Novelty and the Empowering of Minds[1]

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Abstract

The present essay brings forth some considerations related to the future of humanity that are not strategic in nature, but foundational. The focus will not be on providing practical suggestions or solutions, but on revaluing our sense of inclusivity to foster next generations towards novel opportunites and growth. A set of definitions and (unproven) propositions is presented, where the pivot concept — novelty — is ontologically outlined. The fundamental role of the scientific worldview as a provider of lighthouses for inclusivity efforts is proposed. The main conclusion derived from the propositions is: instead of steering humanity through rigid (and inevitably incomplete and/or unsafe) solutions, we should empower the individual's mind by taking advantage of its truthful representation of novelty.

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"We have begun to contemplate our origins:
starstuff pondering the stars; organized assemblages of
ten billion billion billion atoms considering the evolution of atoms;
tracing the long journey by which, here at least, consciousness arose."
— Carl Sagan, Cosmos

Introduction

Novelty[3] is an unsteerable act of nature. It flourishes at every corner and every second of the cosmos. Roused to action as an upward spiral, embedded in principles of reasoning and experimentation, we emerged from the infinite sea of novelty and knowledge made us self-conscious. We are all, essentially, "nature thinking about nature". Knowledge steers our ship on mysterious waters, but the very texture of the ocean is unsteerable — and so we are.

Intelligibility about our place in the Universe is constructed on familiarity and predictability, which gives a sense of clarification and meaning, but it is always incomplete. We are not exempted from the potential uncertainty of outcomes and the openness of the future. These thrive in the realm of novelty.

We have certainly met novelty, in different disguises, continuously in the past and have pondered about it. Be the general principles of statistical mechanics, be our most advanced physical theories — all scratch the surface of novelty. For instance, the fluctuation theorem [1], [2] has recently clarified important details that make time-asymmetric thermodynamic laws derivable from time-symmetric laws — entropy is novelty in *emersion*. The puzzling quantum laws reveal the intrinsic incompleteness world — indeterminacy is novelty in emersion. The profound changes introduced by general relativity re-framed our notions of space and time — relativization is novelty in emersion.

All knowledge relies on the convergence of presuppositions dictated by the internal logical relations of theories with respect to *measure*, its most important constraint. Science evolves as a self-correcting system with measure as its core element — *but not novelty*, which appears *a posteriori*.

Considering our knowledge-based evolution, one feels pressed to ask: is science expected to be always a measure-dominated, solution provider

[3]Next section provides definitions for the main terms.

system? Is it possible to fully incorporate the sense novelty, missed in the very construction of current theories, into an expanded worldview? If so, will such a new worldview address the most pressing issues faced by humanity[3]? This essay attempts to introduce some philosophical insights to our challenging future.

Definitions

DEF. I – *Measure.*

Measure is here understood as the outcome of a comparison. A comparison is always a focused choice between conceived/singularized categories, for example: objects, states, facts, frames, records, idealizations, systems, events, etc, which are selected in particular ways. The conceptions about our place in the Universe and our evolution in time are but instances of measure. The pinnacle of measure for physical intelligibility is the scientific method.

DEF. II – *Novelty.*

Novelty is here understood as an ontological domain which promotes what is perceived physically as the change of a state. Nature tends to create isolable systems prone to measure; such evolutions are realizations of novelty. However, measure only highlights isolable structures, whereas novelty, as a domain, is an exhaustive, interconnected texture of processes[4].

DEF. III – *Inclusivity.*

It is the act of not excluding members through measure.

DEF. IV – *Emersion.*

It is a physical meaning attributed to a measure, usually expressed via relations and laws.

[4]Here, a realistic view (namely, one which nature is the outcome of an ultimately objective reality) is considered, but only in the sense delimiting the arguments to the most irreducible ontological possibility. The propositions do not necessarily rely on a strictly realistic view.

Propositions

Prop. I – *Any intelligent act is an act of measure.*

Intelligence is a manifestation of measure and excells in it. Any entity is intelligent if it performs an act of measure. Nature does not provide intrinsic meaning to measure, but every measure is a self-encoding of relations depicting "nature against nature". Intelligence realizes this single and only possible self-encoding[5].

Prop. II – *The mind is a manifestation of intelligence, and its natural, sustainable state is that which it seeds intelligence towards higher and higher measure conceptualizations.*

The human mind is a particular arrangement of nature, realized as the activity of the brain. The mind cannot be limited by or reduced to the activity of measure— instead, the mind provides a natural ground for seeding intelligence. Seeding is here understood as providing higher and higher measure conceptualizations counteracting isolability (see Def. II). These should flourish on a panorama where measure gives place to novel, richer fundamental entities and increased intelligibility.

Prop. III – *The scientific worldview is an intelligent worldview, but does not saturate the mind worldview.*

The scientific worldview is that of differences in degree; the mind worldview, that of differences in nature (in a different context, see [4]). The former (not surjectively) guides the latter; the latter freely seeds the former. No intelligence can saturate the ultimate substratum of nature — if there is one at all[6]. At best, intelligence can express all sets of *relations* exhaustively (as comparisons), but cannot address the fundamental texture *as it is*. The mind, being a particular arrangement of nature, potentially mimics instances of nature exhaustively. The scientific worldview depicts relations through measure; the mind worldview is itself a representation of nature's texture. Therefore, the scientific worldview does not saturate the mind worldview, but

[5]The particular meaning attributed to a measure is often polarized in terms of being quantitative or qualitative. For example, mathematics is a quantitative self-encoding. The nature of mathematics, as either a purely human construct or a realistic texture of the Universe, will not be discussed in the present essay. Its status will be here assumed to not interfere with the general propositions.

[6]By saturate it is here understood that no intelligence can gain absolute and final knowledge (see Def. II: measure only highlights isolable structures).

the latter must seed intelligent acts through its own reflection (the domain of novelty realized by thinking).

PROP. IV – *There is a sense towards which science approaches higher intelligibility: the management of uncertainty.*

There exists no exhaustively complete, precise or reliable measure obtainable from a given knowledge base, experiment or observation, and nature itself might be, fundamentally, an indeterminacy-based substratum. Uncertainty is treated in the science worldview through probability methods, or new fuzzy logic techniques [5]. In a sense, such tools render uncertainty itself as a potential attribute of the knowledge-base (and not a purely unknown, limiting factor), leading to increased intelligibility. Analogously, uncertainty in the mind worldview seeds higher conceptualizations (see Prop. II), instead of degrading into stagnation. Therefore uncertainty is a realization of novelty.

PROP. V – *Problems are inclusivity pressure, and should be addressed as such.*

False problems can be classified into "non-existent problems" and "misplaced problems" [6]. But problems *per se* are human constructs. In nature, qualifications of "better" or "worse", "good" or "bad" have no meaning. Nature, in its raw, non-conscious state, does not "solve" — it simply rearranges itself exhaustively in novelty. Problems are the intelligent formalization of a measure; solutions are the satisfaction of relational constraints. In a practical example: our planet have been significantly altered by human actions, to the point where the properties which make our world finely habitable may be changing towards inhabitability. The current scale and interdependency of factors that cause those changes are disputed and unclear, but related issues, pressing by themselves, are: poverty, economic inequality, health, management of energy/food/water resources, etc [3]. The present state-of-affairs is a pure representation of what we actually are, right now, given our heritage and contigency — all but a reflection of the neutral perspective of nature. The issues should be addressed/alleviated because they are the result of local and global differential measures that, in a human sense, are formally regarded as important. In other words, all human issues come in the form of an *inclusivity pressure*, which can only be alleviated through the levelling of the intrinsic differential measures that express "how the one world affects the many and how the many worlds affect the one" [3]. The "levelling of measure" is here not understood as uniformity, but inclusivity. In other words, inclusivity is a realization of novelty, in the form of an exhaustive

participation of empowered individuals in our process-based, interconnected world.

PROP. VI – *Measures of progress can only be established for limited-term horizons; absolute horizons of optimum conditions are idealistic human constructs with no meaning in a novelty-based universe.*

Any measure of progress is a comparison between states (the current state vs. the desired state), where the desired state is defined so that it meets a set of goals or solutions. But that implies a purely intelligent formalization (see Prop. V). Since such a progress-based (or time domain-based) measure highlights isolable structures (see Def. II), only limited-term horizons can be specified to meet the desired state. Furthermore, the desired state can never be reached through an exhaustive process, and is contingently limited. On the other hand, the management of uncertainty provides more natural horizons, as it leads to increased measure conceptualizations (see Prop. IV).

PROP. VII – *There is no optimum condition of the mind— therefore, of humanity —, but only its natural condition wherein novelty saturates through inclusivity.*

A strict optimum condition is that which attains the most desirable state, that is, where all goals are reached or all problems are solved. From Prop. VI, this is not possible. Since the mind cannot be limited by or reduced to the activity of measure (see Prop. II), there is no optimum condition of the mind. A compromise is a state of quasi-optimum condition, where differences are settled by mutual concessions of the integrating elements. But a compromise can only be established through the "levelling of measure" (see Prop. V). Therefore a compromise can only be achieved through inclusivity.

PROP. VIII – *Empowering the human mind towards the novelty which pervades the very texture of the universe is not — and cannot be — a form of steering, but of freedom.*

Individual future is linked to collective future [3]. A sustainable compromise can only be achieved through inclusivity, that is, an exhaustive participation (see Prop. VII). The scientific worldview is a provider of lighthouses for inclusivity efforts. Education is such a human inclusivity construct. It promotes the absorpion of knowledge (intelligent act) and reasoning (novel act). This combined process is an evaluative feedback mechanism of the mind: a natural, sustainable state that seeds intelligence towards higher and

higher measure conceptualizations (see Prop. II). It is also an exhaustive manipulation of uncertainty and, therefore, novelty in emersion (see Prop. IV). This combined process is here understood as the empowering of the mind. It aggregates measure relations in parallel to a representation of nature's texture (see Prop. III). Not only education, but any process that cultivates human capital is empowering. Empowering is "nature thinking about nature", a free act[7].

Conclusion

It is undeniable that the presently competing, interconected challenges faced by societies require, more than ever, scientific guidance for their resolution, given their increased complexity. However, those challenges cannot be evaluated in isolation, and rigid solutions for one problem could negatively impact on others. Nor they can addressed by one specific agendum, as history has shown how easily homogenization, uniformity, or worse still, centralization of decision-making power, can take place.

There are no final answers, the author believes. But whatever we regard as challenges, the tools to overcome them are exactly ourselves. Cultivating all possible forms of human capital is a naturally sustainable framework, not only for addressing critical challenges, but also to seed our upward spiral of knowledge. Our "natural intelligibility" is our only source for perspective change and it is where revaluing the status and future of humanity lies — and where it will always lie.

The present essay outlines how natural inclusivity in every human endeavor provides an egalitarian, collective plataform where a kind of novelty can be realized to promote local, global and self-sustained balances of interests. This is not a proposal for steering humanity. It is a proposed insight deeply rooted on nature, the very texture of novelty. Any kind of compromise can only be achieved by the embracing of novelty through inclusivity — the empowering of the individual's mind, because such an empowering represents, exhaustively, the interconnected texture of what we are made of.

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[7]Freedom is here understood as a purely non-imposing act. No considerations on determinism or free-will are implied.

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