Funding the Future

Quantum economics from the perspective of quantum biolo...

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This is the second in a new series that will be published daily during the rest of this week.

The first quantum economics series and then the resulting quantum essays can be found here, but from the outset, whilst we knew the original ten-part series that laid the foundation for ideas on this issue was a starting point, there was always going to be a second series of essays, based on concepts in quantum biology, which is how and why Jacqueline, my wife and co-creator of these ideas, had become interested in these issues in the first place.

This post is chapter 1 in that news series, which will, we hope, provide a deeper explanation of our thinking on what we think is a key issue with the potential to deliver a new understanding of the economy.

A list of previous posts in this series is included at the end of this chapter.

Chapter 1 – Labour, Value and Reflection

In 1905, Albert Einstein solved a puzzle. Light shining on certain metals sometimes released electrons, creating an electric current, but sometimes did nothing. He showed that light came in indivisible packets — photons — and only photons with enough energy, striking a receptive surface, could free electrons and set current flowing.

It is a beautiful metaphor for the economy. Labour is our photon. Value is the electron it can release. Society is the surface on which that energy is either absorbed or bounces away.

Labour as the photon

My argument is that every human being carries a quantum of energy: intelligence, skill,

and time. In addition, labour is indivisible: each person's effort is a discrete packet of possibility. But potential is not enough. Labour achieves nothing in isolation. It must meet something capable of absorbing it, whether it be a job, an institution, a community, or a purpose, if that potential is to be released.

When the economy provides that receptive surface, labour is absorbed, and value is released. When it does not, labour is wasted. Unemployment, underemployment, and exclusion are photons bouncing off an unresponsive surface; that is the equivalent of light without current.

This means labour is not simply one "factor of production." It is the source of all production. Machines, land, and money have no power of their own; they require human energy to be set in motion. Labour is the spark that animates every other resource.

Value as the electron

In physics, once a photon strikes and frees an electron, that electron can flow through a circuit, generating current. In economics, when labour is absorbed, it releases value, which is then seen in the goods, services, and relationships that sustain life.

Value is not, in that case, an abstract number on a spreadsheet. It is the food cooked, the child taught, the patient healed, the community cared for, the product made, and the service supplied. However, like electrons, value must move through a circuit, so that it moves from wages to consumption, from the impact of government spending to public services, from investment to future capacity. When that circuit is complete, society flourishes, but when it short-circuits, the energy becomes destructive.

In that case, the true measure of an economy is not to be found in how brightly its markets shine, but in how well its circuits flow. Money prices tell us nothing if value fails to reach the people who need it. A balanced budget can mask an unbalanced society if labour's energy has nowhere meaningful to go.

The social surface

For photons to release electrons, they must hit a receptive surface. Metals differ in how easily they yield. So do societies. A society that welcomes labour through fair wages, decent work, education, and collective provision acts like a good conductor. A society that blocks access through inequality, insecurity, or discrimination acts like an insulator.

Every strike, redundancy, and unpaid hour is evidence of energy wasted because the surface was unprepared to receive it, leading to increasing disorder. The task of policy, then, is not to make labour cheaper but to make society more receptive: to create institutions that turn human effort into value rather than reflection.

Smoke and mirrors

Not all surfaces absorb electrons in response to photons, though: in physics, light that hits a mirror is reflected. It looks active - brilliant and even dazzling - but releases no electrons. No current flows, which is an understanding core to quantum biology. As a matter of fact, all life is characterised by the passage of photons and electrons through an electromagnetic field.

Speculation performs the same role as the reflection of electrons in economics. Whole industries shine with apparent vitality, whether they be trading floors, property speculators or crypto markets, but the light they throw is deceptive. Enormous amounts of labour are diverted into reflection, and not into creating value. Like the reflections on the back wall of Plato's cave, these activities create an illusion of something real, but the substance of what is happening is very different.

Bright graduates design algorithms for high-frequency trading instead of renewable energy. Accountants and lawyers spend their careers defending tax havens instead of strengthening public services. Bankers invent derivatives whose sole purpose is to profit from volatility. The activity is intense, the surfaces polished, but nothing new is created.

In these situations, labour's photons bounce endlessly within the mirrors of finance, dazzling but sterile, and instead of increasing order in the system, they create an illusion of coherence whilst providing none.

In contrast, a photon absorbed illuminates the system, transferring energy (information) into society and creating value and coherence for all.

This is the tragedy of misdirected labour: energy is not merely unused but consumed in producing illusion. The harder people work in speculative sectors, the more distorted the economy becomes. We mistake the shimmer of rising asset prices for the glow of genuine value.

The waste of reflection

In physics, photons reflected from a mirror contribute nothing to power. In economics, labour devoted to speculation adds nothing to collective well-being. It creates the appearance of wealth while draining the real sources of it.

Three kinds of waste follow:

* ***Lost opportunity.*** Work that could heal, educate, or build is redirected into gambling on prices.
* Those nearest the mirrors capture light that should have illuminated the whole room.
* The reflections feed bubbles that burst, destroying jobs and savings across society.

This is not neutral redistribution; it is systemic dysfunction. A society that channels its

brightest minds into reflection rather than production guarantees its own stagnation.

The true measure of absorption

The economy’s success should therefore be measured not by output alone but by absorption — the degree to which labour is taken up in activities that release genuine value.

An absorbent, vital economy is energised to invest in teaching, care, health, green production, and cultural creation. It pays fairly, protects workers, and values contribution over speculation. It allows photons to strike metal and not mirrors, and as a result, to illuminate reality.

A reflective, dying economy is drained of energy and measures itself by GDP and asset prices. It celebrates brightness while its circuits fail. Just as the prisoners staring at the back wall of Plato’s cave mistook shadows for reality, in this economy, churn is mistaken for current, motion for movement, and illusion for achievement.

The contrast can be seen in a statement that has been suggested (probably incorrectly) to be attributable to Einstein, which is that “Not everything that counts can be counted, and not everything that can be counted counts." Whoever said it, the statement highlights that many important aspects of life, including care in all its forms, cannot be easily quantified and so measured, while other things that can be measured, like money and metrics based on it, may not provide an indication of true value. The measure of absorption reinforces the point.

The politics of care

Once we recognise labour as the photon and value as the electron, politics becomes the science of making society receptive. A politics of care would:

* Guarantee that everyone who can contribute has the opportunity to do so.

* Build public institutions that absorb labour productively — schools, hospitals, green industries.

* Redirect human intelligence from speculation and rent-seeking into creativity and repair.

* Replace GDP with measures of absorption: how fully labour’s energy flows into sustaining life.

This is not sentimental. It is practical physics applied to human purpose. The energy exists. The challenge is to prevent it being wasted.

The moral dimension

In the photoelectric effect, a photon that fails to release an electron is not morally wrong; it is simply reflected. But in human society, waste carries ethical weight. Every unemployed worker, every underfunded teacher, every burned-out nurse represents not just lost output but lost possibility. The failure to absorb labour is the failure to respect life's energy.

Economies built on reflection and exclusion turn living people into stray photons — bright, capable, but left to bounce aimlessly off cold surfaces. To accept that waste is to accept entropy as destiny. To resist it is to affirm that human energy can be directed towards creation, care, and renewal.

Conclusion

Einstein taught us that light consists of photons, indivisible packets of energy that only realise their power when absorbed. Economics should teach us the same of labour.

We are the photons of the economy. Each of us carries energy waiting to be absorbed into value. When society provides receptive surfaces — fair institutions, meaningful work, and shared purpose — that energy releases electrons of value and a current of life flows. When society turns reflective — through speculation, inequality, and exclusion — the light is wasted.

The central question of political economy, then, is not how bright our markets shine but how fully we absorb our photons. Are we building currents of value to sustain life, or staring into mirrors of illusion in the wake of increasing disorder?

Previous posts in this series

* ***The prologue***

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