The Physicalist Program

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Abstract
We'll present the groundwork for the physicalist program and suggest it's implications.

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Introduction

The physical sciences has, over the last few centuries, generated significant advances in mathematics and the applied sciences. As we head further and further into the Planck energy scale it is expected that more breakthroughs will be achieve in the engineering sciences. Not only in that case but also in the development of newer mathematical forms.

Modern science and mathematics has been highly dependent on abstract properties as a necessary condition for articulation and discovery. The elimination of those properties is vital for achieving greater computational power from a holographic standpoint [5].

Yet over the last half century the natural sciences concerned itself in realizing grand unification. Countless schemes were developed that spawned conflicts in the sciences as to which theories are more consistent with experimental data. The development of 11-dimensional SUGRA [supergravity] was met with a great deal of hostility before it was widely accepted as a primary candidate and resolution of grand unification [1].

Yet more alternatives to SUGRA emerged at that period i.e., String Field Theory, Twistor Theory, Loop Quantum Gravity, p-Branes, etc., that attempted to resolve the problem of quantum gravity. Different models were more consistent than others and eventually they were adopted by high-energy physicists in their attempts to find a workable solution.

Since then modern physics has been afflicted with the flaw of modification. Which is what led to the explosion of an innumerable amount of quantum gravity models. If a model is shown to be flawed then such model is revised.

It is only then that countless string models have been suggested with varying SUSY [supersymmetry] parameters [2]. The more precise theories share significant similarities. Other theories diverge from the establishment models but still show experimental plausibility.

Even with 11-dimensional SUGRA it is still expected that more modifications are going to be necessary if it is to withstand ever more novel discoveries; especially in the field of quantum cosmology. In that sense we cannot claim that we have achieve grand unification, and yet through the scientific method, it is more worthwhile to replace the theory rather than to alter it.

How to cope with such stipulations is problematic. The goal of the natural sciences is conformity to principles and mathematical analysis. The paradox of grand unification is that consistency cannot imply conformity; even if experimental evidence continues to show the validity of it’s endeavor.

The physicist program aims to ease that burden [3]. Earlier on the universal law of nature was developed as an explanation to strings by removing self-contradiction [4].

We now feel that the definition of the universal law of nature must be more in line with the goals of the physicalist program.

The physicalist program is primarily the determination of a variation of models that can be related according to its adherence to the universal law of nature. Any theory that is embedded in quantum gravity and high-energy physics, showing adequate experimental Accuracy, can seek inclusion into the program. The only obligation is to eliminate as many features as possible to gain greater computational control.

What characteristics such theories must have is the primary motivation behind the architecture of the physicalist program. Determining how those theories are organized and utilized is a secondary motivation of the physicalist program. We will hint at a possible procedure for the central motivation but it will be a matter of coordination and effort to complete the secondary goal.
The Physicalist Program

We define the physicalist program as:

(1.1) \( \exists n \exists p \vdash p[n] \rightarrow p \)

An combinatoric tree diagram can be stated as the following:
(1.2) $p$

\[
\begin{array}{c}
-p \\
-p \\
-p \\
-p \\
-p \\
\end{array}
\]
The diagram allows us to note logical form [LF]; in that, by knowing LF we can then articulate a procedural mechanism necessary for deriving validation of any unification scheme.
There are two fundamental properties in the natural sciences; those are the constants of nature and mathematical constants. We can state those properties; within standard theory, as the Rosetta Stone:

\begin{align*}
(2.1) \quad \hat{Z}_i &\triangleq \{\pi, i, e, 1, 0\} \\
(2.2) \quad \hat{Z}_j &\triangleq \{\alpha', G, c, \Lambda, e^{\pi} \}
\end{align*}

We can then show that:

\begin{equation}
(2.3) \quad \lim_{j \to \infty} \bigcup_{i} \bigcap_{j} \hat{Z}_i \approx W_{ij}
\end{equation}

We can keep in mind that $W_{ij}$ is not a definite element rather it is now considered a limited artifact.

\section{Procedure}

1. Construct a branching tree.

2. Eliminate identical features unless there appears both doubles on the same branching tree that does not appear elsewhere or constants.

The following lemma is stated:

Any polynomials with arbitrary solutions are null or otherwise.

The lemma is significant in identifying values which are not subject to any restricted numerical parameter.

Given the following procedures for LF and the Rosetta stone we can proceed with numerical calculations by keeping the process restricted in scalars properties.

We can show the following examples to test the procedure:
(3.1) \[\int e^{\sin x} \, dx\]
(3.2) \[
\int e^{inx} \, dx
\]
\[
= \frac{1}{in} e^{inx} \, dx
\]
\[
= \frac{1}{in} \int e^{inx} \, dx
\]
\[
= \frac{1}{in} e^{inx} + c
\]
(3.3) \[ \int \sin \theta \, d\theta \]
\[ \downarrow \]
\[ \sin \theta \, d\theta \]
\[ \checkmark \checkmark \]
\[ \sin \theta \quad d\theta \]
\[ \checkmark \checkmark \]
\[ d \quad \theta \]
(3.4)
\[
\frac{\partial y}{\partial x} = \frac{\partial y}{\partial x}
\]
\[
\downarrow \quad \downarrow
\]
\[
\frac{\partial y}{\partial x} \quad \frac{\partial y}{\partial x}
\]
\[
\checkmark \quad \checkmark \quad \checkmark \quad \checkmark \quad \checkmark \quad \checkmark
\]
\[
\theta \quad y \quad \theta \quad x \quad \theta \quad y \quad \theta \quad x
\]
We will test the theory using Albert Einstein’s field equation for general relativity and the Klein-Gordon equation. We start with Albert Einstein’s field equation:
\[ R_{\text{mn}} - \frac{1}{2} R_{\text{mn}} R_{\text{mn}} + A_g = \frac{c_T}{T} \]
We consider this procedure as:

\[(4.2) \ [R] \ [\mathbb{G}, \hat{\mathcal{A}}, \mathcal{E}] \rightarrow [T] \text{ or } [T] \rightarrow [R] \]

Let's attempt the Klein-Gordon Equation for special relativistic quantum mechanics.
(4.3) \[ \nabla^2 \left( \frac{a^2 c^2}{\hbar^2} \right) \psi(r) = 0 \]

Given the boundary value conditions we can state:

(4.4) \[ \nabla^2 \left( \frac{a^2 c^2}{\hbar^2} \right) = 0 \]

(4.5) \[ \psi(r) = 0 \]

Then we proceed as:
(4.5) \[ \nabla^2 - \frac{\hbar^2}{\mu^2} \] = \psi (r)

\[ \nabla^2 \] - \frac{\hbar^2}{\mu^2} \psi (r)

\[ \frac{\hbar^4}{\mu^4} \]

\[ m^2 c^2 \]

\[ m^2 \]

\[ c^2 \]
Since $a' \neq h$ then the following procedure follows:

$$\text{(4.6)} \ [\nabla] \to [\psi] \text{ or } [\psi] \to [\nabla]$$

We can say without detail that the formalism is also present for $D - 11$ SUGRA as $W_{ij}$ [3]:

$$\text{(4.7)} \ [1] \to [W_{ij}] \text{ or } [W_{ij}] \to [1]$$

The general formalism can be stated as:

$$\text{(4.8)} \ [\gamma_{j \hat{z}_j}] \to [\ ]$$

We assume that unification schemes are constructivist perspective properties that share identical renormalization parameters; that is, $\dim \Phi = \{11\} [6]$. If one allows $\xi_j = \oplus$ and $\xi_j = \otimes$; then, there are an estimated 121 unification schemes. Stipulating that the universal law of nature as $\Pi_\mu$ where $R \otimes \otimes$ is an imaginary element of $\Pi_\mu$, or $R \otimes \otimes \in \Pi_\mu$. 
Further Remarks

The following rules are plausible identification of possible unification schemes:

1. Definition of the physicalist program.
2. Logical Form.
3. \( \dim \Phi = \{11\} \).
4. Finite \( \tilde{Z}_{j,T} \) numerical values such that \( \lim N ( \tilde{Z}_{j,T} ) = (\_\_\_\_) \).
5. Consistent numerical form with the least algorithmic procedure.
6. Holography [5].
Conclusion

We’ve produce a number of examples and rules to demonstrate how to identify unification schemes. The restrictions impose by renormalization helps to identity the possible amount of schemes present in both high-energy physics and quantum gravity. We’ve also reevaluated the universal law of nature that is derivative to the physicalist program. Further long-term studies must not only focus on determining those physical schemes but also determining organization and implication.
References


