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St. Xavier's University, Kolkata

Aims and Scope

St Xaviers University Kolkata Journal of Interdisciplinary Research is an annual peer-reviewed journal. It aims to provide a space for understanding the interdisciplinarity of domains, in order to gain a better understanding of society. Its objective is to encourage and publish research, analysis and issues that pertain to the society and the constant process of its evolution.

This issue of the journal spans various disciplines and has attempted to stay true to its interdisciplinary nature.

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ST XAVIERS UNIVERSITY KOLKATA JOURNAL OF INTERDISCIPLINARY RESEARCH Volume 2, Issue 1, 2024

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FROM THE DESK OF THE VICE-CHANCELLOR



Dear Readers,

A warm and hearty welcome to the latest edition (Volume 2, 2024) of the *St Xaviers University Kolkata Journal of Interdisciplinary Research (SXUKJIR*). I invite you to set out on a journey that encompasses not only academic excellence but also the values integral to our identity as a Jesuit institution. Our vision and mission, rooted in the Ignatian charism, find resonance in every page of this journal. St. Xavier's University, Kolkata endeavours to promote a society based on love, freedom, justice, and fraternity. The journal, a testament to our commitment, showcases research that strives to contribute to the creation of knowledge based on these values. It embodies the Jesuit ethos of Magis: a Latin word that means "more" or "greater," as we continue on our quest for excellence.

In the past year, our journal has achieved a significant milestone by acquiring an ISSN number. This accomplishment stands testament to the growing strength of our intellectual environment, embodied in our publications. As you leaf through the pages of this volume, I invite you to explore diverse, insightful, and socially-relevant research that reflects the vibrant spirit of our academic community.

Our university has achieved remarkable milestones in the last few years, emerging as a beacon of higher education in Eastern India. At the 4th Convocation Ceremony, we celebrated the success of 770 students. It was an honour to confer the Honouris Causa (D.Litt.) upon Chief Minister Mamata Banerjee, who announced the establishment of the Mother Teresa Chair Professorship for Peace at SXUK. This academic year brings a transformative change with the introduction of the 4-Year Undergraduate Programme, aligning with global education trends. This holistic, multi-disciplinary approach aims to empower students, focusing on practical learning outcomes and skill development for

success in competitive fields. As we gear up to embody the inter- and muti-disciplinary vision of the National Education Policy (NEP) 2020, our university's own interdisciplinary journal continues to grow.

SXUKJIR embodies our commitment to fostering interdisciplinary approaches in academia. In an era where the boundaries between disciplines blur, this journal serves as a platform to explore the interconnectedness of domains, offering a deeper understanding of society's evolution. As we continue to expand, our commitment to providing a transformative educational experience remains unwavering.

May the articles in this journal inspire you and provoke thought, reflecting the passion for academic and intellectual excellence that defines St. Xavier's University, Kolkata. Wishing you an enlightening reading experience.

In the spirit of NIHIL ULTRA,

Revd. Dr. Fr. John Felix Raj, S.J.

Vice-Chancellor

St. Xavier's University, Kolkata

EDITORIAL

Dr. Prayag Ray¹

Disciplinary boundaries have traditionally helped to direct research, but have also acted as silos, placing limitations and restrictions on the creation of knowledge. An age of complex problems, however, calls for complex approaches to scholarship that challenge disciplinary orthodoxies. In recent decades, many groundbreaking discoveries and paradigm shifts—whether in quantum biology, digital humanities, or behavioural economics—have emerged at the intersections of disciplines. In line with this ethos, Volume 2 (2024) of *St Xaviers University Kolkata Journal of Interdisciplinary Research (SXUKJIR)* seeks to explore the possibilities that lie beyond, or in the interstices of traditional academic silos. For this volume, we invited researchers to submit papers that highlight the power of interdisciplinary research, and were pleased to have received numerous insightful contributions. We especially welcomed articles with a focus on social issues and global challenges; articles that aligned well with the transformative values of the Jesuit charism as they negotiate with the needs of the modern Indian nation.

In our invited article Susil Kumar Mitra and Pratyusha Das bring their insights into Intellectual Property Rights (IPR) to bear on the economic history of India, discussing how patenting promotes innovation, investment, employment, and economic growth. They outline the role of the Rajiv Gandhi National Institute of Intellectual Property Management as a resource for IPR education in India. Aastha Agarwal, in her article on India's role in shaping multilateralism, seeks to correct the Eurocentrism of the discipline of International Relations by suggesting that rather than viewing India merely as a "swing state," its foreign policy should be understood as rooted in a distinctive sense of self, exercising an agency that draws strength from Indian values. Retaining a focus on the nation, Rajdip Bhadra Chaudhuri, Dipparna Jana, and Boidik Ghosh explore the holistic vision of the National Education Policy (NEP) 2020, examining the challenges West Bengal faces in ensuring successful implementation of the policy. They are particularly attentive to gender-sensitive contexts and the needs of marginalised groups. In a syncretistic article combining insights from Sankhya Philosophy with Western psychologists' theoretical approaches to hope, Chilka Mukherjee, Nimrat Singh, and Sunya Singh explore the possible relationship between agency and pathways thinking in Sattvic, Rajasic, and Tamasic individuals. Rumpa Neogi and Arnab Bhattacharjee's article explores the idea of interdisciplinary itself. This timely article provides an overview of the literature on interdisciplinarity, bringing much-needed clarity to the question of what

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interdisciplinarity involves, the challenges that circumscribe it, and its unique rewards.

In the next article, examining the interstices of medicine and computer science, Koustav Bal, Sayan Das, and Tuhin Utsab Paul review the scholarly work on Implantable Medical Devices (IMDs), with the aim of pinpointing gaps in extant knowledge and outlining the state-of-the-art. In his article on the vulnerability index in poverty studies, Santosh Nandi tries to use fuzzy-stochastic computing in the measurement of multi-dimensional vulnerability, exceeding the limits of traditional Boolean mathematical logics. The article by Aditi Kuila and Mousumi Guha Banerjee examines how recent innovations in technology—most notably AI language models like OpenAI's GPT-4—challenge traditional notions of literary authorship. They make a case, based on close readings of human and AI-authored poetry, for taking AIgenerated literature seriously, foreseeing a future where authorship is a syncretistic activity involving both carbon-based and silicon-based complexity. As gaming studies becomes a burgeoning field of scholarly activity, Anish Bhattacharyya's article exploring the philosophical underpinnings of Assassin's Creed IV: Black Flag is a timely reminder that video games are serious business. This highly interdisciplinary article finds traces of the philosophy and social thought of Thomas Hobbes and Jean-Jacques Rousseau embedded in a popular action-adventure game. Finally, exploring mental health in the context of social work, Mouli Chakraborty and Moumee Jesmin dwell on the challenges faced by women homemakers in West Bengal as their children move out of home. This sensitive article follows a survey-based approach to outline the feelings of loneliness, isolation and loss that mothers face when their role as primary caregiver of children is challenged by distance. They also explore how support groups, and destigmatised, accessible mental health services can provide care and hope to this muchneglected demographic.

A word on our editorial policies will give readers a sense of the quality of the work published in this volume, and make it easier for them to engage with these works. All our articles were checked for plagiarism and were found to adhere to the similarity limits set in our editorial policy. Following best practices in scholarly journals, our invited article was internally reviewed by our Editorial Board (EB), and all other articles went through a stringent double-blind peer-review process. The articles revised on the basis of peer-reviewer feedback were then examined once more by our EB and found to be satisfactory. The citation style followed by SXUKJIR is the Author-Date or Harvard style of referencing, which is widely used across disciplines. Our minor modifications to this style, and special clarifications, are set out in our instructions to authors, which are uploaded on our website (https://sxuk.edu.in/nihil_ultra_journal). The articles are prefaced by an abstract of approximately 250 words' length, formatted in italics, to distinguish it from the main body of the article. Bibliographies are demarcated with the heading "References," and contain works cited by the author as well other essential secondary works that informed the author's writing. When reading the articles, you will find that headings (Level 1) are clearly demarcated in centrealigned, bold-fonted titles, sub-headings (Level 2) are italicised, and sub-sub-headings (Level 3) are underlined. As per our editorial policy, elaborate footnotes have been avoided, with footnotes used sparingly for short author bios and essential information of an additional nature.

The volume you hold is the result of the labours of many individuals, and the spirit of our institution, and they must be acknowledged. SXUKJIR would not have been possible without the vision and the patronage of the Hon'ble Vice-Chancellor of St. Xavier's University, Kolkata, Rev. Dr. Fr. John Felix Raj, SJ. Our respected Registrar, Prof. Ashis Mitra, is the publisher of the journal, and has guided us through every stage of the process—his attention to detail is second to none. Staff at the Vice-Chancellor's Office and the Registrar's Office have patiently helped us with administrative work and record-keeping. Mr. Nilesh Patel at Paradise Printers has been an ever-available point of contact, and has seen the manuscript through from its digital format to the tangible copy you now hold. The IT Office at SXUK has provided their support at various stages of this process, and we are grateful for their help. Mr. Mario Martin Louis, and Mr. Sandeep Mundra, officers of the university, have assisted us in liaising and corresponding with various officials and administrators, including the Registrar of Newspapers, India. To members of our Editorial Board, comprising of external as well as internal members, I owe a debt of thanks. Dr. Arka Chattopadhyay, at IIT Gandhinagar has especially made himself readily available to advise us on the technical aspects of establishing an academic journal. While all Editorial Board members contributed to policy-formulation, administrative decision making, and the copy-editing of the articles, I would like to specifically name Dr. Bidisha Kantha, the Associate Editor, for playing an active and enthusiastic role in taking our journal ahead, Dr. Tuhin Utsab Paul, who helped the journal with its ISSN application, and Dr. Stephen G., who helped us prepare our subscription form and looked into matters related to distribution. Finally, I must thank our authors for their excellent work, readiness to co-operate, and willingness to improve their work continuously.

The Editorial Board sincerely hopes that contributions to our journal continue to be strong, despite its relative youth. The Aims and Scope of *SXUKJIR* are printed in our front-matter, and we will continue to issue Call For Papers on an annual basis. Our CFPs will be readily viewable on the university website (https://sxuk.edu.in/) and will be shared on our social media pages. Subscription to our journal has been made easy—potential subscribers may consult the subscription form printed with the endmatter. We hope that the articles contained in these pages are enlightening as well as inspiring, and imbue the reader with the spirit of our cherished institution—*Nihil Ultra*: Nothing Beyond.

Prayag Pay

The Editor Dr. Prayag Ray

Abstracts Booklet

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Role of Patent System for Economic Development of Country

- Dr. Susil Kumar Mitra¹

&

- Dr. Pratyusha Das²

Abstract

The present era is dealing with various Intellectual Property Rights like Trade Mark, Copyright, Designs, Patent, and others. These are legal rights which protect the creation of the inventor for a specific period. Among all the rights Patents deserves a special mention due to its contribution in the economic development of the country. This article deals with the background of the development of Patent rights and how it was recognised by the International Legal framework. It deals with various agreements, conventions and treaties regarding different Intellectual Property Rights which particularly covers Patent. Patent promotes innovation, which aids in the production of new and improved products that are consumed by the customers and helps in building the economy. It also leads to investment in scientific research which drives progress in the country. It also promotes foreign investment and produces items for export which spurs the development of national industry. There are also some negative economic impacts of Patents which have been discussed. Patent is an incentive for the investors and reduces the amount of research which is wasted. Patent is a type of social contract and creates employment. The article also deals with types of Technology Protection. Therefore, this article deals with the importance of Patenting through creation of exclusive rights, strong market position, higher returns in investment and opportunity to license or sell the invention. Lastly, the article discusses the impact of patent on Economic Growth of India, the role of patenting for students, and human resource development in IP system.

Keywords: Patent, Intellectual Property Rights (IPR), economic growth

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The Selfhood Approach: Understanding India's Role in Shaping Multilateralism

- Ms. Aastha Agarwal³

Abstract

One fundamental question that constantly confronts scholars and practitioners of India's foreign policy is "Whose side is India on?" This is because it is commonly assumed that there are only a few geopolitical groupings that dominate the International System, and that India is only a swing state that can be persuaded to ally with a major power to alter the strategic balance in a geopolitical region. History, however, has proved time and again that India's approach to world affairs is guided by a sense of self that views itself as a distinctive power on the world stage, rather than as a cheerleader or camp follower. From being the first country to raise global discussions on issues like apartheid, nuclear disarmament, European colonialism, equity in North-South relations, climate finance, and the like, to being the leader of bold initiatives such as the imposition of sanctions against an apartheid government, reformation of the global economic order, and advocacy of fair terms in international trade. India has always taken the lead in creating a more inclusive multilateral system that is fit for addressing global challenges. Against this background, this paper attempts to explain the significance of moral and political self-hood in global politics using the Indian experience as an example in an attempt to expand the academic purview of IR which has so long been obsessed with the ideas and achievements of the Western world, while also highlighting India's role as a geopolitical agency of major consequence.

Keywords: selfhood, India, global affairs, multilateralism.

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National Education Policy: Challenges in West Bengal Higher Education

- Dr. Rajdip Bhadra Chaudhuri⁴

- Dr. Dipparna Jana⁵ &
- Mr. Boidik Ghosh⁶

Abstract

Education plays a significant role in achieving the full human potential which facilitates the development of an equitable and just society, finally leading to the development of the nation. India has maintained a specific pattern of education for a very long period of time. However, over time it has recognised the need of the hour to convert the present strict and highly structured form of education to a more flexible and holistic one. This led to the introduction of the National Education Policy 2020. It reflects the government's vision to lay down the path of transforming the country's human potential and channelising the same to future global market forces and also be in perfect harmony with the UN agenda for sustainable development. The purpose of this study emphasises two objectives: one, to understand the overall conception of NEP 2020 in India and two, its implementation possibilities with respect to West Bengal's higher education institutions. Following a descriptive approach we discuss in detail the evolution and current scenario of the specific parameters of the higher education institutions of West Bengal identifying the shortcomings in terms of the successful implementation of the NEP and the future policy formulation that could be initiated to achieve the goal.

Keywords: Education policy, higher education, gross enrolment ratio, Gender Parity Index

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Mental Constitution and Hope: An Amalgamation of the East and West

Ms. Chilka Mukherjee⁷
 Dr. Nimrat Singh⁸
 Ms. Sunya Singh⁹

Abstract

The three qualities inherent in nature which result in individual differences according to the Sankhya Philosophy are known as the gunas—Sattva, Rajas and Tamas, associated with the qualities of wisdom, movement and inertia respectively. A calm and steady mind is a prerequisite for bringing about clarity in perception which may be accomplished through keeping a balance between the gunas, resulting in a harmonious state. In this regard, hope, that is, the cognitive process which entails that one can reach desired goals, has an important role to play not only in accomplishing goals in the objective sphere but in the subjective realm as well, that is, spiritual quest. Hope indicates the belief that one is capable of finding pathways to desired goals and becoming motivated to use those pathways via agency thinking. The present study intends to explore the relationship between agency and pathways thinking in Sattva, Rajas and Tamas-dominant individuals, and also find out whether gender differences exist in terms of agency and pathways thinking in college and university students in Kolkata and Ahmedabad (n=128). David Frawley's Mental Constitution Chart and Snyder's Adult Hope Scale were used. Mean, Standard Deviation and Pearson's Product Moment coefficient of Correlation were computed. The findings show significant positive correlation between agency and pathways thinking in sattva-dominant males (r=0.71. p<0.01) as well as in rajas dominant males (r=0.30, p<0.05). However, very low positive correlation between agency and pathway thinking was found in sattva and rajas-dominant females.

Keywords: Gunas, hope, agency, pathway

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Exploring the Confluence of Knowledge: A Survey of Research on Interdisciplinarity

- Ms. Rumpa Neogi¹⁰

&

- Mr. Arnab Bhattacharjee¹¹

Abstract

This research paper delves into the intersection of varied fields of study in interdisciplinary research. It underlines the critical nature of such research in tackling complex issues that bare disciplinary methodologies cannot resolve. The paper outlines the hurdles in interdisciplinary research, including communication constraints, financial and institutional backing, time and collaboration logistics, and discipline-specific biases. It also sheds light on the merits of interdisciplinary research, which includes holistic approaches to problem-solving, promotion of innovation and creativity, enhanced decision-making, and knowledge progression. Providing concrete examples through case studies and literature review, the paper highlights the tangible value of interdisciplinary research in real-world contexts. The analysis aims to understand the challenges and rewards of interdisciplinary research, establishes the importance of interdisciplinary teamwork, and adds to the academic dialogue on the subject. The research methodology involves qualitative literature review, data collection from scholarly databases and journals, and a theoretical narrative analysis. Suggestions for future work include developing strategies to overcome discipline-centric mindset and deeper exploration of the benefits and drawbacks of interdisciplinary research. The findings from this study contribute to the broader understanding and potential implementation of interdisciplinary research and collaboration.

Keywords: Interdisciplinary research, communication barriers, disciplinary biases, institutional support, collaboration, innovation.

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Security Algorithms in Wearable and Implantable Medical Devices: A Comprehensive Overview

- Mr. Koustav Bal¹²

- Dr. Sayan Das¹³

&

- Dr. Tuhin Utsab Paul¹⁴

Abstract

Numerous implanted medical devices interact with circuitry outside of the human body using wireless radio frequency telemetry. There are many advantages to using wireless communication technology in implantable medical devices (IMDs) for remote health monitoring, therapy, and case identification. The security of these kinds of devices is a crucial concern as any vulnerability to malicious attacks could result in severe consequences like the theft of private information, incorrect treatment, and even death. In order to solve the problem, this paper gives a comprehensive analysis of the current literature on IMD security research in order to better understand the state-of-the-art and pinpoint any gaps in these fields. The key terms discussed in the review include implantable medical devices (IMDs), security, and wireless communication.

Keywords: Implantable Medical Devices (IMDs), wireless communication, jamming, authentication, security, cryptography.

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Decomposition of Intra-household and Inter-household Influences on Composite Multi-dimensional Vulnerability Index: A Fuzzy Stochastic Agent-based Computing Analysis

- Mr. Santosh Nandi¹⁵

JEL Code: B41, C02, C61, C88, I32

Abstract

It is observed that traditional unidimensional material measures are not sufficient to estimate human poverty. So, studying the multi-dimensional poverty is one of the major areas nowadays in poverty studies. Incidentally, these studies have used ex-post determination of poverty instead of ex-ante understanding. Not only that, all of these studies have used traditional Boolean mathematical logics which lacks the real-life flavours. Thus, this work wants to look at ex-ante multi-dimensional vulnerability as a vague concept. Here the numbness of multi-dimensional vulnerability is associated with stochasticity. Thus it has tried to use fuzzy-stochastic computing in the measurement of multi-dimensional vulnerability. Further, this work has tried to accommodate the intra-household disparities within the said fuzzy-stochastic agent-based computation. Finally, it has tried to decompose the influence of inter-household and intra-household influences on the developed measure with the help of fuzzy-stochastic agent-based computing to understand the influence of intra-household disparities on composite measure.

Keywords: Multi-dimensional vulnerability, fuzzy-stochastic membership function, agent-based computing, decomposition, intra-household influences.

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Algorithm and Aesthetics: Navigating the "Brave New World" of Al-Generated Literature

- Ms. Aditi Kuila¹⁶

&

- Dr. Mousumi Guha Banerjee¹⁷

Abstract

In the age of the burgeoning of Artificial Intelligence, the concept of literature has undergone profound transformation, challenging traditional disciplinary boundaries and reshaping the core concepts of authorship and creativity. This present paper, therefore, seeks to evaluate the creative abilities of AI language models, contemplate the future of literature in a world enhanced by AI, and emphasise the AI's capacity to mimic human creativity effectively while generating literary artefacts. Moreover, as writers and creators harness the distinctive potentials of AI language models for collaborative storytelling, poetry, and narrative construction, this study delves into the reconfiguration of authorship and creativity. Essentially, this research offers an all-encompassing perspective on the strengths and constraints of machine-generated creativity within the realm of literature. In this context, while the boundaries of literary disciplines become fluid, the imperative nature of interdisciplinary research is an indispensable guide for researchers navigating the uncharted territory of literary discourses in the digital age. To facilitate this exploration, the study has employed a comparative analysis between human-authored literary content shared on social media platforms and their AI-generated counterparts. The present paper has used OpenAI's GPT-4 language model for this examination. Furthermore, the study adopts a systematic review methodology to comprehensively assess the available literature pertaining to the topic. In this qualitative literature review and analysis, a purposive sampling strategy has been used to select relevant and high-quality academic papers and scholarly articles aligned with the study's subject matter.

Keywords: Artificial Intelligence, authorship, interdisciplinary research, language models, literary creation, literature

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Navigating Political Philosophies in Video Games: An Analysis of Assassin's Creed IV: Black Flag in the Context of Hobbes' Leviathan and Rousseau's The Social Contract

Dr. Anish Bhattacharyya¹⁸

Abstract

This research paper aims to explore the intricate negotiation of political philosophies within the digital gaming narrative of Assassin's Creed IV: Black Flag. The game's narrative is set in the islands of the Caribbean during the eighteenth century. It is essentially a tale of pirates and their way of life, and the larger concerns of world domination and preserving the existing way of life is manifested through the Templar-Assassin conflict. This study argues that this video game which was released in 2013, is heavily inspired by the eighteenth-century discourses on "social contract" and "human nature." Hence, by drawing upon the contrasting ideas presented by Thomas Hobbes in Leviathan and Jean-Jacques Rousseau in The Social Contract, this study seeks to illuminate how a contemporary video game attempts to negotiate with a philosophical tradition that dates back to almost 350 years. The paper shall also ask whether a video game narrative can contribute and perhaps add to these existing political and philosophical discourses.

Keywords: videogame narrative, social contract, human nature, political philosophy, eighteenth century.

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An Overview of Mental Health Concerns and Well-being Status of Homemakers Residing in Metro City Kolkata, West Bengal

Ms. Mouli Chakraborty¹⁹
 &
 Ms. Moumee Jesmin²⁰

Abstract

The phenomenon of children leaving the home for the purpose of study, job, marriage or other within the state, country or abroad is a significant life transition for parents. There are many researches that have focused on the emotional adjustments of the children themselves; this study shifts the focus to the mental well-being of the homemakers, who remain at home. The transition from nurturing a child from many years with the vision that they will grow to stay in a home without them can be challenging for homemakers, as they may experience a range of emotional responses. This study employs quantitative research methods to understand the experiences of homemakers facing this transition, also in-depth interviews and case studies in a qualitative approach to understand individual live experiences. A diverse sample of homemakers, varying in age, mental health status, relation with children, and mode of communication will be included in the research to capture a comprehensive understanding of the phenomenon. This study aims to explore the specific mental health challenges homemakers face during the transition and their coping mechanisms. Identifying the factors that contribute to these concerns is crucial for developing targeted support and interventions. A semi-structured interview schedule was used as data collection tool. Data was collected with 50 homemakers residing in urban Kolkata. The study finds that homemakers face unique circumstances as they typically possess limited social circles, spending a significant amount of time within the confines of their homes managing household chores and daily responsibilities. This self-imposed isolation can cultivate feelings of loneliness and a sense of purposelessness, exerting a negative impact on their mental well-being. Furthermore, in the absence of the constant presence and demands of children, homemakers may grapple with the task of discovering new ways to occupy their time, potentially experiencing a profound sense of emptiness and loss. This study aims to shed light on the nuanced challenges faced by homemakers during this particular life stage, recognizing the importance of understanding and addressing the intricacies of their mental well-being.

Keywords: homemakers, mental health, wellbeing, psycho-social

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