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Owen and the Engineers: Cross-Fertilization between Engineering and Early Socialism in the Owenite Tradition

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ABSTRACT

This paper investigates the attitudes towards engineering within early socialism in Britain. It asks why Owenites, as well as Chartists and Fourierists, were drawn to German-American utopian engineer John Adolphus Etzler's settlement plans in the tropics. Etzler envisioned a tropical paradise run by machinery, where workers and their families lived in a cooperative community and worked only 50 days a year. First, the paper conceptualises the notion of utopian engineering, then it discusses the ambivalences in Robert Owen's attitudes towards machinery. It shows that Owen endorsed mechanization as a tool to reduce child labour but feared that it caused unemployment and misery among adult skilled workers. The third part investigates Owen's endorsement of Etzler's colonial scheme, arguing that the early socialist and the engineer were mutually dependent on each other. Etzler provided Owen with a solution to his technological conundrum, while Owenite publications offered him a means to reach broader audiences for his Tropical Emigration Society. By demonstrating this entanglement, my paper adds to the literature of the relationship between utopia, early socialism, and engineering, and shows that mechanization was as central to early socialism as the abolition of private property, bourgeois marriage and religion.

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In 1843, Chartist publisher James Bronterre O'Brien published a one-act play entitled 'Dialogue on Etzler's Paradise: between Mssr. Clear, Flat, Dunce and Grudge'.[1] In it, Mr. Clear explains the content of the 1833 book *The Paradise*, in which the author 'speaks of new means, to make of earth a paradise, by the application of inanimate powers, that would cost nothing, on machines to do all human works.' Throughout the dialogue Mr. Clear dispels all doubts that the tellingly named Mr. Flat, Mr. Dunce and Mr. Grudge have about the plan to create paradise on earth through machinery.

Both the book, published in Pittsburgh in 1833, as well as the dialogue were written by John Adolphus Etzler, a German engineer who had immigrated to the United States first in 1822. After a brief stay in Germany in 1829/30, he returned to Pennsylvania in 1831, where he encountered the Rappites, German-American pietist dissenters who lived in a

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religious co-operative commune. He was also inspired by early socialist Charles Fourier after attending meetings of the Fourierist society in Philadelphia.

In his book, Etzler suggested that machines ought to be invented that would use wind, water, and solar power to drive for example mechanical ploughs, cranes, or boats, as well as to produce consumer goods.[2] Although such machines did not yet exist, Etzler suggested that they could eradicate hunger and eliminate long working hours, offering workers more time for education and leisure. Moreover, like the Rappites, workers could live communally and share profits equally by forming socialist co-operatives and share-holding companies.

In 1840, Etzler found a companion in Conrad Friedrich Stollmeyer, another German immigrant who was active in the abolitionist movement and the Fourierist Society of Philadelphia.[3] Both of them failed to generate enthusiasm for their ideas among Americans though. But British socialist reformer Robert Owen became an early supporter, writing an enthusiastic review of Etzler's book which was published in Pittsburgh in 1833, advocating that it be published in Britain as well. He also accepted a guest essay by Etzler in *The New Moral World,* one of the newspapers he published along with his son Robert Dale Owen.[4] This gave both Etzler and Stollmeyer an audience among Owen's supporters in Britain. As this audience proved to be more receptive to his inventions, Etzler emigrated to Britain in 1843, whereupon Owen invited him to speak at Harmony Hall, the central assembly of his community project Queenwood.[5] By 1845, Etzler and Stollmeyer had gathered around 1,500 supporters, when they founded the Tropical Emigration Society (TES) to raise money for an intentional community of roughly 250 people in Venezuela. There Etzler planned to test out his invention of the 'satellite,' a wind-powered mechanical plough, for which he had registered a patent in the US in 1841. Even though the settlement failed in 1846, it is remarkable that Etzler and Stollmeyer were able to gain such a large group of supporters in Britain in the 1830s and 1840s. This paper seeks to explain how they managed to do so.

In my paper, I analyse the cross-fertilisation between the early socialism of the Owenites and engineering by focusing on the case study of Etzler's vision of a paradise on earth. I argue that Etzler and Stollmeyer, as utopian engineers, and Owen were mutually dependent on one another: the engineers needed to incorporate an economic system into Etzler's plan that would allow profits to be distributed equally; Owen's social system fit the bill. Owen, in turn, embraced Etzler's engineering concept because mechanisation was an integral part of his social reform plan.

In the first part, I investigate the role of engineering and mechanisation in the social visions Owen developed in the 1810s and 1820s. In the second part, I examine how the Owenite journal *The New Moral World* supported mechanics and engineering. In the third part, I focus on the case study of Etzler's utopian engineering and discuss his need for a co-operative economic system to combine with his utopian vision of a technological future.

1. Engineering and the Concept of Utopia

Historians recently have begun to examine intentional settlements as sites of experiment and knowledge production. In this article, I define utopia not as a contradiction to the experimental side of these settlements. Instead, I see utopian thinking as the ability to

imagine a future that is radically different from the social order of the present.[6] According to sociologist Ruth Levitas, understanding utopia as future possibilities also entails a 'refusal to accept that what is given is enough', so that the utopia becomes a driving force in social change.[7]

Following Levitas, I conceptualise utopian engineering as a reform practice that sought to utilise modern machines to bring about social change. Utopian engineers (who were not necessarily trained in engineering themselves) wanted to fulfil their vision with the help of rationality, the teaching of mechanics and natural sciences to future generations, and practices of knowledge production they derived from the empirical sciences, such as observation, experimentation, and experience. Key to their utopian vision were the future orientation of their reform project, their combination of engineering with a political-economic concept, and their globally conceived idea of an all-encompassing new social order. The tropical parts of the Americas seemed especially well suited as a space to put their utopian vision into practice. The utopian aspect of engineering lay in the rejection of the status quo and their sweeping attempts to restructure society as whole with technology that often did not yet exist. What defines their vision as a utopia was their future orientation and their willingness to offer broad explanations and solutions combined with Millennialist visions of paradise on earth. This is not to say that utopian engineers did not strive to put their visions into practice through community experiments or building prototypes of their machines. On the contrary, their visions were based on the technology that was scientifically possible and the natural laws that were known at the time.

Late nineteenth-century commentators on early socialism often employed the term 'utopia' in a derogatory fashion, using it to mark reform ideas as fictions that would never come about. They drew on Karl Marx and Friedrich Engels's distinction between utopian socialism and materialist-critical socialism – a reference that has continued in academic writing ever since. According to Levitas, Marx and Engels actually praised Owen's, Charles Fourier's and Claude Henri de Saint-Simon's criticism of capitalism but rejected their vision of how societies should transform towards socialism. While utopian socialists wanted to bring about social change by experimenting with settlements and propaganda, Marx and Engels considered this path unrealistic, becoming more and more convinced in the 1840s that revolution was the only way to achieve socialism.[8]

American historians often examined Owenite socialism as utopian and in alignment with the religious sectarianism of the Rappites and the Shakers. The Owenites themselves had been aware of their connection to these groups and paid close attention to religious co-operatives in their publications.[9] In the British historiography, however, Gregory Claeys has argued that Owen, Fourier, and Saint-Simon were actually less utopian than Marx himself, as they tried to put their visions of socialism into practice by running actual communal experiments.[10] Therefore, Claeys proposes to refer to these thinkers as early socialists rather than utopian socialists. Historians of knowledge, communalism, and empire follow Claeys's intervention and investigate Owenite and Fourierist settlements as sites of social knowledge production and experiment. Following French sociologist Michel Lallement, historians of this research tradition circumvent the terminological debate between 'utopian' and 'early socialist' settlements by using 'intentional settlements' as an umbrella term to cover religious

and secular cooperative settlements and focus on the personal continuities between the two groups.[11]

In using the term utopian engineers, I highlight that the historical actors I research were individuals who were able to imagine a future radically different from their past and present. However, by focusing on the engineering part of their thinking, I also wish to highlight that their experience of a radically changing present – specifically, the mechanisation of the textile industry – shaped their utopian visions. Uncovering the ideas that were circulating about alternative sources of energy and alternative economic orders at the time of industrial change helps us analyse how nineteenth-century contemporaries interpreted the changes they witnessed in society around them. They drew on contemporary scientific knowledge in conceiving of ways to radically change the social order in their utopian visions. Accordingly, when we engage with the ideas of the utopian engineers of the time, it helps us discern how they experienced the accelerated changes and the problems they saw arising from them.

In my analysis, I draw upon the writings of German-American engineer John Adolphus Etzler and the Owenite journals *The Crisis* and *New Moral World*, focusing particularly on the ways these journals promoted Etzler's publications and scientific endeavours in general. While there is a large collection of literature on the Owenite movement in Britain and Owenite settlements in the United States, little has been written about how engineering shaped the Owenite movement.[12] In the 1980s and 1990s, several scholars, including Gregory Claeys, Malcolm Chase, and Ulrike Kirchberger, examined Etzler's Tropical Emigration Society within regards to the question of emigration, while others have more recently looked at Etzler and his travel companion Conrad Friedrich Stollmeyer within the context of colonialism and the exploitation of resources in Trinidad. In 2013, Trinidadian novelist Robert Antoni, for example, wrote a fictional account of the failed colonial endeavour.[13]

Etzler's writings can serve as a basis for investigations from various historical approaches, ranging from histories of exile and emigration to colonialism, environmentalism, and the history of capitalism. I aim to add to the existing scholarship by utilising Etzler's vision to investigate the entanglements and the cross-fertilisation between Owenite socialism and engineering as the leading science of the nineteenth century. In doing so, I show that engineering, science, and the invention of modern machines were as central to Owen's notions of social reform as the redistribution of wealth and the abolition of bourgeois marriage and institutionalised religion.

2. Robert Owen's Ambivalent Attitude Towards Machinery

Robert Owen's life has often been divided into two parts: In the first part, he was a successful businessman, running a profitable cotton mill and factory town in New Lanark. Then he came up with an idea for a radically new social order and tried to execute it in his communal experiment in the backwoods of Indiana.[14] In the second part of his life, Owen is often presented as a failed communitarian who lost most of his original, elite followers by advocating not only that property should be communally shared but also that institutionalised religion and bourgeois marriage should be abolished. Surprisingly, he became a trade union leader in the 1830s. In both phases and roles – as a philanthropic factory owner and reformer and a utopian socialist and trade union leader – he had an

ambivalent attitude towards machinery. On the one hand, he blamed the onset of the machine age for social evils ranging from child labour to crime and vice and the unemployment of adult artisans. On the other hand, as I will show, Owen always presented machinery as part of the solution, so he embraced Etzler's mechanised version of a paradise on earth.

According to Owenite expert Gregory Claeys, Owen was ambivalent about machinery because it could fundamentally alter the social order. The premise of his economic thinking was that 'society was being destroyed by, but could ultimately be enormously benefited by, the large-scale displacement of manual labour by machinery.'[15] In the businessman phase of his life, Owen could easily find arguments for why machinery was both part of the problem and part of the solution since his major reform initiative was to reduce child labour and working hours for adult workers. In his 1815 essay 'Observations on the Effect of the Manufacturing System,' Owen described the changes he witnessed in working conditions, comparing the 'happy simplicity' of the agricultural workers of the 1780s and the factory workers of the 1810s, living in a 'state more wretched than can be imagined by those who have not attentively observed the changes as they have gradually occurred.'[16] 'The new manufacturing system,' Owen elaborated, had the consequence that

> in the manufacturing districts it is common for parents to send their children of both sexes at seven or eight years of age, in winter as well as in summer, at six o'clock in the morning, sometimes of course in the dark, and occasionally amidst frost and snow, to enter the manufactories, […] in which all those employed in them very frequently continue until twelve o'clock at noon, when an hour is allowed for dinner, after which they return to remain, in a majority of cases, till eight o'clock at night.[17]

Owen based this description on what he witnessed in Manchester, where the average workday for a child of age seven lasted 14 h. This had detrimental effects on their physical and moral well-being. Owen continued:

> The children now find they must labour incessantly for their bare subsistence; they have not been used to innocent, healthy, and rational amusements; they are not permitted to requisite time, if they had been previously accustomed to enjoy them. They know not what relaxation means, except by the actual cessation from labour. They are surrounded by others similarly circumstanced with themselves; and thus passing on from childhood to youth, they become gradually initiated, the young men in particular, but often the young females also, in the seductive pleasures of the pot-house and inebriation; for which their daily hard labour, want of better habits, and the general vacuity of their minds prepare them.[18]

Here Owen alludes to the detrimental effects of the environment and influences of peers – he often repeated that a person's environment shapes human character, the main point of his essay was to argue that long working hours, especially for children and youth, caused moral vice and crime. Children and teenagers ended up drinking because they had neither received an education nor learned to spend their free time rationally as they had worked since the age of seven. His desire to combat this was his initial motivation for writing up his social reform.

In the 1780s, before the onset of the machine age, in contrast, 'twelve hours per day, including the time for regular rest and meals, were thought sufficient to extract all the working strength of the most robust adult.' According to Owen, even landless peasants

had 'frequent opportunities of enjoying healthy rational sports and amusements; and in consequence they became strongly attached to those on whom they depended,'[19] who were the landed gentry whose land the peasants leased and worked. Here Owen did not present a vision of lower-class consciousness or self-determination but instead praised a long-gone paternalistic relationship between landowner and agricultural worker based in 'a mutual interest between the parties'. With such relationships, even the 'lowest peasant' felt like he belonged to 'somewhat of a […] respectable family.'[20] Owen's nostalgic view of the 1780s reveals that he regarded the British class system not as a cause for the misery of the working classes but rather as a system of 'mutual interest' between the social classes despite a clear hierarchical power structure between them. His sanguine view of class hierarchies was also expressed in his paternalistic approach towards the workers in his factory, the characteristic that British Marxist social historian E.P. Thompson most criticised about Owen as a working-class leader.[21]

Key to the agricultural peasants' happiness in the 1780s, in Owen's view, was that they had time for leisure. In his 1815 essay, therefore, he advocated a reduction of child labour, suggesting three legal steps to achieve this: first, lowering the general hours of labour in factories to twelve; second, prohibiting the employment of children under the age of 10 and limiting the working hours of children aged 10–12 to 6 h a day; and, third, prohibiting mills from employing children who were not able to read, write, or do math, and girls who did not know how to sew common garments.[22]

Of course, in 1815–1816 Owen knew that his fellow factory owners would not give up on the profits they made from child labourers easily. That is where his advocacy for machines came in. In his *New View of Society* (1812–1816), Owen argued that a further proliferation of machines in economic production could increase the profits for factory owners and simultaneously reduce children's working hours so that they could obtain an education without precipitating losses for their employers.[23] Since the mechanisation of the textile industry between 1780 and 1800 had increased profits by a hundred-fold, he argued, one could replicate this effect by mechanising other branches of economy – mainly agriculture and food production. As the machines that Owen wanted to use to increase profits and reduce child labour had not yet been invented – though Owen was optimistic that they would be – he advocated that children in their new free time receive a practical or, to use his term, 'rational education' rather than one focused on classical languages and literature. The former aimed to teach mathematics, natural sciences, mechanics, artisan skills, and the skills of observation and experimentation, which he hoped would enable them to eventually improve the production of consumer goods from their observations of natural phenomena. Etzler illustrated a similar point in his book with the example of a kitchen maid noticing that the steam from boiling water had the power to lift a pot lid: although the maid could observe the phenomenon, it took 'rational' observers to utilise that energy for industrial purposes.[24]

By the 1820s, Owen remained fascinated with machinery and optimistic that it could bring about a new social order. Yet, as the mass demobilisation after the Napoleonic Wars had caused large-scale unemployment and underemployment among adult workers,[25] he gained new perspectives on the problems of the machine age. Commenting on the Manchester and Liverpool Railway, the world's first steam-powered railway line opened in 1830, he wrote in the journal *The Crisis*,

> '[e]very day develops the multiplied wonders of mechanical might, and in doing away, as far as that might is applied, with a correspondent proportion of manual and animal labour for ever, it opens prospects which extend farther than the eye can reach – the following fact united the reality of truth, with more than wonders of fiction.'[26]

This quote clearly expresses Owen's excitement about the possibilities of new technologies, especially to reduce manual labour. His admiring tone makes it clear that he was positive about the technology and the opportunity it provided for him to make his utopian vision, often referred to as a fiction, reality.

Yet, the late Owen, in the second phase of his career, also had to admit that this new 'mechanical might' created specific unforeseen problems, especially unemployment. Further on in the article, he commented: 'Let it be remembered, that the men, which in its first application it throws out of work, are thrown out of particular work not for a few weeks, or months, or years, but for ever.'[27] He noted that unemployment rates for workers with skills that were no longer required was at 25 per cent and that mechanisation decreased the demand for labour and increased the number of unemployed labourers. Therefore, Owen concluded that '[t]his unnatural state of things is approaching to an alarming heed, and nothing but an entire new arrangement of men and things, can shelter human nature from its terrific consequences'.[28] In other words, a whole new social order was required to deal with the negative effects of mechanisation on employment, and, of course, Owen himself had the answer.

In a lecture that he gave at a trade union meeting at the Working Men's Institute in Charlotte Street, in London, on January 5, 1834, Owen addressed these negative effects in more specific terms. He argued that mechanisation without the redistribution of wealth would only lead to 'poverty and misery' for the masses. Owen also recalled that he had already made this connection when he tried to convey his ideas to European leaders at the Congress of Aix-la-Chapelle in 1818: 'I told them that either machinery must be stopped in its progress, or the population must emigrate, or starve; both of these results have already appeared.'[29]

Owen had realised his uneasiness about machinery at around the same time the Luddite movement, famous for the destruction of machinery, reached its endpoint. According to historian Katrina Navickas, Luddism had peaked as a movement with its own images and symbols around 1811–1813, whereas Owenism would not pick up momentum until the 1830s.[30] While Owen and the Luddites shared an uneasiness with the instabilities brought about by industrialisation, economic depression, and the Napoleonic wars,[31] they differed in their goals, protest forms, and strategies. Luddites opposed the machinery that increased profits and reduced working hours,[32] whereas Owen saw the reduction of working hours as a solution to workers' hardship. Also, while the Luddites chose vandalism as a protest form, Owen advocated legal change in Britain, and, when that failed, he appealed to the global elites at Aix-la-Chapelle.

3. Emigration and Population in the Owenite Philosophy

Emigration, according to Gregory Claeys and Malcolm Chase, was a contested topic among Owenite supporters in Britain. This was because many of them feared that promoting emigration would mean accepting political economist Thomas Malthus's premise that overpopulation rather than an unequal distribution of wealth was the cause of

starvation among the working classes. In essence, Malthus's premise meant that working classes were themselves to blame for their condition as they conceived too many children.[33] Since his 1815 'Observations,' Owen had become an outspoken critic of Malthus. Whereas Malthus might have been right in observing an exponential growth of populations under ideal circumstances (without wars or famine), Owen noted, 'he has not told us how much more food an intelligent and industrious people will create from the same soil, than will be produced by one ignorant and ill-governed. It is however, as one to infinity.'[34] Owen claimed that people who were to undergo training in his school of thought and apply its knowledge and rationality to agriculture would be able to increase agricultural production just as the textile industry had done in the previous decade. And Etzler's invention of a mechanical plough driven by wind power provided the necessary tool to make this happen.

Owen made a first brief mention of Etzler's *Paradise* in his publication *The New Moral World* in November 1835, praising the book as 'one of the most extraordinary communications ever made to the public.'[35] He considered Etzler's scheme to create paradise on earth through mechanisation and profit sharing as ambitious, yet substantial. Owen commented that he himself 'thought that I had promised much' when he had claimed that with rational thinking and action, mankind could overcome disease, vice, and misery, and continually increase 'this state of happiness […] by less than three hours' delightful labour daily, on the part of the whole population.'[36] Yet, Etzler's scheme 'promise[d] much more', namely, a community with more leisure than Owen foresaw, in a shorter period of time, all of which would 'be permanently maintained without human labour, or next to none, by the powers of nature and of machinery.'[37]

Owenites continued to promote Etzler's book continued in the *New Moral World*. In January 1836, the journal published a review of it, noting that it provided 'the broad and bold outline of a state of society, similar in its results to those of the New Social System,'[38] and praising the publisher for taking on the risk of producing a British edition of the work. Then, in subsequent issues, the journal published excerpts from the introduction to the first and second volume of Etzler's treatise. Moreover, also starting in January 1836, the journal published a series of texts about the fundamentals of various sciences, including physics, mechanics, and other natural sciences. This seems to have been an attempt to improve its working-class subscribers' scientific knowledge, which they would need for mechanical inventions. This shows that by 1836, Owen and his co-editors had again fully embraced mechanics as the solution to the social problems brought about by industrialisation, such as starvation, unemployment among adult workers, and child labour.

Etzler and his companion Conrad Friedrich Stollmeyer realised that their ideas received a much warmer reception in Britain than in the United States. Etzler claimed that they had reached out to the US government several times but never heard back. Therefore, they focused their publication efforts on Britain. Stollmeyer travelled to Britain in October 1841 to promote the scheme and run trials of the 'naval automaton', a propeller-driven boat, and the 'satellite' (the wind-powered, mechanical plough). He published letters to the editors in the British Chartist newspaper *Northern Star*. The Fourierist newspaper *London Phalanx* published an announcement of the trials and a review of Etzler's book.[39] Etzler himself emigrated to Britain in 1843, and from that moment on, all his publications and the Tropical Emigration Society's newspaper *The Morning Star* (1844–1847) were published in the UK.

4. John Adolphus Etzler's Colonial Paradise

In his scheme, Etzler had produced a socio-economic vision similar to Owenite socialism. He had learned of different co-operative practices from the Rappites' religious settlement and the Fourierist Society in Philadelphia.[40] Etzler's economic analysis in *The Paradise,* however, was rudimentary compared to the number of paragraphs he spent on the scientific and mechanical aspects of his invention and large-scale societal engineering. In the introduction, he vaguely claimed 'that the most profitable, shortest and easiest way' to use wind, water, and solar power would be 'to form *associations* […], so as to enable the rich and the poor, to participate fully in all the possible greatest benefits of these discoveries by paying a share not greater than the price of a lottery ticket.'[41] He did not make it clear whether he meant associations in the sense of co-operative communities or joint-stock companies, though the price to be paid for joining an association suggests the latter. Joint-stock companies were Charles Fourier's preferred means to finance intentional settlements, as the *London Phalanx* explained in 1842.[42] Etzler had been inspired by Fourier, but he was not consistent in his argument. Later in the book, he suggested that his satellite plough be operated on publicly owned land and with the US government being responsible for distributing the profits of his invention equally. Expecting European immigrants to move to the Americas en masse to lessen the population pressures in European industrial centres, he claimed that they could settle the land and enjoy their 'paradise on earth.' At the same time, he wanted to free the enslaved Black population and move them back to colonies in Africa and include Native Americans in his European settlements.[43]

Etzler's population replacement schemes show that he was clearly embedded in a colonial mindset, long before Germany became a united nation-state and a colonial empire in 1871. He used the infrastructures of the British Empire to travel between Britain, the US, and the Caribbean and expressed a favourable attitude towards colonialism when proposing a settlement in Venezuela. According to economic historian Steven Stoll, Etzler's favourable attitude towards colonialism derived from his readings of German human geography, an academic discipline that had emerged in the 1820s that mixed racial science with climatology. It interpreted societies as moulded by climate and provided a rationale for colonisation based on the assumptions that people from moderate climates were more serious and less inclined to pleasures than people from tropical climates.[44] According to Stoll, Etzler perceived the tropics to be 'culturally blank […] and economically underexploited'; further, Etzler did not care much for the local geography of Venezuela as the site of his settlement except for the general climatic conditions.[45] Through his Venezuelan adventure, Etzler became a practitioner of settler colonialism himself and connected settler colonialism with early socialism, albeit he was not the only one to do so.[46]

By 1841, when Etzler published *The New World or Mechanical System*, a sequel to *The Paradise*, he had realised that he needed to find a new organisational structure for his engineered communities. This was because 'he had applied to society at large, and to the government of the United States since 7 years,'[47] but they had not shown any interest in his proposal. Rather defiantly, he explained that wealthy 'speculators of capital' might be most suited to putting his engineering vision into practice,[48] but that he himself was more keen to share his inventions with somebody who was not only interested in making

profits but also 'interested in the moral and intellectual improvements of his neighbours.'[49] Since he had not found a wealthy investor that fit this description, he presented a new solution for finding investors: he proposed to found 'joint stock companies' accessible to the poorest individual'[50] to run his machines via a private community scheme. Shares in this joint-stock company could be sold for as little as $20 (or £1 in the texts addressed to British audiences). Moreover, poor working-class fathers would be guaranteed that within two to seven years the yield of that communal project would be high enough to ensure 'the supply of the natural wants of life for each share holder and his family.'[51] The gendered vision of poor fathers joining the stock company to provide for their families as sole breadwinners seemed an important enough selling point for Etzler to specifically state. After all, neither factory work nor farm work provided enough income for working-class men to take on this role.

Yet, Etzler faced another obstacle: working-class men rejected his highly mechanised vision of the future as they feared that machines would replace them at their jobs. In Etzler's one-act play quoted at the outset, Mr. Grudge expressed this sentiment well when he asked: 'In the name of humanity what then should become of all the poor labouring classes? We have already too many machines which take the bread from the labourer.'[52] Later, he challenges Mr. Clear, who advocated Etzler's vision to the three doubters: 'Only think [o]f all the farmers, all the labourers of the ground, all the artizans [*sic*], all the servants, in short, at least, three-fourths of people were deprived of labour, how in the name of common sense, would they get their wants supplied? – They have no land, no property, and not enough to live upon it.'[53] Mr. Clear's very optimistic and self-assured answer was that they should simply invest £1 or their labour into a joint-stock company to have their and their family's needs met, even if it meant emigrating to a tropical location where Etzler planned to set up his satellite.

Another problem that the tellingly named Mr. Grudge foresaw was that, if everybody lived off their investment in a tropical community scheme, 'evil would not end […] People would get into all sorts of mischief, having nothing to pass their idle time with, except drinking, frolicking, courting, and corrupting all virtues, rioting, and fighting, and killing each other; for idleness is the root of all evil.'[54] Here, Mr. Grudge, especially in his emphasis on frolicking and courting, echoed a moralistic conception of poverty best expressed in Thomas Malthus's *Essays on Population* (1798). If the poor had enough resources and idleness, as provided by any poor relief, Malthus had argued, they would procreate in numbers that were too great. According to historian Gregory Claeys, many of the educated classes in early nineteenth-century Britain shared this conception.[55]

Mr. Clear, utilising a very classist argument, allayed Mr. Grudge's concerns by reminding him of the many idle people from 'good families' who lived off their properties without falling into alcoholism, sexual promiscuity, and general vice because they 'had generally a better education.'[56] Similarly, in a later section very reminiscent of Robert Owen's *New View on Society*, Mr. Clear ventured to explain that 'ignorance and prejudice' cause vice and crime; Owen had made this same argument in 1815–16 when campaigning against child labour and promoting his Infant School at New Lanark.[57] Etzler's rudimentary calls for universal education in later publications seem to have taken up Owen's concept of rational education as he used terminology like 'rational system' and 'new moral world' and envisioned children as the inventors of the future.

Noting the similarities between Etzler's approaches to education and rationality and his own, Owen became more enthusiastic about Etzler and his ideas. This gave Etzler and Stollmeyer the opportunity to use the Owenite journals and speaking engagements in mechanics' halls to promote their first joint-stock endeavour – the Tropical Emigration Society (TES). According to historian Ulrike Kirchberger, by 1845, 1,558 supporters had bought shares in the TES when two boats with 60 and 193 passengers, respectively, sailed towards Venezuela to set up the first intentional settlement to be built with the help of the satellite plough.[58] In Stoll's view, this endeavour failed because Etzler was not only ignorant of the colonial environment in Venezuela but also took little interest in the day-to-day operations of his colonial adventure. In other words, his settlers wound up stranded on a tropical beach with few provisions. Those who did not succumb to hunger or tropical disease ended up settling in Trinidad instead.[59] Despite the failure, Etzler's Venezuelan venture shows that he and his followers – he managed to entice almost 1,600 heads of families to join the TES and 253 individuals to move to Venezuela in 1845[60] – viewed the tropics as a space of abundance and opportunity. Enchanted by the promise of riches, they ignored the dangers of the tropics, including diseases and weather difficulties. Their hubristic optimism without any reflection on the dangers and particularities of the tropics is probably what made the endeavour fail.

5. Conclusion

Etzler adapted Owen's economic and educational concepts to his utopian-engineering vision of the future to demonstrate that his take on social reform was not a path to urban hell, as some critics claimed, but rather a path to a Garden of Eden. Likewise, Owen himself drew heavily on Etzler's mechanical vision of the future to reconcile his enthusiasm for modern technology with his acknowledgment, derived from economic analysis, that this same technology caused unemployment, poverty, misery, and vice. Each provided concepts that filled a gap in the other's argument, successfully cross-fertilising early socialism and reform-oriented engineering in the late 1830s and early 1840s.

Throughout his life, Owen remained an enthusiastic supporter of increased mechanisation, even though the people he hoped his social reform would help were those most negatively affected by it. The demobilisation after the Napoleonic Wars made it obvious not only that industrialisation encouraged child labour on a large scale, but also that it brought about unemployment among male breadwinning workers. As Owen began to recognise the plight of these workers, Etzler's engineered vision of the future provided him with a way to reconcile further mechaniation with his and his supporters' fear that further displacement. Instead of dismissing this fear of greater unemployment, Owen argued that machinery would disrupt current lifestyles but promised a better future.

Likewise, Etzler's promise of paradise benefitted from the cross-fertilisation with Owenite socialism because it offered a model for their social and economic organisation. Even so, Etzler profited more from the publicity than from the intellectual input of the Owenite movement. Nevertheless, the fact that he could raise so much support for his Venezuelan endeavour indicates that many regarded the combination of utopian engineering and early socialism as a fruitful investment in the 1840s.

Many of the questions that Owen and Etzler raised in their writing – including their questioning of the replacement of manual labour by machinery and technology and the question of heavily transforming the environment for energy or food production – are still relevant today. Probably more so than in the decades past, with the advent of digitalisation and artificial intelligence, the question whether new technology brings about more leisure or more unemployment remains. In his conversation with Bruno Latour, global historian Dipesh Chakrabarty draws a long line from the beginning of mechanisation in the early nineteenth century to the contemporary uncertainty of work. In his view, the discovery of technology to end physical toil marks the beginning of the Anthropocene or 'humanity's earthmoving agency' and also the beginning of extractive capitalism.[61] Both Etzler's and Owen's utopian future without work directly ties to current debates on how the navigate the double threat of climate change and digitalisation. Considering that utopias have always been not just future visions but also commentaries on the present in which they were produced, we should take Etzler's and Owen's utopias seriously now as harbingers of many of our modern anxieties.

Notes

1. Etzler, *Dialogue*. For more information on the dialogue, see also Kirchberger, *Expansion*, 92–93.
2. Etzler, *Paradise*, vol. 1, 1.
3. Nydahl, *Collected Works*, XVII.
4. Claeys, "Technological Utopianism," 356.
5. Nydahl, *Collected Works*, XVIII.
6. For a definition of utopia as a commentary on a historical period, as well as a 'prophetic projection into the future', see Eurich, *Science in Utopia*, 6; see also Levitas, *Method*, 218–219. Fredric Jameson sees utopia as a method of overcoming impossibilities to imagine a different future and renegotiating political possibilities in a capitalist society; see Jameson, *Archaeologies*, 232.
7. Levitas, *Method*, 17. Gordin, Tilley, and Prakash make a similar argument. For them, utopian thinking means excavating the 'conditions of imaginability' and directly engaging with radical change; Gordin et al., *Utopia*, 2.
8. For a detailed overview of Marx and Engel's position on Owenite socialism, see Levitas, *Concept of Utopia*, 62–63, 65. For Marx's allusion to Owenism as 'critico-utopian socialism', see also Siméon, "Utilitarianism," 10.
9. Within the context of anti-communism, scholars of American utopianism have argued since the 1900s that secular intentional settlements in North America failed because they were incompatible with the American ideals of individualism and private property. See, for instance, Podmore, *Robert Owen: A Biography*, 336; Manuel and Manuel, *Utopian Thought*; Bestor, *Backwoods Utopias*; Pitzer, *America's Communal Utopias*; and Jennings, *Paradise Now*.
10. Claeys, "Non-Marxian Socialism 1815–1914," 524–525.
11. Cf. Lallement, *Un Désir d'Égalité*, 16; and Kwaschik, "Gesellschaftswissen als Zukunftshandeln," 190, 210. Recently, scholars of utopia have become interested in studying the temporal dimension of utopianism and tying it to present-day political discourse, especially in wake of the 2008 financial crisis, climate change, and social inequality; see Ahlheim, "Ex Machina," 44; Pro Ruiz, *Utopias in Latin America*; Levitas, *Method*, 106.
12. Joel Nydahl, who published Etzler's collected works, placed him within an American tradition of utopian nonfiction writers, while W.H.G. Armytage placed him within the historiography of failed American utopianism; see Nydahl, *Collected Works*, XII; Armytage, "Technology and Utopianism," 129–136.

13. See Claeys, "Technological Utopianism," 352; Kirchberger, *Expansion*, 118; Chase, "Exporting," 197–217; Antoni, *Whatless Boys*; Stoll, *Great Delusion*; McDermott Hughes, *Energy Without Conscience*, 41–60.
14. See Cole, *Robert Owen*, 195, 72. For a more contemporary approach to the two phases of Owen's life, see Trincado and Santos-Redondo, *Entrepreneurship and Utopia*, 8.
15. Claeys, *Money and the Millennium*, 35.
16. Owen, "Observations," 94–95.
17. Ibid., 97.
18. Ibid.
19. Ibid., 96–97.
20. Ibid.
21. Thompson, *English Working Class*, 781.
22. Owen, "Observations," 98.
23. Owen, "Third Essay," 4.
24. Etzler, *Paradise*, vol. 1, 17.
25. Cf. Claeys, *Money and the Millennium*, XVIII.
26. Owen, "Machinery."
27. Ibid.
28. Ibid.
29. The lecture was reprinted in *The Crisis*; see "Weekly Proceedings."
30. Navickas, "Search," 283.
31. Binfield, *Luddites,* 14.
32. Ibid., 4.
33. Malthus, *Principle of Population*. For Owenite attitudes towards emigration, see Claeys, "Technological Utopianism," 365; Chase, "Exporting," 206; and Kirchberger, *Expansion*, 14.
34. Owen, "Observations," 86.
35. Owen, "The 'Paradise'."
36. Ibid.
37. Ibid.
38. "Literature."
39. "Miscellaneous: Mr. Etzler's Invention," 375–376; "Review of: Paradise within," 80–82.
40. Kirchberger, *Expansion*, 92.
41. Etzler, *Paradise*, vol. 1, 5–6.
42. "Act of Association," 1–15.
43. Etzler, *Paradise*, vol. 2, 14.
44. Stoll, *Delusion*, 110.
45. Ibid., 115.
46. Pamela Pilbeam has studied the active role that Saint-Simonians played in the colonization of Algeria; see Pilbeam, "Colonization," 189; see also Kwaschik, "Gesellschaftswissen," 207. For the influence of Owenism on the co-operative structure of the colony of Western Australia, see Gilchrist, *Imperial*; for the colonization of New Zealand and plans to establish an Owenite community there, see Sargisson, *Living,* 12.
47. Etzler, *New World*, 64.
48. Ibid., 49.
49. Ibid.
50. Ibid., 51.
51. Ibid.
52. Etzler, *Dialogue*, 12.
53. Ibid., 16.
54. Ibid.
55. Claeys, *Money and the Millennium*, 19.
56. Etzler, *Dialogue*, 16.
57. Owen, "Fourth Essay," 65.
58. Kirchberger, *Expansion*, 116.

59. Stoll, *Delusion,* 127.
60. According to Kirchberger, 1,558 men interested in emigration to the tropics plus their families would have amounted to around 5,000 to 7,000 people in total; see Kirchberger, *Expansion*, 116.
61. Chakrabarty, *Climate*, 205–206, 208.

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