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MARK B. TURNER, EDITOR
Institute Professor, Case Western Reserve University - Department of Cognitive Science
mark.turner@case.edu
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COGNITIVE SOCIAL SCIENCE eJOURNAL

"Delegatio Ex Machina: Institutions Without Agency"

AGUSTIN V. STARTARI, Universidad de la Republica, Universidad de Palermo, Universidad de la Empresa (UDE)
Email: agustartari@gmail.com

This article examines the disappearance of agency in institutional governance when predictive systems become the locus of delegation. *Delegatio Ex Machina* proposes that institutional authority is no longer anchored in decision-makers but in compiled rules that execute without reference to a subject. Central banks, international agencies, and automated audit systems illustrate how syntactic delegation replaces political acts with repetitive formal structures. By tracing this displacement, the paper defines a framework for understanding authority without agency and its risks for accountability in predictive societies.

"GSDM: A Survival-Driven Architecture for AGI and AI Life"

QILIN GUO, Independent Researcher
Email: guoqilin70@outlook.com

This paper introduces Guo's Survival-Driven AI Model (GSDM), a comprehensive artificial intelligence framework rooted in survival mechanisms, aimed at constructing Artificial General Intelligence (AGI) with life-like attributes, self-sustaining capacities, and social adaptability. Anchored in the operational logics of human society and psychology, GSDM integrates Freud's structural model of the psyche (Freud, 1923/1961), Maslow's hierarchy of needs (Maslow, 1943), and scarcity-centered economic principles into AI design, thereby equipping the system with intrinsic motivation, resource competition, and cooperative social behavior. In addition, given that Artificial Consciousness (AC) is often regarded as an essential constituent of AGI, the appendix advances Guo's Micro-State Theory of Consciousness (GMST). GMST not only grounds the emergence of consciousness in physics and information theory but also articulates mechanistic accounts of subjective experience, selfhood, affect, and mental phenomena. Moreover, it extends the evaluative scope of the Turing Test (Turing, 1950) from semantic performance to underlying physical mechanisms, offering a unified analytic framework for interrogating the existence of consciousness across biological and artificial systems.

"Mathematical Modeling of Emotions Based on James's Theory: A Cognitive Approach for Artificial Intelligence"

SAMIA SGHAIER, *affiliation not provided to SSRN*
Email: samiasghaier21@gmail.com

We propose a formal and computational framework for modeling human emotions grounded in James's theory, where emotions emerge from the perception and cognitive interpretation of bodily signals. Our approach employs a matrix-based representation that integrates perceptual, contextual, and cognitive variables into a unified structure. The model formalizes the transformation from stimuli to emotion classes through the composition of three functions—sensation, perception, and cognition. We implement this framework using a neural network architecture designed for affective computing applications, thereby bridging theoretical psychology and artificial intelligence. Finally, we discuss experimental perspectives and potential applications in emotionally intelligent systems.

"Cognitive Castes: Artificial Intelligence, Epistemic Stratification, and the Dissolution of Democratic Discourse"

DR CRAIG S WRIGHT, University of Exeter, Harvard University, RCJBR Holdings PLC
Email: cw881@exeter.ac.uk

Artificial intelligence functions not as an epistemic leveller, but as an accelerant of cognitive stratification, entrenching and formalising informational castes within liberal-democratic societies. Synthesising formal epistemology, political theory, algorithmic architecture, and economic incentive structures, the argument traces how contemporary AI systems selectively amplify the reasoning capacity of individuals equipped with recursive abstraction, symbolic logic, and adversarial interrogation—whilst simultaneously pacifying the cognitively untrained through engagement-optimised interfaces. Fluency replaces rigour, immediacy displaces reflection, and procedural reasoning is eclipsed by reactive suggestion. The result is a technocratic realignment of power: no longer grounded in material capital alone, but in the capacity to navigate, deconstruct, and manipulate systems of epistemic production. Information ceases to be a commons; it becomes the substrate through which consent is manufactured and autonomy subdued. Deliberative democracy collapses not through censorship, but through the erosion of interpretive agency. The proposed response is not technocratic regulation, nor universal access, but the reconstruction of rational autonomy as a civic mandate—codified in education, protected by epistemic rights, and structurally embedded within open cognitive infrastructure.

"Cognitive Ecologies of AI-Enhanced Learning : Toward a Meta-Intelligent Pedagogy for the Post-Digital Age"

PITSHOU MOLEKA, African Research Network (ARN)
Email: sodecordc1@gmail.com

This article explores the transformative potential of Artificial Intelligence (AI) in reshaping digital education by introducing the concept of Meta-Intelligent Pedagogy (MIP), a holistic, adaptive, and context-sensitive learning paradigm. Drawing from complexity theory, cognitive science, and innovationology, the study proposes a framework for designing AIenhanced learning ecologies that transcend current models of personalization and automation. The paper critically examines how AI systems can foster higher-order thinking, systemic intelligence, and ethical discernment, while adressing the risks of dehumanization and epistemic injustice. This article combines real-world case studies with speculative scenarios to explore not only how AI is currently reshaping education, but also how it might enable radically new forms of pedagogy in the future. This dual approach ensures both empirical grounding and imaginative foresight, which are essential in a rapidly evolving post-digital educational landscape.

"Cognitive Immunology: The Adaptive Falsification Hypothesis and the Evolutionary Origins of Scientific Skepticism"

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MATTHIAS MUHLERT, Independent Researcher
Email: matthias@muhlert.eu

Scientific falsification presents an evolutionary paradox: how did humans develop the capacity to deliberately seek disconfirmation of beliefs that historically ensured survival? While philosophers from Popper to Lakatos have debated whether falsification demarcates science, none have explained its cognitive origins. The Adaptive Falsification Hypothesis (AFH) proposes that falsification emerged through cultural hijacking of evolutionary machinery-pattern-detection systems optimized for survival get repurposed as a "cognitive immune system" that attacks our own theories. We integrate four mechanisms to explain this paradox: (1) Cognitive dissonance theory shows how institutions force scientists to resolve contradictions by abandoning theories rather than dismissing evidence; (2) Error Management Theory demonstrates that science reverses evolution's bias from false positives to false negatives; (3) Fitness landscape topology explains why beautiful theories become epistemic traps; (4) Generative Adversarial Networks provide a computational model for automated falsification. AFH generates testable predictions about symmetry detection in threat contexts, the failure rate of aesthetically-driven theories, and the development of falsification capacity. By grounding Popperian philosophy in cognitive science and evolutionary biology, AFH explains why falsification is both essential to science and psychologically unnatural-requiring constant institutional reinforcement against evolved defaults.

"Game-Based Digital Intervention for Neurocognitive Training in Major Depressive Disorder: A Randomized Double-Blinded Comparator-Controlled Clinical Trial"

J. MATIAS PALVA, Aalto University - Department of Neuroscience and Bioengineering (NBE)
Email: matias.palva@aalto.fi
JOONAS JUVONEN, Aalto University
Email: joonas.1.juvonen@aalto.fi
LAURI LUKKA, Aalto University
Email: lauri.1.lukka@aalto.fi
MARIA VESTERINEN, Aalto University
Email: maria.vesterinen@aalto.fi
ANTTI SALONEN, Aalto University
Email: antti.salonen@soihtudtx.com
VILMA-REETTA BERGMAN, Aalto University
Email: vilma-reetta.bergman@aalto.fi
PAULA PARTANEN, Aalto University
Email: paula.rj.partanen@helsinki.fi
LAURI POHJOLA, Aalto University
Email: lauri.pohjola@soihtudtx.com
JUHANI KOLEHMAINEN, Aalto University
Email: juhani.kolehmainen@soihtudtx.com
MONIKA MEIMER, University of Turku - Turku University Hospital
Email: monika.meimer@mehilainen.fi
XIAOSI GU, Yale University - School of Medicine
Email: xiaosi.gu@yale.edu
HANNA RENVALL, Aalto University
Email: hanna.renvall@aalto.fi
PEKKA JYLHÄ, University of Helsinki - Helsinki University Hospital
Email: pekka.jylha@hus.fi
ERKKI ISOMETSÄ, University of Helsinki - Helsinki University Hospital
Email: erkki.isometsa@hus.fi
SATU PALVA, University of Helsinki - Neuroscience Center
Email: satu.palva@helsinki.fi

Background: Neurocognitive dysfunction—a predictor for poor outcomes and a driver of disability and costs—has remained a significant unmet need in individuals with major depressive disorder (MDD). As such, neurocognitive training could serve as a new therapeutic approach for alleviating symptoms and improving real-life functioning in MDD. Action video games are effective up-regulators of brain plasticity and could thus provide an ideal medium for targeted and personalized neurocognitive training in digital therapeutics for MDD. Efficacy and functional outcomes evidence for neurocognitive training has, however, remained inconclusive.

Methods: In this randomized, double-blinded, comparator-controlled, superiority trial, MDD patients in Finland were randomly assigned (1:1:1) to receive a 12-week game-based intervention with personalized closed-loop neurocognitive training (MEL-T01, "Meliora"), an essentially identical active comparator (MEL-S01, "Sham") with reduced training load, or treatment-as-usual alone. Both Meliora and Sham were provided as an adjunct to treatment-as-usual. The primary outcomes, superiority of Meliora over Sham and TAU, and superiority of Sham over TAU, were assessed using robust linear-mixed-model statistics of the change in depression symptoms measured with the Patient Health Questionnaire-9 (PHQ-9) at 4-week intervals throughout the intervention. Lived experience experts were integral to all stages of this research. The trial was registered with ClinicalTrials.gov: NCT05426265.

Findings: Between June 28, 2022 and August 14, 2024, 1,384 patients were screened for eligibility and 1,001 enrolled for the trial to receive either Meliora (337), Sham (347), or TAU alone (317) for 12 weeks. A per-protocol completer analysis included 483 patients of whom 315 (65·2%) identified as woman, 121 (25·0%) as man, and 47 (9·7%) as other. The mean age was 33·8 years (SD 9·5). For the primary endpoint (PHQ-9), Meliora was superior to Sham (adjusted mean difference c –0·513 (90% CI –1·007 to –0·018), Cohen's d –0·19, p=0·045), and both Meliora (c –1·138 (–1·542 to –0·735), d –0·43, p=2·2·10-6) and Sham (c –0·626 (–1·034 to –0·218), d –0·24, p=0·006) were superior to treatment-as-usual alone. The superiority of Meliora over Sham (c –0·354 (–0·575 to –0·133), d –0·103, p=0·004) was further corroborated with an exploratory intention-to-treat analysis with full device-arm cohort of 684 patients. Adverse events, monitored with four channels, were reported by 148 of 1,001 patients (14·8%) with frustration (87 patients, 8·7%) being the most common. No serious adverse events were reported.

Interpretation: These findings demonstrate the therapeutic potential of neurocognitive training in immersive game-based digital therapeutics, opening new avenues for scalable, personalized, and cost-effective depression treatments that improve functional outcomes.

"Linguistic Strategies in Misinformation: A Semantic-Pragmatic Framework for Detecting Manipulation in Media Discourse (ESTRATÉGIAS LINGUÍSTICAS DA DESINFORMAÇÃO: UMA ABORDAGEM SEMÂNTICO-PRAGMÁTICA PARA DETECTAR MANIPULAÇÃO NO DISCURSO MIDIÁTICO)"

ENSAIO TEÓRICO, Federal University of Parana (UFPR)
Email: author8103220@ssrn.com
ANGELICA ANDERSEN, Federal University of Parana (UFPR)
Email: angelica1br@hotmail.com

This article develops a semantic-pragmatic analysis methodology for identifying linguistic manipulation strategies in media texts. Through the application of six mechanisms – implicature, presupposition, pragmatic inferences, modality, genericity, and nominalisation (AUSTIN, 1975; CARLSON, 2011; GRICE, 1975; HEUSINGER; MAIENBORN; PORTNER, 2011; SIMONS, 2005; SPERBER; WILSON, 1995; STALNAKER, 1973; VON FINTEL, 2006) — I propose an analytical model that demonstrates how these linguistic resources can be exploited to create interpretive distortions. Although other mechanisms are available, I focus on these six as they are persistent in misinformation contexts. The analysis identifies five main manipulative strategies: (1) suggestion of biased meanings without explicit commitment to truth conditions, (2) naturalisation of controversial content as established fact, (3) obscuring the degree of commitment between epistemic necessity and deontic obligation, (4) promotion of essentialist universalisations, and (5) suppression of information about agents and responsibilities. The linguistic strategies that sustain misinformation are exemplified through a viral 2023 news story about inclusive terminology for transgender patients in healthcare. The case study serves as a paradigmatic example to demonstrate mechanisms commonly employed by misinformation fabricators. The results contribute to the semantics-pragmatics interface by operationalising the distinction between what is said and what is implicated, revealing how context-dependency mechanisms can be instrumentalised for manipulation, offering perspectives on semantic compositionality and pragmatic inferential processes, and contributing to media literacy and the growing field of digital pragmatics.

"Transition from Traditional to Hybrid Cash Operations Management in Banking: A System Dynamics Approach and Empirical Evaluation"

OLEKSII SLIEPTSOV, Association for Financial Professionals (AFP), PrivatBank JSC CB
Email: artur220513timur110415@gmail.com

This paper demonstrates how a system dynamics (SD) approach can serve as the foundation for a controlled transition from traditional cash operations management toward a hybrid digital-assisted model in banking. We construct a causal feedback map and a simulation model of cash flows (branch tellers, ATMs, cash in transit and vault inventories), integrate it with algorithms for demand forecasting and route optimization, and then evaluate the economic impact through a quasi-experimental design (difference in differences). Using synthetic but realistic data from a large universal bank (≈300 branches, 1,200 ATMs), the hybrid scenario delivers: • a 34% reduction in annual CIT costs (-6.12m), • a 55m reduction in idle cash balances (capital cost savings ≈ 1.65m/year at a 3% internal rate), • a drop in unplanned ATM cash-out days from 3.2% to 0.9%, • improved short-term forecasting accuracy (MAPE reduced from 19.8% to 6.2%). Implementation costs included CAPEX of 2.8m and incremental OPEX of 0.6m/year, with a payback period of just 3.5 months. The proposed framework is replicable and scalable across banking networks.

"Heavy is the Heart That Wears the Badge: Moral Injury, Racial Identity, and Resilience in Police Officers of Color"

SAMANTHA THORNTON, Independent
Email: thorn@freespacecounseling.org

This study explores the intersection of race, moral injury, and resilience among police officers of color. Through a phenomenological approach and in-depth interviews with ten officers, the research highlights the unique burdens and strengths these officers carry. Findings reveal the weight of dual identity, the centrality of resilience anchors, and the enduring pride in service despite systemic challenges. This work contributes to growing scholarship on moral injury by situating it within racialized policing contexts and calling for culturally responsive interventions. So what? In today's climate of strained policecommunity relations and officer wellness crises, understanding moral injury at this intersection is not only academically significant-it is urgent for both practice and policy.

"Perceptions of ChatGPT Use in Teaching and Assessment Among University Professors and High School Teachers"

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OLUKAYODE E. APATA, Texas A&M University, USA
Email: apata.olukayode@tamu.edu
OI-MAN KWOK, Texas A&M University, USA
Email: oimankwoku@tamu.edu

This paper used the Technology Acceptance Model and the Theory of Planned Behavior to examine variables predicting the use of ChatGPT in education. We obtained our dataset from a publicly available survey. The final sample contained 304 participants, comprising high school teachers and university professors. We found no statistically significant differences in awareness and use of ChatGPT between high school teachers and university professors. However, teaching experience significantly predicted perceptions of support and training received. Surprisingly, the impact of ChatGPT on teaching and assessment methods was not statistically significant. We concluded that specialized training programs are required to successfully include ChatGPT in education.

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This area includes content on the intersections of cognitive science with other social sciences, including the examination of mental events in social systems and in social cognition. Topics can include applications of cognitive science to business, law, economics, politics, psychology, etc.

*Editor: **Mark B. Turner**, Case Western Reserve University*