

## Student as Producer

# Student as producer: an institution of the common? [or how to recover communist/revolutionary science]

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*Mike Neary*

Professor Mike Neary, Dean of Teaching and Learning, Director of the Graduate School and Director of the Centre for Educational Research and Development, University of Lincoln, Brayford Pool, Lincoln LN6 7TS

## Biography

Before taking up the role of Dean of Teaching and Learning at the University of Lincoln in 2007, Mike taught political sociology at the University of Warwick (1994–2007). Prior to becoming an academic, Mike worked in youth and community development in south London (1980–1994).

## Abstract

This paper presents the further development of the concept of student as producer from a project that seeks to radicalise the idea of the university by connecting research and teaching, to a vision of higher learning and revolutionary science based on the reconnection of the natural and the social sciences. The argument is sustained and developed by a critical engagement with classical texts in management studies as well as Marxist writing that has emerged out of the recent wave of student protests against the increasing privatisation and financialisation of higher education. The paper provides a case study where the natural and the social sciences are being brought together in a postgraduate research education programme at the University of Lincoln. The case study includes a debate about the essence of revolutionary science through an exposition of the work of two major revolutionary scientists, Robert Grosseteste (1170–1253) and Karl Marx (1811–1883).

Key words: common, natural and social science, revolution, university, bureaucracy

*Nothing will come of nothing.*

(King Lear: Act I Scene I, Shakespeare)

*We know only one science, the science of history. History can be viewed from two sides: it can be divided into the history of nature and that of man. The two sides however are not to be seen as independent entities. As long as man has existed, nature and man have affected each other.*

(The German Ideology, Marx and Engels 1967: 408)

*If we want things to stay as they are, things will have to change.*

(Lampedusa, The Leopard 1960: 40)

*Happiness lies also in knowledge of the meteors.*

(Marx, Doctoral dissertation 1975: 68)

## Not-student engagement

Student as Producer is often categorised as a project based around the notion of “student engagement” (Taylor and Wilding 2009; QAA 2012a). The core aspects of student engagement in higher education are finding ways to incorporate student intelligence in the quality processes for teaching and learning activities (Hagyard 2009) and involving students in the academic project of the university through collaboration with academics on research projects of real intellectual value (Bovill, Cook-Sather and Felten 2011). Student as Producer is about all of these things, and more. What makes Student as Producer more than the mainstream interpretation of student engagement is that for Student as Producer the future of the university is at stake (Neary and Winn 2009).

Under the current drive for student engagement in the UK, where students are regarded as “the heart of the system” (Browne 2010), the university as an institutional form remains unchallenged. Student engagement takes place within the already established corporatised governance and management structures of higher education (Lambert et al 2012). However, for Student as Producer, the reinvention of higher education in its current institutional state is the main purpose for its activities (Boyer 1990): not as some postmodern “non-space” (Auge 1995) in which students take on the role of super-consumerist “change agents” (Zandstra and Dunne 2009) but as a radical political and sociological project (Fuller 2009), conjuring up the university from its medieval origins as a site of practical experimental science (Southern 1992), *contra* the version of ‘academic capitalism’ on which the contemporary neoliberal university is currently constituted (Slaughter and Rhoades 2004). Student as Producer is reclaiming the progressive vision of German Idealists in the 19th century for a liberal humanist university as a site for speculative philosophy, ie a social encyclopaedia of knowledge at the level of society (Lyotard 1984). Student as Producer is grounding this ‘ideal of the university’ in the radicalised student–worker uprisings of 1968 and the ways in which this student protest has re-emerged at the beginning of the 21st century against the privatisation of university life, now packaged as the ‘student experience’ where the most predominant imperative is employability (HEFCE 2010). In the UK, this privatisation has been intensified by the policy decision to defund the arts, humanities and social sciences, taking all public monies away from teaching in those areas where the traditions of critical social theory are maintained. This is nothing less than a reactionary political act of intellectual vandalism and a declaration of war against critique.

The purpose of Student as Producer is not to maintain higher education as a social science fiction about the struggle over the false dichotomy between its public and private function: after all both are complementary forms of capitalist regulation (Neary 2012a). The aim of Student as Producer is to “dissolve” (Holloway 2010) or better still “detonate” (Lefebvre 1991) the social relation of capital out of which the current version of the university is derived (Neary 2012a), so as to recreate the university as a new form of social institution, what Giggi Roggero calls an “institution of the common” (Roggero 2011).

In recent years, the idea of the commons has attracted a great deal of interest in progressive academic circles, as a way of re-establishing academic values of openness and sharing knowledge. In an important contribution to this debate, Roggero makes a distinction between the notion of ‘the commons’ as a resource emerging out of the natural world and the idea of ‘the common’ as something that is socially constructed. This apparently simple dichotomous separation, of ‘the common’ as opposed to ‘the commons’, is important because it points to a silence in Marxist science: the relationship between the human-social world and the natural-physical world. Twentieth century Marxism has focused on the human-social world to the exclusion of the natural, leaving itself open to the charge that Marx has little to say about the biopolitical or the politics of ecology, and even that Marxist science promotes the desecration of the natural world through a dominating Promethean attitude to nature (Foster 2000).

This non-connection between the natural and social world has led to a separation between the natural and the social sciences, with profound consequences for any project interested in the reinvention of higher education. Radical critical/utopian educational projects in western Europe have focused on the human-social rather than the natural-physical world (Cote, Day and de Peuter 2007). A critical engagement with Roggero’s work enables Student as Producer to further radicalise itself, beyond the philosophy of education and the revolutionary politics of critical pedagogy and popular education with their concentration on the politics of teacher–student and the humanising of knowledge. The problematic division between ‘the commons’ and ‘the common’ demands that Student as Producer deal with the relationship between the natural and the social, considering as an urgent practical problem the relationship between the natural and the social sciences, to reconnect humanity with the natural world so as to be part of the creation of one science: communism, as the avoidance of biospheric catastrophe. Reconfiguring the relationship between the natural and the social sciences will have profound implications for the way in which the university is reconstituted.

Communist science makes no claim for objectivity: for communist science the position of the scientist is fundamentally partisan, grounded in the history and tradition of experiments that engage with the objective and subjective struggle for life. From the position of communist science, political subjectivity is not regarded as detrimental to the research process but is, in fact, the essential objective reality out of which practical critical knowledge is derived. In the vernacular of bourgeois research method, insofar as this paper is concerned, I myself, as the authorial voice, am triangulated between my multiple formal identities as academic activist, the Dean of Teaching and Learning at the University of Lincoln and *scolaire provocateur* closely associated with Student as Producer; notwithstanding other aspects of my biographical life I may chose to include: father, husband, sibling, friend and enemy. In the vernacular of non-functional revolutionary science, my positionality is invoked, as we shall see, by the “power of abstraction” (Marx Capital I), by which I mean, following Marx, the substantive process out of which my political subjectivity is produced. For Marx, abstraction is a real and not a mental process, involving not only “the dull compulsion of economic relations” by which surplus value is pumped out of the labour process and my condition as a worker in capital is confirmed as a “real abstraction” (Marx Capital I) but, more importantly for my purposes, the resistance to that dull compulsion and my personification as wage-labour and, from that resistance, the possibility for a radical alternative world where my own needs and capacities as a social individual are framed as operating principles rather than resources to be plundered.

## Not change management

Student as Producer is about institutional change and might then be regarded as a change management project with students as “change agents” (Zandstra and Dunne 2009). Change management is the ‘go to’ latest fad in management and organisational studies (Birnbaum 2000). Change management is based on the fantasy that only organisations that become ever more entrepreneurial and innovative can survive the new economic realities (Peters 1992). In the recent period those realities have been dominated by the politics of austerity and precarity, making the demand for change appear ever more urgent and necessary (Du Gay 2000: 63,64). In this way, change management sets itself firmly against bureaucracy, which is characterised in the change management literature as red tape, procrastination, indecision, big government, the nanny state and a tendency towards indolence (Du Gay 2000).

A pertinent example of this drive for change management can be found in Drucker’s “post-capitalist” organisational world, not least because of the way in which he contextualises post-capitalism as a “knowledge society” and in that world identifies the “knowledge worker” as a predominant role model (Drucker 1993). As Drucker puts it: “The real, controlling resource and the absolutely decisive ‘factor of production’ is now neither capital, nor land nor labour. It is knowledge. Instead of capitalists and proletarians, the classes of the post-capitalist society are knowledge workers and service workers” (Drucker 1993: 6). In Drucker’s brave new post-capitalist world, society is dominated by educated persons divided into intellectuals and managers, the former living in the world of ideas and the latter in the world of work, neither able to exist without each other as knowledge is put to use to create innovative productivity (Drucker 1993).

Drucker did not expect the university to maintain its current institutional form, seeing it as a relic of capitalist society, overwhelmed by the consumerist demands of post-capitalism and the knowledge business (Rhodes 2001: xii). Drucker predicts:

*Thirty years from now the big university campuses will be relics. Universities won't survive. It's as large a change as when we first got the printed book. Higher education is in deep crisis.*

(Forbes: [www.forbes.com/forbes/1997/0310/5905122a\\_7.html](http://www.forbes.com/forbes/1997/0310/5905122a_7.html))

Student as Producer sets itself fundamentally against Drucker’s post-capitalist world and the knowledge factory on which it is based. Student as Producer starts, like Drucker, from the position of post-capitalist society but differs from Drucker in two important respects: first, academic values and ethics come before and are antithetical to the marketised imperative of knowledge workers; second, a post-capitalist society has yet to be achieved.

## The value of bureaucracy

The attachment to academic values and ethics and the aversion to the entrepreneurial project can be substantiated by a revaluation of the values of bureaucracy as a set of protocols and processes grounded in a set of morals and ethics that are highly valued in our society. These values include democracy, fairness, equality, freedom and collaboration. According to this definition, following the work of Max Weber (1978), bureaucracy is “a site of substantive ethical domain” (Du Gay 2000: 2) and “a particular ethos ... not only an ensemble of purposes and ideals within a given code of conduct but also ways and means of conducting oneself ... the bureau must be assessed in its own right as a particular moral institution and the ethical attributes of the bureaucrat be viewed as the contingent and often fragile achievements of that socially

organised sphere of moral existence” (Du Gay 2000: 4). In this way, the bureaucratic environment contains its very own rationality and sense of purpose (Du Gay 2000: 75).

One can add to this repurposing of bureaucracy as a rational, moral and ethical principle a clear intent to collectively and democratically deconstruct the role of vice-chancellors as the charismatic leaders on whose vision the future prosperity and reputation of the entrepreneurial university appears to depend (Goodall 2009).

## The value of value

Unlike Drucker’s formulations, Student as Producer maintains that post-capitalism has yet to be achieved. For Student as Producer, capitalism is defined not by the type of commodities it produces but, rather, society is dominated by the commodity-form. In that sense it is literally immaterial what commodities are produced so long as the commodity-form is the organising principle of society (Marx Capital I). The commodity-form points to the fact that the fundamental organisation principle for capitalist society is not market exchange relations but the sphere of production as the site within which value is produced (Clarke 1991).

Post-capitalism, for Student as Producer, is achieved not by adaptation to an existing state of affairs but is the creation of a set of resilient circumstances derived from the determining circumstances which demand to be transformed. The logic of transformation for Student as Producer comes from the fact that neither the market-led system of social development nor the model of constant growth on which it is based is sustainable: both have devastating consequences beyond human imagination. The main difference between Drucker’s post-capitalist world and the world of Student as Producer is that social subjects do not simply adapt to a new objective situation but the objective conditions of a new social order are transformed by the actions of social subjects. As the title Student as Producer implies, the focus of transformation is production, not exchange, and is achieved through different forms of collaborative arrangements resulting in different forms through which products can be appropriated. If transformation is based purely on the logic of exchange, as it *is* in Drucker’s so-called post-capitalist world, then the logic of that project can only be to ensure that nothing changes, that the world remains the same: “If we want things to stay as they are, things will have to change” (Lampedusa 1960: 40). In the type of post-capitalist society advocated by Student as Producer, products of whatever kind are not made to be exchanged but are made to correspond to the needs and capacities of the social world in which they are made, following the communist logic “from each according to their capacities, to each according to their needs” (Marx 1875). This communist logic is the basis of what Roggero (2011) refers to as “the institution of the common”.

## Crisis: how do radical intellectuals act?

Drucker was right about one thing. Higher education is in crisis.

Student as Producer has emerged out of crisis or, more correctly, a “double crisis” (Edu-factory Collective 2009). First, a crisis about the meaning and purpose of higher education, where there is a drive towards an ever narrowing focus on marketisation and commercialisation with the student cast in the role of consumer. And, second, the more fundamental crisis out of which the crisis of meaning and purpose is contrived: the social crisis brought about as a result of the ongoing collapse of market-led social development, evidenced by the recent Great Recession (McNally 2011) and the end of the neoliberal project as a set of practices and principles (Roggero 2011).

This sense of crisis is immanent in the slogan ‘Student as Producer’. The concept Student as Producer is based on the title of a lecture, ‘Author as producer’, given by Benjamin to the Society of Anti-Fascists in Paris

in April 1934. The key question for the lecture was how radical intellectuals intervene in moments of social crisis and what form that intervention should take. The lecture was inspired by the Russian constructivists and their recognition of the role of intellectuals at the centre of the production of a new and experimental society. Benjamin took from the constructivists the central idea that production is not simply about the making of finished works but that the process of production should contain its own revolutionary organising principle. For Benjamin it is not enough that a progressive intellectual declares their commitment to progressive social transformation; their work should reflect the ways in which the social relations of capitalist society might be transformed. This transformation is expressed by the way in which progressive political practice is embedded in the nature of the work itself and most particularly the way in which the product is produced.

Benjamin highlights Bertolt Brecht's Epic Theatre to illustrate this effect. Epic Theatre seeks to create an active and critical attitude on the part of the audience to divest the performance of any illusion of pretence or artificiality (Wolin 1982), undermining the reproduction of illusion through experimentation. And so the play becomes pedagogical, with a 'teacherly' attitude bringing consumers of a product into contact with the production process, turning readers and spectators into collaborators (Benjamin 1970). Benjamin extends this thinking to the student experience and the issue of productivity. In 'The life of students', written in 1914/1915, he considered the nature of student life in relation to the politics of production. For Benjamin student life is undermined by vocational learning, which has perverted the creative spirit and "taken possession of the universities as a whole and has isolated them from the non-official creative life of the mind" (Benjamin 1996). This perversion has been further exacerbated by moving away from the 19th century liberal humanist vision for university teaching:

*The organisation of the university has ceased to be grounded in the productivity of its students, as its founders had envisaged. They thought of students as teachers and learners at the same time; as teacher, because productivity implies complete autonomy, with their minds fixed on science instead of the instructor's personality.*

(Benjamin 1996)

Benjamin is important because of the way in which he presents a revolutionary pedagogy on the basis of the reorganisation of intellectual labour. His work suggests that intellectual labour can be radicalised by including the student as the subject rather than the object of the teaching and learning process, ie the student as producer not consumer. In order to develop his approach further it is necessary to find ways to bring revolutionary pedagogy to life in the contemporary context. This is the essential project for Student as Producer at the University of Lincoln.

## **Student as Producer at the University of Lincoln: academic ethics and values**

Although the concept of student as producer is derived from 20th century avant-garde Marxism, few teachers at Lincoln are revolutionary Marxists. Student as Producer creates a radical framework for debates and discussion about policy and strategy for teaching and learning across the university, based on a radicalised political vernacular. Given the extent to which the language of managerialism has overwhelmed the discourse of higher education, this is no mean achievement.

This subversive aspect of Student as Producer is not only a function of Marxist social theory; it is the defining ethic of academic life and the experimental science on which it is based. These values and ethics have not had to be reinvented but are conjured out of the activities of academic workers at Lincoln and elsewhere:

“the Undercommons”, some of whom have not yet abandoned the notion of revolution (Harney and Moten 2009):

*Maroon communities of composition teachers, mentorless graduate students, adjunct Marxist historians, or queer management professors, state college ethnic studies departments, closed down film programmes, visa-expired Yemeni student newspaper editors, historically black college sociologists and feminist engineers. And what will the university say of them? It will say they are unprofessional. How do those who exceed the profession, who exceed and by exceeding escape, how do those maroons, problematise themselves, problematise the university, force the university to consider them a problem, a danger? The Undercommons ... are always at war, always in hiding.*

(Harney and Moten 2009: 149)

The subversion starts with a negative critique of higher education based on the dysfunctionality of its core activities, teaching and research, where the priority and status given to research divides institutions, and sets staff and student against each other (Boyer 1990; Brew 2006) This negative critique forms the basis of Student as Producer’s attachment to the notion of research-engaged teaching (Jenkins and Healey 2009): re-engineering the relationship between teaching and research so that undergraduates become part of the academic project of the university. This is how subversion works, by using the language and protocols of the enterprise university against itself. For example, employability is redefined by Student as Producer as the world of work, giving space for academics to engage in a critical debate about student unemployment, poverty and debt (Neary 2006). The debate about the student learning environment is framed around the politics of space and spatiality, the construction of democratic and horizontal spaces within which collaborations can multiply (Neary and Saunders 2010). Technologies for education at the University of Lincoln are imbued with the “hacker ethic” (Himanen 2001; Winn 2012) where “a new subjectivity is taking shape around a voluntarily entered, collective labour activity” (Soderburg 2008: 2) against the “boredom of commodified labour” (Soderburg 2008: 44) and “a gut reaction against the regularisation and intensification of work” (Soderburg 2008: 18). Hacking here becomes a practice of provocative emancipation (Soderburg 2008: 94) in which “struggle is carried out inside the enemy host and must therefore be subversive rather than confrontational in character” (Soderburg 2008: 134).

Students are free to engage with Student as Producer in whatever ways suit their inclinations: as a standout item on a CV to gain an advantage in the job market (Student as Producer 2011), as a platform from which to influence HE policy at the national and international level (QAA 2012b), or as a radical critique on which to design alternative and experimental forms of higher learning (Alternative Art College 2012). While not all students appreciate the freedom that is on offer, Student as Producer can be most dynamic and effective when committed and dedicated staff work with this dissensus, in some cases to create an enriched “rhizomic” learning environment (Coley, Lockwood and O’Meara 2012).

This subversive ethic and academic-valued approach is written into the bureaucratic framework for teaching and learning at the University of Lincoln, through its teaching and learning strategy, and in the documentation for staff and students that shapes the protocols and procedures for quality validation, monitoring and reporting procedures, including the *Student as Producer user guide* (<http://studentasproducer.lincoln.ac.uk>).

The problem is how to maintain subversion in a context in which student as consumer is the operational imperative among providers of higher education. Part of the answer to that question lies in constantly radicalising the practice and principles of Student as Producer to avoid recuperation; this involves critically engaging with revolutionary ideas like Roggero’s institution of the common.

## Student as Producer: institution of the common

Student as Producer exists beyond the University of Lincoln, forming part of a worldwide movement of academic activism, including scholars and students, against the increasing corporatisation and privatisation, against fees and the deregulation of higher education (Neary 2012). Where these actions have been theorised, they are ripped from the pages of the most subversive authors of the 20th century, including Henri Lefebvre, Guy Debord, Raoul Vaniegem, now written up to coincide with contemporary events. These new subversive writings include the Invisible Committee's (2009) *The coming insurrection*, Tiqqun's (2010) *Introduction to civil war*, and *Communiqués from occupied California: After the fall is now* (2010: <http://afterthefallcommuniqués.info/>).

An important book to emerge in this moment is Giggi Roggero's *The production of living knowledge: the crisis of the university and the transformation of labor in Europe and North America*, published in 2011. Roggero is a founding member of the Edu-factory Collective:

*As was the factory, so now is the university. Where once the factory was a paradigmatic site of struggle between workers and capitalists, so now the university is a key space of conflict, where the ownership of knowledge, the reproduction of the labour force, and the creation of social and cultural stratifications are all at stake. This is to say the university is not just another institution subject to sovereign and governmental controls, but a crucial site in which wider social struggles are won and lost.*

(Federici and Caffentzis 2007)

The book is written through the prism of autonomist Marxism and postcolonial studies, incorporating Marxist and poststructuralist theory to recuperate the concept of 'living labour' as a key Marxist category (Read 2003). Living labour recognises the working class, in its various compositions (eg Black Power, the student and women's movement) as capital's autonomous radical subject and the counterpoint against which capital is forced to rearrange its own failed regimes of accumulation. In the post-second world war period these regimes include Keynesianism, monetarism and now neoliberalism, as a set of disastrous intellectual ideas and programmes for action (Clarke 1988).

The key issue for Roggero, like Drucker, is to highlight the rise of knowledge, also known to Roggero as "cognitive capitalism", and the "knowledge worker" as the new regime of production to reinvigorate capitalist accumulation. Whereas Drucker points to the inevitability of knowledge production for capitalism and the associated death of Marxism, Roggero argues that the university and the production of knowledge have become a battlefield over what he calls the production of "abstract knowledge": knowledge for the capitalist market and the law of value (Roggero 2011: 6) against the production of living knowledge.

At the centre of Roggero's argument is the new institutional form by which living knowledge will be produced: the institution of the common. Key to Roggero's formulation is the way in which he distinguishes the notion of "the commons" from that of "the common": the former is "identified as something that exists in nature (water, earth, environment, territory, but also as well as information and knowledge)"; the latter is denaturalised, ie the outcome of an historical and social process: the crisis of capitalism, in which things, including knowledge, are common only because they are "embodied in living labour, its production and its struggles" (Roggero 2011: 8). In other words, "the common is the organization of something that did not exist beforehand, or the new composition of existing elements in a subversive social relationship" (Roggero 2011: 8). For Roggero, living knowledge is something that is constituted through class struggle, co-operation and radical practice. The purpose then is to turn the crisis of the university into a field of radical research in order to investigate and produce living knowledge: the institution of the common (Roggero 2011: 29).



Roggero provides a practical method to go with this theoretical exposition. He refers to this method as “self-education” or “militant enquiry” or “co-research”: *conricercia*. This method is profoundly anthropomorphic grounded in the methods of anarchist sociology and “new anthropology” (Roggero 2011: 140), based on ethnography and ethnomethodology: “Co-research questions the borders between research and politics, knowledge and conflicts, university and social context, work and militancy” (Roggero 2011: 5). Roggero’s method is not to be confused with workers’ enquiry: knowledge gathered by sociologists to be revealed to workers so they can overcome false consciousness and advance their struggle (Wright 2002). *Conricercia* is fundamentally constitutive, where “the production of knowledge is immediately the production of subjectivity and the construction of organisation” (Roggero 2011: 138), bringing together intellectual and political action from the perspective of living knowledge and living labour as a form of revolutionary practice.

The power of Roggero’s work is that it creates an inspirational, theoretically informed case study for workers and students protesting against austerity and precarity in higher education. However, its limits can detract from and undermine the revolutionary process it is attempting to support.

Ironically, for a method that seeks to denaturalise the commons, the constitutive agent, living labour, appears ready made. However, labour is not an already existing autonomous radical subject; rather, labour has been fabricated by the social relations of capitalist production. Labour, as such, does not exist as but is constituted only as real abstraction (Dinerstein and Neary 2002). The consequences of this fetishising of labour have been argued persuasively elsewhere: at one extreme the privileging of labour as the affirmative subject leads to the prescription for a worker society in which preoccupation with work as the epitome of human sociability predominates; at another extreme, the privileging of labour underestimates the extent to which humanity has been subsumed by the capital relation (Postone 1996; Endnotes 2010). A full exposition of capitalist work, as well as its possible radical alternatives, requires a substantive elaboration of the social relations of labour in capitalism, which must include an enquiry into the real nature of labour and its relation to the natural world (Foster 2000).

The separation of the natural from the social is characteristic of 20th century Marxism (Foster 2000; Burkett 1999; Smith 1990). In Roggero’s version of post-autonomia, Marxism is framed within a political economy of the social–human world, rather than a “political ecology” (Castree 2007; Gorz 1987) or a “strong historical materialism” (Foster 2000: 9). The power of a “strong historical materialism is that it does not impoverish its materialism by denying the natural-physical aspects of material existence” (Foster 2000: 9). The full power of Marxist science lies in a reinvigoration of nature as a significant contribution to value: “labour is the father of material wealth, the earth its mother” (Marx, quoted in Foster 2000: 168). As Marx discovered in his doctoral thesis on epicurian materialism, “Nothing comes from nothing” (Foster 2000: 176); and that the purpose of communist science is to recover the substance out of which everything is made so that it can be remade in a way that supports the struggle for life. Just as in the natural sciences in order to maintain and enhance the natural world it is important to understand its real nature. Hence Marx’s statement from his doctoral dissertation: “happiness lies also in knowledge of the meteors” (Marx’s doctoral dissertation, quoted in DeGolyer 1992: 125).

For Marx, science is the relationship between the natural and the social world, the development of which is natural history (Foster 2000). Marx was clear that only when “science starts from nature is it real science” (Foster 2000: 77) and that human history was therefore “a real part of natural history ... Natural science will in time subsume the science of man just as the science of man will subsume natural science: there will be one science” (Marx, quoted in Foster 2000: 77). This one science, or communism, does not rely on speculative or philosophical solutions, but is a scientific method of enquiry and reason based on an awareness of the historical development of humanity as the alienation from nature (Foster 2000: 114). This alienation can only

be overcome through “the significance of revolutionary practical critical activity” (Marx’s theses on Feuerbach, quoted in Foster 2000: 112).

The consequence of the alienation of humanity from the Earth is the current crisis facing humanity, captured by the apocalyptic vision of biospheric catastrophe. The catastrophe can only be avoided by fixing what Marx referred to as “metabolic rift” between humanity and the Earth (Foster 2000: 114), now ripped apart by the logic of capitalist production. Recovering the metabolism requires not only an ethnography but a radical ethnoecology as well, grounded in the metabolic relation between humanity and nature, so as to transcend alienated existence (Foster 2000: 221). This work is already going on through the recovery of “traditional environmental knowledge” buried in extinct or threatened cultures (Foster 2000: 220), in the construction of “enlivened universities” (Teamey 2012) and, for example, in the urban farms of Detroit and other American cities devastated by deindustrialisation (Choo 2011), as well as through a rational bureaucratic reappraisal of the forces of modern science and technology within an ethic and valued framework in which humanity and nature are the project rather than the resource.

The most dichotomous reading of ‘living knowledge’ would have it that Roggero’s separation of the natural ‘commons’ from the historical and the social ‘common’ reconstitutes the schism in bourgeois science between the natural and the social world. This schism is reflected in the ways in which universities are constituted between the natural and the social sciences and subdivided into disciplinary areas. The key issue for Student as Producer is how the natural and social sciences might be reconnected as a curriculum for practical revolutionary action.

## Postgraduate education at the University of Lincoln: recovering the principle of revolutionary science: one science

The University of Lincoln has taken a small step to reconnect the natural with the social sciences through the development of a postgraduate Researcher Education programme. The programme provides a unique opportunity for PhD students to join a community of researchers by raising awareness of the wide range of methodologies and practical strategies to foster an appreciation of academic diversity and to offer a relaxed environment for networking and personal development. During the programme, a variety of research approaches and specific methods are introduced along with a consideration of issues such as criticality, ethics and the dissemination of research outcomes. Although the course is non-credit bearing, new PhD students are encouraged to participate in the programme to get to know other researchers in an atmosphere of mutual learning. The themes explored are Philosophy of Research, Epistemological Frameworks, Reflexivity and Criticality, Research Design, Qualitative and Quantitative Research Methods, and Research Ethics. Visits across the city of Lincoln make the link between natural science and the humanities by focusing on the cultural and scientific history of Lincolnshire, and have included visits to the Tennyson Research Centre in the dome of Lincoln Central Library and the Joseph Banks Conservatory.

The Researcher Education programme has been developed as an interdisciplinary framework for research students in all subject areas across the University of Lincoln. However, the concept of interdisciplinarity is itself being challenged through an issue that has emerged out of the programme: not how we connect the disparate cognitive disciplines, but rather, and more fundamentally, what is the real nature of experimental science. This fundamental point is established by drawing on the work of Robert Grosseteste, 1170–1253, a former Bishop of Lincoln as well as first vice-chancellor of Oxford University, and counterposing him with another experimental scientist, Karl Marx, 1811–1883. The revolutionary social science of Marx, though his exposition of critical political economy, is well known. Robert Grosseteste, while much less well known, is

regarded by medieval historians as a key figure in the development of the method of experimental science through practical applications and as being central to the creation of the modern university (Southern 1992; McEvoy 2000).

A very interesting and little discussed matter with regard to Marx is his reliance on the work of ancient scholars, and particularly the work of Aristotle, as the basis for his scientific method (McCarthy 1992). Robert Grosseteste, on the other hand, is known among medieval historians for his attachment to the work of Aristotle. It is this connection to the work of Aristotle that links Marx's scientific method with the work of Robert Grosseteste.

A key feature of Grosseteste's experimental science was his aversion to scholasticism, ie the imposition of an already existing body of authoritative biblical knowledge, as western Christendom sought to impose its jurisdiction through doctrinal regulation and cannon law. Grosseteste's anti-scholasticism is grounded in the application of practical knowledge and the method through which such knowledge might be advanced. Following Aristotle, the basis of Grosseteste's method is in making a connection between the powers of observation–induction to discover the real substance of things in response to practical matters, linked to the deductive powers of metaphysics: imagination and intuition (McEvoy 2000). Grosseteste's important scientific advance was his theory of light metaphysics by which he claimed that light is the substance of all corporeal things: “The first corporeal form, which some call corporeity is, in my opinion, light” (Grosseteste De Luce 1235–1240, quoted in McEvoy 2000). For Grosseteste, light is the essence of matter, expanded and condensing into the forms that constitute the universe: predating big bang theory (McEvoy 2000). This formulation was profoundly theological in that Grosseteste further substantiated his theory by claiming that God is the divine light and the substance of everything. In this way knowledge is revealed through God's illumination and is the essence of God's ‘reflection’. The grandeur of Grosseteste's vision is brought to life/light in the architecture of Lincoln cathedral (Hendrix 2011). Robert Grosseteste's writings “constitute the beginnings of modern science” (Hendrix 2011: 4), not ‘standing on shoulders of giants’ but as a disruptive and subversive influence (Southern 1992: 36,37).

*... it opens up the limitless possibility of new knowledge quite independent of statements by earlier writers and only to be tested by further observations of which the greater part are still in the future ... it does not lead to order and consolidation but to change and disarray.*

(Southern 1992: 169)

It is this aspect of disruptive subversion through his experimental activities that forms the basis of Grosseteste's scientific enterprise, and confirms what we already know and what we already do not know: science, by its very nature, is an inherently revolutionary activity.

## Key aspects of Marx's scientific method

Marx follows Grosseteste in his adherence to Aristotelian inductive–deductive methodology: to establish the real substance (inner connection) of matter through observation/experimentation and reason. A key feature of Marx's experimental science, following from his Aristotelian method, is his aversion to dogmatic assumptions, in this case liberal social sciences as well as scholasticism. The liberal social sciences, eg economics, philosophy, sociology, deny any unifying principle or substance for the social world. For the liberal sciences, society is made up of a chaotic and complex network of exchange and consuming relationships, reflecting back to itself the fundamentalist ideology that supports market-based models of social development, where the value of commodities is recognised in the process of exchange (Clarke 1991).

Through his inductive method, Marx reveals that the substance of social wealth is not a vast accumulation of things validated by the market but is, in fact, abstracted labour, or value: congealed quantities of human energy materialised as commodities to be exchanged. Marx referred to these commodities as “real abstractions”, ie a social (immaterial) process hidden from view that takes on material forms. While the value of commodities is recognised in exchange, the expansive quality of value (surplus value) is produced in the process of production through the exploitation of human labour and the natural world. Like Grosseteste, Marx made a connection between his inductive and deductive methods; while Grosseteste revealed God as the substance of all things, Marx uncovered the unifying logic for the expansion of value in the concept of capital. Using the power of reason based on his study of critical political economy, Marx replaced mystical metaphysics, such as that found in Grosseteste’s theory of light/God, with capital as “the automatic subject” (Marx Capital I) of human society, ie a form of “subjectivity without an Ego or consciousness” and the substantive matter of the “social universe” (Postone 1996): the “supreme form of social being” (Clarke 1988). Further connections can be made between Marx’s political cosmology and Einstein’s revolutionary science (Neary 2004; Neary and Rikowski 2002; Kay and Mott 1982).

Like Grosseteste’s experimental science, Marx’s social theory is inherently disruptive and subversive, not as a framework for action but as a critical attitude that recognises the real substance of sociality as human need and capacity and, through the assertion of these needs and capacities, the possibility of a society of abundance (Kay and Mott 1982). The grandeur of Marx’s communist science is the extent to which it recognises that the transformation of capitalist society is inherent in the struggle against the impossibility of capitalist life: “All history is the history of class struggle” (Marx: *Communist Manifesto*). Marx’s most important discovery is that the crisis of capital is the power of humanity reasserting itself and recovering the natural world.

For Marx, communist science is, as it was for Grosseteste, revolutionary science: ie an essential form of disruptive transformation. For Marx, disruption is at the level of society rather than the spiritual world. The problem in the contemporary world, in which capital has replaced God as the “supreme form of being” (Clarke 1988), is the extent to which this disruption is undermined by non-revolutionary science, ie academic capitalism. To recover the spirit of revolutionary science it is necessary to ground Grosseteste in the social and material world and bring him ‘down to earth’. This means recognising Grosseteste’s metaphysics of light/God as an ideal abstraction, and to reconstitute this ideal abstraction in the form in which Marx revealed the power of abstraction, as real abstractions: the substance of the social universe fabricated out of generalised human energy/capacity (abstract labour) and congealed in the form of commodities. In this way, it might be possible to discover ways to unlock the explosive human and natural energy/capacity fixed in these real abstractions (the commodity-form), so as to satisfy and develop real human need and capacities in a way that sustains the natural world out of which all life is derived.

## Research question

A key point for the students and academics to consider is the extent to which revolutionary science is undermined by a scientific enterprise based not on the development of knowledge but rather the development of academic capitalism (non-revolutionary science). In order to recover the substance of communist revolutionary science, it is necessary to reinvent the ideal of the university on the principles of revolutionary science. How can we redesign the idea of the university to enhance and support this vision of revolutionary science? This is the main point and purpose of Student as Producer.

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