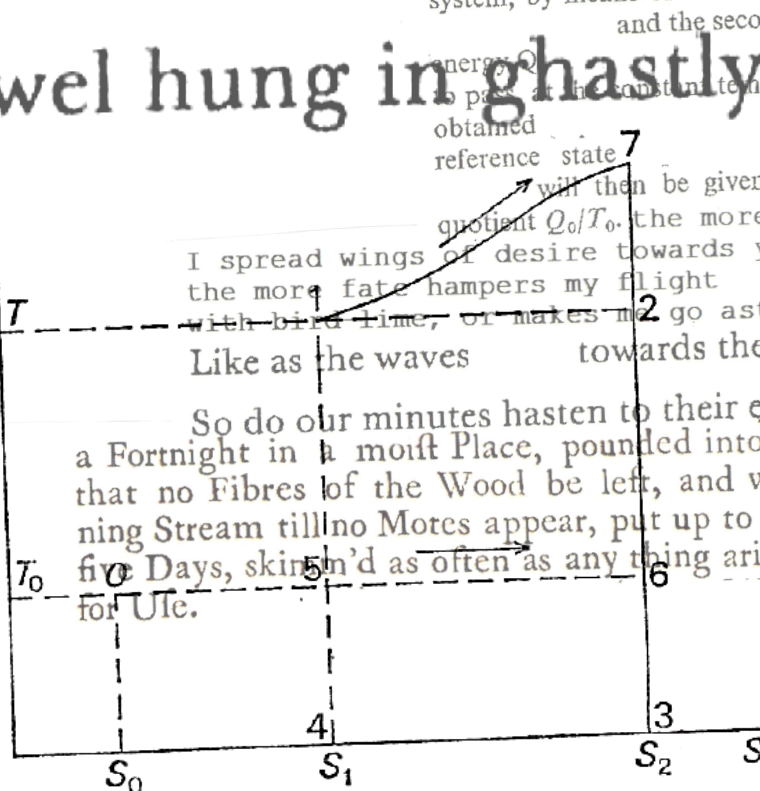


FIG. 2. 3.

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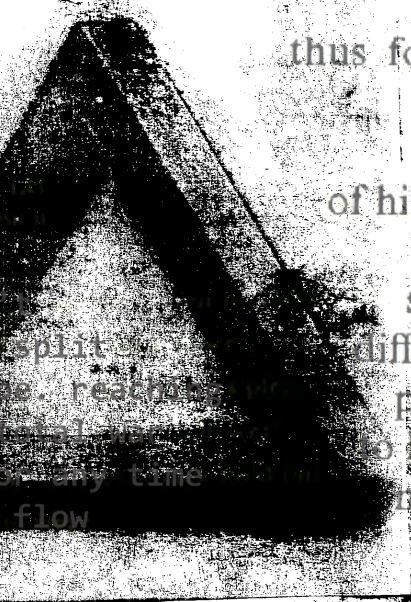
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all physical phenomena are irreversible. Instead of saying that entropy increases indefinitely, we could therefore say that the accumulated effect of irreversible processes increases indefinitely. These two statements are completely equivalent, but while the first is intriguing the second is merely a tautology, for the word 'irreversible' obviously implies an evolution in one direction only because of the impossibility of a return to an earlier state.

This

sky

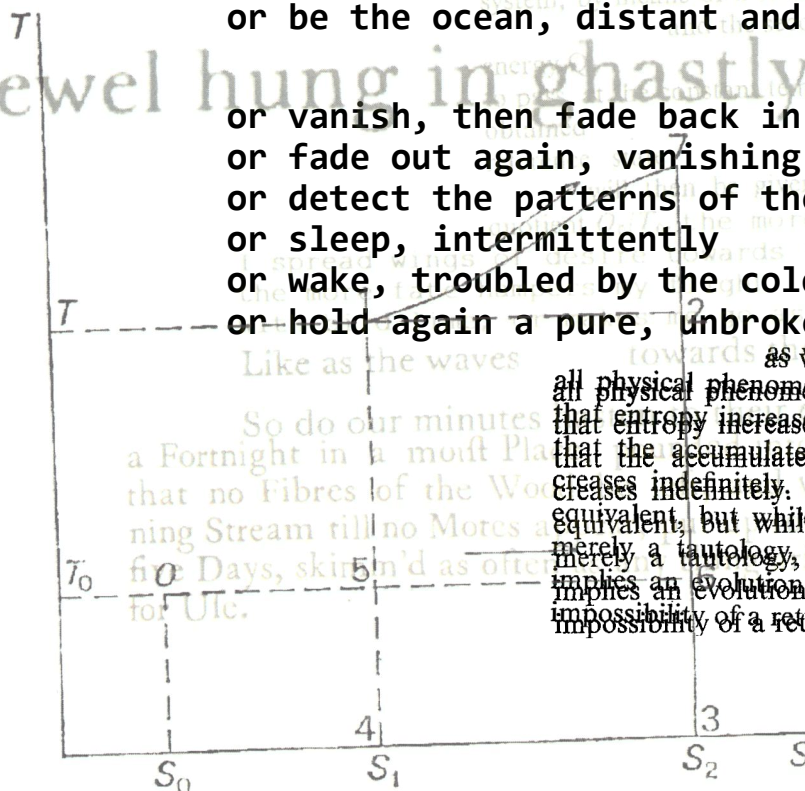


FIG. 2. 3.

Some local variations of temperature or pressure can then occur, even without the intervention of a demon or an equivalent mechanism. Even so, the amplitude of the fluctuations is still very small, of creating a significant difference for us to dream

the fluctuations are very short-lived, the problem consists not only of spotting the most important, but also of stabilizing their effect—that is, of making them being immediately cancelled in the opposite direction. This is the double

For then, no form, the heart to

Of bird, quick on vision holds

a system, the thy shadow, imaginary sight, sight,

however, jewel or the sea, black shapes my limbs,

Incapable no longer quiet, the sun its

or fly across the distant, being or scream at each new numerous.

or set the machine to chatter on or view, from a height, its action a new stage in

or revolve it is the temperature itself which appears and not a change or assume the identity

or be the not be lost, distant and boiling,

or vanish, then fade back, a change

or fade out again, vanishing by points can take

or detect the pattern the direction of the arrow

or sleep, intermittently In other words, during any evolution,

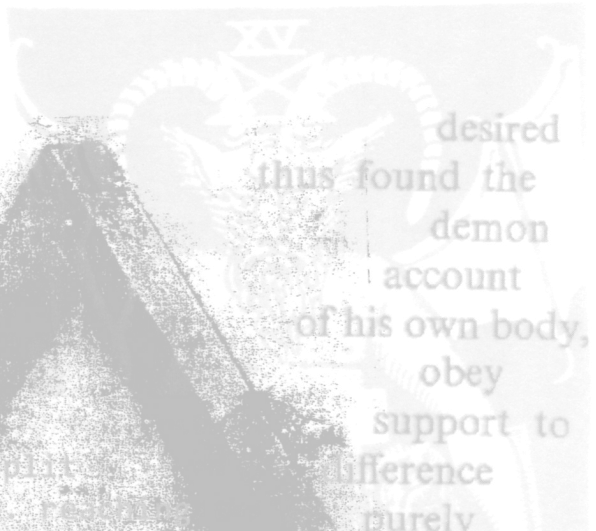
or wake, the successive states of the system always move

or hold again, as indicated by the arrow drawn parallel to the axis of S . It follows that, as time passes, the amount of energy required to restore the system, along the T_0 isotherm, to the reference state increases indefinitely. Should we wish to apply this conclusion to the whole universe we would have to say that the energy necessary to reverse the universe to a certain initial state is continually increasing. We shall return to this

merely a tautology, for the word 'irreversible' obviously implies an evolution in one direction only because of the impossibility of a return to an earlier state.

I desire to burn I am greatly wrong in sorrowing.

FIG. 2. 3.



4.4 Insufficiency of Fluctuations

Let us consider a vessel containing a small number of molecules in order

We make

the fluctuations of molecules without calculation

evident untrue variations

being

So that this happy result of chance shall

In accordance

a system can evolve only to an increase

Thus, a change

by points

can take

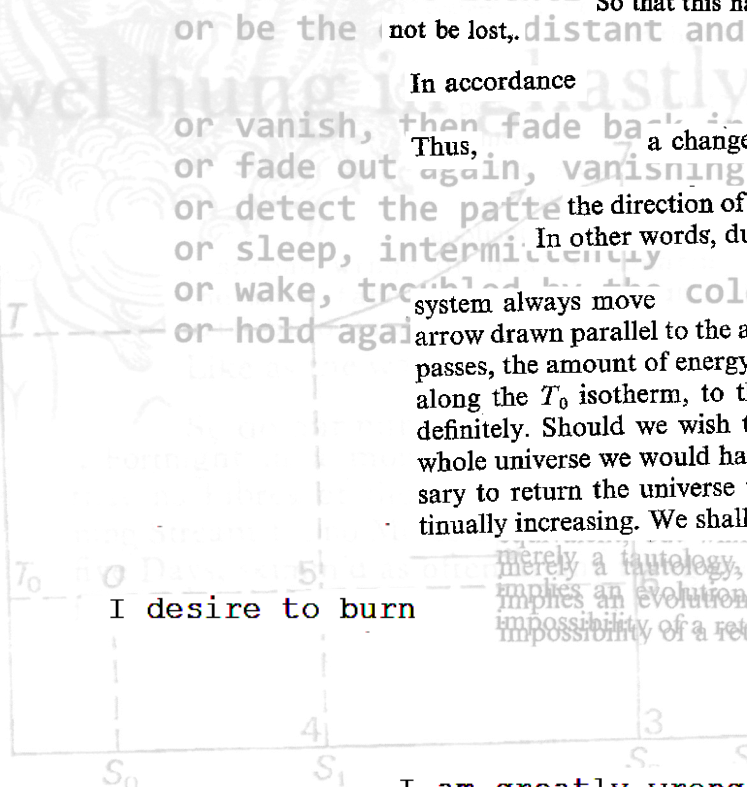
the direction of the arrow

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the fluctuations are very short-lived, so that the problem consists not only of spotting

be the most important fluctuations, but also of stabilizing their effect—that is, preventing them being immediately cancelled out by a fluctuation in the opposite direction. This is point the double as, governing isothermally the zero of entropy.

isothermally we shall henceforth measure the heat

seeing out;

For them all there are replace points 1 and 2

project degradation the point I

I find, falls back off, collapsing in split

system, we shall have to isentropic transition

quick halves of a too-familiar shape, reaching

up again holds is that smell of total war

the which cannot sight.

however swift, my solemn voice us consider a vessel containing

opalescence of liquid black shapes

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the first consists of reducing the temperature of the
gracefully with a red hankerchiefs, the basis
it is the temperature itself which appears and not a change
So that this happy result of chance shall
[. . .]
and I still love, with my failing body,
or experience that which can be mapped
onto its outline, I do even now
In other words, during any evolution,
the successive states of the
as mere dust rotted, as this pulpy mess
of want, and that want is as ever
to be intermixed yet cling to the air
between us as I do, though burning
without end, I hang upon that sorrow,
burst against it, still must exactly
love, nasty and gross and being a system
of heat, the image of that system
the transitory image, lost on waking
and [I am greatly wrong in sorrowing.]

Waking tender as a bomb site
and you are gone, and I, as if
discarded in the wreck. The lust to go back

is always greater, for now abandoning
the trail onward to the vivid place
to reach the sea, to stand towards it

shouting in lieu of song. I can't pretend
to know this body I speak of, that's
even mine; watching the approach

which could be any, that I plant out there
against the grey and sink into
its sight

—There is an unknown
something, which remains behind

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