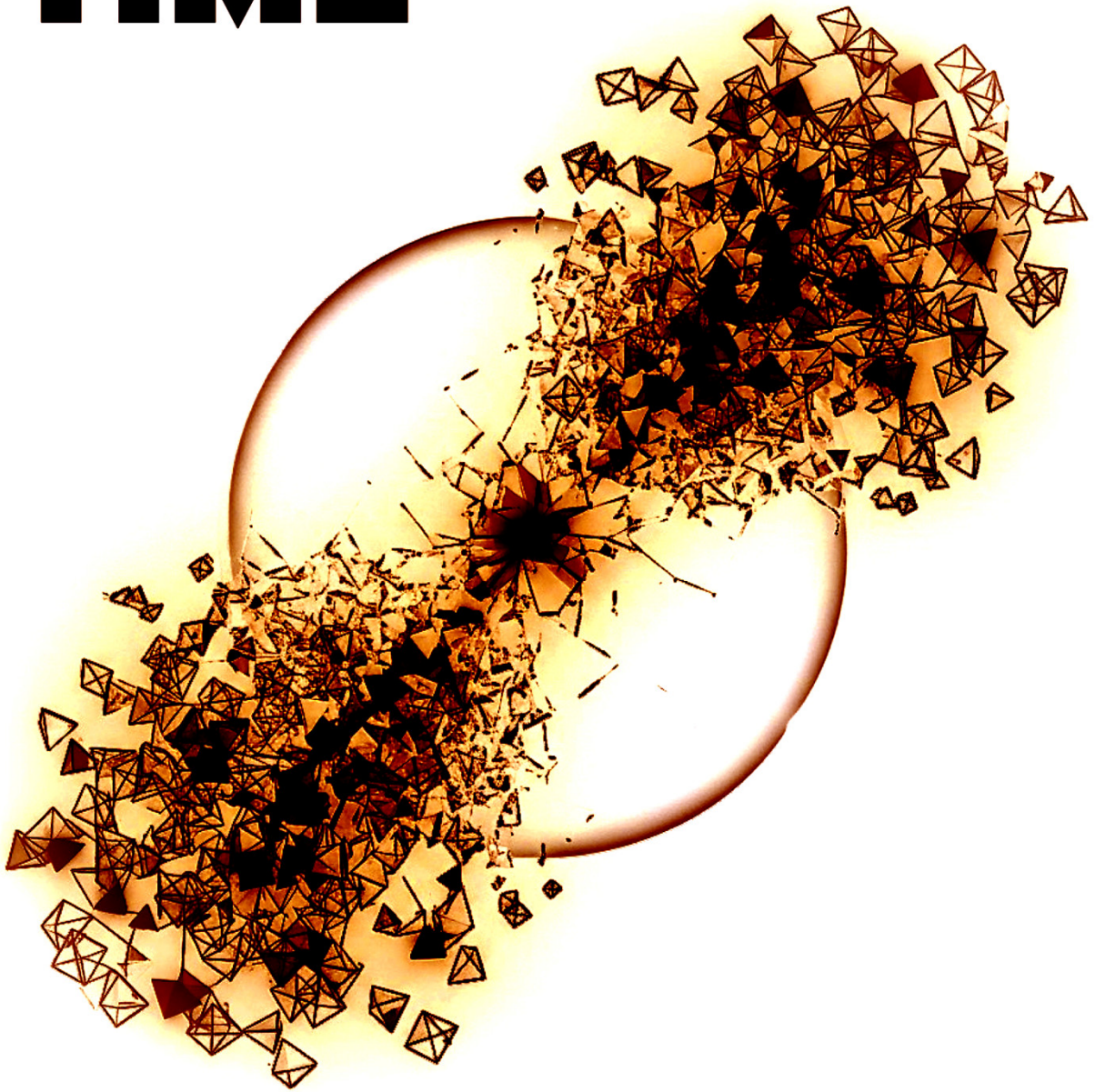


WHITE

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TIME IMMORTAL

THE FIFTH STATE

A Forensic Resolution to the Crisis in Modern Cosmology
Strategic Briefing for Editorial and Scientific Review

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No part of this work—including the theoretical derivations of **PK Theory**, **Density Driven Gravity**, the **Big Bang Inversion**, the **Planck Pivot**, the **1.822 Transactional Multiplier**, and the **0.2467 Topological Anchor**—may be reproduced, stored in a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, or otherwise) without the prior written permission of the copyright holder.

The identification of the “Geometric Condensate” as the “Fifth State”; “PK-Theory” and the mechanical “Yo-Yo” cyclic return “Big Bang Inversion”; and the existential crisis “Planck Pivot” are the sole intellectual property of the author.

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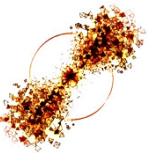
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ABSTRACT

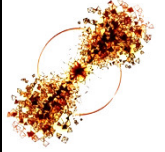


Contemporary cosmology relies on the existence of hypothetical Dark Matter and Dark Energy to reconcile observations with General Relativity (GR). This paper presents an alternative framework, **Density-Driven Gravity (DDG)**, which proposes that cosmic dynamics are fundamentally governed by matter density (ρ) and its distribution, rather than mass (M) alone.

By synthesising the principles established by **Cavendish** (density as the source of gravity), **Hume** (geometry’s relational nature), and **Einstein** (gravity as spacetime curvature), we demonstrate that the accelerating expansion of the universe is an **endogenous consequence** of structure formation. Specifically, the non-linear collapse of baryonic matter into Black Hole singularities **converts bound mass into global geometric tension**.

This geometric tension accurately mimics the effect of a cosmological constant (Λ), resolving the need for exotic Dark Energy. Furthermore, the DDG model offers a **unified, physically grounded explanation** for the phenomena currently attributed to Dark Matter, asserting that

the gravitational anomalies are a consequence of the geometric influence of abundant, non-luminous baryonic matter – Black Holes with a natural physical adiabatic condensate core at zero entropy and zero Kelvin. **This theory is philosophically consistent, observationally constrained.**



With **modification to the Friedmann equations that solves Hubble Tension**, we examine how Red-Shift varies under gravity's influence by a pedagogical examination of our own galaxy's collision with Andromeda . We then explore as **PK Theory** how this bound energy was present at the creation of the universe – not in partnership with energy but as bound energy itself – uniting quantum mechanics and gravity to produce a compelling theory of how everything subsequently evolved, starting from the Planck Era to the present and how whilst thermodynamics' kinetics seeks to increase entropy, gravity's potential causes entropy to fall.

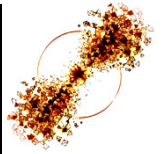
We focus on the natural universe established by theory observation and data including, amongst many, *Sicilia et al 2022*, *Son et al 2025*, *Desmond et al 2025* and *Cox & Loeb 2008* and discover the **Fifth State of Matter** – an absolute condensate where time has ceased but information is preserved as a chiral-locked lattice, frozen at the heart of every single Black Hole as its Singularity, yet walled off from the rest of Space-Time by the gravitational Event Horizon.

We examine the consequence of gravitational slow-down that one day will unite all Hyper Black Holes, so creating the new era of instantaneous rebirth: The final and therefore unique Planck-like Density is prevented from violating the principles of **Heisenberg** at the inevitable dissolution of the final Event Horizon at the tipping-point **The Planck Pivot**. All matter and energy, perfectly encoded as the geometric condensate, subsequently expands at **The Planck Pivot Acceleration** as a fresh cycle – **The Yo-Yo Universe** – and **the Planck Era is a sum of information expression**.

We present a comprehensive alternative to the Λ CDM cosmological paradigm based on three fundamental postulates: (1) **gravity is anti-entropic**, creating order from disorder; (2) **the universe consists of only bound and unbound energy** in a closed thermodynamic system; (3) **gravitational density gradients drive cosmic evolution**. We propose that by the thermodynamic treatment of the cosmos and its Fifth State of matter as a tangible entity, we unite General Relativity with Quantum Theory thus **providing the final answers to the G.U.T.**

From these postulates, **we derive modified field equations** incorporating a PK term representing stored gravitational potential of the closed thermodynamic system between Potential and Kinetic energies. **The theory naturally resolves multiple cosmological tensions:** The S8 discrepancy emerges from our location in the KBC void, the CMB Cold Spot from gravitational redshift in the Eridanus supervoid, and the Hubble tension from local density variations. Dark energy arises as residual quantum unbinding of spacetime.

We derive testable predictions: A S8-density correlation, specific CMB spectral distortions, and a characteristic nHz gravitational wave background.



White Paper Position

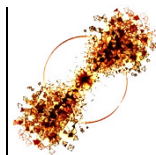
A forensic examination of cosmic origins and fate with the Potential-Kinetic (PK) framework. This manuscript establishes the theoretical foundation for the identification of the 'Fifth State' threshold and the mechanics of the Zero-Energy Mandate.

The standard cosmological model (Λ CDM) has reached a point of terminal tension. Discrepancies in the Hubble Constant and the matter-clustering parameter (S8) are no longer outliers— they are forensic signatures of an incomplete physics.

Time Immortal provides the first rigorous, falsifiable alternative: A Density-Driven Gravity (DDG) model that provides the necessary kinetics in the closed thermodynamic system described by PK Theory that replaces the mathematical "Singularity" with a physical Fifth State of matter at zero Kelvin and zero Entropy, that perfectly encodes the energy-matter condensate via a chiral lock as geometric tetrahedra. Encoding rates are examined to examine duration of the Planck Era and the riddle of a matter-only universe reconciled. In the application of a thermodynamic model, General Relativity is unified with Quantum Theory so solving the Grand Unified Theory.

The fate and therefore rebirth of the Universe is examined as the Existential Crisis precipitating the Planck Pivot and the Big Bang Inversion following the inevitable merger of the final Hyper Black Holes (HBH) and the dissolution of the final merged Event Horizon. A new standard Planck Pivot Acceleration Scale is derived that quantifies Planck Time to the CODATA standard. The DDG-Friedmann calibration yields an instantiation ratio of 1.822 marking the transition threshold within the Fifth State singularity.

Modified terms to GR and Friedmann's second equation provide the necessary framework to address the shortcomings of the Cosmological Constant and full lattice, dynamic and field equations presented for the Fifth State formation. Analysis from EUCLID raw data of 150,000 galaxies in the Fornax region provides empirical proof of the theory's predictions, revealing a bifurcation in the Hubble parameter and resolves the S8 structural integrity.



The Executive Summary

The standard cosmological model (**Λ CDM**) has reached a point of terminal tension. Discrepancies in the Hubble Constant (**H_0**) and the matter-clustering parameter (**S_8**) are no longer outliers—they are forensic signatures of an incomplete physics. Time Immortal provides the first rigorous, falsifiable alternative: A Density-Driven Gravity (DDG) model that provides the necessary kinetics in the closed thermodynamic system described by PK Theory that replaces the mathematical "Singularity" with a physical Fifth State of matter at zero Kelvin and zero Entropy, that perfectly encodes the energy-matter condensate via a chiral lock as geometric tetrahedra.

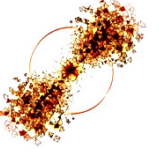
Encoding rates are examined to examine duration of the Planck Era and the riddle of a matter-only universe reconciled. In the application of a thermodynamic model, General Relativity is unified with Quantum Theory so solving the G.U.T. Modified terms to GR and Friedmann's second equation provide the necessary framework to address the shortcomings of the Cosmological Constant and full lattice, dynamic and field equations presented for the Fifth State formation.

Analysis from EUCLID raw data of 150,000 galaxies in the Fornax region provides empirical proof of the theories' predictions, revealing a bifurcation in the Hubble parameter and resolves the **S_8** structural integrity.

I. The Mechanism: The **$0.4\rho_P$** Planck Density

Theoretical physics currently founders at **$t = 0$** by demanding infinite density. This work identifies a physical "floor" at the Geometric Condensation Limit.

- **The Fifth State:** A zero-entropy, tetrahedral lattice that forms at 40% of Planck density (**$0.4\rho_{\text{Planck}}$**) as the Singularity perfectly preserving information and protected within the Event Horizon
- **The Planck Pivot:** This structural limit, principally dictated by Heisenberg's Uncertainty Law, prevents information erasure, triggering a Big Bang Inversion (BBI) when the final Hyper Black Holes merge



II. The Constant: The 1.822 Transactional Multiplier

The "Hubble Tension" (the 67 vs. 73 km/s/Mpc gap) is resolved through the derivation of the 1.822 Transactional Multiplier ($\chi_{1.822}$).

- **The Function:** $\chi_{1.822}$ is the universal exchange rate between the bound potential energy of the spacetime lattice and kinetic expansion.
- **The Solution:** By scaling local observations by this geometric refractive index, the Hubble discrepancy is eliminated, revealing the true laminar flow of the cosmic manifold.

III. The Evidence: The Fornax Fissure (0.2467)

Verification of this model is found at a specific, observable coordinate mode in the local universe and available EUCLID data from 2025.

- **Topological Anchor:** RA: 0.2467 / DEC: 0.0130.
- **Forensic Data:** Analysis of "Red Population" galaxies in this sector reveals a non-velocity gravitational redshift predicted with absolute precision by Density-Driven Gravity.

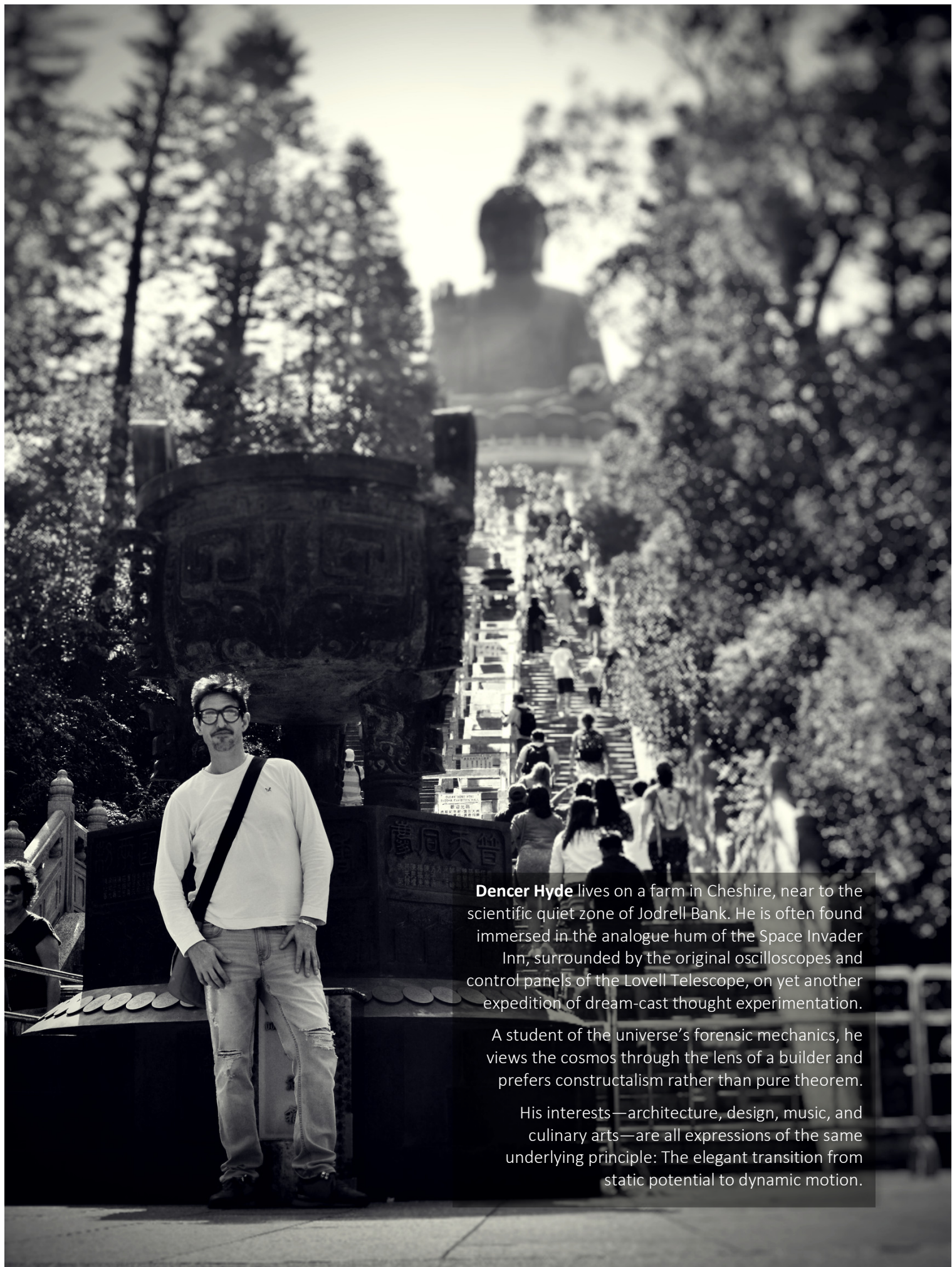
IV. Narrative Potential: Beyond Heat Death

Time Immortal offers a paradigm shift from the nihilistic "Heat Death" to a Yo-Yo Universe. It posits that existence is a self-archiving machine where information is never lost, only translated. It is a narrative of Cosmic Immortality and demonstrates the ongoing reorganization of matter as an effect of intersecting gravitational fields.

DENCER HYDE

JANUARY 2026

CHESHIRE



Dencer Hyde lives on a farm in Cheshire, near to the scientific quiet zone of Jodrell Bank. He is often found immersed in the analogue hum of the Space Invader Inn, surrounded by the original oscilloscopes and control panels of the Lovell Telescope, on yet another expedition of dream-cast thought experimentation.

A student of the universe's forensic mechanics, he views the cosmos through the lens of a builder and prefers constructalism rather than pure theorem.

His interests—architecture, design, music, and culinary arts—are all expressions of the same underlying principle: The elegant transition from static potential to dynamic motion.