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Food, imperialism and dependency

As we have seen throughout this enquiry, many constructive elements for a sustainable paradigm already exist. Nonetheless, something prevents them cohering into an ensemble where they might determine a new mode of production. The obstacle is partly the difficult leap of consciousness to a true paradigm-shift, and partly repression by the ruling order . . . more specifically the structural forms this has acquired over the past century, which is the theme of the present chapter. By understanding what we are up against, we may better understand why the change-over – however technical it sometimes appears – inevitably involves political radicalism.

The 'Green Revolution' in the structural logic of imperialism

To create a social science of imperialism was not easy, and what is often missed is how, in doing so, Lenin found himself obliged to anticipate general systems theory. His most intensive study of dialectics (Lenin, 1972 [1914–16]), in other words of the dialogue between nature and consciousness, was undertaken in the period when his book *Imperialism, the Highest Stage of Capitalism* was under preparation.

Dialectics draws upon nature to understand processes of change and development, and one of its key principles is to grasp contradiction within phenomena as the driver of change. In this chapter, we will encounter several such dualities within imperialism, which encapsulate its essence.

Imperialism is an era of transition, and indeed of *rift*, in the sense that it tears history apart by pulling in two directions. On the one hand it is highly *reactionary* (both in militarism and politics), acting to suppress

creative initiative. On the other, it 'drags the capitalists, against their will and consciousness, into some sort of new social order…' (Lenin, 1939). Thus, through the course of this era, elements of a new order are at the same time emerging and being held back. If, therefore, today's situation may sometimes seem exasperatingly static, there could be a dynamism within this: where two conflicting forces temporarily neutralise each other, something could rapidly unblock the situation.

Imperialism has two closely linked facets: structural change within capitalism and dominance over the global South. The exploitation and resistance of the peoples of the South is always a central theme, and new structural forms of capitalism evolve in a two-way relation of cause and effect. Such forms include the rise of mega-corporations and speculative finance capital, which serve simultaneously as mechanisms of accumulation, and structures to smother resistance. Both the corporate and finance-capital aspects of imperialism are exemplified in the food system, a system which therefore cannot be changed without challenging them.

In Chapter 4, we saw how capitalism, and more specifically its twentieth/twenty-first century form (imperialism), has been punctuated by several phases or 'waves'. On the one hand, each such phase has its unique characteristics – specifically, industries and technologies – which mark it out. On the other hand, it imparts path-dependencies which seem to endure throughout successive phase-shifts.

Let us consider the chemical industry: we've discussed (Chapter 3) the chemical paradigm as a 'fix' for feeding the urban poor. However, only by placing it in the context of the corporate interests driving imperialism can we get the full picture. While the chemical industry typified imperialism in its early twentieth-century form, it also initiated an enduring path-dependency, beginning with fertilisers, and then bringing in pesticides and herbicides. If, during later accumulation regimes, other new industries/technologies arose to assume a leading role, most notably biotech, these were still inscribed within a similar logic.

The driving narrative can be illustrated if we consider one of the key reference-points for food imperialism, the Green Revolution (GR).

In the strict sense this refers to a programme – strongly developed in the 1960s – to promote hybridised 'high-yielding varieties' (HYVs) of rice and wheat. Key to understanding the GR is an extremely close interdependence between chemicals and seeds. As with genetically modified organisms (GMOs) later, HYVs were deliberately bred so that they would only function with high inputs of chemicals (fertiliser, pesticide, etc.) and machinery manufactured by the corporations which sponsored

the GR (Glaeser, 1987). For example, HYVs were bred to 'tolerate' herbicides which kill off competing plants. And because F1 (first generation) hybrids from two parent strains do not reproduce true to type, Southern farmers would remain eternally dependent on the seed supplier. In the economic logic of imperialism, it is *profitable* to sell seeds, fertiliser and pesticide. In the political logic, this builds a web of power, holding individual farmers and whole countries in thrall. Traditional approaches (where you work in partnership with natural ecologies, where insects aiming to eat your crop meet their evolved natural predators, where the primary defence against disease is evolved immunities, where intercropping or succession helps us 'borrow' immunities from one plant to protect its neighbour, where spontaneous plants are either incorporated for their properties or out-competed by ground cover) are repudiated. Instead, you simply *wipe out everything*. And indeed, expunging diversity is practically affirmed as a virtue: only a few staples were tolerated, and only a single strain of each.

All these interdependencies of profit and politics were experimented and refined through the GR so, in this sense (again a case of path-dependencies), we can say the GR is alive today, and GM is an extension of it. In fact the corporate interests and institutions forged during that period are still active: the Consultative Group on International Agriculture Research (CGIAR), effectively run by the World Bank, still quietly co-ordinates global research agendas (Alston, et al., 2006, p.326–7).

This is an embarrassing reality for the ruling instances, who still don't quite know how to handle the GR's legacy. When the UN Food and Agriculure Organization (FAO) speaks of 'greening the Green Revolution' (FAO, 2011), it adopts a cringingly ambiguous formulation, which somehow implies reforming what is basically unreformable.

We can analyse this whole picture of simplification and homogenisation at two levels.

(a) At a rational level, it is a most efficient form of exploitation and dominance. What underpins it is a deep connection between the reductionist-linear approach to science and political/social power. If, *conceptually*, you simplify a system and its chains of cause and effect, then *politically* it is easy to rule. In this way, by connecting political ecology with imperialism theory, via our case study of food, we may bring out certain features which will enrich both.
(b) On the other hand, however much capitalism may appears rationalist (even conspiratorial), this is in the deepest sense – as Merchant (1980) again shows – mere camouflage for a non-rational, manic

and phallocentric control-freakery…which imperialism fully inherited. Elsewhere (Biel, 2012), I have explored the notion of 'exterminism', a term coined by E.P. Thompson (Thompson, 1980) and developed in an interesting way by Mark Jones (Jones, 2001). Since we are emphasising not just techniques, but mentalities, it would be important to see this in the context of the Cold War: the US bombing of Vietnam, Cambodia and Laos; napalm and Agent Orange. Internally in the US, too, there is a whole landscape of images around 'lawns' and 'weeds' which symbolise the extirpation of communism, and more generally of dissent and diversity. At a conference of the US elite, a Congressman, citing the authority of the FBI, openly compared eco-activists to Al Qaeda: 'This is a weed that has come into the lawn and if you don't cut it out, it will spread.' (Quoted in Biel, 2015b, p.39). From herbicide to genocide, there is somehow a continuum: expunging diversity, expunging weeds, expunging dissent.

Neo-colonialism's harsh impact on the global South

If the web of power is strong enough, a transition could be engineered from the formal colonialism of early imperialism into a 'neo-colonialism', where Southern elites are vouchsafed their own flags and anthems but remain in thrall to the core. It cannot be overemphasised how important control over a country's food supply has been as a condition for this. Cold War warrior Henry Kissinger openly boasted of using 'food as a weapon' (Linear, 1985). Conversely, it is precisely the hollow 'sovereignty' of neo-colonialism which is today being critiqued from below by food sovereignty movements.

In the process of an engineered food dependency, a major role was played by discourses of 'development' and modernisation. These had two functions: smashing 'tradition' (i.e. the good side of tradition: localism, autonomous knowledge and farmer-based research); and propagating a model where the goal of development was wholly identified with industrialisation, leaving agriculture starved of investment.

Thus, policies urged in the 1950s by development theorists like Walt Rostow imaged traditional societies as 'backward' *precisely because* their people were able to rely on the bounty of fertile lands (Rostow, 1958, p.159); this allegedly made them lazy so they had no incentive to become entrepreneurs. However, if the 'old' rural order had to be expunged, no autonomous modernised agriculture was allowed to take

its place: to escape 'backwardness', developing nations must industrialise *rapidly* (the phrase Rostow used was 'takeoff', implying some sense of escape velocity), which meant extorting, somehow, a massive surplus from the countryside to feed the urban population *even though investment was all flowing into industry*. The result could only be to perpetuate food dependence.

Although, in its quintessential form, this approach was a product of Western imperialism, the notion of squeezing farmers to invest in industrial growth found a certain basis in Soviet policy too (Amin, 1981) (in contradiction to an opposite approach of sustainable agriculture in the USSR, which we will discuss in Chapter 12), and notably proved seductive to populist nationalist regimes with some anti-imperialist pretentions – Egypt under Nasser being a classic case. Mao Zedong in China was one of very few to realise that such an approach would be disastrous for development, *including that of industry* (Mao, 1977 [1956], p.286). As Amin showed, in contrast to a theoretical closed-economy model where the proceeds from exploiting farmers would remain within the national economy, accumulation circuits are in reality global (Amin, 1974): any surplus squeezed from the Southern agricultural sector tends to flow to the core. I would say that many lessons of the dependency school still apply (Biel, 2000), and the global food chains, which impose such horrific exploitation on Southern rural dwellers (Patel, 2008), can still be understood as expressions of accumulation on a world scale. It should be noted, too, that dependency implies its opposite: a delinked model (Amin 1986) in which national development serves in the first place that of agriculture (Amin 1980. p.144 ff.); here, the dependency school merits recognition as an antecedent of food sovereignty.

Since the promise of 'modernisation' was actually hollow, the resultant social formations readily subsumed the bad side of the tradition they claimed to reject. In pre-capitalist societies (feudal, or perhaps the better term is 'tributary' – Amin, 1980), there had been a kind of balance whereby wealthy rural elites had prescribed duties of patronage. In contrast, under neo-colonialism, as Baran points out, the exploitation of populations by their domestic agrarian rulers was '. . . freed of the mitigating constraints inherited from the feudal tradition' (Baran, 1958, p.76): in other words, the functional part of elite agrarian tradition was scrapped, leaving only the oppressive bit. This is why 'modernising' societies are often rooted in very primitive landholding structures, a point well made in the analysis of Indian society by the Naxalite revolutionaries of the 1960s (c.f. Bannerjee, 1984), and which has surely retained its relevance today.

An imperialism of resource flows, and how to fight it

For a still deeper perspective on exploitation, including its neo-colonial form, we should now consider resource flows.

As we argued earlier, one way to analyse a system is through its inputs and outputs. In urban/industrial society, linear flows replace loops (de Rosnay, 1979), inputs are thoughtlessly degraded, and excessive waste ejected. In a thermodynamic sense, we can represent the inflow as low entropy or 'exergy' (Hornborg, 2001), which turns into entropy when used up.

From this angle, we might approach the food system by examining only what flows into and out of it, leaving the mode of cultivation itself as a black box. Here, political ecology would consider how such flows are *controlled* and, on this topic, Malcolm Caldwell (1931–78) made crucial contributions:

[1] in his notion of 'protein imperialism' he showed how the meat industry in the core exists only on the basis of global flows of nutrients (Caldwell, 1977), thus providing a model for other exploitative flows;
[2] he showed how these global flows relate to the entropy issue, i.e. the degradation of energy/matter from a differentiated and 'available' form (where they constitute a resource) into a form where they become polluting waste (Caldwell, n.d.). In other words, we must see entropy and social exploitation as linked.

The deduction might be (still regarding the farming model itself as a 'black box') simply to liberate the food system from such exploitative flows. This would be one line of argument in favour of localism.

The above level of analysis, although somewhat helpful, is only partial. Caldwell's weakness was to remain subject to a chemical-reductionist view of agriculture which magnifies the role of inputs, notably of nitrogen, with the result that his argument has at times a pessimistic and Malthusian tone. This results from a one-sided reading of systems theory which overstresses thermodynamic flows at the expense of complexity. In reality, the whole point is what happens inside the 'black box': the magic ingredient which both keeps entropy low, and maintains the self-modifying faculty to embrace rift, is complexity. As we have argued, flows of energy into the system tend to be *negatively* rather than positively related to the effectiveness of a farming

methodology, inasmuch as the more you subject the soil to *work*, the more you weaken complexity (by damaging soil structure, organisms, fungal networks, etc.). It follows that food sovereignty and agroecology must be complementary: it's not enough merely to delink the farming system from exploitative flows without also revolutionising cultivation *itself*, in order to rebuild complexity.

A good example of a technique which builds complexity is intercropping, whereby we imitate the multi-layered forest, including a canopy, climbers and ground cover plants, the most famous example being the Native American system incorporating maize, beans and squash (Landon, 2008). However, if we pursue this example, it suddenly becomes clear that what, at first sight, appears merely an issue of farming technique is really indissociable from social struggle, in this case a hidden history of South-South and South-North knowledge transfer. Thus, from Jack D. Forbes' remarkable research, we learn how native American crops like solanum, maize and curcubits were introduced to Africa independently of the colonialists, through a close interaction between African and native American peoples as they fought to survive the dual holocaust of the sixteenth century: colonisation of the Americas and the slave trade (Forbes, 1993). Food was central to surviving colonial/imperial genocide.

More recently, the struggle against colonialism and neo-colonialism remains similarly inseparable from a restoration of sustainability within farming. Thus the great African leader and martyr Thomas Sankara (1949–87) from Burkina Faso critiqued the food issue both as a material basis of dependency (c.f. Shuffield, 2006), and as a paradigm to understand – and therefore to fight – exploitation in a more general sense. Sankara was arguably the first statesman to link the political struggle (for land/food, against neo-colonialism) with explicit support for agroecology, c.f. his encouragement of agroecological projects conducted by Pierre Rabhi, which still continue (Terre et Humanisme, 2014). The orientation of Rabhi's work seems to be very much South→North and South→South: *not* about 'introducing' agroecology from outside, but rather enriching it, learning from indigenous techniques, which in practice *are* agroecology even if they do not use the name.

Trade specialisation and the rise of globalism

The notion of free trade was proposed quite early in capitalist history, at the beginning of the nineteenth century, by David Ricardo. The justification was international co-operation in place of nationalist competition,

which seemed to make sense. However, there are too many crucial issues, notably ecological issues, which the theory sweeps aside. Its basis was the notion of 'comparative advantage', according to which each country should specialise in *only* the few products in which it could 'do best' (Ricardo, 1951). We cannot over-emphasise the importance of this point: under liberalism, *free trade is equivalent to specialisation*.

The most obvious ecological issue is to discount the impact of transport (plus refrigeration, etc.), hence the whole issue around food miles, but there is also something deeper.

The natural approach was always to cultivate a wide spread of crops, since, while any given year might be disastrous for some, this would not matter because it would be good for others. Every year is in some way 'extreme' and you may lose some crops completely: for example, the broad bean (*Vicia faba*) is prone to attack by a form of aphid, which is normally controlled by its natural predator, ladybirds (*Coccinellidae*). However, the disruption of seasons caused by climate change may lead to the latter breeding at the wrong time, in which case you lose the whole crop. Nevertheless, there will always be a bumper harvest of something else to compensate so, in that sense, there is no such thing as a 'bad year'. If you are specialised, on the contrary, both your livelihood as a farmer, and the food security of the consumer, will be jeopardised. Specialisation in agriculture is therefore antithetical to resilience. Although for the global South one could obviously say there is some comparative advantage for tropical crops, this argument is deceptive: the South's real 'advantage' under imperialism is cheap labour and lax environmental rules.

Given the exploitative potential, from an imperialist perspective the liberalisation of global trade seems a no-brainer.

Why, then, did it take so long to implement? The answer lies in the fact that a counter-trend also exists. One of imperialism's key dualities lies in the tension between its globalising face and its nationalistic/fascist/military face. Early imperialism, while highly internationalised at some level (notably investment), was also hyper-nationalist. In particular, wartime brought home the importance of food security as an offshoot of national security (thus an essentially militaristic definition). Accordingly, in the postwar/pre-neo-liberal phase (i.e. 1945 through to the 1980s), a strange situation prevailed: while the General Agreement on Tariffs and Trade (GATT) began tentatively to explore free trade *in industry*, in agriculture the capitalist powers actually became more nationalistic. The UK augmented its food self-sufficiency to a point where (by the early 1980s) *95 per cent* of indigenous-type food was locally grown (Barling, et al., 2008, p.11). That period in the history of

food imperialism was extremely important, because it laid the foundation for where we are today. While colloquially we tend to call the global North 'industrialised' (which seems to imply the South is agricultural), in reality the powerhouse of agriculture is *also* in the North, while the South, owing to the impact of 'development' policies which throttled rural investment, must depend on imports either of food itself or of agricultural technology. Thus the nationalism of the core served to restrict and deny that of the periphery.

More specifically, the systemic power of the North is concretised under two aspects:

[1] The issue of staples (starchy crops that supply the majority of carbohydrates and are thus strategic for food security). Parts of the core where agribusiness productivity is extremely high become major staple food exporters (notably of wheat) to the South, often displacing indigenous staples (sorghum in India, maize in Mexico) in the process. Here, we again see how a system, by being simplified and homogenised, is easier to control.

It is precisely on the basis of being in control of the world food system that imperialism felt safe – under neo-liberalism and globalisation, from the early 1980s onward – to realise more fully the exploitative potential of 'free' trade *in industry*. While a tendency to import consumer manufactures from the South was always latent in imperialism – as shown in the predictions of Hobson (Hobson, 1902) – it took a long time to realise. I would argue that it required the North to build its food empire first.

[2] Global value chains in food. The point of value chains is to fragment productive processes, sub-contracting tasks to small firms for whom the core company has no responsibility; if they go bust, someone else will pick up the contract. This has spawned a whole terminology: 'flexibility', 'zero stocks', etc. (Biel, 2000). Initially, this system was experimented with in industry but, during the latter part of the 1980s and early 1990s, the value chain approach was extended to food. With the Uruguay Round of GATT (1986–94) and inauguration of the World Trade Organization (1995), agricultural trade was subsumed into global accumulation, along with the 'trading' of intellectual property rights, which were of key significance for food-related technologies. From a food-regimes standpoint, there was at the same time an effect in accentuating the North-South divide: when the limitations of productivism were revealed within the global North – its focus

> solely on quantity had led to qualitative decline (Welch and Graham, 1999) – the intensive sector was internationalised (Marsden and Morley, 2014, p.8).

Once agricultural trade was globalised, this took to a whole new level the possibilities for controlling systems by homogenising them.

The effect was notably to promote an absurd expectation that there should be no seasonality in what we consume and that every crop must be available throughout the year. To take the case of asparagus, this can be grown perfectly well in England (as the author does), but only for six weeks per year, which is fine because that makes it special and there is a sense of expectation. Under globalisation, it is imported from Peru. Asparagus makes significant demands on water so, if there was any genuine comparative advantage, it would be from a country with plentiful water, but Peru is actually water-poor compared to the UK (Castanas, 2014). The legitimate aspiration is for people to have plenty of good-quality food every day; the insane aspiration is to have strawberries or asparagus 365 days a year. Yet the latter is what forms the basis of the flagship advertising campaign of the Tesco supermarket chain in Britain, with the slogan 'freshly clicked' (illustrated with graphics of asparagus and strawberries): you need only click your touchpad and they source the goods globally. The consumer has no connection with, or responsibility for, how this happens.

Homogenised systems are good for exploitation but bad for sustainability. Even now, neo-liberal economists shamelessly promote 'free trade' in food as a security against climate-induced scarcity (for example, Purdue University, 2016). The reality, however, is the opposite: any setup which is homogenised, de-localised and non-modular is vulnerable to shocks and system collapse; there is no security for any country, community, or city which depends on such a setup. Such a critique helps take our grasp of dependency beyond the point reached by the Dependency school: we now see it in terms of *systemic* vulnerabilities.

Agriculture and capital accumulation

The old farming paradigm was driven by *industrial* capitalism, in the following senses:

[1] *Politically*, the incentive was to feed urban proletarians enough to keep them docile.

[2] The *economic* incentive arises as follows: part of a worker's pay goes to replacing her/his subsistence, the remainder (surplus value, in Marx' terminology) being profit. Therefore, if you reduce the cost of subsistence (within which food obviously figures strongly), *profit in the industrial sector will rise*.

These arguments still apply, but a major change came with the crisis of the 1970s when conventional sectors dried up from an accumulation standpoint. Now, capitalism depends increasingly on agriculture as a means of accumulation in its own right.

We can interpret this conceptually in two ways:

(a) Rosa Luxemburg predicted, during the early twentieth-century imperialism debate (Luxemburg, 1913), that accumulation cannot reproduce itself out of nothing: it must always snatch, and commodify, new realms of existence, sucking each dry before clawing in the next (this is one reason why I argued that there is an 'entropy' intrinsic to capitalism – Biel, 2012). When neoliberalism came in, in the early 1980s (marking a qualitative increase of commodification at every level), it found much untapped potential in agriculture, as well as in farming-related 'intellectual property', notably biotechnology.
(b) As Marx revealed (Marx, 1954 [1887]), the competition of capitals creates a driving logic to replace labour by machines: in a large-scale, mechanised process, a handful of workers produce many goods, making the enterprise more competitive.

This latter tendency was initially realised in industry but has obvious implications for agriculture as well: today in parts of the global North perhaps 2–3 per cent of the population work in agriculture and, owing to the high level of technology, produce (unsustainably) vast volumes of food. Hence agriculture fully assumes the characteristic features of imperialism: concentration, agribusiness, factory farming.

Whereas the critique of productivism would address this same reality – the shift to agribusiness and mechanisation – from the standpoint of increasing the productivity *of land* (so as to feed more people), the Marxian argument adds the dimension of raising the productivity *of labour*. The difference is important, because it is by no means demonstrable that concentration actually *does* increase the productivity of land: small farms may in fact be at least as productive as agribusiness, if not more so (GRAIN, 2016, p.84). The fact that the productivity of labour

increases is, however, indisputable. Using this logic – which humanity does not really want or need, but is forced by the structural dynamic of capitalism to follow – the result is not just to raise unemployment but, more specifically, to effect a depopulation of the countryside accompanied by a kind of urbanisation driven more by rural dispossession than by the promise of actual urban employment.

This argument is important for how we appraise the 'new paradigm' addressed in FAO/United Nations Conference on Trade and Development (UNCTAD) discourses. On the one hand, it calls for maintaining and indeed increasing *the productivity of land* ('sustainable intensification'). On the other hand, a renewed emphasis on small farms seems to imply a *decrease in the productivity of labour*: as rural livelihoods are rebuilt, farming will become more labour-intensive (as opposed to capital-intensive); quite possibly, too, a de-urbanising 'counter-exodus' will occur, whereby the proportion of rural population increases somewhat.

Does this model make sense, and can we afford to make farming more labour-intensive?

To answer this, we need to revisit our discussion of 'work'. The key point is that replacing human labour by technology means a *decrease* of efficiency, by destroying the free energy of self-organising soil systems (Chapters 5 and 7). Redressing this, a less technology-driven farming model would actually be more efficient. Of course we are not speaking of a neo-feudal future where serfs replace combine harvesters. The reason we do not need this is that today's mainstream paradigm is really an ultra-high-work system, in heavy energy deficit, each calorie of food requiring at least 10 calories of input (Glaeser and Phillips-Howard, 1987; Lott, 2011), which is, however, disguised by the use of fossil fuels. Potentially, therefore, the small-farm model makes sense but only with a simultaneous shift to low-work cultivation methods (such as 'do-nothing' farming – Fukuoka, 1978) inspired by 'deep tradition'.

We must also factor in the fact that the energy supplied by labour itself needs energy to feed it. This connects with a point highlighted by some environmental bloggers (e.g. Bluejay, 2013; Goodall, 2014), namely that if the calories consumed in physical exercise are replaced by food *produced under the current mainstream system*, it is more environmentally-friendly to put fossil fuels in your car, than to walk! The energy equation can be brought back into balance if we consume the low-input food we are producing (another argument for circularity and localism), while interestingly – as revealed by research among hunter-gatherers – an active lifestyle seems not to require more food

(Pontzer, et al., 2012) because the body adjusts. The solution, then, is to move back/forward to the situation which made Rostow apoplectic: people living from nature's bounty without working too much.

On this basis, we can say that the FAO/UNCTAD scenario of sustainable intensification plus small farms makes sense and is perfectly realisable *from an energy input/output angle*.

However, there are fundamental socio-political dimensions which the official discourse does not acknowledge. A knowledge-intensive, low-work system implies empowerment, a redistribution of power away from corporate intellectual property, and liberation from the dominance of global value chains. If these conditions are absent, the switch to small farms, which should in principle be progressive, could actually be just another form of exploitation. Let us explore the reasons for this.

Resisting the co-optation of small farmers in a new regime of imperialism

The possibility for a co-opted form of small enterprise was always latent in imperialism. It is implied by yet another of the dualities we keep encountering: on the one hand capitalism pushes towards modernity, monetary economy, the dominance of market relations, concentration (larger enterprises gobbling up small ones), and the replacement of labour by technology. *Superficially this appears very much the dominant trend*, highly typical of the imperialist phase. On the other hand, there was always a faculty for subsuming many kinds of more 'primitive' determinants. This is a major issue in the feminist critique of the household (Hartsock, 1983): the household was a unit inherited from patriarchal society ('bad tradition'), and subsumed under capitalism (Biel, 2000, p.133). Furthermore, sectors of the population marked out by ascribed gender and 'racial' determinants, or by informal (e.g. undocumented) status, are super-exploited in activities very often labour-intensive, self-employed and non-monetarised. A similar line of argument is seen in Dependency theory, according to which, 'insofar as primitive accumulation refers to accumulation on the basis of production with non-capitalist relations of production, it need not be prior to, but can also be contemporary with capitalist production and accumulation' (Frank, 1978, p.241).

In this, a tactic has always been to enlist the oppressed as agents in their own oppression and, here, the relationship with technology is interesting. Household appliances were advertised as liberatory, but

were really just a way of anchoring the household in a new accumulation regime. There is an analogy with farming, because the chemical-intensive paradigm would be insecure if embodied only in corporations; it must also colonise the mind of small farmers. This was possible because the pre-modern system, *as peasants actually experienced it* (i.e. circumscribed by corrupted elites in collusion with colonialism), although formally organic, was the antithesis of a low-work deep tradition; on the contrary, it imposed backbreaking toil for low yields. Therefore, when modernism offered a false promise of liberation through a sanitised, homogenised world of chemicals and miracle seeds, a magical passport to predictable high yields free from vagaries of climate, a new prosperity, it is altogether understandable that many welcomed it.

The question is how to escape this situation today.

The kinds of paradigm-shift addressed by Kuhn (1970) were already a deeper issue (in world-view and modes of being) than typically envisaged by FAO-style 'paradigm-shift' discourses, but even then they took place in the minds of elite thinkers like Galileo. What we need now is something much deeper still, because it must come from below. It is a question of *conscientisation*: and whether in the work of Freire (1972), Biko (1978) or Fanon (1952), conscientisation is always about curing a colonisation of the mind. This is why the political side of the movement – food sovereignty – is inseparable from the physical cultivation methods (agroecology etc.). If you only have the politics (community autonomy, national sovereignty, etc.) without fundamentally changing the physical cultivation methods, it will be a failure and, conversely, to have only agroecology without the politics would be equally nonsensical.

In the absence of political radicalism, the 'new paradigm' might indeed be mere window-dressing for a new episode in the history of capitalism's super-exploitation of households and small producers. This is especially likely because, in its most recent phase, capitalism has indeed adapted to embrace principles of self-organisation and complexity, at least up to a point (Biel, 2012). With industrial value-chains, the whole issue is that these function *not by destroying small producers* – or even some elements of self-organisation amongst them, as in industrial clustering – but rather by corralling them into voluntary slavery. Foucault, in his work of the mid-1970s, prophetically described a power 'exercised through networks', and which 'functions only when it is part of a chain' (Foucault, 2003, p.29). In more recent specialist literature favourable to industrial organisation we find confirmation of this, in the fetishisation of concepts such as 'network capitalism' (defined as the culmination of three successive steps wherein governance has been exercised

respectively through markets, hierarchies and networks) (e.g. von Tunzelmann, 2003, p.369).

Although the initial focus of such a re-positioning was industry, the theory behind it actually derived from small *peasant* production. A key notion is that of 'self-exploitation'. In elaborating this term, A.V. Chayanov (1888–1937) showed (Chayanov, 1966) how the peasant household organised its resources *internally* according to principles which were not capitalist (c.f. also Thorner, 1971). Parallel with this, there was also a way of exploiting what we could call a reverse alienation: earlier capitalism had caused a 'dis-embedding' – to employ a concept introduced in varying contexts by Karl and Michael Polanyi (Polanyi, K., 1944; Polanyi, M., 1962) – in other words, *a separation from real conditions, real place and real nature*. Now the new management literature recognises such separation to have been counter-productive, and advocates instead a re-discovery of *embeddedness* – in place, in local realities, but of course subordinated to global networks. The new management theories from the 1980s thus helped capitalism prolong its rule by parasitising non-capitalist modes of organisation which might in principle be those of a new phase of human society and, in fact, this is the worst form of capitalist exploitation. It should be obvious that all these methods would be eminently transposable to agricultural smallholders.

Accordingly, even *or perhaps especially* in a model where small farms were insulated to some extent from the circuits of capitalism in their *internal* operation – so long as the buyer-driven food chains (dominated by Northern conglomerates) retain *overall* systemic control – the setup would be exploitative. It is indeed more profitable for the monetarised, fully-capitalist sector to exploit units which internalise their reproduction costs, than it would be if everything was monetarised – an argument which would apply not just to rural small farms, but also to urban food-related initiatives, including community-based ones. In this sense, both small farmers in the rural 'new paradigm', and the new 'community' discourse of modified neo-liberalism in the city, could be complementary pathways to exploitation.

If we are aware of the dangers, they could be avoided, by for example small farms and local initiatives finding an alternative pole of attraction to shield them from exploitation by global chains. This is exactly why a militant food sovereignty movement is an indispensable ingredient, although it can be supplemented by community social movements, and in this sense the city has a crucial contribution to make, for example by setting up Community Supported Agriculture schemes. The point is to escape imperialism's perverse 'embedding', and move back/forward

to a *meaningful* embedding within local cultures, knowledge systems and community networks.

Food sovereignty is, after all, merely a term currently attached to an emergent process, one which by definition is more than the sum of its parts. These parts include: land reform, indigenous struggles, food networks, seed exchange, community supported small farms, co-operatives, commons regimes in knowledge, localism, urban metabolism and many more. Such movements, generated by the reality of alienation and dispossession, are descendants of struggles going back to the origins of colonialism and class society, and the point now is to bring them together into an ensemble. The process is partly an objective one, common to self-organisation in all complex systems, and partly a subjective visioning of a better future. In any case, food sovereignty cannot fully be understood outside the context of the era within which it has arisen: that of imperialism.