

history

Education Must Make History Again:
*Remembering Comenius in a Time
between Worlds*

Zachary Stein

Perspectiva is a registered charity operating as a collective of scholars, artists, activists, futurists and seekers who believe credible hope for humanity's future lies in forms of economic restraint and political cooperation that are beyond prevailing epistemic capacities and spiritual sensibilities. We work to develop an applied philosophy of education for individual and collective realisation in the service of averting societal collapse; and to cultivate the imaginative and emotional capacity required to usher in a world that is, at the very least, technologically wise and ecologically sound.

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Zak is a philosopher of education working at the interface of psychology, metaphysics, and politics. He has published two books, including [Education in a Time Between Worlds](#), along with dozens of articles. He has co-founded a non-profit and think tank, taught graduate students at Harvard, and consulted with technology start-ups. Zak is a long-time meditator, musician, and caregiver, which has shaped him more than any professional engagements. Find out more about Zak's work [here](#).

Foreword

The Philosopher Alasdair MacIntyre once wrote: ‘I can only answer the question “What am I to do?” if I can answer the prior question “Of what story or stories do I find myself a part?”’

The following essay is about a story we are all part of today, the true story of being in a time between worlds. That elegant phrase - ‘a time between worlds’ - came from the author of the essay Zachary Stein, initially developed in his book *Education in a Time Between Worlds* (2019). In this Perspectiva essay the meaning of the idea is deepened through an examination of the inspiring and under-appreciated figure of John Amos Comenius.

Comenius lived between 1592 and 1670, when the pre-modern world of feudalism, kingdoms, and hegemonic religion had not quite died and the modern world of trade, commerce, and nation states was just being born. Comenius’ world was in crisis in the original sense of being at a turning point, where the meaning and direction of collective life is momentarily up for grabs. We are in a crisis of precisely this kind again today.

For those working for a better world, the stories we are part of may be climate change mitigation, or reducing political polarisation, or the promise of new technologies, or an image to guide action, like doughnut economics. But these endeavours are all part of a bigger story that needs to be inhabited today. Until we grasp that we are in a time between worlds it is hard to see the deep structures of societal immunity to change that keep the old world on life support. Without trusting that a new world will be born it is hard to see the possibilities for radical renewal, possibilities that are neglected because they can’t be perceived within the prism of the world to which we are habituated.

We really are in a time between worlds! The expression is not just a poetic soundbite, or a mystical status claim, though it is informed by visionaries and prophets of the evolution of consciousness like Jean Gebser and Sri Aurobindo. The idea is empirical, sociological, and compelling to those who look.

The world most of us have known, of nation states, the rule of law, the so-called free market, and the printing press is ending, slowly but surely. This process of undoing seems inexorable and it is happening partly because capitalism is running out of frontiers, partly due to the transgression of the planet's ecological boundaries, partly due to the impact of the internet and artificial intelligence and virtual reality on our lifeworlds, and partly because our democracies now lack viable informational ecosystems to inform collective debate and decisions.

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As you will read in what follows, the notion that we are between worlds stems partly from Immanuel Wallerstein's work on World System Dynamics and partly from Peter Turchin's analysis of secular cycles of history. There are also perspectives closer to the Perspectiva community. For instance, the anthropological idea of *liminality* can be used to describe ethnographers separated from their own culture but not fully part of the one they are studying. Many social futurists feel a little bit like that today. Indeed, Joe Lightfoot coined the term 'the liminal web' to describe the ecosystem of inquiry and practice of which Perspectiva is a part.

Perspectiva takes the idea that we are in a time between worlds seriously and I would even call it a premise of our 'urgent one-hundred-year project'. A key paragraph about half-way through Zak's essay chimed with my experience of running the organisation and the challenge of explaining what we are about:

"The point I am making is that during times between worlds there emerge certain ideas and thinkers that are, properly speaking, without a world. Their work is about creating a new world, by necessity. Let us call their workspace the liminal. Not within the old world or the world to come, the liminal is exactly that which is the bridge and fulcrum between worlds. The focus of work in the liminal is on foundations, metaphysics, religion, and the deeper codes and sources of culture—education in its broadest sense."

The need to rediscover and reinvigorate education as the deeper codes and sources of culture is aided by Zak's skilful reviving of the spirit of John Amos Comenius, an educator of world-historical importance.

But why education exactly? Because education is not just children in uniform with their feet under desks holding pencils expectantly while looking at their teacher. Zak understands Education – as I believe we all should – in the expansive Deweyian sense as a practice of social autopoiesis – the process by which society renews itself, including an intelligent patterning of institutional deaths and cultural births. We are called upon to be enlightened undertakers and visionary midwives.

As this essay reminds us, Education is the means by which we make it possible for new worlds to be born within worlds that are dying. It is in this sense that Zak rightly argues that Education must make history again.

And so, back to the question ‘What am I to do?’ The point of this essay is that this question should be informed, as a matter of urgency, by the deep story of being in a time between worlds. That story comes alive through the way Zak conveys the inspiration of John Amos Comenius, who developed his visions and theories four hundred years ago. It is up to all of us to make sense of what they mean today.

Jonathan Rowson

Executive Director of Perspectiva

Education Must Make History Again: *Remembering Comenius in a Time Between Worlds*

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Introduction

What follows is an attempt to distill lessons for educational futures from the annals of mostly forgotten history. I am reviewing the past as history, with my back to the future, which remains unknown, looking for hope in the rubble of previous catastrophic world transformations.¹

There have been many suggestions about what “drives” history and what causes major historical changes. It has long been seen as important to make sense of those times in the past when profound social transformations occurred that impacted the most basic aspects of our humanity. Questions inevitably arise. Are we living in one of those times?² Is knowledge of prior historical transmutations relevant for us today? In other writings I have demonstrated that, yes, we are living in such a time.³ Such times have occurred before, when one world-system rolls over and another emerges. I call them *times between worlds*—when one world is ending while another is waiting to be born. We can learn from prior *liminal epochs* to help us understand our own, but only if we can come to understand what drives history.

I argue further that educational innovation is one of the major catalysts of fundamental historical change. Other drivers of history, such as technology, warfare, and economics, presuppose and stem from educational realities. Humans make history when they make intentional changes to the dynamics of intergenerational transmission. This means literally changing how we “pass on” the knowledge, skills, and character traits that make possible the unfolding of what we call history. When looking at prior times of great change seeking lessons for today, I suggest keeping an eye on things like socialization, enculturation, contexts of human development, dynamics of teaching and learning, and intergenerational transmission. This is all “education”—as I broadly construe it.

Thinking this way about history allows me to say that, today, *education is the meta-crisis*.⁴ Education is the root of all more specific crises such as climate change, governance breakdowns, impending war, and social unrest. There is a hidden crisis that is giving rise to the many obvious crises: it is unfolding in our own minds, and within newly complex and problematic dynamics of intergenerational transmission.

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Take climate change. CO₂, fossil fuels, and superstorms are not themselves the fundamental problem. The fundamental problem is how we think and make choices concerning those things, and by implication, more importantly, how we will “pass on” certain failed ways of being and knowing to the next generation. If we don’t solve the problem of education none of the other problems can get solved. Absent education, only temporary solutions exit.

Our civilization is starting to mishandle the basic task of equipping the next generation with the requisite skills, personality structures, and cultural resources needed to maintain essential social systems. This is what might be called “*social autopoiesis*”—the self-(re)creation of the social body—and it can only be accomplished through intentional practices of education. Drastic educational crises that remain unresolved result in failures of social autopoiesis and eventually civilizational collapse.

Times between worlds—*liminal epochs*—always involve profound educational crises, which can rapidly cascade into total civilizational breakdowns. The ideal response has been to “reboot” the social structure using an updated educational operating system. The best example from recent history—the last time this happened at scale—is the story I tell in this essay.

Déjà vu: It is Happening Again

John Amos Comenius (1592-1670), arguably the greatest educational thinker humanity has ever known, lived in a dynamic and transformational historical epoch—a *time between worlds*. During his life the reign of religious aristocracies climaxed, were exhausted, and gave way to the birth of the modern capitalist world system.⁵ In this context he articulated the difference between education that perpetuates failing social systems and education that transforms failing social systems into something new, for the sake of humanity.

The educational system envisioned by Comenius was an attempt to define a new *paideia*. *Paideia* is a Greek word meaning roughly *educational paradigm*—the totality of a society’s ideas, institutions, and practices concerning intergenerational transmission. Comenius envisioned a *planetary paideia* that was integrative of science and religion, while also being universal, including all peoples regardless of sex, creed, race, or nationality.

Comenius’ vision would directly inspire the creation of institutions pivotal to what has become known as the Western Enlightenment. This now obscure philosopher of education carried a bright torch through the gauntlet of wars

and inquisitions between the Renaissance and the Enlightenment. His vision of transformative education would eventually change the very face of the emerging world system.

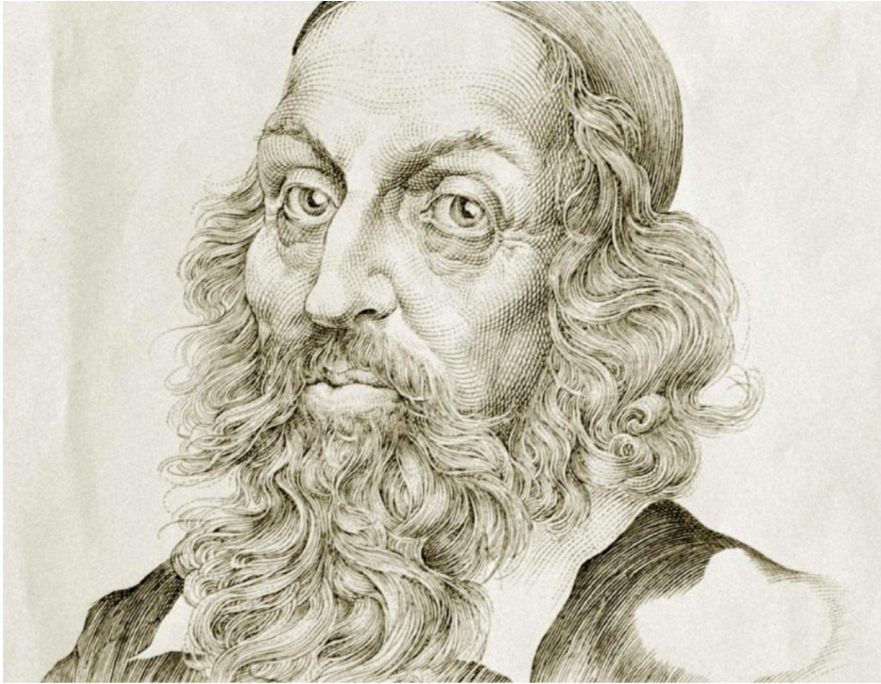


Figure 1: Portrait of John Amos Comenius (Jan Amos Komenský), as it appears on the Czech 200 Crown Bank Note.

Comenius' story includes the eventual betrayal and forgetting of his vision as modernity reached maturity. The reason to study Comenius is to see what happens when education makes history, for better and for worse. This story, as I tell it here, also focuses on the historical epoch in which Comenius lived, specifically the “metahistorical patterns” that were in play, which reveal great similarities between his time and our own.

I have tried to tell a carefully condensed story here. A great deal of detail is lacking, with only some of the fascinating subplots addressed in the endnotes. When I first discovered this story, I experienced *déjà vu*. We are once again tasked with countering social breakdown resulting from information technologies by means of educational innovation.

Bohemian Rhapsody: Comenius, Europe, Modernity

In 1957 UNESCO held a conference to celebrate the 300th anniversary of the publication of John Amos Comenius' *Opera Didactica Omina* (1657).⁶ This four-volume work, edited and compiled by Comenius towards the end of his life, contains wisdom from over thirty years of educational reform efforts throughout Europe. The first volume, *The Great Didactic*, would become one of the most influential and revolutionary educational books ever published, containing perhaps the first comprehensive “modern” educational theory. It had curricula for empirical science as well as religion, an age-graded school organization, and suggestions on making materials for every ability across every subject. Overall, the approach was student-centered, focusing on fostering natural curiosity, observational skills, and a civilized cosmopolitan ethos.

All of these were incredibly revolutionary ideas at the time, and this is just a partial list of innovations found in the book. School masters reading Comenius' books in the 1660s would have been familiar with other methods, such as the use of brutal physical punishments (akin to torture) set alongside treacherously abstract lessons in ancient languages. Comenius' call for humane methods of education was literally 300 years ahead of its time. Physical punishment for poor academic performance was practiced widely in so-called “modern” nation states up until the 1960s (and it is still practiced in some households and private schools).

The Great Didactic was published during the last decade of Comenius' life, after he had found refuge in Amsterdam during a time of chaos and violence. Comenius had, in fact, settled into what was becoming the new center of the emerging world-system, and he dedicated his educational *magnum opus* to the Dutch East India Company. The economic and logistical organization of the Dutch East India Company was as radical a departure from the feudal economic regimes as Comenius' vision of education was from feudalistic forms of schooling. Below I discuss the ethical complexity accompanying the birth of modernity, as the shadow of colonialism hangs over all of the first “modern” innovations. Three centuries later, when Jean Piaget would head efforts by UNSECO to resuscitate the memory of Comenius, the long-term results of capitalism and other “modern” innovations had created nationalistic school systems falling drastically short of the potentials he had outlined in the 17th century.

The story I tell here is of a path not taken for education and society at the dawn of the modern era. Comenius had aligned with the future direction of the world-system, seeing in science and capital forms of social organization that transcended the dynamics of disintegrating feudal and religious political organizations. As I discuss below, he worked to show these new powers a way to harness their innovations to undergird an education-centric social system, one that would place human development and the free flow of information at the center of social life on a global scale. Fueled by a mystical faith in the coming of a new world, Comenius courageously promoted a vision for a *planetary paideia*.



Figure 2: The frontispiece for a 1657 edition of the *Didactica Opera Omnia*. Comenius sits writing, while gesturing with his left hand towards all the various forms of education he outlines in the book, as illustrated around him.

Comenius lived and worked in contexts of extreme opposition and danger. Ultimately his vision was betrayed by the very powers he invested with its actualization. Capital and the nation state took many of the key ideas in his system, especially those useful in upgrading and expanding school bureaucracies and improving the reach of public education as part of building national economies.

Although many readers will likely have not heard of Comenius, his reputation precedes him. Even before the final publication of his great education works in 1657, he was invited by monarchs to work on entirely reforming the educational systems of the English, Swedish, and Dutch. He fielded requests from many other countries, including in the Islamic world, and from what were then the American Colonies. He was invited to be one of the first presidents of Harvard; he declined.⁷

Comenius was also the author of *Janua linguarum reserata* (*The Doors of Language Unlocked*), which is by far the greatest language textbook of all time, being re-issued and in circulation until the end of the 19th century (close to 300 years). The same is true of his *Orbitus Pictus* (*The World in Pictures*), which applied the novel use of print technologies to create a language textbook that was also the first picture book for children and young adults. These books were used to teach Latin all over the world and were written using an unprecedented innovation where a picture was followed by two columns, one describing the picture in a native language, the other with the same description in Latin.

As simple as this may seem now, it was a true innovation in the use of print technology. This innovation signals one of the many ways that Comenius was adapting to a world that was rapidly changing. He put fundamentally new technology to use in a profoundly revolutionary way. Between the years between 1650 and 1890, Comenius' books could be found almost everywhere, having been translated into Chinese, Arabic, Russian, and all European languages. To that point in history there may have been no more radical innovation in educational technology. These books made Comenius known all over the world.

Comenius was inspired by what Marshall McLuhan called the Gutenberg Galaxy, specifically the impact of having the Bible printed and available in many languages. The rapidly expanding world of printed books was changing the face of Europe, with the Protestant Reformation (1517-1648) being one of the main outcomes. A major part of Comenius' work was done while serving as the last Bishop of a small Protestant sect known as the Bohemian Brethren, sometimes called the Unity.

Comenius was born into the Brethren, where his father had been an important figure. The Brethren were a small mystically oriented group that was systematically persecuted by both Catholics and Protestants for their views. Their views included the idea that there should be peace between Catholics and Protestants and peace among all sects of Protestants. Indeed, there

should be peace among all religions, claimed the Brethren. Keep in mind that this was a time of tremendous religious conflict and intersectarian violence. While calls for peace were not unheard of, the sophistication of the Brethren's theological and political thinking, thanks in large part to Comenius' religious writings, was unique in the period.

The only thing comparable during the time would be the writings associated with the "Rosicrucian furor" that swept Europe in the lead-up to the Thirty Years' War. It is likely that the Brethren may have been an inspiration to the writers behind a series of provocative philosophical manifestos that sparked the furor.⁸ The most famous was Johannes Valentinus Andreae's *The Chemical Wedding of Christian Rosicrucian*, which told the story of a secret brotherhood of mystic healers, working to unite humanity through wisdom, science, and faith. It is known that Andreae and Comenius were in touch, and that Andreae had a major impact on Comenius, after living in the same area of Bohemia and interacting with the same group of intellectuals around the "Winter King" of Bohemia.

In a much-analyzed historical moment, this was the place (Bohemia), time (1619-1620), and intrigue (Rosicrucian rumors) that set off the Thirty Years' War. After these fateful events, Comenius, the Brethren, and a large number of Protestant refugees left their homelands in Moravia and Bohemia never to return. For the rest of his life Comenius would travel Europe without a home, under the sponsorship of various powerful families and politicians, always seeking to seize the historical moment to undertake radical reforms of education (very much like one of the itinerate world reforming Rosicrucians in Andreae's writings).

Of course, it was not just the writings of religious and philosophical radicals that fermented the tumult of the Thirty Years' War. The whole of Europe came to be at war with itself—the first "world war" to encompass the entirety of the then still young capitalist world system. The leaders of all nations were in confusion; there was a generalized educational crisis impacting all strata of the population. This was a time between world systems.

In his classic historical account of Comenius, Matthew Spinka paints a picture of a time when new technological and economic changes were outpacing the thinking of the leaders of the ancient regimes.⁹ New thinking was needed, especially thinking that could integrate the emerging scientific paradigm, as well as the immanent democracy and economic revolutions that were being given voice in the newly emerging public sphere of print media. A unifying vision is what the Rosicrucian writings offered. Comenius would echo them with his totalizing vision of educational reform and integrative world philosophy.

The aforementioned picture books and textbooks were felt by Comenius to be only a practical necessity. At times the demand for them became a distrac-

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tion from what he took to be his life's work: the elaboration of *pansophy*, a system of universal wisdom that could serve as an integrative world philosophy.

(126)

Geometry. CIII. Geometria.



A Geometrician
measurcth the height of
a Tower, 1....2.
or the distance
of places, 3....4.
either with a Quadrant, 5.
or a Jacob's-staff, 6.

He maketh out the
Figures of things,
with Lines, 7.
Angles, 8.
and Circles, 9.
by a Rule, 10.
a Square, 11.
and a pair of Compasses, 12.

Out of these arise
an Oval, 13.
a Triangle, 14.
a Quadrangle, 15.
and other figures.

Geometra
metitur Altitudinem
Turris, 1....2.
aut distantiam
Locorum, 3....4.
sive Quadrante, 5.
sive Radio, 6.

Designat
Figuras rerum
Lineis, 7.
Angulis, 8.
& Circulis, 9.
ad Regulam, 10.
Normam. 11.
& Circinum, 12.

Ex his oriuntur
Cylindrus, 13.
Trigonus 14.
Tetragonus, 15.
& aliæ figuræ.

Figure 3: The chapter on "Geometry," from an English edition of the *Orbis Pictus*.

The notion of pansophy itself can be found in several Rosicrucian texts, where it represents a sophisticated Neoplatonic synthesis of alchemy, Christology, Utopianism, and Baconian natural science. But Comenius was cutting past the fictional scenarios of the Rosicrucian ideologies and suggesting

something that was intended to be taken literally. Comenius was not offering a Utopian allegory, but concrete utopian theorizing setting a trajectory for actual reforms. He was trying to turn the famous Rosicrucian “invisible college” into something *visible*. As discussed further below, this places one of the most important educational thinkers in history directly in the lineage of streams of esoteric Christianity, Renaissance alchemy, and Kabbalistic divination.¹⁰

Comenius’ pansophic work presents a theory of everything woven together right as modernity began to fracture the value spheres and disciplines. It is an attempt at an integration of all knowledge into a single system, including the new empirical sciences, as well as religious aspects of human culture. Importantly, pansophy provides for the design of educational configurations capable of catalyzing a universal reform of all human institutions.

The pinnacle of this vision is the Pansophic College or Temple of Light. Also called the School of Schools, this organization was to act like a planetary hub or clearinghouse for knowledge, running quality control, printing the latest findings (and those that had been disproven or changed), while also working on the integration of religions with science and politics. All knowledge was to be made available through a universal network of printers and schools that “*taught all things to all people in all ways*,” which was one of the catch-phrases that Comenius coined.

This vision was particularly inspiring to a group in England, which included Samuel Hartlieb, who would go on to be one of the key players in the founding of The Royal Society. Hartlieb asked Comenius to come to England to present his plans before the crown and the parliament. There was sufficient support, but the timing of the meeting coincided with the outbreak of the English Civil War, so Comenius left for Sweden, where he had been asked to reform their schools.

Hartlieb’s group continued to work on the basic ideas in Comenius’ vision. After the civil war subdued, and with much intrigue and planning, this group created The Royal Society of London for Improving Natural Knowledge. The creation of this society in 1660 generally marks the beginning of “the Enlightenment.” The vision for this society is to be found in Comenius’ pansophic blueprints, which were a concretization of the Utopian schemes found in works such as Francis Bacon’s *New Atlantis*, as well as in the works associated with the Rosicrucian movement.

One more example must feature in this brief account of Comenius’ work. René Descartes had meetings with Comenius, and allegedly it was Comenius who encouraged him to publish his famous meditations. Descartes himself was so impressed by Comenius that he wrote a large work on Comenius’ vision for pansophy, which remains unpublished.¹¹ This is an almost unbelievable story, given the canonical status of Descartes as one of the founders of modern thought and the relative obscurity of Comenius by contemporary

lights. Nevertheless, the story is true, and it is a mostly forgotten fact that during the dawn of the modern era there were other visions for the future of knowledge and society than those that would become known as Cartesian dualism and scientific reductionism.

(77)

The Taylor.LXII.Sartor.



The Taylor, 1. cutteth Cloth, 2. with Shears, 3. and seweth it together with a Needle and double thread, 4.

Then he presseth the Seams with a Pressing-iron, 5. And thus he maketh Coats, 6. with Plaits, 7. in which the Border, 8. is below with Laces, 9.

Cloaks, 10. with a Cape, 11. and Sleeve Coats, 12.

Doublets, 13. with Buttons, 14. and Cuffs, 15.

Breeches, 16. sometimes with Ribbons, 17.

Stockins, 18.

Gloves, 19.

Sartor, 1. discindit Pannum, 2. Forfice, 3. consuitque Acu & Filo duplicato, 4.

Postea complanat Suturas Ferramento, 5.

Sicque conficit

Tunicas, 6.

Plicatas, 7.

in quibus infra est Fimbria, 8. cum Institis, 9.

Pallia, 10.

cum Patagio, 11.

& Togas Manicatas, 12.

Thoraces, 13.

cum Globulis, 14.

& Manicis, 15.

Caligas, 16. ali-

quando cum Lemniscis, 17.

Tibialia, 18.

Chirothecas, 19.

Figure 4: The chapter on "The Taylor," from an English edition of the *Orbis Pictus*.

Despite his fame and influence during his life the legacy of Comenius is complicated. The Thirty Years' War resulted in an understandable reaction against religion and religious dogma, a sentiment that was merged with the new Enlightenment paradigm of natural science. This reaction towards religion muted the legacy of Comenius. Indeed, Comenius had been a vocal believer in prophets and soothsayers who spoke of a new world emerging and

an old one passing away.¹² His theology was superordinate to his empiricism, even as both had a place in his grand vision. Thus, as modernity unfolded, his textbooks flourished while his vision of a *pansophic planetary paideia* was largely forgotten. Nevertheless, Comenius' vision was a driver of world historical change, serving as the "underground" and original inspiration for the first modern educational systems and scientific organizations.

But what does it mean to say that education can be the driver of world historical change?

There are periods of time that mark transitions between world-systems; times when the deep structures and codes of civilization itself are in flux. Comenius lived in such a time.

Education as a Driver of Historical Change

The phrase I have used in my book to describe our current historical epoch—"a time between worlds"—is not a metaphor. It is not "as if" we are in a time between worlds; we are quite literally in such a time. It is possible to see within history periods of time that mark transitions between world-systems; times when the deep structures and codes of civilization itself are in flux. Comenius lived in such a time, and so do we. Understanding this requires looking into the work of diverse and relatively new fields such as world systems analysis,¹³ cultural evolution,¹⁴ and cliodynamics,¹⁵ which can all be classed under the heading of "metahistory." Metahistory is about the search for overarching patterns that characterize large swaths of time. This can only be undertaken through an integration of multiple academic disciplines.¹⁶

Notably, this search for large patterns in the unfolding of human societies used just to be called "history." But the grand narratives of modernity fell hard as their ideological underpinnings began to fade. Postmodern social sciences dissected and fragmented "his-story" into various camps. Then postmodern approaches encountered their own limits. Arguing for the *absence* of a metanarrative is still a kind of metanarrative, and a particularly incoherent and confusing one. Social systems and cultures do not long survive when there is no "shared story" about the big picture of history.

So, today, a new generation of scholars are using unprecedented analytical tools to tell a different kind of "metahistory." These approaches engage with the complexity sciences, epistemology, and syntheses of quantitative and qualitative data across various time scales and geographical scopes. The result are compelling metahistorical insights into trends, dynamics, and patterns unfolding over centuries involving billions of people.

Thus far education itself has not been a focus of metahistorical analysis, although the role of education has not been neglected entirely either.¹⁷ I believe that educational systems and practices can be reformed in light of patterns revealed through metahistorical analysis. These insights into how education makes history must be held alongside and interwoven with insights from psychology, anthropology, and all the other various fields comprising the interdisciplinary field of education.

There have been historical moments in which education and educational thinking have fundamentally implicated world historical transformations. Education becomes a radically transformative enterprise during times spent “between worlds,” when cultural and social patterns are fundamentally changing.

On the Nature of a Time Between Worlds

Metahistorians such as Turchin and Wallerstein have obtained results that display remarkably similar trends in the data, where there is a recurring cycle of demographic, economic, and political dynamics. For example, a period of relative stability in prices, labor practices, and inter-elite competition appears predictably to lead to eventual increasing economic inequality, price fluctuations (i.e., inflation), and increases in inter-elite competition (i.e., war). Once the competition ends there follows another stable period for some time, until the situation begins to unravel along the same lines as before, only this time with greater technological and geographical reach.

Working with these kinds of “macro-historical” trends allows for an approach to historical periodization. An important instance of this is seen in Braudel’s “secular cycles,” which represent long-term trends in economic systems.¹⁸ Important for our story here is Braudel’s famous notion of the “long sixteenth century” (approx. 1450-1640), which was picked up by Wallerstein and turned into a general theory of epochal transitions between world-system hegemony. Evidence is adding up that makes it possible to begin to “carve history at the joints” and see into its deeper structures and dynamics: our world is waking up to its own metahistory.

One of the clearest distillations of this tradition can be found in Giovanni Arrighi’s *The Long Twentieth Century*. As the title suggests, he applies the theory of secular cycles up to the present day and predicts the coming end of a major cycle. This entails the immanent birth of a new kind of global economic order. The figure below is adapted from Arrighi’s book, but I have placed insights from the field of cultural evolution alongside his telling of economic history. The point here is not the exact dates, nor the exact labels and naming conventions, but rather the broad trends, and more importantly, the convergences between trends.

Notice that during this incredibly eventful stretch of history there are two places where metahistorical trends in cultural evolution and economic cycles coincide: the turnings of the seventeenth and twenty-first centuries. In these epochs we find the ramifications of new technologies, wholesale new beginnings of economic hegemony, and sweeping changes in the nature of culture and consciousness.¹⁹ During each of these transformational epochs there was an inordinate amount of thinking and innovation in the realms of basic organizational design and cultural patterns and symbols. Conceptions of knowledge and education, religion, and government, would all be in the process of being rethought.

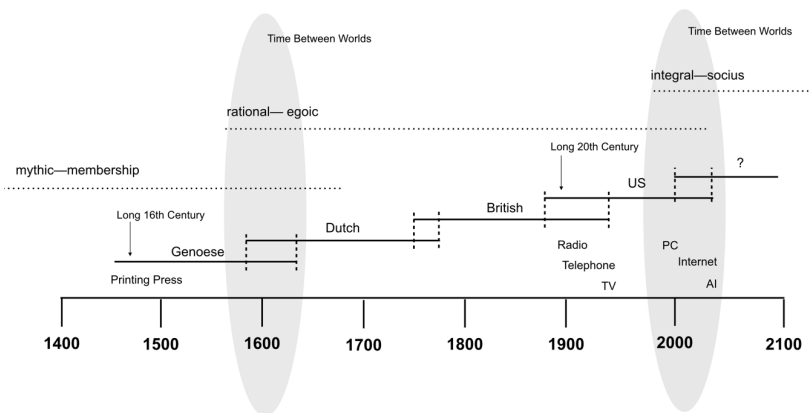


Figure 5: Timeline displaying secular cycles of world hegemonic organization during seven centuries of the capitalist world system (based on Arrighi; Wallerstein), as nested within dynamics of media and cultural evolution (based on McLuhan; Gebser). Two epochs represent a convergence of metahistorical trends marking major transformations and can thus be characterized as “time between worlds.”

Turchin’s metahistories consider the many variables involved with the kinds of secular cycles outlined above including (but not limited to) inter-elite competition, legal codes and governments, ideological instability, and population dynamics. In periods when one cycle ends, and another begins, trends across all these variables converge. Turchin’s books give a clear enough picture of the numbers and the converging lines and curves (all of which I think are essential to understand). What I want to do here is characterize these dynamics from the inside, in terms of education, which involves bringing in the dimensions of culture and consciousness.²⁰

As an educator reading Wallerstein or Turchin it is hard not to see the pivotal epochs in world system transformation as times involving profound educational disruption and innovation. These were times when all four of the major crisis vectors—sense-making, meaning making, legitimacy, and capability—are beset by disruptions of intergenerational transmission.²¹ A time between worlds is turbulent to say the least. It involves not just *more of the same kind of society*, which is what happened during the four centuries between 1600 and 2000, but instead, *the emergence of a new kind of society*.

This is all just to say that because Comenius lived between 1592-1670 his life was, according to metahistorical trends, directly straddling the end of one world system and the beginning of another. More specifically, he was living right at the end of the long 16th century, which is the epoch in which the capitalist world system first began to take shape. It is the time during which

modernity began, properly speaking. Before 1450 there was nothing really like large scale capitalism; after 1640 capitalist modes of organization were running Europe, and rapidly expanding around the world. “Modernization” had arrived, for better and for worse.

Comenius saw that one world system was collapsing and a new one was emerging. He hoped to shape that future world into an education-centric society.

Comenius witnessed first-hand the collapse of feudal society and the beginnings of a new one. He was from Bohemia, the starting place of the Thirty Years’ War, and died in Amsterdam, which would be the new seat of capitalist hegemony after the wars ended. Comenius saw that one world system was collapsing and a new one was emerging. He hoped to seize the moment and shape that future world into an education-centric society of peace, love, and universal wisdom for all. Of course, that is not what happened.

The point I am making is that during times between worlds there emerge certain ideas and thinkers that are, properly speaking, without a world. Their work is about creating a new world, by necessity. Let us call their workspace *the liminal*. Not within the old world or the world to come, *the liminal* is exactly that which is the bridge and fulcrum between worlds. The focus of work in *the liminal* is on foundations, metaphysics, religion, and the deeper codes and sources of culture—education in its broadest sense. Individuals working here are often “beyond [conventional notion of] good and evil” in the Nietzschean sense, having stepped out past the edges of the old world, while doing the work of creating a new one.

This is dangerous work and the stakes are high, as the choices and actions made in the liminal set the trajectory and shape of the new emerging world. The old world sees the liminal with fear and disbelief, persecuting those who work there. Jesus was neither part of the Pagan or Jewish world, nor was he part of the Christian world that was emerging. The Buddha was neither part of the Hindu ancienry, nor was he a Buddhist. Work in the liminal is work in a time between worlds. From the perspective of the world to come—future historians—the liminal of recent memory is not always good, the choices made are questionable, and actors suspect. The so-called founders of modernity (people like Descartes, Kant, and then Darwin, Jefferson, Ford, etc.) are now the focus of critique by those inhabiting the world they created.

Comenius ushered in an era of “modern education.” Yet he was largely forgotten once the secular, capitalist, and nationalistic projects of modernity were fully underway. Although he was world famous, his systemic educational reform efforts (in Sweden and elsewhere) largely failed in his own day due to the persistence and inertia of medieval systems of education. The metaphysical and philosophical foundations of his system—*pansophy*—were not acceptable to the church because they made a place for science and for a diversity of faiths. Comenius’ system was also not acceptable to the future creators and maintainers of scientific knowledge, many of whom took up residence in institutions he inspired (e.g., The Royal Society). Although Descartes and Leibniz admired the pansophic system, they themselves would find more of a place in the modern world without it. Leibniz himself wrote in

homage: “May the time come, Comenius, when multitudes of men of good will shall pay homage to thee, thy deeds, and thine aspirations.”²² So far this has not come to pass.

It is useful to see the comparisons between the time that Comenius lived in and our own. Comenius’ life and work, as I understand it, provides certain clues into how and why education can make history. His vision is relevant, but so is the historical context that was provoking it and responding to it. The overwhelming social need to define and implement a new *paideia* is paramount in a time between worlds. Had the Comenian *pansophic planetary paideia* been more fully adopted as a cosmopolitan framework for modern schooling, instead of its piecemeal adoption by capitalist nation states, the history of the modern world would have been different. It is impossible to say, but the nearly four centuries since Comenius’ death could have been quite different had some of his plans come more fully to fruition.

Metaphysics, Science, Religion, and Education

As Piaget notes in the introduction to the UNESCO retrospective, Comenius was not only the first to conceive of a comprehensive science and theory of education, but he also made this the core of his entire philosophical system of pansophy. The art of teaching was placed at the core of a comprehensive philosophy and universal system of knowledge (and faiths). He wished to construct a “theory of everything,” but also to make it teachable and learnable to all people in all ways.

Comenius offered an unprecedented (and in many ways still unparalleled) use of philosophical theory as the foundation for a systemic approach to education. He worked out a metaphysical basis for education, as different from a religious basis, and as different from a governmental basis. Education should be grounded in the truths of nature, he argued, not in dogma or power. Moreover, any comprehensive system of science and philosophy must bring into the world those ways of teaching and learning that constitute its very essence. Philosophy and science themselves must, as part of their true essence, result in a planetary educational system, affecting all people of all ages, putting all humans in constant touch with the full state of knowledge.

This is an idea that is foreign to our own time, let alone the 17th century: education should be put in primary place as the core of human society. Pansophy entails an education-centric society. As Piaget points out: Comenius comprehended society as a whole *sub specie educationis*:

The central idea [of Comenius’ thought] is probably that of nature as a creator of form, which, being reflected in the human mind, thanks to a parallelism between man and nature, makes the ordering of the educative process automatic. That natural order is the true principle of teaching, but the sequence is dynamic, and the educator can carry out his task only if he remains a tool in

nature's hands. Education is thus an integral part of the formative process to which all beings are subject and is only one aspect of that vast development... [This view] merges into one spontaneous development [both of] nature and the educative process. Education is therefore not limited to the action of school and family but is part and parcel of general social life. Human society is an educative society... Comenius' genius lay in grasping that education is one aspect of nature's formative machinery and so integrating the educative process into a [metaphysical] system in which the process is indeed the essential axis.²³

Comenius offers a system of ideas that is a clear precursor of developmental psychology. It was biomimicry meets Integral Theory circa 1635.

Piaget suggests Comenius' metaphysical system be understood as halfway between Aristotle and Francis Bacon. This rings true but neglects almost entirely the theological and mystical writings and arguments that bring Comenius' thought closer to the Rosicrucian theosophists and Renaissance alchemists, who were Neo-Platonists. Piaget is trying to protect readers from the intense religiosity of Comenius' vision and writings, which is understandable given the common-place modern reaction against religious thought.²⁴ But this is not in fitting with Comenius' own commitment to a framework that integrates science, religion, and politics within a general theory of education—i.e., Piaget is pulling the punch that Comenius would like to land. Interestingly, Rudolf Steiner lands this punch, but that is ahead of the story.

What Piaget does embrace are the immensely important innovations in Comenius' thinking that would make him a precursor to evolutionary theory, developmental psychology, functionalist sociology of education, and international education. The first metaphysical innovation Comenius offers along these lines is replacing the static Neo-Platonic and Aristotelian hierarchies of being with a focus on emergence, advance, and isomorphism between different strata of existence.

Take the great vertical chain of being as articulated by Plotinus, lay it down horizontally, and set it unfolding over time as a developmental process. Comenius was one of the first to do this and to run with the implications; these implications involve understanding humans in a new way, where evolving and developing, and thereby adding to and completing "the work of God," is what nature (including human nature) does. Piaget sees this as a crucial moment in the history of ideas, and he is right. Comenius was seeking to understand human beings on analogy with natural processes as studied by science, while not abandoning the sacred dimensions of human experience. It was biomimicry meets Integral Theory circa 1635, and they combine in the planning of an international educational system.

Comenius offers a system of ideas that is a clear precursor of developmental psychology. This was related then to a theory of schooling based on a system of progressive instruction adjusted to the stage of development of the student. His method involved finding (apparent) laws of growth and change in nature through observation (à la Bacon) and then applying these as analo-

gies to understand human growth and development. This made Comenius a proponent of understanding students as active learners, the mind itself being something spontaneously growing and adapting to its environment.

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CXXV.

The Tormenting of Malefactors.



Supplicia Malefactorum.

<i>Malefactors</i> , 1.	<i>Malefici</i> , 1.
are brought	producuntur,
from the <i>Prison</i> , 3.	è <i>Carcere</i> , 3.
(where they are wont to be	(ubi torqueri solent)
tortured) by <i>Serjeants</i> , 2.	per <i>Lictores</i> , 2.
or dragg'd with a <i>Horse</i> , 15.	vel <i>Equo raptantur</i> , 15.
to place of <i>Execution</i> .	ad locum <i>Supplicii</i> .
<i>Thieves</i> , 4.	<i>Fures</i> , 4.
are hanged by the <i>Hang-</i>	suspenduntur a <i>Carnifice</i> , 6.
<i>man</i> , 6. on a <i>Gallows</i> , 5.	in <i>Patibulo</i> , 5.
<i>Whoremasters</i>	<i>Mæchi</i>
are beheaded, 7.	decollantur, 7.
<i>Murderers</i>	<i>Homicidæ</i> (<i>Sicarii</i>)
and <i>Robbers</i> are	ac <i>Latrones</i> (<i>Piratæ</i>)
either laid upon a <i>Wheel</i> , 8.	vel imponuntur <i>Rotæ</i>
having their <i>Legs broken</i> ,	<i>crucifragio plexi</i> , 8.
or fastened upon a <i>Stake</i> , 9.	vel <i>Palo infiguntur</i> , 9.
<i>Witches</i>	<i>Striges</i> (<i>Lamiæ</i>)

Figure 6: The chapter on "Tormenting the Malefactor," from an English edition of the *Orbis Pictus*.

Piaget would demonstrate 300 years later that the growth of capacity and insight in children is spontaneous, requiring active engagement, interests, and developmentally appropriate contexts. Comenius suggested leaving children half their time for independent (but loosely supervised) work, driven by their own interests. He also suggests having curricular materials available at vari-

ous levels of complexity and sophistication, so that every student would have some way into every subject, and then once in, there would be a clear path “upwards” towards increasing understanding.

The higher reaches of all disciplines converge within the pansophic vision of knowledge, faith, and society. And although Piaget studiously avoids this particular conclusion, for Comenius this means each path ascends toward Christ and God. Have no doubt about it: Comenius is a writer from the 1600s, a devout Christian, and the head Bishop of a radical and mystical sect. This can make reading Comenius disorienting for the contemporary reader, even if it is tremendously rewarding and fascinating.

It is possible to work with hermeneutic integrity and not dismiss his arguments in cavalier modern fashion. However, this requires being willing to engage with questions in the domain of religion, metaphysics, and epistemology. Historical contexts and the history of ideas are also needed to give Comenius his due. Piaget avoids these issues at the heart of Comenius’ work, which concern the salvation of humanity through the discovery and spread of universal truths, which might change the very condition of humanity, and lift life above the misery and hatred of a fallen world. Some of these truths are scientific and in no way a matter of religion, as Comenius makes clear. However, other truths concern the nature of the human heart and mind and are thus not a matter for science.

Comenius was trying to foster peace between warring religions *and* between science and religion. A comprehensive orchestration of metaphysics and philosophy—pansophy—was the key to doing it. What would become known as “modernity” would try to stop the wars between religions in a different way, by using science to disarm and rule over the religions, treating them as archaic superstitions. This strategy has failed, as Comenius would have predicted given his awareness of the primacy of religious questions near the heart of science itself (a point to which we will return).

The deeper cut of Comenius’ metaphysics gets into the true meaning of the German word *Bildung*, which is in literal translation close to: “making one’s self into the image of God.” It comes from the German *Bild*, which means “image” and was coined as a way of expressing a sacred sentiment: that the purpose of education and self-development is to make oneself into the image of Christ or God. While he did not use this word (he wrote mostly in Latin), nevertheless Comenius is at the root when thinking about *Bildung*.

The planetary paideia he proposed involved more than spreading scientific knowledge and modern social systems around the world. Comenius sought to lead humanity towards truth, through peaceful efforts of wholesale co-operation in the interest of universal education. His was not a project of nation building or economic development (although many of his ideas were repurposed to this end as “modern” education), his was a project about the future of humanity and the potential for a new kind of world. The vision

was grounded in a new metaphysical and philosophical system, which was neither religion nor science, but rather an embodied and institutionalized system of universal discovery and education.

Centuries before Google we find here the idea of a universal clearinghouse for all scientific and non-scientific knowledge, culture, and practices of faiths. The idea is then to use this to “teach all things to all people in all ways.” The result would be to lift all humanity beyond ignorance and into a Christlike and Divine way of being.

Reading the above there should be concerns from the ranks of postmodernists about the modern, universalistic, and Christian scheme of global educational hegemony that Comenius has hatched here. Indeed, with ungenerous hermeneutics—where one ignores historical context and plays to the literal letter rather than the spirit of the text—Comenius could be mischaracterized as just another European man trying to spread Christ and Capital around the world. Some facts should give pause to those reacting with this summary dismissal.

For one, Comenius is not modern, nor is he pre-modern: he is literally between worlds (as I have been trying to point out).²⁵ This means that if you go looking for science (as we know it now) in Comenius’ writings you will not find it; a point that is made again and again by skeptical commentators on Comenius. He is inspired by Bacon and the turn to empirical methods, but is still quoting the Bible as proof, while drawing anecdotal evidence and metaphorical insight from nature.

You will also not find simplistic pre-modern religion in his work either, which leads to the second point that should dissuade his summary dismissal. Comenius was the head of a radical religious group persecuted by *both sides* of the major conflict of the day. The Unity were persecuted because they were an orthodox, ethically progressive, peace-loving, reconciliatory, and theologically complex order.

The Bohemian Brethren, as already mentioned, have been reasonably suspected of being the inspiration for the Rosicrucian order itself.²⁶ Comenius’ Christianity was not the same Christianity responsible for the raging of the Thirty Years’ War. Indeed, this fact is the main thrust of his voluminous and influential religious writing, which I do not have space to discuss here. The Unity was a millenarian group and believed that a new world was immanent, and that the end of the world (as we know it) is at hand. They were correct in some ways, as the world system of their founder, the martyr Jan Hus, would be gone after a generation of war, and the modern capitalist world system would begin its first iteration, reaching beyond the ancient regimes.

Comenius’ religious goals bring us closer to the Pansophic College of Light, and to the liminal space in which, for a moment, the world stands on the brink of concrete utopia.

Twenty-First-Century Temples of Learning: The Pansophic Temple

Here therefore, in [John] Amos Comenius in the sixteenth and seventeenth centuries, at the beginning of our era, we find a person who knew that change was afoot, that a new and different age was dawning and that what formerly existed must now be recreated in the form of outer reason rather than be preserved and perpetuated as tradition. Tradition was founded on the last revelations to be received, on temple building, irrespective of whether this concerned the Greek temple or that of Solomon. The nature of temple building, symbolic, imaginative pictures concerned with temple building, were the foundation of everything else.

Rudolf Steiner (1916)²⁷

I have elsewhere written about what it might take to redesign education during a time between worlds and suggested a vision in which a new kind of institution emerges, which I call the “21st-century temple of learning.” I meant for the phrase to elicit something in the imagination that is more beautiful and sacred than a school, yet which like a school is the heart of where education takes place within society. My proposed temple of learning is part of a larger concrete utopian program for transforming our planetary civilization into an education-centric society.

I was paying homage to Comenius without knowing it. As already mentioned, he had himself proposed the creation of a Pansophic Temple or College of Light as the most basic institution of a future social world in which economics, politics, and religion would be brought together in service of a universal system of education. Although I had never heard of Comenius when I wrote my book, there was a common root for our ideas about a temple of learning.

The so-called *temple mysteries* are near the core of the Western esoteric tradition of mystical practice and theurgy. All physical temples are representations of an imaginal space in which God and humanity are able to meet. In the absence of a physical temple in space a sacred container can be created in time, in the imaginal realms, through bonds of love and collaboration in the service of God.²⁸ It is by looking into these kinds of ideas that Comenius’ vision begins to break the mold set for it by modern interpreters, like Piaget.

The Steiner quote above is taken from a lecture on Occult Fraternities, delivered in Berlin at the height of the First World War. He lets the esoteric cat out of the bag and traces a line from Egypt and Greece through Jerusalem to Golgotha, at all points noting the existence of mystery schools, each of which had its own project of “temple building.”

The most visible of such traditions in modern times, as Steiner points out, is Freemasonry, which takes the notion of temple building directly to heart, implied even in the name of the order itself. Comenius makes an appearance

in this lecture because of his extensive involvement with various occult fraternities throughout Europe, most notable the Rosicrucian Brotherhood.²⁹ Steiner was intrigued by the fact that Fredrick Eckstein (a childhood friend of Steiner and a noted Theosophist, polymath, co-worker with Freud, and spiritual traveler) published a book on Comenius in 1915.³⁰ Needless to say that Eckstein's compilation is different than Piaget's, focusing on the esoteric aspects of pansophy and Comenius' work in the maintenance and creation of occult fraternities.

My proposed temple of learning is part of a larger concrete utopian program for transforming our planetary civilization into an education-centric society.

Following Eckstein's selections and directions, Steiner places Comenius in the context of a multi-century arc of world-historical evolution. Steiner has his version of metahistory. Comenius is a creator in the liminal, and according to Steiner, a visionary who allows for the passing away of the old world and a birth of the new. Steiner reminds us that at the center of every modern utopian vision is a temple dedicated to the creation and dissemination of knowledge—a temple of learning—and that this temple is an explicit reference made by the likes of Moore and Bacon to the ancient mysteries of the temple, especially the temple of Solomon.

Comenius is trying to work out what it would mean to take up the project of creating a temple of learning *in the actual world*, which he calls the Pansophic Temple. Steiner sees that Comenius' work was not that of a secular reformer but rather that of a mystical activist, unfolding a kind of theurgic protest of world (re)making. His project of educational reform was not about the nation state or the economy, nor was it about ethnocentric or ideological indoctrination. Comenius was fulfilling a covenant by attempting to prepare a space in which humanity might live with the Truth and know the Good and Beautiful.

Of course, not just any temple of learning should be built. Steiner quotes Comenius as selected by Eckstein: "The temple of Solomon was built on Mount Moriah at God's command; Moriah means 'the countenance of God.'" After which Steiner continues: "So as we have seen, Vitruvius required a builder to possess in his mind all wisdom about the human being—"The foundation of the temple of wisdom will thus be a countenance of God"—and in the same way the countenance of God, which means the revelation of God, should be revealed through a new form of knowledge [Pansophy]."³¹

Steiner sees what Piaget did not, which is that Comenius' theory was also a kind of sacred architectural plan. Pansophy was not only a theory of human development, education, and knowledge. It was a blueprint for a new kind of temple for the human mind and soul—built so as to literally contain all humanity within an endeavor of ongoing revelation. The Pansophic Temple was not a school or university, it would not have a building or campus. It was the core catalyst of a universal system of education, a clearinghouse for all knowledge, established as part of a sacred covenant between all educators distributed everywhere around the globe. The Temple would be the epistemic center of an education-centric *cosmopolis*—the spiritual center of a planetary civilization.

Towards the very end of *The Great Didactic* Comenius lays out a vision of this system, with various kinds of schools for various ages and dispositions, starting with early childhood and ending with adulthood. Each school has a curriculum framed by pansophy and related to the school before and after it. The idea of a sequence of schools and grades is common sense for us, but this was a *major* innovation in Comenius' day. The engine or core of the whole system is different than the parts, and so he calls it "The School of Schools":

It is scarcely necessary to point out how useful a School of Schools ... would be, in whatever part of the world it were founded. Even if it be vain to hope for the actual [physical] foundation of such a college, the desired result might still be brought about, existing institutions being left as they are, if learned people would work together, and in this way seek to promote the glory of God. These people should make it the object of their associated labors to thoroughly establish the foundations of the sciences, to spread the light of wisdom through the human race with greater success than has hitherto been attained, and to benefit humanity by new and useful inventions; for unless we wish to remain stationary or to lose ground, we must take care that our successful beginnings lead to further advances. For this no single person and no single generation is sufficient, and it is therefore essential that the work be carried on by many, working together and employing the research of their predecessors as a starting point. This Universal College, therefore, will bear the same relation to other schools that the belly bears to the other members of the body; since it will be a kind of workshop, supplying blood, life, and strength to all.³²

I find it hard to emphasize enough the historical importance and uniqueness of what Comenius offers here. Understand that the universities had not yet been separated from the Church and monasteries, that the modern notions of progress, technology, and science were nowhere near the center of the common world view. The European world was being torn apart by religious war. The Enlightenment had not yet begun (is this passage its beginning?), and the printing press was only just then becoming truly ubiquitous.

Comenius was attempting to bridge between worlds, by conceiving of a universal system of scientific education undertaken as a sacred commitment, i.e., science education in the name of God. The sacredness of the vocation of the scientist is the great skeleton in the closet of the Enlightenment, haunting the various iterations of science and scientific practice that have followed from it.

The origins of science and the educational institutions in which it could thrive can be found in the religious and mystical speculations of workers in the liminal, like Comenius and Bacon in particular (Bacon's mysticism was profound, and bizarre by modern standards). But whereas Bacon placed his

temple of learning in a fictitious utopia and continued to support the divine right of kings, Comenius placed his temple of learning in the future of this world and joined in alliance with the powers leading Europe out of pre-modern social structures based on dynastic fiat.

The de-transcendentalization of the temple of learning is the main gift that Comenius gave to modernity, and to the future of the world. His vision is of an actually existing social body of distributed knowledge workers who organize, regulate, disseminate, and synthesize the world's knowledge. Citizen-teacher-scientists range across interrelated domains of science, politics, and religion, synthesizing and distributing new knowledge for the sake of leading humanity into a higher ethical and epistemic order of being.

It is easy to see what inspired thinkers like Descartes, Herder, Goethe and others, many of whom went on to create “modern universities” along these lines.³³ The scope and intelligibility of the pansophic vision is also presumably what enabled Comenius to operate around the continent within the midst of occult orders and invisible colleges of scholars, who were aligned behind the scenes towards a more general reform of the social order, starting with educational institutions (such as the Royal Society, as already mentioned).

Note how deep the connection is between Comenius and what is called the “*Bildung* tradition” in education. The very idea of Pansophy is that humanity's knowledge should be modeled after God's knowledge, as a kind of species-level *Bildung*. This is knowledge and education understood as a trajectory, an evolution of human knowing and being—beyond the Medieval pre-modern steady (static) unchanging “great chain of being.” This is not because Comenius dismisses revelation, even if many of his more strictly modern followers did. On the contrary, it is clear from his life that Comenius took revelation very seriously. But in the pansophic system the insights of religion are placed in relation to science, in order to create an integral picture of the total state of the world and humanity. It is upon this process of pansophic integral knowledge stewardship that the universal educational system is based. From this it draws its life blood.

Comenius' faith does not result in his suggesting a pre-modern religious education system. And his love of science (as he understood it) does not lead him towards modern secular “integrative sciences” programs. Comenius attempted to seize the moment of the liminal and bring the Temple Learning down from the imaginal realm and into space and time. I believe he was about 400 years too early.

Comenius attempted to seize the moment of the liminal and bring the Temple Learning down from the imaginal realm and into space and time.

Conclusions: What Would Comenius Do?

Comenius has a great deal to teach us still. I am not as concerned with the details of his system as I am with the nature of the project itself. I have argued that the scope, tenor, and innovation in his work was a product of its position within the liminal, that Comenius was between worlds, and he knew it.

This awareness of the historical moment was fodder of major consequence. It enabled his thinking to expand in ways both grounded in “reality” and open to the emergence of totally new and unprecedented realities.

The best evidence of Comenius’ “situational awareness” can be found in his most famous book, which I have so far only mentioned in passing, the *Orbis Pictus* (World in Pictures). The book attempts to give an overview of the human situation in pictures. These pictures are then used to teach language. The innovativeness, sensational popularity, and effectiveness of the book has already been discussed. My point here is that the scope and complexity of the world represented within the *Orbis Pictus* is surprising to most contemporary readers.

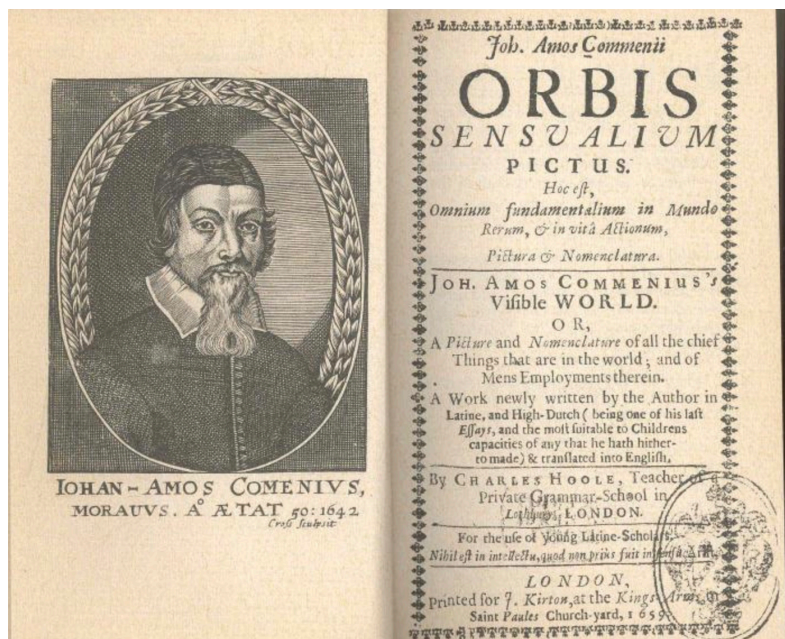


Figure 7: The frontispiece for a 1659 edition of the *Orbis Pictus*.

The book contains hundreds of detailed images that reveal the dynamics of urban life in medieval Europe. Within this range of activities, one sees the shock of change taking place in the time Comenius published. New machines for commodity production requiring complex divisions of labor are set alongside witch trials and scenes of public torture. Rudimentary scientific ideas are placed alongside overtly Christian religious symbolism, as well as images dealing with ancient “pagan” philosophy. Domesticity is shown in entries about the intimate details of houses and then juxtaposed to vast distances intimated by entries dealing with ships, war, and trade. One could easily argue that the book remained relevant for 300 years exactly because

it saw both worlds, the feudal agrarian order passing away, and the capitalist industrial order coming into being.

What would it take for a book (or a website) created today to be relevant in 300 years? What about one that teaches children and young adults the key ideas and languages involved with their world? This gives a sense of what liminal epoch-transitioning work must accomplish. World-bridging and world-creating work must find a way to make meaning of both the exiting order and the newly emerging order in its potentialities. Work in the liminal is different from work done within the epistemic safety of a given world. Navigating between worlds requires seeing both, while being at home in neither.

Work in the liminal is different from work done within the epistemic safety of a given world. Navigating between worlds requires seeing both, while being at home in neither.

If one were to create *Orbis Pictus 2022*, what would it need to contain? The task is to compile images and languages relevant for all people, spanning across two world systems—the world disappearing, and the world to come. It would have luxury high rises next to slums, juxtaposed to ecovillages and communes with off-the-grid technologies and socio-political experimentation. It would have entries on loans, debt, and the creation of currency by national banks, and then entries on bitcoin miners and crypto venture capital. There would be an entry on schools with images of massive public buildings followed by entries on the Internet with an atomic family huddled in a room, each focused on their own screens. There would be entries on “nature” and entries on geoengineers and biodomes. Large factories would be placed next to gig-economy networks and aristocratic post-work social media celebrities.

Now expand and consider the deeper issue: how would one create the Pansophic College and related universal educational systems today? What would Comenius do? Would he create a large multi-national education company? Probably not. That would be taking sides with the system that is passing away. The spirit of Comenius would have us go deep into digital educational technology innovations. Radical new approaches are needed, as different from what currently passes for educational technology as *Orbis Pictus* was from the Bible.

When you search Google for the words “Pansophy” and “Pansophic” one of the first results is a new for-profit multinational educational company. Pansophic Learning, Inc. was created by the former creator of K12, Inc., which provides educational materials and technologies for homeschooling, and is now one of the largest education companies in the world, grossing almost one billion in revenue. The main goal of K12, Inc. is to provide the tools that parents need to help their homeschooled children meet the standards of their local public school’s curriculum. Pansophic Learning, Inc. plans to do this and more on a global scale, and stands poised to shape the future of education on a now digital planet.

Will the approaches and products offered today by these late-capitalist educational juggernauts still be relevant in 5 years, let alone 300? While the business model may be visionary, a business model cannot solve the founda-

tional problems of knowledge and value in our times. As Comenius shows us, *the planetary paideia requires pansophy*, a new way of knowing, along with a new system of values. Only from that follows the technical and bureaucratic innovations that make it possible. An educational system of planetary scope that was not guided by a pansophic vision could be a disaster, a point on which Comenius is clear.

I realize this seems like a lot to ask. The goals of most educational technology companies do not include addressing and resolving foundational issues in epistemology, ethics, and the debates between science and religion. But what this means is that their “solutions” to the educational crisis are only about access and delivery of content—leaving untouched the question of what *actual* innovation would look like in the realm of curricular content. The main priority appears to be delivering old wine in new (digital) casks.³⁴

Comenius’ vision invites us to look at what is required during this crucial juncture in history. New communication technologies make a new world possible. But we must not focus on the technology alone, spreading it around the world for its own sake (and to make money). There is spirit of inquiry and imagination needed concerning ways for embedding human wisdom within new means of communication. Something is possible that was not possible before, but what emerges is not guaranteed to be humane.

Comenius speaks to us across the centuries about the dangers of *anti-education*, of coercion and dogma—having witnessed inquisitions and witch trials.³⁵ Anti-education occurs in the absence of wisdom, when coercion becomes the cause of identity formation and belief structure. Comenius also witnessed the first large urban printing press enabling propaganda campaigns, waged with leaflets and flyers.

So, as we have seen, Comenius commandeered printing presses of his own with the help of princes and kings. Eventually, from Amsterdam, he flooded continents with his educational materials and visions. The Royal Society (i.e., “first institution of the Enlightenment”), modern public schools (and some believe modern freemasonry) all emerged from Comenius’ influence. This influence was powerful because the time was such that new technologies of knowledge reconfigured educational possibilities and made new forms of social order possible. When between worlds, a vision of new education, a vision of a new *paideia*, becomes everything.

Failure to build the new *paideia* results in widespread perpetuation of anti-education, often making use of new technologies of information, knowledge, and dissemination. Comenius understood anti-education as a kind of sacrilege, an affront to the unique expression of God that is in every person. Furthermore, according to Comenius, education is required to become a person, fully human as intended, to realize the image of God (*Bildung*). Anti-education, on the other hand, involves a process of “un-personing”—literally a dehumanization. But more specifically, it is not making the human

into an animal, rather, it is making something neither human nor animal, a kind of devil. Seeing the insanity of propaganda-driven tortures during the 30-year war could lead one to Comenius' position.

Here we find in Comenius a distinctly modern *urgency* to create an education-centric society at world-scale, as a means to literally save humanity from the potentials of its own technologies, sciences, and governments. As we saw, this was a very compelling vision to his contemporaries like Leibniz, Descartes, and Hartlieb, who praised and wrote about him at length. Yet here we are, still waiting for the *educational eschaton*.

Modernity did not build mystery schools to keep pace with its technologies. It builds temples to Science, Government, and War, but neglects to build adequately universal Temples of Learning, for all people. The public schools built by nation states, while inspired ultimately by Comenius, betrayed his sacred cosmopolitan vision, by becoming secular and nationalistic, dividing humanity rather than uniting it.

Digital technologies give us a new opportunity to expand the horizons of our educational visions, for better and for worse. If the wrong approaches to educational technology innovation are adopted now humans could face a new dark age. But if a vision of Comenius' scope could be brought in as a guiding framework for large scale distributed innovation, then we could have an educational renaissance on our hands.³⁶ Choices made in educational technology during the next decade will decide the fate of billions of future children and change the shape of civilization.

The current trajectory of digital technology innovations appears anti-educational, especially social media.³⁷ But this is primarily a result of perverse incentive structures that guide the choices made by technologists and consumers. The market drives innovation toward attention capture and fragmentation, driven by dopamine hits yielded from discontinuous and usually manipulative information. But this is not the only way to imagine digital technologies as a means of socialization, enculturation, and intergenerational transmission—all of which social media as currently designed intends to capture (and already does to some extent).

Despite all this there are ways forward for truly educational technologies. In fact, the landscape is wide open, given the clustering of innovations around a limited set of incentive structures and business models. Whole important areas of possible innovation have simply not been incentivized or valued. There are easily imaginable social media technologies that are obviously more conducive to learning and long-term educational benefit than current technologies. For example, repurposing the psychometric and surveillance software currently used for microtargeting to create tools that would allow individuals to see and understand their own personal data, to reconceive themselves as learners. Psychology and data science can be wedded to digital

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technology innovation to promote learning, rather than to serve as a means of coercive anti-education.

Educative and humane digital technologies can be created if the incentives and ideas driving technologists can be aligned with humanitarian ends. “The same technologies that brainwash us now could provide for a kind of education more powerful than any modern school system. The tools of algorithmic curation used to capture our attention to deliver advertisements could be used to promote individualized learning and to protect our attention from being degraded. This is entirely possible. Schools, communities, governments, and markets can be reimagined based on the use of social media, but this requires rethinking both social media’s purpose and beneficiaries.”³⁸ A way must be found to either redirect or to make obsolete through better innovation the largest companies ever created (Alphabet and Facebook dwarf the Dutch East India Company). And we must find that way fast.

Make no mistake, the task before us is more daunting than that faced by Comenius. We are not dealing with printing presses and gun powder, but circuit boards and hydrogen bombs. Comenius had plagues and the Thirty Years’ War raging around him; the world system was indeed coming apart. But it was a civilizational collapse limited in space to Europe and without technologies capable of ending all life on the planet Earth as we know it. The stakes are higher, and the educational crises are deeper.

Existential risks of self-induced extinction shadow the current liminal epoch and its educational crises. Our time between worlds has intensity and ethical weight without historical precedent. But in the shadow of truly planetary risk is also the first true possibility for an emergent *planetary paideia*. It will be increasingly difficult for social systems to sustain the level of planetary-scale problem solving required in the 21st century. Education must be placed at the center of a global collaborative response to existential risk. In doing this it is possible to address the root causes of the meta-crisis and to expect a cascading impact on all other more specific crises.

Education can be made the fulcrum of civilizational transition. The unfolding of human potential is a frontier into which we have only first ventured. As Comenius knew, the human is an unfinished project, with cosmic potentials, thus evolved as an image of God. If the center of these efforts that we call civilization were to become education itself, then human development would constitute our shared aim as a species. This would create a state of almost ideal social autopoiesis, radically opening the gates of learning, calling humanity out into its own potentials in perpetuity. This was for Comenius our fate and density as a species: to create an education-centric planetary society, for all people, for the sake of world peace.³⁹

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Endnotes

1 Pulled from the famous passage of Walter Benjamin: “A Klee painting named *Angelus Novus* shows an angel looking as though he is about to move away from something he is fixedly contemplating. His eyes are staring, his mouth is open, his wings are spread. This is how one pictures the angel of history. His face is turned toward the past. Where we perceive a chain of events, he sees one single catastrophe which keeps piling wreckage upon wreckage and hurls it in front of his feet. The angel would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. The storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress.” Benjamin, Walter, “Theses on the Philosophy of History”, in *Illuminations*, trans. Harry Zohn, Schocken Books (1969), p. 249.

2 Stein, Zachary (2020). “[COVID-19: A War Broke Out in Heaven.](https://www.whatisemerging.com/opinions/covid-19-a-war-broke-out-in-heaven)” [https://www.whatisemerging.com/opinions/covid-19-a-war-broke-out-in-heaven.](https://www.whatisemerging.com/opinions/covid-19-a-war-broke-out-in-heaven)

3 Stein, Zachary, *Education in a Time between Worlds: Essays on the Future of Schools, Technology, and Society*, Bright Alliance (2019).

4 Stein, Zachary (2019). “[Education is the Metacrisis: Why it’s Time to See Planetary Crises as a Species-Wide Learning Opportunity.](https://systems-souls-society.com/education-is-the-metacrisis/)” Transformative Educational Alliance, Perspectiva Press. [https://systems-souls-society.com/education-is-the-metacrisis/.](https://systems-souls-society.com/education-is-the-metacrisis/)

5 This period has been tracked by Immanuel Wallerstein and Jason Moore as the pivotal transition in the hegemony of the modern world system and world ecology. It has also been noted by Jean Gebser and by any number of historians of the West as “cultural revolution” of modernity.

6 Jean Piaget was the organizer of the UNESCO conference, and his edited volume remains one of the best available introductions to Comenius in English. See: Piaget, Jean, *John Amos Comenius on Education*, Teacher’s College Press (1967). Other highly recommended overviews of Comenius include Cizek, Jan, *The Conception of Man in the Works of John Amos Comenius*, Peter Lang (2016), and Murphy, Daniel, *Comenius: A Critical Reassessment of His Life and Work*, Irish Academy Press (1995).

7 This interesting fact comes as reported in the writings of Cotton Mather, cited by Spinka, Matthew, *John Amos Comenius: That Incomparable Moravian*, The University of Chicago Press (1943), pp. 82, as probably true, although no official record exists.

8 See Yates, Frances, *The Rosicrucian Enlightenment*, Routledge & Kegan Paul (1972), which is one of the most reliable and least sensational introductions to the topic. It contains almost two entire chapters focused on Comenius.

9 See Spinka, *John Amos Comenius: That Incomparable Moravian*, pp.14-15, where the location of Comenius in history is masterfully wrought. Spinka is careful to reflect on the leadership of Europe as being in a state of educational crisis; he sees this as a general trend: “Why did it happen that on the eve of the Thirty Years’ War it was poor insane Rudolph II (1576-1611), King of Bohemia, on whom the heavy responsibility for the direction of affairs rested? Or why was it the imbecile Louis XVI, who would have made an admirable locksmith but whom nature did not qualify for the tremendous tasks which faced France, just then at the helm? Why was it that the amiable and harmless nonentity, Czar Nicholas II, was called upon to deal with the Russian Revolution of 1917? Such questions

are inevitable as long as humankind has not realized some Platonic Republic, or New at Atlantis, or Utopia [or Comenian educational scheme].”

10 The College of Light and other core ideas in Comenius can be traced to the Rosicrucian ideology, which was a form of esoteric Christianity, but with roots in the Kabbalah, and especially, in medieval and ancient alchemy, as studied by Carl Jung. This implies that when thinking about Comenius’ religious ideas—e.g., what he means by Christ, and what he means by God—that there is a form of mystical Christianity at the heart of it. His was not a simple pre-modern form of religion. Rather his thought existed right on the brink of the modern and was qualitatively more complex than the medieval forms of Christianity that were involved three decades of brutal wars in the name of God, as Comenius witnessed.

11 Descartes’ unpublished manuscript on Comenius is noted by Spinka in *John Amos Comenius: That Incomparable Moravian*, pp. 92-93. He reports that a version of this manuscript exists among the papers of Samuel Hartlib, who was one of Comenius’ main supporters.

12 The account is given by both Spinka and Yates of the ill-fated friendship between Comenius and a man named Christopher Kotter, who knew each other since childhood. Kotter was also a member of the Unity. He began having visions in the 1620s, including religious messages and political predictions concerning the wars, all with Rosicrucian overtones, all predicting the return of a righteous Protestant King to Bohemia. Comenius believed his friend and saw to the publication and dissemination of the visions, right up and into the many royal courts in which he had influence. Such visions were common, to some extent (and are common again today), being an aspect of a time between worlds, where many possible futures are co-existing. The problem for Comenius would concern only his posthumous reception, as immediately upon Comenius’ death Kotter fled into the hands of Catholics, claiming to have made it all up, and converted (presumably for protection from persecution now that his powerful friend was dead). Comenius’ reputation was tarnished irreparably among those with knowledge of these events. And it was a key few from this generation who wrote the books in which his name lived on. The obscurity of Comenius is still due to the visions of Kotter, to some extent.

13 Immanuel Wallerstein is the main figure here, but the group also includes Giovanni Arrighi, Jason Moore, and others (there is a Journal of World System Research). Jason Moore’s *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*, Verso (2015) is one of the best places to start because of its concern with world ecologies and the ecological limits of world-system expansions.

14 Jean Gebser is the leading light here, but is flanked by writers like William Irwin Thompson, Riane Eisler, and Iain McGilchrist. While these accounts are quite diverse, they focus on reading history through a richly theoretical lens wherein the evolution of culture involves the transformation consciousness itself. Ken Wilber’s *Up From Eden: A Transpersonal View of Human Evolution*, Anchor Books (1981) is one of the better introductions to the general field.

15 Peter Turchin has pioneered techniques in quantitative structural-demographic analyses of large historical data sets, an approach he calls cliodynamics (Clio is the muse of history). This work shows large-scale trends in terms of quantitative convergences of key indicators. Turchin’s *Ages of Discord: A Structural-Demographic Analysis of American History*, Beresta Books (2016) presents a quantitative model of historical change involving a number of variables. He reveals a cyclical (and predictable/understandable) dynamic of *War and Peace and War*, which is the title of another of his books, published in 2007.

16 The Santa Fe Institute has recently published a book on just this field, simply entitled *History, Big History, and Metahistory*, edited by Krakauer, David C., Gaddis, John Lewis & Pomeranz, Kenneth (2017). The book collects papers from an interdisciplinary conference dedicated to considering the “return” to metahistorical theory and research. Importantly, *Big History* pushes time sequences back beyond the human to include biological, geological, and cosmic time scale. *Big History* puts human history within a universal cosmic frame and begins to place the patterns of history alongside the patterns of biological and cosmic evolution. As I explain in the main text, Comenius understood (in his way) that history makes no sense outside of *Big History* as a frame, and that education itself should reflect this, addressing humanity as to its place in the universe.

17 Turchin notes that educational institutions play a role in inter-elite competitions and economic inequality. Cultural historians like Thompson note the pivotal role of the founding of universities and schools. And world system analysts read educational systems as sub-components of larger political and cultural systems. No one is focusing on education as an independent factor, let alone as a driving force. I argue that this is due to a too limiting definition of education, which can be understood as both system-maintenance (“schooling”) and as system-transforming (“transformative education”).

18 Secular means long term. See Turchin, Peter, and Nefedov, Sergey A., *Secular Cycles*, Princeton University Press (2009). While there are disagreements among economists as to the duration and dynamics of such long-term trends, there is little doubt about their existence. Only in the past decade have quantitative analyses of history progressed to the point that they might be understood in terms of complex dynamic systems models, as suggested by Wallerstein and operationalized by Turchin.

19 To the left of the figure, looking backwards in time, economic data gets harder to track, but there are “secular cycles” that have been looked at by a few world systems analysts following Wallerstein and Turchin. Gebser suggests the magic-typhonic and archaic structures of consciousness, but due to archeological evidence it is harder to land the approximate emergences.

20 Not represented in this figure, but present in the work of Jeremy Rifkin and Moore, are energy and mobility regimes, which also pivot around the epoch present above. This is clear in Rifkin’s *The Third Industrial Revolution: How Lateral Power is Transforming Energy, the Economy, and the World*, Griffin (2013), where the model is: communication regimes are enabled by communication technology, energy regimes enabled by energy sources powering societies, and mobility regimes enabled by forms of transportation and logistical networks. There are convergent transformations of communication, energy, and mobility that can be called economic infrastructural transformations. These infrastructural transformations create general-purpose technological platforms that fundamentally change how power is managed and how economic activity is mediated. Rifkin offers a coherent theory of infrastructural transformations which are the basis for the three major industrial cycles, which he calls industrial revolutions. The first industrial revolution in Britain: steam-powered printing; telegraph communication networks; steam-powered railroad networks; cheap coal energy regime. The second industrial revolution in the United States: telephone communication networks; cheap oil energy regimes; internal combustion engine and cars; highway system. The third, emerging industrial revolution: the internet; cheap solar/alternative energy; driverless autonomous vehicles. Thanks to Derrick Yoder for this footnote.

21 See Stein, Zachary (2019). [“Education is the Metacrisis: Why it’s Time to See Planetary Crises as a Species-Wide Learning Opportunity.”](#)

22 See Spinka, *John Amos Comenius: That Incomparable Moravian*, p. 152, where he cites Cubberley's *The History of Education* (1920) as the source.

23 From Piaget, Jean, *John Amos Comenius on Education*, pp. 6-7.

24 Piaget himself was a closet mystic, as I have argued elsewhere. See Stein, Zachary (2016). "[Beyond Nature and Humanity: Reflections on the Emergence and Purposes of Metatheories](http://www.zakstein.org/wp-content/uploads/2014/10/Stein_MetaTheory_BOOK_FINAL-copy.pdf)," http://www.zakstein.org/wp-content/uploads/2014/10/Stein_MetaTheory_BOOK_FINAL-copy.pdf.

25 The point that Comenius is neither pre-modern nor modern is made by Eetu Pikkari in his essay "Signs of Reality: The Idea of General Bildung by J.A. Comenius", in *Theories of Bildung and Growth: Connections and Controversies Between Continental Educational Thinking and American Pragmatism*, edited by Siljander, Pauli, Kivelä, Ari & Sutinen, Ari, Sense Publishers (2012), pp. 19-31.

26 It has also been suggested that they were supported by the queen of England against the Hapsburgs and the Pope. But the role of what we would now call British Intelligence in the dynamics of the 17th century are beyond the scope of this essay.

27 Steiner, Rudolf, *The Human Spirit Past and Present: Occult Fraternities and the Mystery of Golgotha*, Rudolf Steiner Press (2015 [1916]).

28 See Corbin, Henry, *Temple and Contemplation*, Routledge (2009), where some of the dynamic mystical practice involved with the temple mysteries is explored from the perspective of the imaginal and archetypal psychology.

29 Moreover, Keatinge reports that the rules of modern Freemasonry have been attributed to Comenius, but this cannot be confirmed (nor disconfirmed!). See Keatinge, M.W., "Introduction", in *The Great Didactic of Comenius*, Adam and Charles Black (1896), pp. 35.

30 Eckstein, Friedrich, *Comenius und die Böhmisches Brüder*, Insel-Verlag (1915). There is no English translation of this book available.

31 Steiner, Rudolf, *The Human Spirit Past and Present*.

32 Taken from the first English translation of Comenius' magnum opus (originally published in 1631): Keating, M. W. (translator), *The Great Didactic of Comenius*, Adam and Charles Black (1896[1631]), pp. 347-348.

33 For the direct connection between Herder, Goethe, and Comenius see Spinka, *John Amos Comenius: That Incomparable Moravian*, where the admiration of both Herder and Goethe for the incomparable Moravian is made clear. This plugs Comenius into the very roots of the Bildung tradition.

34 This is not the place to get into my critiques of the current state of educational technology, which I explore in more depth in *Education in a Time Between Worlds* (2019).

35 For Comenius on the dehumanization of bad education see Hábl, Jan, *On Being Human(e): Comenius' Pedagogical Humanization as an Anthropological Problem*, Pickwick Publications (2017).

36 In this conclusion I only focus on technology reform, drawing parallels with Comenius'

innovative use of print technologies. But there is another possible parallel to be drawn concerning the contemporary need for the diffusion of “invisible collages” to lay the groundwork for the spread of a new world view. I leave this to a foot note, making the suggesting slightly less visible.

Invisible collages are civilizational fulcrums. Recall that in 1660, Francis Bacon and other luminaries founded the Royal Academy of Science, which was the first organization of its kind in the world and marked the beginning of the Enlightenment. Prior to this the intellectual currents that would become modern science were only to be found “underground” in what was known as the “invisible college.” Rumors of this invisible college began as an aspect of the Rosicrucian movement but were made real by the efforts of Comenius. The Royal Academy of Science was a careful movement from invisible to visible, from outlaw to new law.

In the 1970s Francis Yates largely demystified the Rosicrucian Order, but in the process she revealed the true historical function of Rosicrucian ideas and strategies in the birth of modern science itself. There was a small group of innovators working to maintain the insights of the Renaissance during a time of religious persecution and near total war. There was a revival of the ancient “pagan” study of nature by a small group, working in secret on the foundations of human sense-making, and thus working to orchestrate a major civilizational transition. Francis Bacon and others (such as Robert Boyle and Rene Descartes) plugged into the spirit of the invisible college through Comenius, and thus the delicate critical path from the Renaissance to the Enlightenment was navigated.

Similar invisible colleges appear on the edges of fading paradigms and failing civilizations. Here small groups work on the nature of sense-making itself, relatively free from the dictates of the fading and failing legacy systems. Basic innovations are made in these colleges that set the attractors and trajectories of future civilizational forms, which are necessary to replace current forms that have entered a terminal (self-terminating) dynamic. The amplification and manifestation of insights from these colleges has involved the reconfiguration of legacy institutions at a foundational level, and thus the impacts of the colleges have been powerful, but indirect and subtle, aimed at the deeper source code of culture itself.

The “invisibility” of these colleges is essential for their success, as are their small size, and above normal forms of internal coherence (found in bonds of trust and secrecy). Because these colleges were always on the fringes of unstable paradigms and social systems they sometimes needed to be protected or occluded from direct gaze. The archetypal image is of an academy set out on the edges of the polis, where reality and civilization meet, and wilderness is transformed into new frontier. Across their various historical instantiations, the invisible colleges were operated according to a comprehensive and innovative *paideia*—a shared philosophical vision of life, knowledge, and education— which is more primary than whatever science may inspire and enable. A new orientation to knowledge and reality itself was the backbone of these colleges. The powerful diplomatic and political effect of their cultural and scientific innovations was the result of fundamentally new forms of sense-making being practiced; these forms were literally impossible to practice elsewhere, yet they were the necessary attractor basins for the future of civilization.

37 The Consilience Project (2021), “[Social Media Enables Undue Influence.](https://consilienceproject.org/social-media-enables-undue-influence/)” [https://consilienceproject.org/social-media-enables-undue-influence/.](https://consilienceproject.org/social-media-enables-undue-influence/)

38 Ibid.

39 See *The Angle of Peace*, the startling call for world peace drafted by Comenius and officially circulated to all the crowns of Europe in 1667.

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