2nd International Conference Social Contexts of Science

Interdisciplinarity and Technology Assessment

12-13 May 2025

BOOK OF ABSTRACTS

Wrocław University of Science and Technology

Faculty of Management

International conference on Social Contexts of Science

International Staff Week

2nd International Conference Social Contexts of Science

Interdisciplinarity and Technology Assessment

organized in parallel with
Erasmus+
International Staff Training Week (ISTW)

12 and 13 May 2025

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Wrocław Tech under the Rector's Initiative: "Support for Scientific Events 2025"

Wrocław University of Science and Technology

Faculty of Management

International conference on Social Contexts of Science

International Staff Week

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Conference Organizer

Wrocław University
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Faculty of Management

International
conference on
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Faculty of Management
Wrocław University of Science and Technology

The Faculty of Management at Wrocław University of Science and Technology focuses on providing thorough education to prepare future specialists for the modern labor market. A key objective is the advancement of scientific knowledge in management and quality sciences, alongside supporting the continuous professional development of its academic and research staff.

The Faculty actively cultivates scientific inquiry among new scholars and builds strong partnerships with the economic sector. These collaborations aim to develop and share innovative solutions, thereby boosting the competitiveness and growth of businesses in Poland and internationally. Additionally, the Faculty of Management plays a university-wide role by teaching essential managerial skills and knowledge to students from all faculties at Wrocław University of Science and Technology.

Academic activities at the Faculty cover interdisciplinary research and education in management, economics, and social sciences, with an increasing emphasis on the roles of technology, innovation, and sustainability in modern organizations. Building on over five decades of academic tradition from the Faculty of Computer Science and Management, the Faculty of Management became an independent academic unit on September 15, 2021. This was achieved by combining resources and expertise from the former Faculty of Computer Science and Management and the Faculty of Humanities, allowing for a focused approach to current global challenges.

Key areas of expertise include:

- Strategic and project management in technology-focused and innovation-led enterprises;
- Business intelligence and the use of advanced digital technologies in complex decision-making and forecasting;
- Entrepreneurship and the development of sustainable development strategies;
- Human resource management and organizational behavior in technologically evolving work environments;
- Financial and operational management, focusing on circular economy principles and broader societal changes.

The Faculty of Management holds the academic category 'A' and has received a commendation from the Polish Accreditation Commission (PKA), highlighting its commitment to high academic standards. The Faculty is authorized to award doctoral and postdoctoral degrees in Management and Quality Sciences.

Our commitment to advancing knowledge is demonstrated through participation in research projects funded by national and international bodies, such as European Union framework programs (e.g., Horizon Europe, Horizon 2020) and national programs like OPUS and SONATA. Faculty members engage in interdisciplinary research, combining expertise from management, operational research, and economics to create effective solutions for complex real-world problems, often at the intersection of scientific progress, technological development, and their societal impacts.

More details on the faculty website: `https://wz.pwr.edu.pl/en/`

Dear Readers,

We are pleased to share the Book of Abstracts for the *2nd International Conference on the Social Context of Science*, held on 12-13 May 2025 at the Wrocław University of Science and Technology, Poland. This event was organized in parallel with the *Erasmus+ International Staff Training Week (ISTW)*, offering a unique opportunity for scholars, researchers, and practitioners to engage in fruitful discussions on the intersections of science, society, and technology.

This year's conference theme, *Interdisciplinarity and Technology Assessment*, provided an essential platform to explore how global challenges of our time can be tackled. In particular, the conference focused on promoting responsible innovation, fostering collaboration across disciplines, and ensuring that the technologies we develop contribute positively to society. The conference provided a space for meaningful exchange and exploration of key subject areas, including:

- *Computational Social Science, Modeling, Networks*, examining how computational methods and modeling techniques can be used to understand complex social phenomena, simulate human behavior, and explore dynamics in social networks, including polarization, diffusion of innovation, and collective decision making.

- *Technology in Society & Education, Social Context*, investigating the societal implications of technology adoption, its transformative role in education, and how digital tools re-shape social structures, access to knowledge, and public discourse within various cultural and institutional contexts.

- *AI Applications, Sustainability, Circular Economy*, exploring the intersection of artificial intelligence with sustainable development, highlighting how AI can support climate action, optimize resource use, enable circular economy strategies, and drive innovation in environmental monitoring and management.

- *Ethics, Interdisciplinarity, Social Context/Innovation*, addressing the ethical challenges and responsibilities of scientific and technological innovation, the importance of cross-disciplinary collaboration, and how contextual understanding enhances responsible research and innovation in complex societal systems.

A key part of our conference was also the panel discussion on *Social Contexts of Science.* This session featured experts from diverse backgrounds and went beyond technical specificities to scrutinize the dynamic and intricate relationship between scientific advancement and the societal frameworks it inhabits. The panelists discussed how science shapes society and, reciprocally, how societal factors influence the trajectory of scientific research and application.

We would like to take this opportunity to express my gratitude to the organizing committee – especially the student volunteers, the scientific advisory committee, the session chairs, the dean and vice-deans of the Faculty of Management, the honorable Rector and Vice-Rectors of Wrocław University and Science and Technology for their invaluable support and efforts to ensure the success of this event. We also thank all the keynote speakers, presenters, participants and panelists who joined us and contributed their knowledge, expertise, and passion.

Furthermore, we would like to extend my appreciation to the Director and members of the Center for International Relations at Wrocław University of Science and Technology, for supporting the conference and organizing the Erasmus+ International Staff Week in parallel with the conference, extending the horizons of the conference.

We hope that the connections and insights gained here will continue to inspire innovative ideas and collaboration in the years to come. Looking forward to seeing you at future conferences and continuing the important work of shaping a responsible and sustainable future through interdisciplinary research and technology assessment.

Yash Chawla
Conference Co-Chair

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Scientific Session 2: Technology in Society & Education, Social Context
Marta Rusnak *Faculty of Architecture, Wrocław Tech, Poland*

Scientific Session 3: AI Applications, Sustainability, Circular Economy
Yash Chawla *Faculty of Management, Wrocław Tech, Poland*

Scientific Session 4: Ethics, Interdisciplinarity, Social Context/Innovation
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Schedule

SCS Conference 2025 – Schedule

This schedule outlines the events for the 2nd International Conference on Social Contexts of Science and the International Staff Training Week (ISTW) 2025.

Note: In Scientific Sessions, the bolded author indicates the presenting author.

Day 1: Monday, 12 May 2025

Venue: Building H-14, Wrocław Tech Campus: Unless otherwise specified, all sessions, coffee breaks, and lunch on this day will take place in this building (`More Location Info`).

Time	**Event / Title / ID**	**Speaker / Authors**
09:00 - 10:00	Registration	
10:00 – 10:30	Welcome and Inauguration	
10:30 – 11:15	**Keynote 1 / ISTW Intro-Lecture:** *"Modelling Public Discourse:* *A Computational Approach to Polarisation, Radicalisation, and Truth Seeking Under Disinformation"*	**Rainer Hegselmann**
11:15 – 11:45	— *Coffee Break* —	

Conference/ISTW Scientific Session 1

Theme: Computational Social Science, Modeling, Networks

Session Chair: Katarzyna Sznajd-Weron

11:45–12:00	*'Phase Diagram' for Nowak–Szamrej–Latané Model of Opinion Dynamics* `ID: SCS2025/2KMSPT`	**Malarz, K.**; Wołoszyn, M.
12:00–12:15	*Q-Voter Model With Weighted Social Influence to Study Consensus Building* `ID: SCS2025/2PMQIO`	**Mullick, P.**; Sen, P.
12:15–12:30	*An Interplay Between Noise and Temperature in a Simple Coupled Model of Opinion Dynamics* `ID: SCS2025/2ACAOO`	**Chmiel, A.**; Sienkiewicz, J.

Continued on next page

Day 1 Schedule Continued

Time	Event / Title / ID	Speaker / Authors
12:30–12:45	*Conformity and External Influence: Opinion Modeling on Various Lattices* `ID: SCS2025/1MWCOS`	**Wołoszyn, M.**
12:45–13:00	*The Origin of Inequalities in Early Societies: An ABM Model* `ID: SCS2025/1PSTWA`	**Sobkowicz, P.**
13:00–13:15	*Network Analysis of Parliamentary Voting: Uncovering Coalition Dynamics in the Polish Sejm* `ID: SCS2025/2JSNTO`	**Szwabiński, J.**; Gunia, K.
13:15–13:30	*Rigorous Agent-Based Modeling of Green Practice Diffusion: Analytical Approximations and Validation on Organizational Networks* `ID: SCS2025/3AARAA`	**Abramiuk-Szurlej, A.**; Sznajd-Weron, K.; Szurlej, M.
13:30 - 14:30	— *Lunch* —	
14:30 – 15:15	**Keynote 2:** *"A Daring Strategy for Fake News: No Bans, No Fact-Checking, but Sequestration"*	**Serge Galam**

Conference/ISTW Scientific Session 2

Theme: Technology in Society & Education, Social Context

Session Chair: Marta Rusnak

Time	Event / Title / ID	Speaker / Authors
15:15–15:30	*Artificial Intelligence in Education: Innovation vs. Technostress and Technology Anxiety – Research Insights* `ID: SCS2025/2NDATA`	**Demeshkant, N.**; Trusz, S.
15:30–15:45	*Linked Open Data in Public Insitutions - Lower Silesia (Poland) Case Study* `ID: SCS2025/1ALLTL`	**Lamek, A.**
15:45–16:00	*Political Engagement Approaches for Adoption of Complementary Currency in Complex Societal Settings* `ID: SCS2025/4PBPCC`	**Budrytė, P.**

Continued on next page

Day 1 Schedule Continued

Time	Event / Title / ID	Speaker / Authors
16:00–16:15	*Enhancing Engagement and Accessibility With Linktr.ee in Education* `ID: SCS2025/1GGEIS`	**Gutu-Robu, G.**
16:15–16:30	*Teacher Digital Skills in Online Language Teaching and Learning* `ID: SCS2025/3GVTTL`	**Valunaite Oleskeviciene, G.**; Mockiene, L.; Tamosiuniene, L.
16:30–16:45	*Teaching Excellence Seminars – The Approach to Present New Methods for Teaching and Learning* `ID: SCS2025/5KLTTT`	**Laszczyk, K.**; Poturaj, H.; Licznerska, A.; Krysiak, J.; Kijaszek, W.
16:45–17:00	*Consumer Buying Behavior and Purchase Decision-Making in the Apparel Industry - A Study of Saurashtra Region in India* `ID: SCS2025/1AJKCC`	**Jayesh Katrodia, A.**
17:00–17:15	*The Remote Student Concurrent Interdisciplinary Project for the Tiny and Sustainable House* `ID: SCS2025/9KLTTC`	**Urszula Laszczyk, K.**; Komarzynska-Swiecik, E.; Costamgna, E.; Zoltowski, M.; Kaczmarek, A.; Carollo, M.; Remic, K.; Ceglarek, J.; Bertrand, R.
17:15 – 19:15	Wrocław City Walking Tour	*Starting Point: Building H-14*

Day 2: Tuesday, 13 May 2025

Venue: Building H-14, Wrocław Tech Campus: Unless otherwise specified, all sessions, coffee breaks, and lunch on this day will take place in this building (`More Location Info`).

Time	Event / Title / ID	Speaker / Authors
09:00 – 09:45	**Keynote 3:** *"Technology Assessment In and For the Digital Transformation"*	**Armin Grunwald**

Conference/ISTW Scientific Session 3

Theme: AI Applications, Sustainability, Circular Economy

Session Chair: Yash Chawla

Continued on next page

Day 2 Schedule Continued

Time	Event / Title / ID	Speaker / Authors
09:45–10:00	*The Use of Large Language Models in Qualitative Text Analysis: A Comparative Study of AI and Traditional Methods...* ID: SCS2025/2AUTTL	**Uss-Lik, A.**; Dyczek, B.
10:00–10:15	*Considerations on the Opportunity to Implement Specific "Smart" Agriculture Initiatives Into Action* ID: SCS2025/3SGCLA	**Gavrilas, S.**; Tigan, E.; Brinzan, O.
10:15–10:30	*Empowering Circular Economy Through Effective Waste Segregation Awareness: An Innovation-Driven Approach to Sustainable Public Engagement* ID: SCS2025/1JBEIC	**Bhanderi, J.**
10:30–10:45	*Exploring the Potential of Smart Packaging in Circular Economy Strategies* ID: SCS2025/4MFETS	**Fiałkowska-Filipek, M.**; Wangwacharakul, P.; Karpavičė, J.; Chawla, Y.
10:45–11:00	*Bridging Strategy and Operations for Circularity: Regional Collaboration in Post-Consumer Used Textile Collection and Sorting* ID: SCS2025/2PWBTT	**Wangwacharakul, P.**; Laurence Esguerra, J.
11:00–11:15	*Assessing the Confluence of Sustainability and Business Models in the Mobile App Development Industry in Poland: An Investigation into Company Strategies and User Perceptions* ID: SCS2025/2JCAIB	**Cieślak, J.**; Chawla, Y.
11:15 – 11:45	— *Coffee Break* —	
11:45 – 12:30	**Keynote 4:** *"The Ethics of Paying Research Participants: A Moral Obligation or a Necessary Evil?"*	**Joanna Różyńska**

Conference/ISTW Scientific Session 4

Theme: Ethics, Interdisciplinarity, Social Context/Innovation

Monika Małek-Orłowska

12:30–12:45	*A Tanzanian Maternal and Neonatal Healthcare Dataset Compliant With Federated Learning: Privacy, Fairness, and Compliance* ID: SCS2025/3JMAIM	**A. Mwakatobe, J.**; F. Michael, K.; Nyambo, D.

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Day 2 Schedule Continued

Time	Event / Title / ID	Speaker / Authors
12:45–13:00	*Interdisciplinarity for Stable Future of Our Planet* `ID: SCS2025/1BKITI`	**Knosala, B.**
13:00–13:15	*Interdisciplinary Approach to Building Local Communities' Resilience in Crisis Conditions* `ID: SCS2025/1NSIIS`	**Skorobogatova, N.**
13:15–13:30	*Processors and Sensors or Paper and Clay? Low-Tech Games in Neuroarchitecture* `ID: SCS2025/1MRPTN`	**Rusnak, M.**
13:30–13:45	*The Significance of Language Education at Technical Universities* `ID: SCS2025/1ALTTM`	**Licznerska, A.**
13:45–14:00	*The Capacity of Volunteer Networks for Sustainable Social Innovation in Ukraine* `ID: SCS2025/3OVTSV`	**Voropai, O.**; Chala, N.; Pichyk, K.
14:00 - 14:45	— *Lunch* —	
14:45 – 15:30	**Keynote 5:** *"Becoming an Academic Discipline in Germany: TA From Policy Advice to Problem-Oriented Research"*	**Bettina-Johanna Krings**
15:30 – 16:30	**Panel Discussion** on *Social Context of Science*	`Panel Details`
16:30 - 16:45	Closing	
19:00 – 21:30	**Gala Dinner** Location: Hotel Wodnik Na Grobli 28, 50-421 Wrocław	`View Map`

Keynote Speeches

A Daring Strategy for Fake News: No Bans, No Fact-Checking, BUT Sequestration

Serge Galam

Emeritus Senior Researcher at SciencesPo and French National Centre for Scientific Research (CNRS), France

Abstract

Fake news is pervasive, raising growing concerns about its impact on social and political events. However, to date, there is no concrete quantitative measurement of its influence, such as in the 2016 U.S. presidential election. Yet, there is broad consensus that fake news poses a major threat to both democratic and non-democratic societies. In response, substantial efforts and investments have been directed toward fact-checking platforms to identify, label, and ultimately suppress misinformation on social media. However, the acquisition of Twitter (now X) by Elon Musk and the outcome of the 2024 U.S. presidential election have disrupted this trend, introducing a destabilizing alternative: the removal of regulations in the name of free speech. The dismantling of many safeguards against misinformation presents an immediate challenge, exploited by various hostile entities. In this work, I propose a novel approach to addressing fake news—one that neither relies on strict regulation nor outright bans. Instead, I advocate for a system that sequesters misinformation within small, self-contained networks, preventing its large-scale spread. To assess the feasibility of this approach, I employ the sociophysics-based Galam Majority Model (GMM) of opinion dynamics. It is important to emphasize that, at this stage, the proposal is purely theoretical and implemented within a model. At this stage, a practical application in social media remains a distant prospect.

Reference Serge Galam, Fake News: "No Ban, No Spread—With Sequestration", Physics 2024, 6(2), 859-876 (2024)

More details and speaker's bio available on the conference website

Technology Assessment in and for the Digital Transformation

Armin Grunwald

Professor of Philosophy at Institute for Technology Assessment and Systems Analyses (ITAS), Karlsruhe Institute of Technology, Germany
Head of the Office of Technology Assessment at the German Bundestag (TAB)

Abstract

For decades, TA wasn't perceived as an academic discipline in Germany. The interdisciplinary and transdisciplinary pattern of TA seemed the counterpart of academic disciplines based on its traditional premises with regard to generating and resolving "scientific problems". However, economic, political and societal developments in the last decades have created "big problems" on global scale, which cannot be longer resolved by disciplinary approaches. A new type of scientific research, the "problem oriented research" has been developed and have fostered scientific approaches like Environmental Research, Climate Research or/and TA. These approaches aiming to frame, to analyze and to resolve its research questions by integrating the multitude of disciplines as well as by integrating different stakeholders with their interests, positions and visions of future developments. The talk will provide an insight into the development of TA as an academic discipline at KIT in Germany, providing the historic development as well as introducing new conceptional pattern of teaching and reflection on the relationship of Society and Technology.

🔗 More details and speaker's bio available on the conference website

Modelling Public Discourse: A Computational Approach to Polarisation, Radicalisation, and Truth-Seeking Under Disinformation

Rainer Hegselmann

Professor of Philosophy, Frankfurt School of Finance and Management, Bayreuth University, Germany.

Abstract

In my talk, I will argue that agent-based models are well suited to understanding many of the effects and problems of contemporary public discourse. There are a number of prominent models of opinion formation. My starting point will be the so-called bounded-confidence model. In this model, agents only consider the opinions of others that are not too far removed from their own. Simple extensions of the basic model make it possible to analyse phenomena such as polarisation, radicalisation, but also the chances of finding the truth under conditions of systematic disinformation. What is disturbing and irritating, however, is that these models almost always have a dual-use character: They can also be used to develop effective disinformation campaigns or even polarisation strategies.

More details and speaker's bio available on the conference website

Becoming an Academic Discipline in Germany: TA From Policy Advice to Problem-Oriented Research

Bettina-Johanna Krings

Sociologist, and Deputy speaker of the Work and technology topic within the "Humans and Technology" focus of the Karlsruhe Institute of Technology (KIT), Germany

Abstract

The idea of TA was founded in the US in the 1960s, where numerous environmental problems like water and air pollution as a side effect of technological progress more and more came into public awareness. Social movements arose and protested massively against these developments. At a first glance, political institutions seemed defenseless against these dynamics, but quickly realized that they need information, interdisciplinary knowledge and new instruments in order to address these problems. In the US, The Office of Technology Assessment (OTA) was founded in 1974, the objective was to provide congressional members with "objective" analysis of the complex scientific and technical issues. This model rapidly was transferred to European Countries, where in Germany the Office of Technology Assessment at the German Bundestag (TAB) was founded in 1990. This history shows, that the functions of TA primarily were settled in the field of political advice. AT the same time, scientific knowledge seemed the necessary precondition in offering robust knowledge with regard to political decision making processes in the long run.

🔗 More details and speaker's bio available on the conference website

The Ethics of Paying Research Participants: A Moral Obligation or a Necessary Evil?

Joanna Różyńska

Assistant Professor in the Department of Ethics of the Faculty of Philosophy at the University of Warsaw, Poland | Chairperson of The Bioethics Committee of the Polish Academy of Sciences

Abstract

Paying people to participate in biomedical research is an increasingly common practice in various types of studies involving healthy volunteers and patients. However, it continues to raise numerous ethical and practical controversies. It is still unclear (i) what the ethical rationale for paying research participants is; (ii) whether there is a moral obligation to pay participants or merely an ethical permissibility; and (iii) how fundamental principles of research ethics apply to and shape the practice of research payment. In my talk, I will address these three questions in a systematic and principled way. I will argue that researchers have a prima facie moral obligation to offer payment to research participants, stemming from the principle of social beneficence. This principle constitutes an ethical "backbone" of the practice. Other ethical principles of research ethics, i.e., respect for persons/autonomy, beneficence/nonmaleficence, and justice/fairness, form an ethical "skeleton" of morally sound payment schemes, and provide additional moral reasons for offering participants (1) reimbursement of direct expenses incurred; and (2a) remuneration conceptualized as a reward for their valuable contribution, provided (i) it meets standards of equality, adequacy and non-exploitation, and (ii) it does not constitute undue inducement; or (2b) remuneration conceptualized as a market-driven price, provided (i) it is necessary and designed to help the study achieve its scientific and social goals, (ii) it does not reinforce wider social injustices and inequalities; (iii) it meets the requirement of non-exploitation; and (iv) it does not constitute undue inducement. Finally, I will argue that the principle of justice/fairness provides a strong ethical reason for not offering compensation for lost wages (or other reasonably expected benefits).

🔗 More details and speaker’s bio available on the conference website

Panel Discussion

Panel Discussion on Social Contexts of Science

PANELISTS

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INNOVATION HEAD,
CAPGEMINI

Jakub Galus
STRATEGIC PARTNERSHIPS
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Session I

Computational Social Science, Modeling, Networks

‘Phase Diagram’ for Nowak–Szamrej–Latané Model of Opinion Dynamics

Krzysztof Malarz[1], **Maciej Wołoszyn**[1]

[1] *AGH University of Krakow, Poland*

Abstract

The Nowak–Szamrej–Latané model of opinion dynamics [1] is a computerized version of the theory of social impact introduced by Latané [2]. The model control parameters (α, T) [3-7] describe the effective range of interactions and the social temperature, respectively. In References [3,4,5] the multitude of available opinions was introduced leading to the study of opinion dynamics in an artificial society where initially every actor presents a unique opinion, not shared with any fellow member of the same society [6,7]. With Monte Carlo simulation, we check how model control parameters influence the number of opinion observed in the system after its long evolution and how these parameters influence the time of reaching the consensus (if for given a pair of parameters responsible for effective range of interactions and social temperature, such consensus is reached). Finally, we identify the set of model parameters (α, T) where consensus is quite easily reached, where society polarization is the most probable outcome of the evolution, and where, even for a long time of system evolution, more than two opinions survive [8].

[1] A. Nowak, J. Szamrej, B. Latané, Psychological Review 97, 362 (1990) [2] B. Latané, American Psychologist 36, 343 (1981) [3] P. Bańcerowski, K. Malarz, The European Physical Journal B 92 (10), 219 (2019) [4] A. Kowalska-Styczeń, K. Malarz, Plos One 15 (7), e0235313 (2020) [5] M. Dworak, K. Malarz, Entropy 25 (1), 58 (2023) [6] K. Malarz, T. Masłyk, Physics 5 (4), 1031 (2023) [7] M. Wołoszyn, T. Masłyk, S. Pająk, K. Malarz, Chaos 34 (6), 063105 (2024) [8] K. Malarz, M. Wołoszyn, arXiv:2503.16721 [physics.soc-ph] (2025)

Keywords

Sociophysics, Opinion formation, Social impact theory, Monte carlo simulation

Current status of the research is: Under-review in a journal

Q-Voter Model with Weighted Social Influence to Study Consensus Building

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[2] *University of Calcutta, India*

Abstract

I would like to present a model of opinion formation where an individual's opinion is influenced by interactions with a group of agents. The model introduces a novel bias mechanism that favors one opinion, a feature not previously explored. In the absence of bias, the system reduces to a mean field voter model. We identify three regimes: favoring negative opinions, favoring positive opinions, and a neutral case. In large systems, equilibrium outcomes become independent of group size, with only the bias influencing the final consensus. For smaller groups, however, the time to reach equilibrium depends on group size. Our results show that even a small initial bias leads to a consensus, with all agents eventually sharing the same opinion if the bias is not zero. The system also exhibits critical slowing down near the neutral bias, which acts as a dynamical threshold. The time to reach consensus scales logarithmically for non-neutral biases and linearly with system size for the neutral case. While short-term dynamics are influenced by group size, long-term behavior is determined solely by the bias.

Keywords

Opinion dynamics, Voter model, Decision making, Social simulation, Consensus formation

Current status of the research is: Published, available online

An Interplay Between Noise and Temperature in a Simple Coupled Model of Opinion Dynamics

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Abstract

Opinion modeling, despite decades of efforts by sociologists, psychologists, and even physicists, still remains a challenge. This task has become even more complex in today's world, where communication channels between people are diverse and multifaceted. Social physicists have adapted their flagship model from magnetism – the Ising model – to opinion dynamics. In this model, the temperature becomes a key parameter that controls how likely spins/agents are to adopt the opinions of their neighbors (encoded as $+1$ or -1). In the language of physics, we talk about a continuous phase transition, a shift from an ordered to a disordered state. It has been shown that a small modification of the Ising model, in which a randomly chosen spin interacts only with its q neighbors (q lobby), leads to a switch from a continuous to a discontinuous phase transition with hysteresis at q $\geq$ 4. Similarly, in the generalized voter model, instead of just one neighbor, we choose q neighbors of the node and change its state only if all neighbors share the same opinion. In the presence of stochastic noise, interpreted as "independence," a continuous phase transition is observed only for q $\leq$ 5, while for q $>$ 5, the transition becomes discontinuous. In real social relationships, we often observe nodes belonging to many different networks. We communicate on the Internet via email or through social media. Each tool forms a separate network, yet a single individual can be a member of several of them simultaneously. To accurately model the dynamics of node/agent states, it is necessary to account for the influence of multiple networks, which becomes possible when we describe the system using a multiplex network. Both the q-voter model and the q-Ising model have been analyzed on multiplex networks. Depending on the value of the parameter q, interesting changes in the nature of phase transitions have been observed. Here we focus on a case where dynamics follow the q-voter model on one layer and the q-Ising model on the other, and an agent changes its state only when both layers permit it (no hypocrisy assumption). This problem appears especially intriguing as in the q-Ising model, the control parameter is temperature, while in the q-voter model, it is the noise associated with individual independence. An interplay between noise and temperature was analyzed for a fixed value of q. In the special case, when q=1 (the lobby consists of agent), the system undergoes a continuous phase transition, and the critical value of noise is connected to the temperature by simple relation p=tanh(1/T). Surprisingly, for q=2, we identify a range of noise that prevents the system from reaching an ordered phase regardless of the value of temperature. For q=3, only continuous phase transition is observed, while for lobby sizes 4 and 5, a shift from discontinuous to continuous transitions takes place. Finally, for higher q, only discontinuous transitions are observed. Performed Monte Carlo simulations show perfect agreement with the analytical approach for the full graph case. Although the limiting behavior of the model is clear (it reduces to a single-layer q-Ising model for p=1 and to a q-voter when T goes to infinity), our results point to possible translation between temperature and noise in opinion dynamics models and show how one can bring such a coupled system to a specific state (ordered or disordered) through an interplay between p and T.

Keywords

Opinion dynamics, Multiplex network, Agent based model, Phase transition, Sociophysics

Current status of the research is: Work-in-progress

Potential collaboration with Authors

I am open to collaboration

Conformity and External Influence: Opinion Modeling on Various Lattices

Maciej Wołoszyn[1]✉

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Abstract

Opinion modelling can be viewed as a tool to predict how the social opinion changes in time for a given network of agents and their relations. However, it can be also seen as a more basic and general technique used to understand the dynamics of such processes. The latter problem leads to the question about the influence of the structure of relations: how strong is the effect of increasing the number of relations, and how it is realized? How the social systems react to the changes in the network of relations, if different levels of conformity (strength of convincing other agents) and external influence (for example, caused by mass media) are considered? Does that help or prevent reaching a consensus?

The above mentioned questions have been subject of many important works in the field of sociophysics, a field of science which applies computer simulations, analytical methods and other tools borrowed mainly from statistical physics to the description of social systems. In the current work, those questions are addressed with Monte Carlo simulations performed on various regular lattices and on their modified versions. The considered modifications include increasing or decreasing the number of relations between the agents.

As should be expected, the results [1] indicate that stronger bonds and openness to discussion and argumentation generally help in reaching a consensus, and quantitative estimations of the levels of those parameters will be presented. Moreover, the external influence becomes a destructive factor at different levels depending on the lattice, and this influence is also discussed in terms of its strength. Finally, the interplay between those two factors will be considered to find the conditions for transition between polarization of opinions and consensus.

[1] M.Wołoszyn, Conformity and Mass Media Influence in the Sznajd Model on Regular Lattices, Entropy 26 (2024) 307

Keywords

Sociophysics, Opinion modelling, Opinion dynamics, Sznajd model, Polarization, Consensus

Current status of the research is: Published, available online

Potential collaboration with Authors

Researching and expanding opinion models, models of social balance (Heider balance), and other similar models; we are looking for exchange of experiences, access to real-world data, cooperation in software development and offer sharing our experiences, software, and capability of conducting simulations at a large supercomputing centre

The Origin of Inequalities in Early Societies: An ABM Model

Pawel Sobkowicz[1]

[1] *National Centre for Nuclear Research, Poland*

Abstract

We present results of an agent based model, describing the origins of inequalities and social stratification in certain class of affluent hunter-gatherer societies. These societies, defined in the anthropological literature as transegalitarian, are characterized by availability of surplus resources and emergence of social inequalities, predating more complex structures found in sedentary agricultural communities. The relative simplicity of social structure allows to create a model, which focuses on a few key drivers of the process. These are: variability of certain individual characteristics (skills and talents, luck, greediness) and effects of the tendency for assortative matching. Our results provide insights into the relative importance of these individual and societal conditions in the appearance of stable stratification in initially egalitarian societies. Depending on the choice of which individual characteristics are more prized by the society (skills and contributions versus accumulated and used surplus wealth), the resulting structure may be more meritocratic or oligarchic

Keywords

Agent based model, Inequality, Meritocracy, Greed

Current status of the research is: Under-review in a journal

Network Analysis of Parliamentary Voting: Uncovering Coalition Dynamics in the Polish Sejm

Janusz Szwabiński[1], **Katarzyna Gunia**[1]

[1] *Wroclaw University of Science and Technology, Poland*

Abstract

This talk introduces a novel approach to analyzing voting behavior and coalition structures in parliamentary systems through the use of complex network analysis techniques. A network representation of parliamentary voting will be constructed, where nodes represent members of parliament, and weighted edges capture the similarity in their voting patterns over time. By applying community detection methods, emergent coalition structures will be identified directly from voting behavior, without relying on prior knowledge of party affiliations. The internal structure and cohesiveness of these communities will be further analyzed using core-periphery measures.

The method will be applied to data from Sejm, the lower house of the Polish parliament. The heterogeneity of both the ruling coalition and the opposition and their changes over time will be studied. Quantitative metrics for party polarization, coalition cohesiveness, and government stability based on topological features of the voting network will be introduced. Our findings reveal increasing polarization between government and opposition blocs, while also uncover nuanced dynamics within coalitions, such as the shifting positions of parties following internal splits.

Keywords

Opinion dynamics, Social network analysis, Community detection, Voting dynamics

Current status of the research is: Work-in-progress

Rigorous Agent-Based Modeling of Green Practice Diffusion: Analytical Approximations and Validation on Organizational Networks

Angelika Abramiuk-Szurlej[1] ✉, **Katarzyna Sznajd-Weron**[1] ✉, **Mikołaj Szurlej**[2]✉

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Abstract

Agent-based modeling (ABM) is increasingly used to manage pro-environmental behavior change, especially in energy-related contexts. A key advantage of ABM is its ability to model local consumer interactions, which play a crucial role in promoting pro-environmental behavior driven by peer pressure and social norms. However, ABM is often criticized for its lack of rigorous validation and sensitivity analysis. To address these challenges, we refine an existing ABM of green product and practice diffusion, applying Pair Approximation (PA) and Monte Carlo Simulations (MCS) to real-world organizational networks. This approach provides new insights into how well analytical methods can capture diffusion dynamics in social systems.

The model considers two main factors: (1) social interactions among agents, crucial for the spread of energy-related behaviors, and (2) the probability of engagement in a certain behavior. The original model assumed engagement following a logistic function. We propose a modified version where engagement probability is treated as an independent parameter not defined by any specific functional form. The new version can be seen as a general innovation diffusion model that extends beyond pairwise interactions.

The model simulates agents in a social network, where each agent has neighbors defined by the network structure. Interactions between agents allow social influence to shape their decisions. Each agent can either: 1) randomly decide to adopt or reject an innovation, or 2) respond to social influence by conforming to a unanimous group of neighbors or maintaining their previous state. The system evolves through random sequential updating, simulating continuous time. In each update, a randomly chosen agent changes its decision. This process continues until the system stabilizes and reaches a steady state.

We use two analytical methods to analyze the model: Mean-Field Approximation (MFA) and Pair Approximation (PA). These methods are compared with MCS applied to Watts-Strogatz (WS) graphs and organizational networks. The WS graph serves as a controlled environment, allowing us to verify the model implementation and examine how well PA captures diffusion dynamics across different graph parameters. We also validate the model on real organizational networks to examine actual diffusion patterns. By comparing PA and MCS results, we assess the accuracy of analytical methods in predicting adoption dynamics.

The results on the WS graph show that PA provides accurate results when the clustering coefficient is low, but overestimates adoption levels in highly clustered networks. In these cases, we cannot replace the ABM with the analytical approximation. Additionally, the time to reach steady-state adoption levels is longer in clustered networks, showing a "critical slowing-down" effect near phase transitions. This insight is crucial for policymakers and businesses aiming to accelerate green practice adoption within organizations. We also examine organizational networks, where properties such as clustering coefficient and degree distribution, along with global network parameters, help to explain the differences between PA predictions and MC results.

Our study highlights the need to evaluate ABM results with analytical methods and MCS, especially when using real-world data. While PA is useful in less clustered networks, MCS is necessary for accurate predictions in highly structured systems.

Keywords

Agent-based modeling (ABM), Pair approximation (PA), Monte carlo simulations (MCS), Organizational networks, Green practice diffusion

Current status of the research is: Work-in-progress

Session II

Technology in Society & Education, Social Context

Artificial Intelligence in Education: Innovation vs. Technostress and Technology Anxiety – Research Insights

Nataliia Demeshkant[1], **Sławomir Trusz**[2]

[1] *University of the National Education Commission, Krakow, Poland*
[2] *WSB University, Dabrowa Gornicza, Poland*

Abstract

Technological progress is profoundly enhancing the effectiveness of education. Artificial Intelligence (AI) is an essential tool in this revolution. AI-driven applications and software are successfully used to teach different courses and subjects. However, its effectiveness depends on users having minimal anxiety toward new technologies and avoiding technostress. One of the key protective factors against the negative impact of emotional variables is competence in using AI for teaching and learning. An important tool for measuring this process is the Technological, Pedagogical, and Content Knowledge related to AI (TPACK-AI). This study explored the relationship between TPACK-AI, technostress, and teachers' anxiety toward new technologies. 340 respondents participated in the study. Data were collected using standardized tools: Celik's TPACK-AI Questionnaire, Wilson's Abbreviated Technology Anxiety Scale, and Wang's Technostress Scale. The findings indicate a significant negative correlation between the analyzed variables. Moreover, TPACK-AI appears to alleviate symptoms of technostress and anxiety, potentially improving teaching effectiveness. The results are discussed concerning recent literature and their practical implications for education.

Keywords

Artificial intelligence, Educational process, TPACK, Technostress, Technology-related anxiety

Current status of the research is: Work-in-progress

Potential collaboration with Authors

I am interested in collaborating on AI in education at different levels, enhancing teachers' competencies, and promoting education for sustainable development. I am looking for partners with expertise in these areas, particularly those who have a strong background in educational technology, curriculum development, or sustainability in education. I offer experience in integrating AI solutions, designing teacher training programs, and contributing to innovative educational projects aimed at fostering sustainable practices

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International conference on Social Contexts of Science

Linked Open Data in Public Institutions: Lower Silesia (Poland) Case Study

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Abstract

The concept of Linked Open Data (LOD) is one of the most practical and useful forms of organizing and publishing data. This approach consists in sharing data in an open and linked way, which allows them to be analyzed by public institutions, citizens, and the private sector. The practical implementation of LOD in public administration can lead to increased data credibility and transparency, support for the decision-making process, improvement of the quality of public services and better management of these entities, even in crisis situations. The article covers key theoretical aspects and practical use of Linked Open Data in public institutions, especially on the example of Polish Lower Silesia region. Technological and organizational aspects were considered, as well as an analysis of case studies from Poland, aimed at assessing the level of advancement in sharing data in an open and linked way. This study is based on rich literature on the subject, considering scientific research, government reports and legal regulations. The aim of the article was to review the level of advancement of the linked open data (LOD) concept in public institutions, especially in the context of the possibility of using it in management and decision-making process based on the example of Lower Silesia (Poland) organizations. This research is also a case study of what kind of open data is available and what can be used by users: citizens, commercial companies, and public organizations. Moreover, this work places the level of advancement of Lower Silesia institutions on the famous Tim Berners Lee's scale and compares the obtained results. For the first time, the level of advancement of the linked open data concept in Polish public institutions was evaluated, which may improve the results in institutions already using this idea but also encourage them to develop the network of linked data resources.

Keywords

Linked open data, Management, Decision making, Big data, Data analysis, Public institutions, Semantic web

Current status of the research is: Accepted, but not published online

Potential collaboration with Authors

IT development in education, innovative education models

Political Engagement Approaches for Adoption of Complementary Currency in Complex Societal Settings

Paulina Budrytė[1], **Lina Čeponienė**[1], **Mantas Jurgelaitis**[1], **Tomas Skersys**[1]

[1] *Kaunas University of Technology, Lithuania*

Abstract

Complementary currencies (CCs) are emerging as powerful tools to enhance economic resilience, foster social cohesion, and support local sustainability goals. However, their adoption within mainstream financial and policy frameworks remains challenging, particularly in complex societal settings characterised by multi-level governance, regulatory uncertainty, and stakeholder fragmentation. Here, we explore political engagement approaches that facilitate the institutionalisation of CCs, with a focus on how strategic interactions between policymakers, civil society, and financial regulators shape the success or failure of CC initiatives.

A central case in this analysis is the EC-funded HE project “Creating Economic Ecosystems Through NGI Deployment (Local for Local)”, which aims to leverage Next Generation Internet (NGI) technologies to develop localised economic networks. This initiative demonstrates how digital infrastructures, combined with political advocacy, can enhance the credibility, transparency, and efficiency of CCs, thereby strengthening their legitimacy within regulatory and governance frameworks. The project also highlights the role of digital platforms in overcoming traditional CC adoption barriers by enabling more seamless integration with local economies and public services.

This research examines various political engagement strategies in different governance contexts. Key findings indicate that a significant factor is represented by strategic framing. In this case, CCs are positioned as complementary rather than disruptive financial instruments, which establishes their acceptance among policymakers and increases regulators. Coalition-building also plays a crucial role, as collaboration among municipalities, businesses, and grassroots organisations creates a broader support network and mitigates resistance from traditional financial institutions. Furthermore, participatory policy design, in which stakeholders are actively involved in shaping regulatory frameworks, has been found to enhance institutional buy-in and improve long-term sustainability. Another decisive element is narrative adaptation. Here, CC initiatives align their objectives with broader policy priorities such as digital transformation, economic decentralisation, or social equity. It is observed that they gain greater traction with decision-makers.

Such investigation allows the inclusion of more perspectives into the implementation of CC in the local context. The findings could contribute to broader discussions on monetary innovation, alternative economies, and governance dynamics in contemporary societies, emphasising the role of digital infrastructure in shaping the future of local economic ecosystems.

This research was funded by the European Commission through the EU Research and Innovation Funding Programme, Horizon Europe, under the project Creating Economic Ecosystems Through NGI Deployment (Local for Local), Grant Agreement No. 101135443.

Keywords

complementary currencies, political engagement, innovation

Current status of the research is: Work-in-progress

Enhancing Engagement and Accessibility with Linktr.ee in Education

Gabriel Gutu-Robu[1] ✉

[1] *National University of Science and Technology Politehnica Bucharest, Romania*

Abstract

In the digital era, students increasingly rely on mobile devices and social media for information, making traditional teaching methods less effective. Research shows that young adults (18–23) view mobile phones as essential for social connection (Campbell, 2006). However, students using phones for non-course activities take fewer notes, recall less, and score lower on exams (Kuznekoff & Titsworth, 2013). Since preventing phone use is challenging, integrating educational content into social platforms can help engage students more effectively. Educators must adapt to students' digital habits by using platforms that fit their daily interactions. This paper examines Linktr.ee as a resource hub for a Recommender Systems course at National University of Science and Technology Politehnica Bucharest (NUSTPB), improving accessibility and engagement. Data were collected in the 2024–2025 academic year from 22 students: 16 regular, 2 optional, 2 retaking, and 2 retaking from other programs. 86% were active during the semester, and 82% passed the course. At the semester's end, 16 out of 19 active students (84%) provided feedback on course workload and teacher assessment. The feedback indicated that this course had an average workload compared to others, requiring access to multiple digital resources for learning and assignments. Linktr.ee served as a central hub for accessing lecture slides, assignments, papers, schedules, announcements, and other resources. As a widely-used link aggregation tool, Linktr.ee streamlined content sharing across platforms, catering to students' frequent use of smartphones and social media. Unlike the multiple platforms like Moodle and GitHub commonly used at NUSTPB, Linktr.ee reduced cognitive friction by centralizing materials, allowing students to focus more on learning rather than navigating through scattered resources, often requiring authentication or two-factor verification. To evaluate the impact of Linktr.ee, an evaluation form was designed to assess: 1) Ease of Access – how quickly students retrieved course info; 2) Time Efficiency – whether a centralized platform reduced search time; 3) Engagement – whether students interacted more with content; 4) Perceived Usefulness – whether Linktr.ee enhanced learning. A mixed-methods approach combined quantitative analysis (Likert-scale ratings) and qualitative feedback (open-ended responses). Preliminary results showed positive reception, with students valuing the accessibility and mobile-friendly nature. However, challenges included authentication-required links due to privacy concerns and some students being unfamiliar with Linktr.ee, requiring initial guidance. Suggestions for better categorization of resources were also made. Findings suggest educators should adapt to students' digital behaviors by using social media-inspired platforms for educational content. The study highlights the role of Technology Assessment in reshaping pedagogical strategies and improving outcomes. Future recommendations include integrating link aggregation tools with interactive platforms to boost engagement and communication. By meeting students on familiar platforms, we can enhance accessibility, engagement, and the overall effectiveness of education.

Keywords

Student engagement, Digital learning, Technology in education, Resource aggregation, Centralized resource access, Mobile learning

Current status of the research is: Work-in-progress

Potential collaboration with Authors

I would like to inculde more modern tools and technologies into my teaching and also help others into doing the same with their courses. I am a big fan of modern educational tools and am passionate about the field of educational research.

Teacher Digital Skills in Online Language Teaching and Learning

Giedre Valunaite Oleskeviciene[1], **Liudmila Mockiene**[1], **Lora Tamosiuniene**[1]

[1] *Mykolas Romeris University, Lithuania*

Abstract

Technology-driven language teaching and learning is closely related to the need to integrate digital technologies into the language classroom. Technological advances are also evident in the work of the European Commission, which acknowledges the use of digital technologies to empower learners and launches numerous EU-funded research projects focused on the ICT use in teaching and learning. The OECD Program for International Student Assessment in 2021 ICT framework states that "technology profoundly transforming people's work and professional life, significantly affects multiple facets of education, and provides new opportunities for students to learn outside of school and can change teachers' pedagogical approaches and the learning experience of students in school" (PISA, 2021). Deacon et al. (2017) stress the need to integrate digital technologies into the language classroom as universities have the main goal of preparing learners for 21st-century employment with the necessary language and digital skills. In this context, improving teacher digital skills becomes one of the essential elements for teachers' professional perspective and identity (Esther T. Canrinus et al., 2012) as it is related to improvement of the digital skills of the learner and improvement of the language teaching and learning process. According to the PISA framework 2021, educators' ICT skills "depend on the availability, accessibility, and quality of ICT resources" and are important in improving learner digital skills (PISA, 2021). The changing didactic leadership in applying digital skills, i.e., the improvement of the digital skills of the teachers and the improvement of teaching alternating with the augmented digital agility of the learners, create a new didactic dialogue in the learning process. Teachers' self-evaluation of their digital skills is an important factor in teachers' self-identification as professionals. The current study aims to overview the change in the language educators' perception of their digital skills in Lithuania. To address the teacher status in this new didactic experience, a digital questionnaire on Google Forms was employed for collecting and analysing the data in the current study. Based on the theoretical assumptions, the following research questions were formulated: How do language teachers in Lithuania assess the development and the perspectives of their digital skills? What digital resources and apps do language teachers in Lithuania use in teaching and learning languages? The research results reveal that educators feel the need to improve their digital skills related to language teaching and learning and see this as part of their professional identity. The study reveals that language educators possessing a higher level of digital skills tend to use more complex digital resources and lead in the digital classroom settings. The determination to further foster acquisition of digital skills necessary for teaching and learning reveals the presence of language teacher motivation to develop new professional competences in application of ICT. Also, two thirds of the respondents developed their digital skills without institutional or peer support, which reveals that digital skills appear to be a valuable part of their professional context and efficacy as well as motivation and, eventually, part of their professional identity.

Keywords

Language teaching and learning, Digital skills, Digital technologies, Questionnaire, ICT

Current status of the research is: Work-in-progress

Potential collaboration with Authors

Digital technologies in teaching and learning, digital leardership, digital humanities

Teaching Excellence Seminars: The Approach to Present New Methods for Teaching and Learning

Karolina Laszczyk[1]✉, **Honorata Poturaj**[2]✉, **Agnieszka Licznerska**[3]✉, **Jaroslaw Krysiak**[4]✉, **Wojciech Kijaszek**[1]✉

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[4]*Department of E-learning, Wroclaw University of Science and Technology, Poland*

Abstract

The goal of the Teaching Excellence Seminars (TES)—proposed by prof. Agnieszka Bienkowska—was to enable academic teachers from Wroclaw Univ. Sci. & Technol. to gain a clear view on other teaching and learning methods from the perspective of pedagogy specialists from other countries who teach at universities. We hosted the professors from UNITE! Alliance of the universities- Aalto (prof. (Tomi Kauppinen), MIT (prof. Wojciech Matusik), Univ. Saint Andrews (prof. Ifor Samuel & prof. Antie Kohnle), Ghent Univ. (prof. Martin Valcke), or ULisboa (prof. Patricia Rosado Pinto & prof. Paulo Costa) and Wroclaw Univ. Sc. & Technol. (prof. Daoud R. Iskander & dr Jerzy Latka). Our actions were part of Centre of Excellence in Didactics, the Wroclaw Univ. Sci. & Technol. and conducted under patronage of the Vice-Rector for Education. TES was organised for the past 3 years, including the action within UNITE! (see in MetaCampus), with 11 presenters, 8 seminars spanned from 2022 until 2024. The TES encouraged educated teachers to become teacher educators while fostering their own civic engagement. Our guests mainly focused on innovative attitudes towards the application of digital tools, while adapting them for digital and hybrid learning environments. Specifically, TES seminars inspired both their organizers and audience to explore topics related to e-learning, interdisciplinarity, pedagogical strategy in teaching and learning, to mention the titles as: “"E-learning in universities: is it the new normal?", “Design online learning”, “Ungraduate Learning at MIT, ” “Didactics at St. Andrews”, “Facing new challenges with new tools: the importance of transversal training in Higher Education” or “Learning by doing”. TES speakers shared with their tips, tricks and best practices, fostering professional connections and building networks. Due to TES, that was live streamed, our beneficiaries could actively interact through Q&A session to dive into the new methods and tools while aiming to organise classes, lectures, seminars or cooperative actions.

Keywords

Teaching excellence Seminars, Didactics, Teaching & learning, Pedagogy

Current status of the research is: Work-in-progress

Potential collaboration with Authors

Innovative teaching and learning for academic teachers

Consumer Buying Behavior and Purchase Decision-Making in the Apparel Industry: A Study of Saurashtra Region in India

Ankit Jayesh Katrodia[1]

[1] *North West Univeristy, South Africa*

Abstract

This research explores the diverse aspects of consumer behavior in the Indian fashion retail sector. sector, concentrating on the complex interactions of multiple elements influencing buying choices. Essential elements like cultural subtleties, economic forces, societal factors, and technological advancements Improvements are examined to uncover their influence on consumer tastes and purchasing behaviors The aim of the study was to analyze the buying choices of consumers in the clothing industry within the Saurashtra Region of India. This study sought to determine the factors influencing customers' decision-making while shopping in retail clothing stores. The Indian retail market, the fifth largest retail destination in the world, was ranked second after Vietnam as the most appealing emerging market for retail sector investment according to AT Kearney's seventh annual Global Retail Development Index (GRDI). A survey was conducted to gather quantitative information regarding purchasing-related decision-making. The study involved a sample of 253 participants. The SPSS 25 statistical software was utilized for analyzing the collected data and visualizing it. The linear regression examination was conducted. The findings indicate that the store's design, arrangement, ambiance, and customer loyalty influence decision-making. The results suggest that the consumers are increasingly worried about whether the clothing manufacturers adhere to eco friendliness in their buying choices.

Keywords

Consumer buying behavior, Decision Making process, Apparel industry

Current status of the research is: Work-in-progress

Potential collaboration with Authors

Joint academic research and publications

Applying Concurrent Engineering to Remote Interdisciplinary Design: A Sustainable Tiny House Project

Elzbieta Komarzynska-Swiesciak[1]✉, **Karolina Urszula Laszczyk**[2]✉, **Elisa Costamgna**[3]✉, **Michal Zoltowski**[2]✉, **Andrzej Kaczmarek**[4]✉, **Matteo Carollo**[2]✉, **Kristina Remic**[5]✉, **Jan-Peter Ceglarek**[5]✉, **Reinhold Bertrand**[5]✉

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Abstract

The increasing complexity of sustainable building design requires effective interdisciplinary collaboration, yet traditional methods often rely on sequential workflows, leading to inefficiencies and fragmentation between disciplines. This paper explores Concurrent Engineering (CE) as a novel approach to interdisciplinary architectural and engineering design, emphasizing its potential to revolutionize the way professionals from diverse fields collaborate in the built environment sector. While CE has been successfully applied in aerospace and manufacturing, its adoption in building design and construction remains in its early stages. This study presents an innovative implementation of Concurrent Engineering in an academic setting, applied to the development of a Tiny Sustainable House with a closed water cycle and an autonomous IoT-based environmental management system. Conducted within the framework of the UNITE! Alliance, the project engaged students from architecture, mechatronics, mechanics, and environmental engineering across Wroclaw University of Science and Technology, Politecnico di Torino, and TU Darmstadt. By working in a remote, concurrent digital environment, participants integrated expertise from multiple disciplines in real-time, employing CE principles to ensure optimal efficiency, sustainability, and circular economy strategies in the design process. The study provides critical insights into the role of Concurrent Engineering in interdisciplinary building design, identifying both its advantages—enhanced knowledge exchange, reduced iteration times, and improved integration of technical and sustainability aspects—and challenges, such as digital coordination barriers and decision-making complexities in virtual settings. Findings suggest that CE has the potential to transform interdisciplinary collaboration for an architectural design that includes the rainwater purification and wastewater treatment, power supply for electricity and heat as well as manageable smart home system, fostering a more synchronized, data-driven, and self-sufficient approach to building development. By bridging the gap between Concurrent Engineering and building design, this paper contributes to the broader discourse on interdisciplinary methodologies, demonstrating how technology-driven, parallel collaboration models can significantly improve both educational outcomes and real-world architectural and engineering practices.

Keywords

Concurrent engineering, Interdisciplinary collaboration, Sustainable building design, Self-sufficient building design, IoT in architecture and construction

Current status of the research is: Work-in-progress

Session III

AI Applications, Sustainability, Circular Economy

The Use of Large Language Models in Qualitative Text Analysis: A Comparative Study of AI and Traditional Methods in Social Sciences on the Example of Women's Motivations for NGO Participation

Aneta Uss-Lik[1] ✉, **Berenika Dyczek**[1] ✉

[1] *University of Wroclaw, Poland*

Abstract

This study focuses on the application of large language models (LLMs) such as GPT-4 (OpenAI), Claude (Anthropic), LLaMA-2 (Meta), Mistral, Gemini (Google), and Polish AI systems, including PLLuM and Bielik, for analyzing in-depth interviews (IDI) conducted with women regarding their motivations for participating in non-governmental organizations (NGOs). The primary objective is to compare the effectiveness of LLMs in linguistic data analysis with traditional qualitative research methods, evaluate their potential and limitations, and outline future directions for developing AI-supported tools for text analysis in the social sciences.

The study adopts a computational social science approach, combining AI-driven text analysis with traditional qualitative research methods. The methodology involves processing a dataset of interviews to identify key motivations, barriers, and reflections shared by participants. LLMs are assessed in terms of their ability to categorize responses, analyze sentiment, detect linguistic patterns, interpret content within situational and cultural contexts, and apply data clustering and categorization methods. The results obtained through LLM-based analysis are compared with findings from classical qualitative research to evaluate the reliability and effectiveness of both approaches.

The findings highlight both the strengths and limitations of using LLMs for text analysis. While these models enable rapid and scalable processing of large datasets, their ability to capture subtle cultural contexts, emotions, and linguistic nuances remains constrained compared to traditional research methods. The study also addresses key ethical considerations, including privacy concerns, algorithmic biases, and the risk of misinterpreting participant voices.

The final evaluation of LLMs in the context of text analysis in the social sciences provides insights into their future development and applications. The study emphasizes the necessity of hybrid approaches that integrate advanced NLP techniques with human-driven qualitative interpretation. Additionally, it underscores the need for further research into improving LLMs' ability to analyze social data and the development of AI-assisted tools that support researchers in exploring qualitative texts in a transparent and reliable manner.

Keywords

Large language models, Text analysis, AI in social sciences, Comparison of analytical methods, Contextual interpretation, Computational social sciences, AI ethics, Future of research tools

Current status of the research is: Work-in-progress

Considerations on the Opportunity to Implement Specific "Smart" Agriculture Initiatives into Action

Simona Gavrilas[1]✉, Eugenia Tigan[2]✉, Oana Brinzan[3]✉

[1] *"Aurel Vlaicu" University of Arad, Romania*

Abstract

Low-impact technologies are continuously designed and improved to decrease the impact of anthropic activities on the ecosystems. The intention is to limit, if not eliminate, most of the possible causes of climate change. In this context, our study is integrated. Several new initiatives focus on the farming area. One of them intends to include information technology in the domain. The provocations and constraints for implementing some of the precision agriculture instruments were the focus of the present research. We intend to determine the opportunity to implement activities specific to the “smart” agriculture concept. For that, a questionnaire was applied. The target group consisted mainly of people in contact with different field sectors, producers and/or consumers. It was remarked that all respondents were aware of the concept of“ smart” agriculture. Over half of them considered that the approach is meant to optimize and improve the sustainability of agricultural production. The results obtained by analyzing the data could provide a basis for local authorities and legal deciders to project mechanisms that facilitate the performance of the vision considered. The actions will be established given the limitations suggested by the respondents who have implemented some specific instruments.

Acknowledgment: The search was developed as an activity in the ERASMUS+ Project, 2023-1-DE01-KA220-HED-000166720-The Future of Precision Agriculture-Machine Learning for Autonomous Decision Mechanism-“SMART Farming”.

Keywords

Advanced technologies, Farmer’s considerations, Implementation degree, Precision agriculture, Process monitoring

Current status of the research is: Work-in-progress

Potential collaboration with Authors

I am interested in exploring potential collaborations to develop technologies or biotechnologies for valuing waste (e.g., agricultural waste, wastewater, and food waste).

Empowering Circular Economy Through Effective Waste Segregation Awareness: An Innovation-Driven Approach to Sustainable Public Engagement

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Abstract

Improper waste segregation remains a key challenge in the transition to a circular economy, leading to increased landfill waste and inefficiencies in recycling. This research explores how innovative awareness strategies can drive behavioural change and improve waste disposal habits. Using a theoretical approach, we analyse existing waste management models, stakeholder roles, and policy measures to develop a framework for effective public engagement. We focus on marketing-based interventions, such as customised visual guidance at disposal points and QR-code-enabled feedback, to enhance public engagement. While this study is in its early stages, it aims to lay the groundwork for future implementation and data collection to validate its impact. By analysing the role of key stakeholders, policy measures, and technology-assisted awareness, this work-in-progress research contributes to the broader discussion on improving waste management practices for a more sustainable future.

This work was financed by the National Science Center (NCN, Poland): grant no. 2022/47/D/HS4/03444.

Keywords

Circular economy, Waste segregation, Public awareness, Sustainable practices, Behavioural change, Marketing innovation

Current status of the research is: Work-in-progress

Potential collaboration with Authors

We are interested in collaborating with researchers, policymakers, environmental organizations, and industry experts working on waste management, behavioural change, and sustainability initiatives. We seek partners who can provide insights on policy development, stakeholder engagement, and technology-driven interventions to enhance public awareness of waste segregation. Our research provides a theoretical framework for innovative waste segregation awareness strategies, focusing on marketing interventions, stakeholder analysis, and policy recommendations. We can contribute expertise in behavioural change strategies, circular economy principles, and public engagement models, as well as collaborate on future empirical studies to test and implement our proposed approach. We welcome discussions with those interested in policy-driven solutions, real-world implementation, and interdisciplinary research that bridges social sciences, technology assessment, and environmental sustainability.

Exploring the Potential of Smart Packaging in Circular Economy Strategies

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Abstract

This study explores the potential of Smart Packaging (SP) to enhance logistics capabilities within Circular Economy (CE) frameworks, suggesting how SP might help facilitate sustainable and responsible industry practices. We discuss the possibilities offered by integrating intelligent, active, and connected packaging solutions that go beyond traditional containment and protection packaging functions to enable proactive, real-time coordination of demand, supply, and information flow across sectors.

Through a systematic literature review of 46 peer-reviewed articles, selected from an initial dataset of 1586 entries, we propose a conceptual model that illustrates the interaction between SP functionalities and logistics capabilities, highlighting their impact on CE strategies. The study employs the PEO (Population, Exposure, Outcome) framework to identify relevant studies and uses study context coding to assess SP's alignment with logistic capabilities and its application to CE.

Our review suggests that integrating SP could be instrumental in enhancing the circularity of supply chains, potentially leading to more resilient trade networks. SP functionalities enhance logistics performance by enabling agile, data-driven decision-making. By improving real-time data exchange, predictive analytics, and automated inventory management, SP fosters more responsive supply chains and supports the transition to circular models. The study highlights the need for stakeholder collaboration, emphasizing coordinated efforts among manufacturers, logistics providers, policymakers, and consumers to maximize SP's benefits for long-term CE goals.

The study indicates that SP could support societal benefits by encouraging sustainable consumption, reducing waste, and improving recycling processes crucial for circular supply chains. The adoption of SP might optimize resource efficiency and offer environmental benefits, aligning with sustainability goals. Furthermore, the potential societal impacts of SP include supporting sustainable economic models through better resource management and waste reduction, promoting environmental stewardship, and enhancing corporate social responsibility. SP is also shown to improve transparency and consumer trust by ensuring precise and reliable product management throughout its lifecycle.

We recognize the need for continued interdisciplinary research and collaborative efforts to fully understand and leverage SP's capabilities in supporting CE goals. This study underscores SP's role in bridging technological innovation with societal needs, emphasizing the importance of rigorous technology assessment in driving sustainable development.

Keywords

Smart packaging, Circular economy, Logistic capabilities, Supply chain management

Current status of the research is: Work-in-progress

Bridging Strategy and Operations for Circularity: Regional Collaboration in Post-Consumer Used Textile Collection and Sorting

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[1] *Linköping University, Sweden*

Abstract

The textile industry in the Nordic region faces significant challenges in achieving circularity, particularly in the collection and sorting of post-consumer textiles. The European Union's 2025 mandate for separate textile collection aims to improve textile circularity; however, gaps remain in municipal readiness, infrastructure, and actor role clarity. Effective management of the reverse supply chain is crucial to enhancing the volume, flow, and quality of textiles for reuse and recycling. Addressing these operational challenges requires a coordinated approach among regional actors. This research explores how regional relationships and resources can be orchestrated to foster collaboration and create collective value in textile collection and manual sorting. Applying orchestration theory (OT), the study examines the capabilities required for effective coordination within the regional circular textile ecosystem. While OT has been widely studied in the private sector, its application in the public sector remains underexplored. A case study was conducted in Linköping municipality, Sweden, involving semi-structured interviews, observations, and document analysis with key stakeholders in the textile reverse value chain. Findings reveal that while municipalities set strategic goals for textile circularity, they often lack the operational resources to function as ecosystem orchestrators. Instead, the waste management company (WMC) emerges as a de facto orchestrator, managing collection points, allocating textiles to non-profit organizations (NPOs), and ensuring alignment between NPO sorting protocols and downstream mechanical sorting facilities. This highlights the need for public-private collaboration and enhanced municipal support for orchestrators within the textile ecosystem. The managerial implications of this research suggest that municipalities and policymakers must recognize and support the role of orchestrators, equipping them with the necessary capabilities and resources to enhance system efficiency. Improved coordination mechanisms, transparent role delineation, and investments in sorting infrastructure are critical for scaling textile circularity. Strengthening partnerships among municipalities, WMCs, and NPOs can facilitate knowledge-sharing and resource optimization, driving progress toward sustainable textile management. From a societal perspective, this research contributes to reducing textile waste, lowering environmental impact, and promoting social and economic benefits through collaborative resource management. By fostering a circular textile economy, regions can mitigate the negative consequences of fast fashion, create local job opportunities, and improve social equity in textile reuse and recycling initiatives. The study provides actionable insights for policymakers, municipal leaders, and industry stakeholders, guiding them in the operationalization of textile circularity strategies and the development of resilient regional ecosystems.

Keywords

Textile, Circular economy, Orchestration, Collection, Sorting

Current status of the research is: Work-in-progress

Potential collaboration with Authors

Any actors and stakeholders with interest in textile circularity. Researchers within the field of circular economy and circular supply chain.

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International conference on Social Contexts of Science

Assessing the Confluence of Sustainability and Business Models in the Mobile App Development Industry in Poland: An Investigation into Company Strategies and User Perceptions

Jędrzej Cieślak[1], **Yash Chawla**[1]

[1] *Wroclaw University of Science and Technology, Poland*

Abstract

In an era where sustainability is a paramount concern, the mobile application industry has lagged behind in adopting eco-friendly and socially responsible practices. This reserach fills a significant gap in the literature by investigating the potential of sustainable development to revolutionize mobile app creation and its impact on society.

The primary objective of this publication is to examine whether sustainable development can be leveraged to enhance the success of mobile applications while contributing to broader global sustainability goals. By exploring the intersection of technology and impact, the research offers a comprehensive analysis of how sustainable practices can be integrated into the mobile app development lifecycle.

The research presented in this research is structured to offer a dual-perspective analysis: it investigates how end users perceive sustainability in mobile applications and how companies developing these products' view and implement sustainable practices. By comparing these two perspectives, the research aims to shed new light on the potential advantages that sustainable development can bring to the mobile application sector. This comparative analysis is crucial, as it reveals the real challenges faced by companies and offers practical recommendations for implementing sustainable development practices.

Moreover, this research contributes new insights into the field by highlighting the potential of sustainability as a leverage point for the success of mobile applications. Given the increasing consumer awareness and demand for environmentally and socially responsible products, understanding end users' perceptions of sustainability can provide a strategic advantage for developers. The research presented in this research delves into the potential market benefits of sustainable mobile applications, positioning sustainability not just as a compliance requirement but as a competitive differentiator.

This work is supported by the National Science Center (NCN, Poland): grant no. 2022/47/D/HS4/03444.

Keywords

Business practices, Perspective user, Industry, Mobile, Application, Sustainability, Development, Consumers

Current status of the research is: Work-in-progress

Potential collaboration with Authors

We welcome researchers from various background to collaborate with us on issues of sustainability and technology assessement.

Session IV

Ethics, Interdisciplinarity, Social Context/Innovation

A Tanzanian Maternal and Neonatal Healthcare Dataset Compliant with Federated Learning: Privacy, Fairness, and Compliance

Justin A. Mwakatobe[1]✉, **Kisangiri F. Michael**[2]✉, **Devotha Nyambo**[2]✉

[1] *Mbeya University of Science and Technolgy (MUST), Tanzania*
[2] *Nelson Mandela African Institution of Science and Technology (NMAIST), Tanzania*

Abstract

In the digital era, ensuring privacy, fairness, and security of patient data is of paramount importance in healthcare data sharing and research activities. Tanzania's fifth Health Sector Strategic Plan July 2021–June 2026 (HSSP V) underlines the necessity for the government to create a legislative framework to safeguard patient confidentiality, privacy, and data security. The existing literature addresses multifaceted challenges from classical Machine Learning (ML) and Deep Learning (DP) techniques in data sharing, security, privacy, regulatory compliance, data imbalance, overfitting, interpretability, fairness, and biases. This led to the gain in traction of the Federated Learning (FL) model for data sharing, fairness, privacy-preserving, and security between healthcare providers. Therefore, this paper presents a specialised maternal and neonatal dataset that can be used by researchers to develop a privacy-preserving FL model with fairness for healthcare data. The real dataset in Comma-Separated Value (CVS) format carries 20,333 patients' data from three hospitals (Zonal, regional, and district) in Tanzania. Cleaned and preprocessed datasets contain details such as encrypted ID, encrypted name, demographic, sponsor, vitals, diagnoses, procedures, medications, and outcome. The developed model will preserve data privacy with fairness by keeping data at its source and aggregating model updates instead of raw data. In conclusion, the dataset aims to support advancements in privacy and ethics of healthcare data analytics, application of FL in low-resource infrastructure like in Tanzania, where there is no need for new resources (trains on local infrastructure), fairness and bias mitigation, policy and regulatory impact, local contextualisation, and educational resources for researchers who wish to pursue FL technique. Furthermore, raw maternal and neonatal datasets will be encrypted with differential privacy, cryptographic protocols such as secure aggregation, and Secure Multi-Party Computation (SMPC) security techniques to ensure data privacy and fairness.

Keywords

Maternal, Neonatal, Privacy, Regulatory compliance, Data sharing, Health data

Current status of the research is: Work-in-progress

Potential collaboration with Authors

Continuing research in FL model, collaboration in research in the field of emerging technlogies such as AI, privacy, data protection and cybersecurity.

Interdisciplinarity for Stable Future of Our Planet

Bartłomiej Knosala[1]

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Abstract

The aim of the talk is to discuss the problem of interdisciplinarity in times of climate destabilisation. Starting from the notion of climate marasm, i.e. the inability to take international wide-ranging and effective action to stabilise planetary systems, we reflect on the adoption of necessary adjustments to the current scientific culture. At the same time, we make a case for the inclusion of disciplines belonging to the broader humanities in a strategy to combat climate change. The theoretical basis for our considerations is the concept of Bruno Latour, according to which the division between pure social force and pure natural mechanisms is the result of the so-called Constitution of Modernity. According to Latour, maintaining this division hinders or even prevents effective actions to stabilize planetary systems. According to Latour, global warming is a quasi-object – a tangle of various elements that constitute our world. Since these elements are both natural and social, understanding the current situation and defining strategies necessitates the invention of collective dispositives, i.e., organizing teamwork that encompasses quite different disciplines, which do not use the same means of expression but address the same issues.

Keywords

Interdisciplinarity, Anthropocene, Humanities, Ecology and religion

Current status of the research is: Work-in-progress

Potential collaboration with Authors

I am looking for collaborators interessted in developing multidisciplinar approach to climate change. I can offer developer approach from perspective of Ecology and religion paradigm

Interdisciplinary Approach to Building Local Communities' Resilience in Crisis Conditions

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[1] *National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine*

Abstract

In the context of modern global challenges, the priority task of science becomes not only generating theoretical knowledge but also developing integrated solutions to ensure sustainable and resilient development of society. The concept of community resilience, capable of functioning effectively in crisis conditions, gains particular relevance. The presented research is based on an interdisciplinary approach and integration of expertise from various stakeholders: academic community, public administration bodies, business structures, and civil society. The methodological foundation of the research is a collaborative model for forming and implementing strategies for sustainable development of territorial communities. The empirical basis of the presentation comprises results from the international project "Increasing the capacity of local communities to counteract crisis situations," implemented by a consortium of Igor Sikorsky Kyiv Polytechnic Institute and Poznan University of Technology within the NATO "Science for Peace and Security" (SPS) program. The project aims to build institutional capacity of local communities in crisis management and ensure an adequate level of security at the local level. Comprehensive analysis of the regulatory framework for crisis management has allowed for systematizing the main regulatory gaps and institutional barriers. A series of in-depth expert interviews facilitated the identification of critical factors requiring optimization in crisis management policy. Practical implementation of research results is carried out through specialized training for local government representatives, students, NGO representatives, and other interested parties. A key component of the training program is the methodology for collaborative involvement of all stakeholders in forming strategies for sustainable community development in crisis conditions. The presentation features a developed system of key performance indicators (KPIs) for interaction between local self-government bodies and stakeholders in enhancing communities' crisis resilience. The proposed metric system enables measurement of progress and comparative analysis of the dynamics in developing anti-crisis resilience of territorial communities.

Keywords

Sustainable development, Crisis conditions, Interdisciplinary approach, Local communities' resilience, Strategy

Current status of the research is: Work-in-progress

Potential collaboration with Authors

Exchange of experience in organizing the educational process; discussion of opportunities for developing educational programs with public participation; exchange of experience and discussion of opportunities for using social networks in educational and scientific activities; sharing best practices in engaging applicants and the public in scientific research (including the experience of implementing the NATO Science for Peace and Security (SPS) Program project); discussion of opportunities for organizing and conducting joint scientific events and publications; joint participation in international projects

Processors and Sensors or Paper and Clay? Low-Tech Games in Neuroarchitecture

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Abstract

The development of cities to address social, cultural, and environmental challenges increasingly relies on new technologies. One such method is eye tracking (ET), used to assess how urban developments impact the perception of urban structures and architectural heritage. However, ET has several limitations, including long data collection times and high costs. Additionally, technological constraints prevent eye tracking from being universally applicable, as it may not work for all individuals, in rainy conditions, or at night. Could games offer an accessible and environmentally friendly alternative? Although games are often perceived as less serious research tools, the idea of using “childlike play” may not seem as attractive as employing sensors and AI-driven data processing. However, initial studies suggest that exploring simple solutions may be worthwhile. To investigate this, a series of parallel studies were conducted, comparing findings derived from high-tech and low-tech approaches. Specifically, researchers analyzed how people visually engage with proposed urban interventions at different scales and compared this with their ability to reconstruct or select corresponding alternatives using 2D or 3D puzzles. The first comparative analysis revealed significant correlations between these methods. These findings suggest that games could provide a sustainable, low-cost method for evaluating urban development impacts on heritage sites. Future research should further explore the broader applicability of puzzles and other game-based approaches in city management and heritage protection.

Keywords

Neuroarchitecture, Eye-tracking, Games, Low-tech, High-tech

Current status of the research is: Work-in-progress

The Significance of Language Education at Technical Universities

Agnieszka Licznerska[1]

[1] *Wroclaw University of Science and Technology, Poland*

Abstract

The presentation explores an integrative potential of meaning creation, a topic central to language lessons, including those run at technical universities. The presentation integrates insights from philosophy and pedagogy to underline the significance of language education at technical universities.

The problem is that the curriculum of technical universities is typically characterized by methodical approach, linear processes and clearly defined sequences of knowledge acquisitions. However, language lessons diverge from this model by emphasizing synchronous construction of meaning. Therefore, it has become common to underestimate the process of meaning construction. In sum, language is mostly perceived as the medium of communication of technical ideas. Some might insist that this is enough. Although I concede that language as a medium sometimes suffices, I maintain that we need a new concept integrating language, science, and technical universities.

When discussing science, many scientists seem to forget that its initial development was driven by the pursuit of power, action, and improvement of the practical arts (Randall, 1940). The element of practical arts, i.e. people as users has recently emerged from the depths of ongoing discussions on humanity or human capabilities, especially in the context of developing AI. In this context, “practical arts” refer to drawing insights from students’ or individuals’ lived experience. Yet in technical universities little attention is paid to the role of language and the manner in which students’ or individuals’ lived experiences are positioned within curricula, even if human feelings or beliefs constitute a fundamental element in the cutting-edge method of innovative thinking, i.e. Design Thinking.

Central to this presentation is the recognition that language courses do not merely transmit pre-defined knowledge of grammar and vocabulary but construe meaning during language lessons via language games (Wittgenstein, 1999). Language teachers do teach about words like tools ‘a hammer, pliers, a saw, a screw-driver, a rule, a glue-pot, glue, nails’ (Wittgenstein, 1999, §11) and about words’ functions as craftsmen teach about functions of these tools. However, they do not exclusively examine the inside of a locomotive’s cabin and define the handles of a crank or a switch, solely determining their positions and functions—for example, the crank opens a valve and the switch toggles on or off (Wittgenstein, 1999, §12). They focus on application and—dependent on adequate contexts—make distinctions between giving orders and obeying them, reporting an event, constructing an object from a description, speculating about an event, or solving a problem (Wittgenstein, 1999, §23). Since students often seem unaware of how the world works, language lessons cover a wide range of topics—from birth, banks to technology, tools, food, and death. This approach helps address the common complaint from students that they struggle even in Polish, so they see no point in trying in English. Language courses see the point of embedding various issues in context.

Language learning is a context-dependent dynamic process, where meaning is collaboratively negotiated during language-games (Wittgenstein, 1999). Language-games matter because they open the world to students, introducing them to collaboration, thinking, seeing connections, discovering intermediate hidden cases before arriving at a final clear state, i.e. meaning.

Keywords

Meaning, Language-games, Lived experience, Educational practices, Technical universities

Current status of the research is: Work-in-progress

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The Capacity of Volunteer Networks for Sustainable Social Innovation in Ukraine

Olga Voropai[1]✉, **Nina Chala**[2]✉, **Kateryna Pichyk**[3]✉

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Abstract

Social entrepreneurship and social innovation are gaining rising attention as a way of both solving societal challenges and creating economic value. However, before becoming a focus of a social enterprise, pressing environmental, social and cultural problems are often solved by volunteers. About 2.7 million people in Ukraine were engaged in volunteer activities in 2023. This study explores whether volunteering can drive social entrepreneurship in Ukraine based on the similarities between the activities undertaken by volunteers and social entrepreneurs. Given volunteers' significant role in addressing social issues, particularly during wartime, this research examines how volunteering ecosystems contribute to social entrepreneurship ecosystems (SEE). A qualitative case study approach was used to analyze the structure and dynamics of Ukraine's volunteering ecosystem (VE) and its interaction with social entrepreneurship. Desk research was conducted using secondary data from 2019 to 2023, including Ukrainian State Statistics, UN Volunteers reports, and voluntary organization publications. The study also reviewed literature on social entrepreneurship and volunteering, assessing the factors that enable volunteers to transition into social entrepreneurs. The key findings relate to similarities and differences between the two ecosystems, the ways of their interaction, and the forms of state support for the transformation process. The research identifies key similarities between volunteering and social entrepreneurship, including the purpose of solving social challenges, limited resources, and working within established legal structures. At the same time, profit orientation and the objective to reach financial sustainability are the characteristics that differentiate social entrepreneurs and, therefore, make the transition of volunteers to innovators and business entities a feasible way of expanding the positive impact of the VE ecosystem and solving social problems in the long run. Furthermore, the study identified three dimensions of SEE efficiency: social entrepreneurship culture, access to markets, and skills and business development support, where volunteers can be beneficial if they join the social entrepreneurship process. This study underscores the need for policies that facilitate the transition from volunteering to social entrepreneurship. Governments can play a crucial role by creating supportive legal frameworks, funding mechanisms, incubators, and educational programs, fostering collaboration and networking, supporting research and raising awareness and recognition. Strengthening the relationship between volunteering and social entrepreneurship ecosystems can serve as a model for other conflict-affected or post-disaster regions, supporting sustainable recovery and social innovation.

Keywords

Volunteering, Social entrepreneurship, Volunteering ecosystem

Current status of the research is: Published, available online

Potential collaboration with Authors

The Faculty of Economics of the National University "Kyiv-Mohyla Academy" is interested in joint research in the filed of economics, finance, and management with the Wroclaw Tech Management department and potential Erasmus mobility agreement between the two HEIs.

Postphenomenology Meets Conceptual Engineering: A Study in the Ethics of Technology

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[1] *University of Silesia in Katowice, Poland*

Abstract

With the new developments in technologization of life, the question of the kind of normative framework capable of grasping the challenges of augmented moral life becomes apparent. For with the standard apparatus of established ethical theories, focused either on technology broadly taken and thematised in terms of tool/agent debate, on regulation, or on the concept of responsibility, the possibilities of other normative solutions seem to gather little attention. The area which seems of to demand special importance is the everyday engagement of human agents with their accompanying technologies and, hence, the emergence of hybrid, mediated forms of experience and acting. However, so far, the research here has been conducted with an eye on addressing the ontology of the relationships with little focus given the language used. In the presentation, I shall argue that the development of a comprehensive account in the ethics of technology demands not only facing the normative challenge that is going from depicting the human-technology relations to framing them as forms of moral extensions, but also – and primarily – addressing the language used in such analyses. For this, I propose combining the tools of posphenomenology with those of conceptual engineering. On the example of an attempt to delimit the concepts of extended self, a cyborg, and a hybrid, I shall indicate how an analysis of different forms of agent's presence demands engineered vocabulary, which allows one to determine the scope of moral standards and (prospected) excellences of this new kind of agent.

Keywords

Ethics of technology, Postphenomenology, Conceptual engineering, Cuborgization, Extended self

Current status of the research is: Work-in-progress

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