



***Education in Times of Polycrisis.
Bifurcations, Climatic Antinatalism and New Eco-Pedagogies
Pedagogika w czasie polikryzysu.
Bifurkacje, klimatyczny antynatalizm i nowe ekopedagogie***

ABSTRACT

RESEARCH OBJECTIVE: The article analyzes the challenges facing pedagogy in an era of multiple crises – an accumulation of ecological, demographic, and social crises – and points to alternative educational scenarios in the context of climate antinatalism and posthumanist pedagogy.

THE RESEARCH PROBLEM AND METHODS: How can pedagogy respond to the destabilization of the world system and the crisis of reproduction in the (post)Anthropocene? The analysis is theoretical and based on the literature on the subject (Morin, Wallerstein, Haraway, Colebrook, Paulsen, Beier) and feminist criticism.

THE PROCESS OF ARGUMENTATION: The argumentation begins with a diagnosis of polycrisis and bifurcation theory, followed by a discussion of the concepts of climate antinatalism and their criticism, and selected pedagogical responses are cited: re-wilding education, “embodying the Earth,” networked learning, and “weird pedagogy.”

RESEARCH RESULTS: Traditional pedagogy is losing its justification, and the proposed alternatives are shifting education towards relational, embodied, multispecies, and speculative practices that teach care, shared responsibility, and living with uncertainty.

CONCLUSIONS, RECOMMENDATIONS, AND APPLICABLE VALUE OF RESEARCH: It is recommended to abandon the paradigm of control in pedagogy in favor of regenerative and adaptive models that strengthen social resilience in conditions of instability and polycrisis.

→ **KEYWORDS:** **POLYCRISIS, BIFURCATIONS, CLIMATE ANTINATALISM, (POST)ANTHROPOCENE, POST-ANTHROPOCENTRIC PEDAGOGY**

STRESZCZENIE

CEL NAUKOWY: Artykuł analizuje wyzwania pedagogiki w epoce polikryzysu – kumulacji kryzysów ekologicznych, demograficznych i społecznych – oraz wskazuje alternatywne scenariusze edukacyjne w kontekście klimatycznego antynatalizmu i pedagogii posthumanistycznych.

PROBLEM I METODY BADAWCZE: Jak pedagogika może reagować na destabilizację systemu świata i kryzys reprodukcji w (post)antropocenie? Analiza ma charakter teoretyczny i oparta jest na literaturze przedmiotu (Morin, Wallerstein, Haraway, Colebrook, Paulsen, Beier) oraz krytyce feministycznej.

PROCES WYWODU: Wywód zaczyna się od diagnozy polikryzysu i teorii bifurkacji, następnie omówione są koncepcje antynatalizmu klimatycznego i ich krytyka oraz przywołane zostają wybrane pedagogiczne odpowiedzi: *rewilding education*, „ucieleśnianie Ziemi”, sieciowe uczenie się i „dziwna pedagogika”.

WYNIKI ANALIZY NAUKOWEJ: Tradycyjna pedagogika traci uzasadnienie, proponowane alternatywy przesuwają edukację ku praktykom relacyjnym, ucieleśnionym, wielogatunkowym i spekulatywnym, które uczą troski, współodpowiedzialności i życia w niepewności

WNIOSKI, REKOMENDACJE I APLIKACYJNE ZNACZENIE WPŁYWU BADAŃ: Rekomenduje się porzucenie paradygmatu kontroli w pedagogice na rzecz modeli regeneratywnych i adaptacyjnych wzmacniających odporność społeczną w warunkach niestabilności i polikryzysu.

→ **SŁOWA KLUCZE:** POLIKRYZYS, BIFURKACJE, KLIMATYCZNY
ANTYNATALIZM, (POST)ANTROPOCEN, PEDAGOGIKA
POSTANTROPOCENTRYCZNA

Introduction

The world we see today does not seem particularly inviting. The accumulation of ecological, energy, economic, geopolitical, social, and demographic crises erodes the world's stability, triggering a cascade of consequences. This situation increasingly reveals potential sites of change (so-called bifurcation points), i.e. sites where the world loses stability and becomes vulnerable to non-obvious developmental trajectories. It is precisely in these critical junctures that both narratives of climate antinatalism and new eco-pedagogies proposing alternative ways of thinking about the future and education gain significance. This text attempts to address the question of how pedagogy can respond today to the destabilisation of the world system and the crisis of reproduction in the (post-)Anthropocene.

Bifurcations, Climate Anti-Natalism, and New Eco-Pedagogies in Relevant Literature

The term polycrisis is attributable to Morin and Kern (1999), whose text is a veritable manifesto of planetary thinking, a call to recognise the Earth as a common homeland, and as a vision of global responsibility. The world depicted here is a complex and internally contradictory system. However, rather than trying to eliminate the complexities, we should affirm and embrace them as a source of creation and transformation, and as an opportunity for the development of a truly shared planetary culture. In the authors' view, it would then become possible to overcome future crises and to build a more conscious and solidaristic civilisation – resilient and capable of responding to global challenges (Morin & Kern, 1999, pp. 15–32).

Morin and Kern's concept combines ecological, social, and philosophical reflection. The manifesto has proved to be a major point of reference for contemporary debates on global crises, the problems of (un)sustainable development, and the need for systemic thinking as a tool for understanding and overcoming contemporary challenges (Morin & Kern, 1999). After 2022, the term included in the manifesto has gained legitimacy in a language defining the predicament of today's world due to Adam Tooze (Whiting & Park, 2023). In his article "Welcome to the World of the Polycrisis", published in *The Financial Times* in October 2022 (Tooze, 2022), the author points to a new aspect of challenges due to the systemic interaction of multiple global risks. Humanity may be doomed to live in the shadow of cascading, world-destabilising crises that cannot be analysed in isolation. This will trigger complex and unpredictable processes and phenomena that call for novel strategies of systemic thinking and governance. Tooze's article initiated a series of analyses devoted to disruptions in the functioning of global homeostasis in the era of polycrisis, while the polycrisis itself has become an analytical category in interdisciplinary accounts of the condition of the contemporary world (Tooze, 2022).

The above intuitions resonate with Immanuel Wallerstein's concept of the self-organising world-system. This very idea will be my point of reference for reflection on the current proactive situation in Western countries, as well as on climate antinatalism as a project of (post-)Anthropocentric utopia. In his theory of the modern world-system, Immanuel Wallerstein focuses on Braudel's (1999) historical conception of world development (Chase-Dunn & Hall, 1997, p. 20), adding Ilya Prigogine's theory of dissipative structures to it (Wrzosek, 1995). Prigogine's theory will be important for the further considerations due to the category of bifurcation, a distinctive point of deviation towards possible constructions of models of the social world, including antinatalist ones.

Wallerstein defines the "world-system" as a global capitalist arrangement sustained through feedback mechanisms, i.e. cycles, trends, and institutions, that impose self-organisation on it. Order is reproduced bottom-up through the practices of actors and structures of exchange, while hierarchies distribute profits and costs, sustaining inequalities (Wallerstein, 2007, p. 108). Hegemonies, however, are not permanent: centres of

power shift. This reveals the system's capacity for (re)organisation without a central actor (Wallerstein, 2007, p. 88). In moments of destabilisation, the system enters a phase of crisis, opening space for alternative configurations. Even minor fluctuations may then alter its trajectory. As Nowak notes, in unstable phases "bifurcation points" enable evolution in an unpredictable direction, becoming guarantors of novelty in the world and a prerequisite of its creativity (Nowak, 2011, p. 137; Prigogine, 2000, pp. 892–898). Small interventions can alter entire macro-trajectories of the system. Such dynamics require adaptive capacities at the level of meta-systemic rules (Wallerstein, 1991, 1998). Recognising bifurcations is a form of practical wisdom that enables creative exploration of new models of effective action under given, complex conditions.

The social sciences are to be a space in which we constantly put our images of the world to the test, for our potential actions depend upon them. Wallerstein proposes that, by testing alternatives, we come to know the possibilities that reality opens before us. Through the continual construction of new theories, but also through their deconstruction (so as to prevent them from assuming a dogmatic form), we have the chance to discover the regularities governing the social world (Nowak, 2011, pp. 169–170).

To define such practices, Wallerstein proposes the neologism "utopistics." "Utopistics is not the design of perfect worlds, but the consideration of real historical alternatives that may be realised as a result of the crisis of the existing system" (Wallerstein, 2008, p. 11). In periods of bifurcation, when the system's equilibrium is upset, utopistics is a necessity as it triggers non-obvious, innovative choices that may define the future order. The diagnosis of the condition of the world as we know it in a polycrisis and that moment of bifurcation, strain, and exhaustion of the world-system described by Wallerstein may become a pretext for exercising our imagination.

One possible version of the "new" in this context is one in which, alongside the proclamation of a climate state of emergency, the claims of climate antinatalism are put to the test. In line with the logic of world-systems theory, social tendencies in the sphere of procreative decisions cease to be a matter of exclusively private choice and become decisions of systemic and ethical significance, exerting a real influence on the future of the biosphere. The above conclusions follow from the seminal article "The climate mitigation gap: education and government recommendations miss the most effective individual actions" (Wynes & Nicholas, 2017). The authors analyse the discrepancy between educational and governmental recommendations and the actual effectiveness of individual actions. Their findings indicate that most educational programmes and climate policies omit information about the most effective practices for reducing CO₂ emissions. It is having fewer children, foregoing car use, avoiding air travel, and adopting a plant-based diet that exert a far greater impact on the climate than standard recommendations such as recycling or saving energy. The authors emphasise that the absence of such information in public discourse creates a significant "gap in climate education." For the narrative of climate antinatalism, fertility data are particularly crucial: according to the authors, having one fewer child corresponds to an average reduction of 58.6 tons

of CO₂ per year. Ecological childlessness is thus presented as a highly impactful pro-climate activity (Wynes & Nicholas, 2017, Murtaugh & Schlax, 2009).

The path of deliberate childlessness due to the environmental crisis is taken by Mathilde Krähenbühl (2022). Her ecological perspective in research on reproduction and demographics shows that decisions to remain childless are responses to anxieties related to an uncertain future under the shadow of climate catastrophe, coupled with a sense of eco-responsibility, a reluctance to increase one's carbon footprint through having children, and an ethic of care leading to the conviction that it is better not to bring children into a world threatened by polycrisis. Again, environmentally motivated decisions to remain childless emerge as supra-individual practices, embedded within a network of climate, moral, political, and economic discourses that transform the meaning of parenthood and of the "duty" to reproduce. Krähenbühl notes that environmental childlessness is political and raises questions about the individualisation of responsibility.

The tension between the individual and the systemic renders the issue of climate antinatalism far from neutral (Florkowski, 2020; Szocik, 2024; Sasser, 2024; Yopo Diaz et al., 2025; Jach, 2017; Starzyński, 2020). Szocik stresses that the knowledge of the mechanisms of discrimination, exploitation, and oppression should never be ignored when defining the frameworks for thinking about the future (Szocik, 2024, pp. 160–161). The relevant core tensions are discussed by the feminist scholar Kristina Rukaite (2020), who emphasises that contemporary climate discourse increasingly reduces reproduction to simple calculations of carbon dioxide emissions. This turns children into emission units, their birth and existence being quantified in tons of CO₂. This approach radically instrumentalizes the body, treating it as a tool for the production or reduction of greenhouse gases. This adds an additional layer of control to procreative decisions with.

The female body has historically been subject to regulation and supervision, reflecting a continuity of thinking about population as a problem requiring governance. In the past, this often entailed the demonization of contraception and abortion. Today, it involves the more subtle pressures of climate antinatalism (Rukaite, 2020). In both cases, reproduction is seen as a space in which the state, science, and capital can pursue their interests, and the body becomes a site for the enactment of environmental politics. For Rukaite, this is a part of more complex processes that restrict both individual bodies and whole families and communities, producing divided and segregated spaces that determine whose life is considered valuable and worth reproducing, and whose is not.

The issue of reproductive justice, taking into account the oppressive nature of various contextual logics, e.g. colonialism, racism, exploitation, and oppression, has been researched extensively (Ross & Solinger, 2017; Eaton & Stephens, 2020; Sigle et al., 2025). Rukaite embraces this perspective, showing that by inducing guilt and constructing moral pressure to act responsibly toward the future, contemporary climate discourse both ignores the patriarchal history of reproduction under capitalism and legitimises the gendered, racial, and exploitative conditions that history has produced (Rukaite, 2020, pp. 11–12). The ostensibly neutral language of science can thus mask structural inequalities: not everyone has equal access to reproductive choices, and responsibility for

the climate crisis is shifted onto individuals rather than economic and political systems. As a result, science becomes a tool of power, social engineering, and discipline. Rukaitė does not question the challenges of the climate crisis, aware that in the era of the (m)Anthropocene¹ reproduction inevitably becomes a field of climate policy, begging questions about the future of the planet, generational justice and individual rights. She emphasises only that a critical perspective is needed, one that combines reproductive justice, gender issues, and global inequalities. Rather than reducing the question of bringing children into the world to calculations of emissions, it is necessary to recognise the broader social context, establishing who actually bears the costs of the crisis, who has the possibility of choice, and who is compelled to submit to demographic policies. Only this perspective shows that reproduction in the (m)Anthropocene is not a private decision, but a space of negotiation between the individual, society, and the planet.

The discourse threads presented above, together with their critique, strongly problematize the stance of climate antinatalism. It is therefore difficult today to predict whether, despite social anxieties about climate (Sasser, 2024), such a scenario has a realistic chance of becoming a post-bifurcation macro-trajectory of our world-system. Some irreversible demographic processes are underway. In Poland alone, there has been no generational replacement for four decades; current fertility stands at 1.09 children per woman. As the sociologist Anna Gromada notes, this is a new record low, placing Poland 198th out of 209 countries, alongside war-torn Ukraine. Data from the first half of 2025 shows that an even lower record is imminent: 1.03 (Gromada, 2025). Demographic trends clearly do not require labels to transform our world-system effectively under conditions of shrinking resources and polycrisis. Yet it is clear that the vision of climate antinatalism continues to influence post-anthropocentric imagination, a feature of popular dystopias and speculative and futuristic social concepts.

The classical concepts worth special attention here due to their pedagogical potential include Donna Haraway's influential idea of forming non-procreative and more-than-human kinships as an ethical alternative to biological reproduction, known as "making kin, not babies" (Haraway, 2016). The popular game of cat's cradle, which Haraway proposes to call string figures, becomes here a model of multispecies assemblage (relations with humans, animals, plants, and technologies) and a metaphor for relations in an inevitably post-anthropocentric world. The author invites us to think in terms of weaving networks, relational tentacles, and co-producing the world with other beings. Moreover, she offers a language enabling a rearticulation of questions concerning the future, responsibility, and life on a damaged planet.

Claire Colebrook (Colebrook, 2014) is an author of another bold intuition formulated around the theme of post-anthropocentric antinatalism. She challenges the dogma of

¹ K. Rukaitė modifies the notion of the Anthropocene, using the term (m)Anthropocen. This eco-critical and feminist reformulation takes into account the patriarchal contexts of the Anthropocene (masculinism, modernism, market), emphasising that it is not humanity in general but specific regimes of power, capitalism, and colonialism that are responsible for environmental degradation and for the Eurocentric character of the dominant ecological discourse.

affirming life, indicating that the imperative to say “yes” to life is not so much a universal value as a mechanism sustaining the species’ interest in survival. This imperative functions as metaphysically given (Colebrook, 2014, pp. 203–204), which makes it hard to think beyond an anthropocentric *telos*. In this perspective, the refusal of reproduction is not an act of misanthropy, but a critique of the anthropocentric values taken for granted. In the Anthropocene, when affirming life at all costs becomes a reflex of survival, accepting a “NO” to life opens a space for a cosmic ethics, independent of procreative norms and metaphysical dogmas. While Colebrook does not explicitly call for antinatalism, she implies that considering it is vital for lifting the taboo that prevents imagining a world beyond the imperative of reproduction.

In the face of such (post-)Anthropocentric moods, what today remains within the remit of pedagogy – this meta-space of meanings associated with life, relations, development, and education? In an increasingly low-fertility and increasingly unstable world, is there any future for a pedagogy whose primary reflex is, after all, to move TOWARDS the child and to stabilise the child’s world? Interesting suggestions are offered by pedagogical visions of re-wilding education, embodying the Earth, mycelial pedagogies (Paulsen et al., 2022), or Jessie L. Beier’s weird pedagogies (Beier, 2023).

The text *Rewilding Education for a New Earth* (Paulsen et al., 2022) is a pedagogical manifesto deeply ingrained in the experience of the climate crisis and the COVID 19 pandemic. The authors stress the need for a new post-anthropocentric pedagogy focused on networks co-created with other actors of natureculture, and argue that education should not function as an instrument for reproducing crisis, but rather as a space of regeneration. The concept of “re-wilding” offered in the book is to signify a return to wildness. This does not, however, involve a romantic escape into nature, but instead an opening of education to unpredictability, relationality, and more-than-human worlds. Education is no longer concerned with preparation for a stable future, but with learning to live under conditions of polycrisis, disequilibrium, and the necessity of coexistence; with learning care and responsibility; and with practising more-than-human communities, i.e. with animals, plants, ecosystems, and technologies. This education inclines towards nature, draws upon art, performance, and spiritual practices, experiments with forms of communal learning, and challenges hierarchies. It valorises nature-inspired art pedagogies and relies on the concepts of embodying the Earth and mycelial pedagogies (Paulsen et al., 2022, pp. 200–230). The former means the embodiment of relations with the planet via educational practice that integrates the body, the senses, and emotions into the experience of the environment. It departs from purely cognitive learning in favour of embodied education, where one becomes a part of the earth, e.g. via rituals, art, and motion in nature. This is transformative pedagogy, genuinely teaching care and shared accountability. On the other hand, mycelial pedagogies are like mycelial networks, they form decentralised, interdependent structures grounded in cooperation, reciprocity, and flow (of knowledge, skills, competences) in a non-linear, networked manner. Knowledge circulates here as it does within mycelium, connecting people, places, and more-than-human beings. Such education becomes a process of living co-reconstruction of

this complex, non-hierarchical, uncontrollable multispecies ecosystem, in which concern over excessively low fertility becomes lost within biocentric networks of humans and non-humans.

Advocating weird pedagogy, Jessie L. Beier (2023) takes a step further: rather than reflecting on the reproduction of rescue discourses in education, she opts for strengthening adaptive pedagogical practices that would help acknowledge and practise loss, finitude, and even the necessity of phasing out certain forms of social life. Where traditional pedagogy invests in sustaining purpose, function, and efficiency, “weird” pedagogy tends to redistribute energy towards speculative and creative practices that do not guarantee usefulness, but instead open up fields for educational laboratories of energy. They make it possible to practise “sprouting,” i.e. rituals, conditions, and didactic gestures that open onto uncertainty and purposelessness; it becomes possible to experiment with time, materials, rhythm, intensity, rest, and even exhaustion. The end of the world in the title of Beier’s book is not a challenge to be overcome, but a site for the emergence of counter-intuitive and unpredictable learning communities, in which education may develop like germinating seeds, in line with the logic of uncertain growth and openness to transformation (Beier, 2023, pp. 209–220).

Conclusion

The above reflections point to a clear shift in pedagogy away from a controllable, “purely human” logic towards the uncertain future of a network of coexisting beings. These proposals align themselves with more-than-human learning as an open and unpredictable process, inherently incomplete and finite. In this context, the discourse of climate anti-natalism gets clearly diluted. “The period of transformation from one system to another is a period of great struggle, uncertainty, and constant questioning of structures of knowledge. We must first and foremost try to understand what is happening, and then make a choice as to the direction of the world’s development that we consider desirable. Finally, we must devise a mode of action that will enable us to move in that direction” (Wallerstein, 2007, p. 128).

Pedagogy today need not obsessively perpetuate obsolete, inadequate formulas of theory and practice. Nor does it have to passively submit to the inert momentum of the imminent future. It carries within its historical memory many experiences of transformative change. At present, it faces yet another such moment and has the chance to confront it creatively.

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Source of funding

Lack of funding sources.

Disclosure statement

No potential conflict of interest was reported by the author(s).