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Designer Babies: Ethical, Scientific, and Social Implications

Dr. Asha Mishra*

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Abstract: The advancement of genetic engineering, particularly CRISPR-Cas9, has opened new frontiers in human genome modification, leading to the concept of "designer babies." This paper reviews the scientific principles, ethical concerns, potential benefits and societal impacts of genetically modified embryos. Here, we discuss the feasibility of genetic modifications for eliminating genetic diseases and

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Integrating Technology in Psychological Interventions: A Comprehensive Review of Approaches, Challenges, and Future Directions

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Abstract The integration of technology into psychological interventions has emerged as a transformative approach to addressing the increasing demand for mental health services. Technological tools such as mobile applications, virtual reality (VR), artificial intelligence (AI), telepsychology, digital therapeutics, and mindfulness-based technologies offer novel ways to enhance treatment accessibility, personalization, and scalability. These tools have the potential to expand the reach of psychological care, particularly for individuals in underserved areas or those with limited access to in-person therapy. This review explores how technology is currently being used in therapeutic settings, evaluates the effectiveness of these tools, and highlights both the opportunities and challenges associated with their use. Key issues, such as privacy concerns, data security, user engagement, and the digital divide, are discussed. Despite these challenges, technology has proven to be an effective tool in managing mental health conditions, including anxiety, depression, and PTSD. Furthermore, the review explores the future of technological advancements, focusing on how emerging technologies may further improve psychological interventions and integrate seamlessly into clinical and non-clinical environments. This review aims to provide valuable insights into the role of technology in modern psychological care and its potential for shaping the future of mental health treatment.

Keywords: psychological interventions, technology, digital therapeutics, telepsychology, virtual reality, artificial intelligence, mobile applications and mindfulness interventions .

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Community structure of phytoplanktons community in two different areas along Getalsud Dam of Jharkhand state

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Abstract: Blooms including red-tides caused by phytoplankton are of significant value in the aquatic environment as they affect marine economy. Hence, an analysis of phytoplankton becomes essential in any study concerning hydro biological investigations. Present study focusses attention on a thorough investigation of phytoplankton with reference to their species makeup, percentage contribution, population density and community structure. All these are calculated by prescribed formulas. The present study areas (stations 1 and 2) form a typical dumping yard system. Both the stations are present in the Jharkhand state along Getalsud dam basin area. The first collection site was fixed near the northern bank of the dam which was 1 km west of the residential area. The second selected site was fixed near the southern bank of the dam which was 2 km east of the small industrial area. The river water is extensively utilized for agriculture, fisheries, irrigation and navigation purpose. Phytoplankton For two years, samples were taken from the surface waters of the research sites once a month. from October 2022 to September 2023. For convenience's sake and easy interpretation, a calendar year (of study) was divided into four seasons. This kind of grouping viz., postmonsoon (January to March), summer (April to June), premonsoon (July to September) and monsoon (October to December). 0.35

These Samples were utilised for qualitative examination after being stored in 5% neutralised formalin. Regarding the quantitative analysis of phytoplankton, the settling technique was used. Plankton numerical analysis was performed using Utermonl's Inverteo-plankton microscope. Analysis of phytoplankton of stations 1 and 2 showed the presence of 187 Diatoms were the most group contributing 71.12% followed by greens and blue greens contributing 9.63% and 8.56% respectively. Dinoflagellates contributed and others contributed only 3.74%. Each group's percentage contribution towards physplankton composition in the increasing order was as follows.

Others< Dinoflagellates< blucegreens < Greens< Diatoms

Key Words: Phytoplankton, population density, Species richness, Blooms, Autotrophs

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जयशंकर प्रसाद की काव्य साधना

डॉ .संजय कुमार

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प्रR◌ावना:

प्रसाद की काव्य साधना उनके काव्यात्मक यात्रा को व्यक्त करने का एक उत्कृ ष्ट उदाहरण है। उनकी काव्य कृ◌ितयों में भिक्त भावनाओं की गहराई और धा◌िमर् क तत्वों का सुंदर प्रितष्ठान है। उनकी

रचनाओं में सरलता, श्रृंगार, प्रकृित, भिक्त और िवरह केभाव अत्यंत प्रभावशाली हैं।

काव्य कला का िवकास:

कहा गया है िक 'किव का जन्म होता है िनमार्ण नहीं'। किव की काव्य धारा के िदशा पिरवतर्न में बाह्य पिरिRिथयां सहायक हो सकती हैं, िकंतु काव्य रचना के िलए आवश्यक प्रितभा एवं भावुकता उनमें जन्मजात होती है। प्रसाद भी जन्मजात किव थे। 'कलाधर' उपनाम से अत्यंत सरस और मनोहर छंद की रचना उन्होंने 9 वषर् की अवस्था में ही की। तभी तो सत्रह वषर् की आयु में उनकी रचनाएं पत्र – पित्रकाओं में प्रकाि◌शत होने लगीं। कुछ समय पश्चात् इंदु प्रकाि◌शत हुई और इंदु में प्रकाि◌शत रचनाएं आगे चलकर 'िचत्राधार' और कानन 'कुसुम' केरूप में प्रकट हुईं।

उनकी समR काव्य रचनाओं का काल Nमानुसार ि◌ ववरण इस प्रकार ि◌ दया जा सकता है: (1)िचत्राधार (रचना काल 1906 ई० से 1909 ई०)

(2) प्रेम पिथक (सवर्प्रथम ब्रजभाषा में 1905 ई० में तथा खड़ी बोली में 1913 ई० में)

(3) करुणालय (1913 ई०)

(4) महाराणा का महत्व (1914 ई०) (5) कानन कुसुम (1912 ई० व 1916 ई०)

(6) झरना (1920 ई०)

(7) आंसू (1925 ई०)

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Impact of environmental factors on the degradation of various steel grades over time

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Abstract: The pace at which metals and other materials corrode is significantly influenced by atmospheric pollutants including SO_2, NO_2 and CO_2. The rate of corrosion in steels is determined by their chemistry. Studies conducted in numerous nations have shown that pollution has a significant impact on corrosion rate. When moisture combines with the acidic gases produced by factories, the atmosphere becomes acidic. The corrosion behaviour of two steel types—plain carbon steel (PCS) and weathering steel (WS)—exposed to the atmosphere of Jharsuguda is described in this study. The exposure of the samples took place between 2014 and 2019. Compared to WS, PCS exhibits a higher rate of corrosion. This is explained by the development of protective, nonporous oxide layers on WS. Raman spectroscopies validate the findings. The mechanism of air pollutants has been ascertained by analysing the dusts collected at Jharsuguda. Laboratory researches on exposed samples have been conducted in order to determine the mechanism and comprehend the causes. Raman spectroscopy and other techniques have been used to investigate the mechanisms behind the degradation of various steel grades.

Keywords: Plain Carbon Steel (PCS), Rust, Raman spectroscopy, Weathering Steel (WS)

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A review on Biomaterials and different coating techniques of Hydroxyapatite (HAP)

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Abstract: Hydroxyapatite $Ca_{10}(PO_4)_6(OH)_2$ is one of the most important biomaterial used for orthopedic implant due to its compositional and biological similarity to the mineral phase of the vertebrates bone. It is widely used in both orthopedic and dental Vields due to its chemical similarity to bone mineral. Ceramics have high compressive strength and good esthetic appearance. Among ceramics alumina and zirconia are most inert in nature. This review paper covers the literature assessment concerning Alumina (Al_2O_3), hard tissue: bone, Hydroxyapatite (HAP), different types of Hydroxyapatite coating techniques, Ion implantation, ion beam mixing and the Sol-gel coating techniques: Dip coating & spin coating. The various methods involved in the process of HAP coating and its advantages and disadvantages have been also discussed.

Keywords: Alumina (Al_2O_3), Hydroxyapatite, Ion implantation, Ion beam mixing, Sol-gel, Dip coating

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Neural Mechanisms of Human Decision-Making: Insights from Cognitive Neuroscience

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Abstract: Decision-making is a complex cognitive function that influences human behaviour across diverse contexts, including personal, professional, ethical, and economic domains. It involves evaluating available choices, predicting potential outcomes, and selecting the most appropriate action based on internal and external factors. This process is essential in daily life, encompassing a wide range of activities, from simple tasks like choosing a meal to more complex decisions such as financial investments or moral judgments. Each decision, regardless of its complexity, involves specific neural circuits and cognitive processes that work together to achieve desired outcomes.

This paper aims to provides a comprehensive review of the neural substrates of decision making, focusing on the prefrontal cortex, basal ganglia, and limbic system, which work in concert to facilitate cognitive control, reward evaluation, and emotional regulation. The role of key neurotransmitters, including dopamine, serotonin, and norepinephrine, is examined in the context of risk-taking, reward processing, and impulsivity. Furthermore, the paper explores theoretical models of decision-making, including dual process theory and prospect theory, alongside their neurobiological underpinnings. Practical

applications are discussed in fields such as psychopathology, artificial intelligence,

behavioral economics, and policy-making. The interplay between rational and emotional decision-making, cognitive biases and real-world implications of neuroscience research are examined. By integrating interdisciplinary perspectives, this research contributes to a nuanced understanding of decision-making and offers potential pathways for improving judgment and decision-making strategies in clinical, technological, and societal settings.

Keywords: Decision-making, Cognitive Neuroscience, Prefrontal Cortex, Dopamine, Behavioral Economics, Cognitive Biases, Neurotransmitters, Artificial Intelligence.
