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Fletcher, R.; Rammelt, C.

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Decoupling: A Key Fantasy of the Post-2015 Sustainable Development Agenda

ROBERT FLETCHER* & CRELIS RAMMELT**

*Wageningen University and Research, Wageningen, The Netherlands

**Utrecht University, Utrecht, The Netherlands

ABSTRACT *Central to the United Nations' post-2015 development agenda grounded in the Sustainable Development Goals is the notion of 'decoupling': the need to divorce economic growth from its ecological impact. For proponents, decoupling entails increasing the efficiency with which value is derived from natural resources in order to reconcile indefinite economic growth with environmental sustainability. However, even advocates admit that the idea of decoupling remains poorly conceptualized and subject to scant empirical investigation. This persistent commitment to a highly questionable idea suggests the possibility of a deeper psychological dynamic at work here. Drawing on Lacanian psychoanalytic theory, in this article we therefore analyze decoupling as a 'fantasy' that functions to obfuscate fundamental tensions among the goals of poverty alleviation, environmental sustainability, and profitable enterprise that it is intended to reconcile. In this way, decoupling serves to sustain faith in the possibility of attaining sustainable development within the context of a neoliberal capitalist economy that necessitates continual growth to confront inherent contradictions.*

Keywords: capitalism, neoliberalism, environment, decoupling, psychoanalysis

Introduction

'Decoupling' is the key term in a growing discussion of the potential to separate sustained economic growth from its environmental impact. While the concept has received relatively little direct public attention thus far, it is fast becoming a central component of the post-2015 development

Correspondence Addresses: Robert Fletcher, Sociology of Development and Change Group, Wageningen University and Research, De Leeuwenborch, Hollandseweg 1, Wageningen KN 6707, The Netherlands. Email: robert.fletcher@wur.nl; Crelis Rammelt, Department of Human Geography & Planning, Faculty of Geosciences, Utrecht University, Heidelberglaan 2, Utrecht TC 3508, The Netherlands. Email: c.f.rammelt@uu.nl

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agenda grounded in the United Nations' (UN) newly minted Sustainable Development Goals (SDGs). Indeed, one could argue that decoupling is foundational to this agenda, since, as we will show, without decoupling, the goals themselves will be unlikely to be achievable. In this article, therefore, we explore the growing push for decoupling within the context of the SDGs. We outline the concept's development and increasing promotion within the post-2015 agenda. We then discuss how the concept has been analyzed to date within a growing body of scholarly literature. Subsequently, we undertake a detailed dissection of the most extensive attempt to define a decoupling agenda to date via a series of reports recently published by the United Nations Environment Programme (UNEP) to inform the SDG agenda. We demonstrate that these reports, while ostensibly promoting the potential of decoupling to contribute to genuine sustainable development, actually accomplish the opposite, revealing—in conjunction with a growing body of evidence from other sources—how infeasible this aim actually is. We analyze this paradoxical situation from the perspective of Lacanian psychoanalysis, suggesting that decoupling may constitute a central 'fantasy' of the SDG agenda that 'disavows' the agenda's infeasibility and thus defers the fundamental question of whether it is in fact possible to achieve the type of 'sustained, inclusive and sustainable economic growth'¹ that the SDGs promise within the framework of a neoliberal capitalist economy. We conclude by highlighting fruitful directions for future research on the decoupling agenda as it continues to develop and unfold.

Introducing Decoupling

According to UNEP, the decoupling concept was first advanced in 2001 by the Organisation for Economic Cooperation and Development (OECD), which presented it 'as one of the main objectives in their policy paper "Environmental Strategy for the First Decade of the twenty-first Century"' (UNEP, 2011a, p. 4). The concept built on previous discussion of 'eco-efficiency' advanced by the World Business Council for Sustainable Development, defined as the delivery of 'competitively priced goods and services that satisfy human needs and bring quality of life while progressively reducing environmental impacts of goods and resource intensity throughout the entire lifecycle' (Schmidheiny, 1992, in UNEP, 2011a, p. 4). Subsequently, the European Union (EU) adopted decoupling as a component of its 2005 Thematic Strategy on the Sustainable Use of Natural Resources under the 6th Environmental Action Program.

UNEP's own focus on decoupling began with establishment of an International Resource Panel (IRP) in 2007 to provide 'independent, coherent, authoritative and policy relevant scientific assessments on the management of natural resources and the environment for the highest net benefit of present and future generations' (UNEP, 2014, p. xii). This IRP published its first report, *Decoupling natural resource use and environmental impacts from economic growth* (UNEP, 2011a) in 2011 as a component of the overarching Green Economy initiative (UNEP, 2011b) that UNEP promoted that same year in the lead-up to the 2012 Rio+20 Earth Summit (Wanner, 2015). As IRP co-chairs, Ernst Ulrich von Weizsäcker and Ashok Khosla explained, 'Decoupling human well-being from resource consumption is ... at the heart of the Green Economy Initiative of UNEP' (2011a, p. xi).

Yet, while the Green Economy frame itself has largely faded from public discussion following the heated controversy it inspired at Rio+20 (see Tienhaara, 2014; Wanner, 2015), UNEP has continued to actively champion the decoupling concept specifically. The IRP's first report was intended to be followed by several others, the second of which, focused on 'Technologies, Opportunities and Policy Options' (UNEP, 2014) for achieving decoupling, was released in 2014. Via these reports, UNEP hoped to 'inspire Member States to embed sustainable resource

management and the concept of decoupling in the post-2015 development agenda' (Steiner, 2014, p. xv), as well as to make it 'a key issue in the on-going deliberations on the Sustainable Development Goals (SDGs)' (UNEP, 2014, p. xii). This aim appears to have been largely successful. In the lead-up to finalizing the SDGs, UN Secretary General Ban Ki-Moon emphasized the need to 'decouple economic growth from environmental degradation' (2014, p. 23) as a key ingredient of the agenda, while the prominent economist Jeffrey Sachs, a key advisor to Ban in SDG formulation, subsequently released a book endorsed by the UN SG in which Sachs wrote of what he termed the new *Age of Sustainable Development*, 'The end result, if successful, would be to "decouple" growth and dangerous overuse of primary resources and ecosystems' (Sachs, 2015, p. 218). The Sustainable Development Solutions Network led by Sachs to oversee SDG implementation has further emphasized that '[t]he key is for all countries, rich and poor, to adopt sustainable technologies and behaviors that decouple economic growth from unsustainable patterns of production and consumption'.² Decoupling has been championed by other prominent actors as well. The OECD (2014) has reiterated the importance of the concept, as has the EU in its 7th Environmental Action Program (EEA, 2013). The concept has also been promoted by influential civil society organizations, including the Breakthrough Institute (2014, 2016), New Climate Economy (2014, 2015), and Ecosystem Marketplace.³ All signs, in short, point to decoupling becoming a central component of the renewed global development agenda.

The concept, however, is not without its critics. Næss and Høyer (2009) problematize discussion of decoupling in sustainable development dating back to the seminal Brundtland Report (World Commission on Environment and Development [WCED], 1987). In *Prosperity without growth*, Jackson (2011) devotes a chapter to dispelling the 'myth of decoupling' by arguing against its economic feasibility. Wanner, similarly, critiques decoupling as a central 'myth' of the Green Economy agenda (see also Tienhaara, 2014), while Caradonna et al. (2015) identify it as a foundational 'fantasy' of the Breakthrough Institute's (2014) *Ecomodernist Manifesto*. In a series of blog posts, Burton (2015, 2016a), along with other members of his Steady State Manchester team (2014), challenges ostensible evidence for decoupling advanced by New Climate Economy (2014, 2015) (see also Spash, 2014). Isenhour (2016) and Isenhour and Feng (2016) offer a detailed critique of the decoupling agenda pursued by the Swedish state in partnership with China. More extensively, Steinberger, Krausmann, Getzner, Schandl, and West (2013), Wiedmann et al. (2015), Amate (2014), and Burton (2016b) all highlight a dearth of demonstrable decoupling across a range of societies (both developed and developing), while Ward et al. (2016) point to the fundamental impossibility of decoupling on an aggregate global scale.

All of these previous analyses, in short, cast substantial doubt on the viability of a decoupling agenda. Here, we draw all of this together to outline the various serious questions concerning the possibility of decoupling that proponents envision. Yet, we go beyond this as well. Previous studies have remained largely focused on critiquing the decoupling agenda on its own terms, explaining why, with respect to its own criteria for success, it is unlikely to be achieved. What this analysis does not explain is why decoupling continues to be so widely promoted despite such glaring gaps in its formulation. How, in other words, is the 'myth' or 'fantasy' of decoupling sustained in the face of such obvious deficiencies?

Decoupling as Neoliberal Fantasy

This is the key question that we take up in this paper. While this question can be approached from a variety of perspectives, we suggest that Lacanian psychoanalysis is particularly

productive given its central focus on fantasy as a foundation of ideology. Lacanian theory is grounded in a conceptual separation among three realms: the Real, the Symbolic, and the Imaginary. The Real is Lacan's placeholder name for the fundamentally unknowable (in his terms 'impossible') reality that we attempt to make sense of and control in the realm of the Symbolic. Due to the Real's impossibility, however, it inevitably exceeds our Symbolic efforts to bring order to it. Yet, rather than acknowledging this reality, we tend to 'suture' this gap in the realm of the Imaginary through recourse to fantasy, which Žižek calls 'the frame through which we experience the world as consistent and meaningful' (1989, p. 138). Fantasy, in this sense, functions to offer both the prospect of successfully knowing and controlling the Real as well as an a priori explanation for this is, inevitably, not achieved. In this way, fantasy constitutes 'a means for an ideology to take its own failure into account in advance' (Žižek, 1989, p. 142). This function of fantasy is commonly sustained through 'disavowal', less a state of denial per se than one of 'half-knowing' (Žižek, 1989) in which the fantasy's illusory nature is superficially acknowledged, yet it is still adhered to nonetheless. As Žižek describes, disavowal thus follows the formula: 'I know very well, but still ...' (1989, p. 12). Usefully, this perspective collapses the common divide between explanation on individual and collective levels, depicting subjectivity as constructed through social processes shaped by psychodynamic mechanisms as well.

From this perspective, decoupling can be viewed as a central fantasy giving force to a vision of a 'sustainable development' for neoliberal capitalist economies, and in the process providing essential ideological support to the SDG agenda. Commentators have of course long asserted the presence of fundamental environmental limits to indefinite economic growth. Mainstream pundits tend to point to population growth and overconsumption as the root of the problem (e.g. Meadows, Meadows, & Randers, 1972; Meadows, Randers, & Meadows, 2005; Turner, 2008), while more radical critics contend that the capitalist economy itself is incompatible with sustainability due to inherent contradictions that render it unstable if not incessantly growing (e.g. Bellamy Foster, 2000; Malm, 2016; Næss & Høyer, 2009; O'Connor, 1988, 1998). This is particularly true of capitalism's contemporary neoliberal form. While the term neoliberalism has been employed in various ways (see esp. Flew, 2011), most precisely it is defined as the political economic regime promoting intertwined processes of privatization, deregulation, decentralization, marketization, and commodification that have become globally hegemonic since the 1980s (Castree, 2010). Disdaining mechanisms of collective resource aggregation and redistribution as inefficient and unwieldy, neoliberalism must thus promote economic growth as its 'one true and fundamental social policy' (Foucault, 2008, p. 144). Under neoliberalism, consequently, capitalism has sought to internalize the environmental impacts of growth to an unprecedented degree in what O'Connor (1994) calls a system's evolution into an 'ecological phase'. In this way, as Büscher (2012, p. 29) points out, neoliberalism promotes 'the paradoxical idea that capitalist markets are the answer to their own ecological contradictions'.

The global sustainable development movement can thus be understood, in large part, as a grand effort to deny the reality of environmental limits, to prove that sustainability is in fact compatible with indefinite economic growth. An insistence of this compatibility, indeed, has been a central component of the UN's sustainable development agenda since its inception (Næss & Høyer, 2009). As the Brundtland Report asserted,

Far from requiring the cessation of economic growth, [sustainable development] recognizes that the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which developing countries play a large role and reap large benefits. (WCED, 1987, p. 40)

The SDGs reaffirm this faith in their insistence on the continued need for ‘sustained, inclusive and sustainable economic growth’, as previously noted.

Decoupling as fantasy sustains this faith in the face of increasing documentation of the dramatic environmental consequences of economic growth to date. In this sense, decoupling can be seen as key ideological pillar of the neoliberal environmental project in general (Wanner, 2015). The capacity of neoliberalism to sustain its ‘non-death’ in the face of persistent failure, both in the environmental realm and elsewhere, has provoked debate among critical analysts (Crouch, 2011; Fletcher, 2013a, 2013b, 2014; Peck, 2010; Wilson, 2014). Most agree that the neoliberal economic system is supported by a particular ideology seeking to obfuscate apparent failure and thus allowing proponents to ignore potential critiques. However, why and how this obfuscation occurs is a matter of contention. Marxists, represented most centrally by prolific theorist David Harvey, tend to argue that ‘a benevolent mask full of wonderful-sounding words like freedom, liberty, choice, and rights’ conceals ‘the grim realities of the restoration or reconstitution of naked class power’ (2005, p. 119) at the heart of the neoliberal project. Others, such as Peck (2010), accept that some neoliberal proponents, at least, are genuine in their desire to see their project succeed on its own terms and are merely blinded to its failure by the internal logic of their perspective.

Building on this latter approach, an emerging body of work has drawn on Lacanian psychoanalysis to describe the ways in which neoliberal ideology is sustained through fantasies of success constantly deferred into the future that help to explain away present failure (see Dean, 2008; Wilson, 2014), and a growing subset of this literate has applied this analysis to environmental governance in particular (see Fletcher, 2013a, 2013b, 2014; Stavrakakis, 1997; Swyngedouw, 2011). Drawing on this, we contend here that decoupling can be understood as a central fantasy of neoliberal environmental governance obfuscating the fundamental tension between the indefinite economic growth and the environmental sustainability this fantasy insists are reconcilable.

What is Decoupling?

UNEP’s reports remain the most extensive effort to outline a decoupling strategy to date and contain most of the elements contained in similar proposals. The first report explains that ‘decoupling means using less [sic] resources per unit of economic output and reducing the environmental impact of any resources that are used or economic activities that are undertaken’ (UNEP, 2011a, p. xv). In a foreword to the report, former UNEP Executive Director Achim Steiner elaborates, ‘Decoupling at its simplest is reducing the amount of resources such as water or fossil fuels used to produce economic growth and delinking economic development from environmental deterioration’ (Steiner, 2011, p. xiii).

The report proceeds by first explicitly acknowledging the limits to growth debate, asserting that ‘it is time to recognize the limits to the natural resources available to support human development and economic growth’ (2011a, p. 74). At the same time, UNEP asserts that economic growth remains necessary to reduce poverty; as Steiner states,

it is clear in a world of nearly seven billion people, climbing to around nine billion in 40 years’ time, that growth is needed to lift people out of poverty and to generate employment for the soon to be two billion people either unemployed or underemployed. (2011, p. xiii)

Yet, this necessity for growth must confront the reality that ‘[o]n a worldwide scale, resource consumption is steeply on the rise . . . and resource consumption is still a reliable companion

of economic prosperity' (von Weizsäcker & Khosla, 2011, p. xi). Hence, UNEP advances decoupling as 'a necessary precondition for reducing the levels of global inequality and eventually eradicating poverty' (2011a, p. 75) while remaining within biophysical resource limits. Indeed, the organization asserts in a subsequent report that 'to maintain stable future economies and natural life support systems, resource productivity increases would need to be greater than the rate of economic growth for the world as a whole. This is called "decoupling"' (UNEP, 2014, p. 6). Hennike, one of the reports' main authors, elsewhere states simply that 'Staying within "planetary boundaries" is impossible without decoupling' (2014, p. 1).

The case for decoupling is grounded in a series of key conceptual distinctions. The first is between 'relative' and 'absolute' decoupling, the former designating a reduction in 'the rate of use of (primary) resources per unit of economic activity. This "dematerialization" is based on using less material, energy, water and land resources for the same economic output' (2011a, p. xxiv). *Absolute* decoupling, by contrast, describes an overall decrease in resource use even as the total economy grows. UNEP likens this scenario to the (in)famous Environmental Kuznet Curve.

The second key distinction is between 'resource' (i.e. input) and 'impact' (i.e. output) decoupling, where 'resource decoupling could be referred to as increasing resource productivity, and impact decoupling as increasing ecoefficiency' (2011a, p. xxiv). Third, UNEP distinguishes 'material' from 'immaterial' resources, the former being those 'whose value is characterized by the qualities that render it useful for certain applications' (2011a, p. xxi) and the latter those 'whose use has no effect on the qualities that make them useful; nor can they easily be given an economic value' (2011a, p. xxi). The main material resources UNEP identifies are energy, materials, water and land (2011a, p. xxii) while examples of immaterial resources include 'the song of a bird inspiring a composer' and 'the shine of a star used by a captain to find his way' (2011a, p. xxi). The key difference between these categories, of course, is that unlike material resources '[u]sing immaterial resources does not change the qualities that make them useful, or reduce the range of available applications' (2011a, p. xxi).

Finally, UNEP differentiates 'economic' and 'physical' growth, the former designating an increase in GDP or similar financial measures of economic value, the latter representing the material inputs and stockpiles providing the basis for this value.

It is in terms of these various distinctions that the case for decoupling unfolds, the main objective being to promote 'non-material economic growth' that minimizes physical growth based in material resources, thereby increasing the gap between economic value, resource use, and environmental impact—a dynamic termed 'dematerialization'. In this way, UNEP asserts, 'it becomes conceptually possible for economic growth (defined now as money flow, or value) to be decoupled from physical growth of the economy (material resource accumulation and consumption) and associated environmental pressures' (2011a, p. 34). But the discussion goes much further than this, quoting Ekins (2000) favorably as contending,

It is clear from past experience that the relationship between the economy's value and its physical scale is variable, and that it is possible to reduce the material intensity of GNP. *This establishes the theoretical possibility of GNP growing indefinitely in a finite material world.* (in UNEP, 2011a, p. 34, emphasis in original)

Achieving this requires a paradigm shift in which 'prosperity ceases to mean increasing consumption of material goods' and instead becomes geared toward the desire to 'participate meaningfully and creatively in the life of society' (2011a, p. 35)—for, as Gallopin points out, 'While demographic growth and material economic growth must eventually stabilize, cultural,

psychological, and spiritual growth is not constrained by physical limits' (2003, p. 27; in UNEP, 2011a, p. 34).

Through which mechanism is decoupling to be achieved? UNEP's answer, simply stated, is 'innovation':

The key to decoupling in practice will be innovations that make it possible to increase resource productivity, thereby reducing metabolic rates . . . Innovation for resource productivity, therefore, may well define the core challenge for sustainable resource management for the coming decades. (2011a, p. 38)

The report is quick to claim that this is not a mere 'techno-fix', however, highlighting two forms of innovation—'institutional innovation' and 'relational innovation'—in addition to technological advance.

While UNEP acknowledges that 'state intervention is required to sustain high levels of consistent investment in innovation' (2011a, p. 38), the main mechanisms proposed for this intervention are quintessentially neoliberal. While qualifying that 'there is clearly no "one size fits all" prescription or instrument' for implementing its vision, UNEP's follow-up 2014 report claims that decoupling 'is often best stimulated by creating favourable conditions for investment in resource productive innovation, and letting market forces provide the best solutions' (2014, p. 12). This report identifies 'a number of areas where current policy structures coming out of past government decisions steer economies away from resource productivity', specifically mentioning: (1) 'Subsidies of up to US\$1.1 trillion each year for resource consumption'; (2) 'Taxation of people's work through labour taxes', which '[t]ogether with distortions from subsidisation of resources . . . reduces the return on investment in resource efficient technologies and techniques'; and (3) 'Regulatory frameworks for markets [that] have often been created in ways that discourage long-term management of resources, but rather promote their wasteful early use' (2014, p. 10).

Sustaining the Fantasy

While the perspective outlined above appears optimistic about the potential of decoupling to achieve its lofty goal of reducing global poverty by stimulating environmentally sustainable economic growth, UNEP's own analysis in fact strongly undermines itself in a variety of ways, revealing a reality quite at odds with its enthusiastic proclamations. In this way, UNEP follows a common strategy in which

(a) a statement of a win-win scenario, i.e. the opportunities that globalization and agribusiness open up for the 'poor', [is] followed by (b) a caveat in the form of a reality check usually starting with a 'but', which emphasises the challenges in achieving the desired win-win scenario. (Oya, 2009, p. 597; see also Li, 2011)

In terms of both conceptual and empirical substantiation, the 2011 report admits, the decoupling concept remains largely vacuous: 'The conceptual framework for decoupling and understanding of the instrumentalities for achieving it are still in an infant stage' (von Weizsäcker & Khosla, 2011, p. xi). Empirically, meanwhile, decoupling is quite difficult to measure, a difficulty compounded in the case of impact decoupling:

Socio-technical changes that have reduced negative environmental impacts in the past may have resulted in the decoupling of economic growth from certain specific impacts, while other impacts remained unchanged or even accelerated. Therefore, it can be problematic to consider impact decoupling in general without acknowledging that specific interventions can have unintended

consequences or else ignore some impacts. It follows that it may be difficult to design a system-wide set of interventions capable of decoupling resource use from all negative environmental impacts simultaneously. (2011a, p. xxvi)

In short, ‘Across those scale levels, impact decoupling is not easy to assess’ (2011a, p. 19). Burton (2016b), for example, highlights the serious methodological uncertainties behind recent data from the World Resources Institute and others pointing to absolute decoupling in carbon emissions.

The limited evidence for decoupling that does exist generally refers to relative decoupling, since ‘[a]bsolute reductions in resource use are rare’ (2011a, p. xxv). And even in places where some relative decoupling seems to have occurred, UNEP acknowledges that this may be offset by ‘a shifting of the material and environmental burden into developing countries’ (2011a, p. 16) through offshoring production. For example:

Even in the two countries which arguably have made the most explicit efforts towards decoupling, Japan and Germany, and where at first glance domestic resource consumption shows stabilization or even a modest decline, deeper analysis shows that many goods contain parts that have been produced abroad using major amounts of energy, water and minerals. Thus some of the advanced countries are managing the problem of high resource intensity by ‘exporting’ it elsewhere. The Report observes that trade—not surprisingly—is generally enhancing energy use and resource flows and thus, overall, impeding rather than promoting decoupling. (2011a, p. xi)

In addition, UNEP recognizes that evident decoupling may be further offset by ‘a “rebound effect”, or more accurately a Jevons Paradox, in which ‘efficiency gains in resource use may paradoxically lead to greater resource use’ (2011a, p. xvi). In sum, the 2014 report admits, ‘breaking the link between human well-being and resource consumption is necessary and possible but in reality is hardly happening’ (2014, p. xii).

It is at this point, then, that the disavowal begins in earnest. Despite the preceding admissions of methodological complexities, for instance, UNEP elsewhere claims evidence for some modest relative resource decoupling on a global scale:

Annual global resource extraction and use increased from about 7 billion tons (7 Gt) in 1900 to about 55 billion tons (55 Gt) in 2000, with the main shift being from renewable biotic resources to non-renewable mineral ones. Even in the existing economic environment of continuously declining resource prices, some decoupling of resource use from economic activity has taken place: *the world economy has been dematerializing*. (2011a, p. 17, emphasis added)

In this statement, dramatically increasing resource extraction is interpreted as evidence of dematerialization itself!

Subsequently, however, the report changes tone once again, as much as admitting that the sustainable decoupling it advocates is impossible to achieve. UNEP outlines three hypothetical scenarios for future resource use: (1) the ubiquitous ‘business-as-usual’ (BAU); (2) a modest contraction and convergence ‘requiring industrialized countries to reduce their per capita resource consumption by half the rate for the year 2000’ (2011a, p. xvii); and (3) a ‘[t]ough contraction and convergence [that] would keep global resource consumption at its 2000 level, but redistribute the resources so all countries achieve roughly the same per capita metabolic rate’ (2011a, p. 73). Of these, UNEP admits that only this third scenario is both ‘consistent with the IPCC assessments of what would be required to prevent global warming beyond 2 degrees’ and ‘compatible with the existing (if unknown) limits to the Earth’s resource base’ (2011a, p. 32). Yet, even this ‘scenario would not lead to an actual global [absolute] reduction in resource use’ (2011a, p. 73). Moreover, notwithstanding its insufficiency, it ‘would be

unlikely to be politically acceptable' (2011a, p. 73) anyway, for 'most politicians are likely to regard this scenario as too restrictive in terms of developmental goals such as reducing poverty and providing for the material comfort of a rapidly expanding middle class' (2011a, p. 32). Hence, the proposal would need to be 'supported by a clear case as to why poverty reduction in a resource scarce world will depend more on innovations for decoupling than if investments continue to prioritize BAU production and consumption technologies and systems' (2011a, p. 32). In sum, despite acknowledging that only this last scenario comes close to offering a vision of a sustainable future, UNEP admits that it 'can hardly be addressed as a possible strategic goal' (2011a, p. 32).

How, then, are all of these many thorny issues to be resolved and effective decoupling realized? UNEP reassures us simply that '[t]he IRP intends to seek answers to such questions in its future work' (2011a, p. 75).

Anatomy of a Disavowal

While asserting the necessity of dramatic decoupling for any hope of genuine sustainable development, in short, UNEP simultaneously admits that: (1) there is virtually no evidence that (absolute) decoupling works; (2) the conceptual basis for even imagining its possibility is weak; and (3) even if it were possible, it would be politically infeasible. A clearer case of disavowal would be difficult to identify.

This disavowal is necessary because there are in fact fundamental tensions within a neoliberal capitalist economy, between the concerns for poverty alleviation, environmental protection, and profit generation that the decoupling proposal asserts are reconcilable. Biophysical growth—no matter how 'dematerialized'—remains finite, and thus far, growth of the global financial system has, as evidenced below, continued to increase natural resource extraction in absolute terms. A reversal of that trend is nowhere in sight. At the same time, economic growth in and of itself will do nothing for poverty alleviation without strong redistribution policies that are contrary to strict market logic. Considered together, these problems raise serious questions concerning the viability of a SDG agenda rooted in the idea of decoupling. Drawing on the critical scholarly literature outlined earlier, we explore the various dimensions of this conundrum below.

Defying the Laws of Nature

Copious evidence questions the potential for absolute decoupling (e.g. Burton, 2015, 2016b; Isenhour, 2016; Isenhour & Feng, 2016; Jackson, 2011; Ward et al., 2016). As noted earlier, there is evidence that absolute decoupling at the global level has not yet occurred for important inflows of energy and matter; only (limited) relative decoupling has been documented thus far (Energy Information Administration [EIA], 2014; Haas, Krausmann, Wiedenhofer, & Heinz, 2015; Sustainable Europe Research Institute, 2013), and even this is questionable given the widespread tendency for environmental damage to 'leak' outside the area of assessment (Isenhour, 2016; Isenhour & Feng, 2016; Ward et al., 2016). The same is true for the decoupling of outflows of waste and emissions, using carbon dioxide (CO₂) emissions as a proxy for other outflows (EIA, 2014; Mitchell, 2012; in Rammelt & Crisp, 2014). Many assume that relative precedes absolute decoupling; however, relative decoupling is by no means a new phenomenon. Not only have 'dematerialization' strategies since the industrial revolution failed to neutralize overall growth of material production and consumption, they have actually intensified it

in accordance with the previously mentioned Jevons Paradox (Bringezu, Schütz, Steger, & Baudisch, 2004; Bunker, 1996).

What would absolute decoupling within a growth economy actually require? The global economy is a dissipative system that relies on inflows of resources from the planet's biophysical stocks in the form of energy and matter. The process also returns outflows of waste and emissions. While non-renewable resources are stock-limited, renewable resources are flow-limited. Similarly, there are biophysical limits to the amount of waste that can be stored by the environment (the finite size of a sink) and the magnitude of the waste flows that can be absorbed and cycled over time (the renewable capacity of a sink) (Daly & Farley, 2010; Georgescu-Roegen, 2011). Perpetual financial growth within the confines of absolute biophysical limits is theoretically only possible if efficiencies in the throughput keep perpetually rising faster than the rate of growth. This implies that there should be no maximum eco-efficiency limit. For absolute decoupling to work, in short, matter–energy cycles will eventually need to be fully closed within the confines of ‘planetary boundaries’.

Absolute decoupling must not only account for constraints related to the ‘quantities’ of the stocks and flows, but also to the relative ‘qualities’ of the inflows and outflows. Primary energy sources are required for production. During production, some of this energy accumulates in the material stocks of the economy, or the rest is used up—that is, is dissipated as waste heat. The accumulated energy eventually also dissipates when biological stocks are consumed, or when physical stocks wear out, corrode, or decay. As resources are thus inevitably transformed into waste, the overall entropy—very simply put, a measure of energy dissipation—increases (Boulding, 1966; Georgescu-Roegen, 2011). In other words, entropy increases when refineries transform crude oil into hydrocarbons and plastics; factories transform the hydrocarbons into kinetic energy, thermal energy, and carbon dioxide emissions; and plastics eventually degrade and end up in the environment in the form of micro- and nano-particles.

The increase of entropy on earth as a whole is reversed only because of the existence of a complex biosphere powered primarily by solar radiation, which represents the main source of work and inflow of ‘exergy’. Some of this is transformed by plants and organisms into chemical exergy and some of it eventually ends up buried as low entropy stocks of fossil fuels. Flows of energy on earth are part of an open cycle; solar exergy comes in and heat goes out. Flows of matter, on the other hand, are part of a closed cycle (Boulding, 1966).

As mentioned, absolute decoupling would imply approaching closed material cycles, which would require separating and reprocessing high entropy wastes to return and reuse as low entropy resources (O'Rourke, Connelly, & Koshland, 1996). Even if it would be physically possible to close cycles, for all practical purposes, it is impossible (Boulding, 1966; Daly, 1992). From an engineering perspective, product recycling is really ‘down-cycling’ (Kay, 1994, p. 14): in each cycle, some matter is lost or degraded, reflecting the process of increasing entropy. For most materials, their permanent movement in closed cycles would violate the entropy law (Reay, McCool, & Withell, 2011). One strategy that has been suggested is to replace those with ‘biological materials’, which would arguably become part of natural flows through the biosphere. However, this strategy hardly serves to decouple economic activity from resource use as it would rely on the production of large and growing quantities of plant materials, which will undoubtedly increase the scale of human appropriation of the stocks and flows of the natural system through agro-industrial production (Reijnders, 2008).

Meanwhile, engineering strategies at the industrial scale today still rely on cascading waste into feedstock. This is a practice that can reduce (or slow down the growth of) material throughput, but it does not close material cycles entirely (O'Rourke et al., 1996). Even with infinite

sources of renewable energy, closed cycles remain difficult to imagine for complex materials such as pesticides, fertilizers, coatings, lubricants, adhesives, inks, brake pads, or tires. As Daly asks, ‘Does the fact that we discovered uses for aluminum imply that we can invent a technology to recycle all the particles of rubber scraped from tires on curbs and interstate highways?’ (1992, p. 92). It is even harder to imagine this for highly dissipative emissions resulting from the combustion of fossil fuels (O’Rourke et al., 1996). Hopes are often set on solar-powered electricity generation and its non-damaging bountiful source of exergy. However, such a system also still requires a material basis, while its growth will also lead to increasing waste heat.

Even so-called non-material economic activity has material consequences in terms of both inputs and outputs. Hence, UNEP acknowledges, for instance:

Although some assumed that computerization would lead to a dematerialized ‘knowledge economy’, material extraction also increased from about 35 billion tons (35 Gt) in 1980 to nearly 60 billion tons (60 Gt) in 2005, with substantial increases in particular in the extraction and use of construction minerals and ores (reflecting the twin impacts of accelerated urbanization and population growth on resource requirements). (2011a, p. 64)

Other ostensibly non-material processes invoked to support the possibility of decoupling display similar dynamics; the ‘shift from vinyl albums to online music and from books to e-books’,⁴ for instance, still requires, among other inputs, material production of computers and e-readers as well as energy to transport these items and also power all of the equipment through which these digital media are delivered, to say nothing of the manifold resources used by consumers to generate funds to purchase these ‘non-material’ products.

In short, a growth-based economy will always demand growing energy inputs (Ward et al., 2016). As Boulding cautioned long ago, ‘In regard to the energy system there is, unfortunately, no escape from the grim Second Law of Thermodynamics’ (1966, p. 6).

Poor Economics?

Yet, even if decoupling were possible in a strictly biophysical sense, it would remain quite difficult to achieve in purely financial terms. How, in a decoupled economy, would the value fueling sustained economic growth be generated? UNEP is silent on this essential point, yet it is worth exploring here. Ultimately, all new economic value—and hence profit—arises from: (1) appropriating the surplus value of productive labor; (2) externalizing environmental costs of production; and/or (3) transferring value between groups of holders (the process that Marx called ‘primitive accumulation’ and Harvey (2005) updates as ‘accumulation by dispossession’). As Moore shows, far from commodifying everything in their path, capitalist markets thus actually depend fundamentally on not commodifying substantial quantities of both human and non-human labor so that these can be exploited without actually paying for them as the basis for increased profit: ‘To fully commodify the reproduction of labor-power would do away with the unpaid work that allows accumulation to proceed at acceptable rates of profit’ (2014, p. 292).

To the extent that producers seek to redress either of these dynamics by internalizing social and/or environmental costs, overall production costs must therefore rise, which means either raising prices as well or accepting a reduced rate of profit. In the former case, aggregate profit must still fall as well, as higher prices reduce overall demand, unless of course a premium is charged for including social and environmental benefits (as with organic and fair trade products), in which case, the higher production costs are passed on to consumers. Yet, even in such cases, a viable market requires that some costs remain externalized; otherwise,

prices would rise to impossible levels—as evidenced, for instance, by growing criticism of the social and environmental problems remaining in many current organic and fair trade production schemes (see e.g. Moberg & Lyon, 2010). Patel (2010), for instance, suggests that the average fast food hamburger would cost on the order of US\$200 if all social and environmental implications of its production were included in its purchase price.

Fully internalizing the costs of both production and consumption in the way that serious decoupling would demand, in short, would make it so expensive that most conventional commodity markets in its sale could no longer function. This would require paying workers, in aggregate, far more than they currently earn. Yet, paying workers more entails either decreasing one's profit margin or raising prices even further, creating the conditions for a vicious cycle that would likely reverse the economic gains of decoupling altogether.

These essential dilemmas are compounded by the fact that in a 'mature' global economy, sustaining growth over time becomes increasingly more difficult as the size of the economy develops. Harvey (2014) emphasizes this point, demonstrating that the nature of compound interest necessitates that the same rate of growth requires ever-greater expansion in economic activity. Hence, he describes:

To keep to a satisfactory growth rate right now would mean finding profitable investment opportunities for an extra nearly \$2 trillion compared to the 'mere' \$6 billion that was needed in 1970. By the time 2030 rolls around, when estimates suggest the global economy should be more than \$96 trillion, profitable investment opportunities of close to \$3 trillion will be needed. Thereafter the numbers become astronomical. (Harvey, 2014, p. 228)

It is unclear, moreover, what exactly would replace current sectors of the economy that must be curtailed for decoupling to proceed. Fossil fuel extraction is currently the largest industry in the world, generating an estimated US\$4 trillion in 2014 and accounting for between 4.6% and 6.5% of global GDP (IBISWorld, 2015), while the second leading sector is tourism, which is fundamentally grounded in fossil fuel use as well (United Nations World Tourism Organization, 2015). Countless spillover industries also depend either directly or indirectly on oil production and consumption. As Ferguson (2015) points out, drawing on Žižek (2010), oil has seemingly magical properties, defying the labor theory of value in its capacity to generate tremendous value relative to the investment in (conventional forms of) its extraction (as long as environmental costs are externalized, of course). It is generally agreed that the world will need to move away from a fossil-fuel-based economy for decoupling to occur (see esp. Sachs, 2015), yet despite the environmental gains such a transition would potentially achieve, it is unclear what if anything could replace the economic value that would be lost in this transition in order to not only make up the enormous shortfall but actually sustain still further growth in the future.

The Price of Inequality

When social issues are taken into account, these essential dilemmas in the decoupling agenda become more pronounced still. Since we cannot increase the size of the economic pie indefinitely, concerns about its unequal distribution will only become more pressing. Curiously, despite its emphasis on the importance of poverty reduction as motivation for the continued economic growth necessitating decoupling, UNEP spends no time at all discussing how decoupling relates to poverty rates. GDP is the only development indicator used in the report (and not even in per capita terms, let alone in relation to international or national distribution). UNEP states that throughout the twentieth century, 'growth rates of CO₂ emissions ... are smaller

than the respective growth rates of GDP, so a relative decoupling has occurred' (2011a, p. 19). Yet, during this same period, global inequality has increased dramatically (Milanovic, 2011; Piketty, 2014). Hence, whatever decoupling that has occurred has not necessarily been matched by concomitant poverty alleviation (notwithstanding limited gains in extreme poverty reduction over the past several decades focused mostly on China; see Sachs, 2015⁵)—one of the central aims of the initiative and the explicit rationale for the need for sustained growth. Without strong policy measures to redistribute revenue, even if decoupling were to be achieved, it would not necessarily lead to poverty reduction but would, on the contrary, likely only further exacerbate it.

But the problem is more fundamental than this, for the limited 'dematerialization' that UNEP identifies is in fact *dependent on* cheap labor, since this allows more value to be realized from the same 'metabolic rate' of resource throughput—a dynamic that, paradoxically, decoupling requires to reconcile poverty alleviation with continued economic growth (Hennike, 2014). In order to compensate for this gain in labor efficiency, even more growth is required, which of course must further exploit either labor itself or diminish natural resources to sustain a significant rate of profit as well. Consequently, environmental protection must inevitably come into conflict with social equity in the quest for green growth.

Strategies of Dissimulation

All of this suggests that, far from reconcilable priorities, people, planet, and profits are in fact mutually exclusive trade-offs within a neoliberal capitalist economy. Choices must be made between each of these priorities that will inevitably have consequences concerning realization of the others. Indeed, we can identify such trade-offs in a variety of strategies seeking to negotiate these priorities in the world today:

Efforts to internalize environmental costs while sustaining high rates of profit, as we have seen, must inevitably exacerbate inequality as the value expended on labor must be reduced to a minimum. This is essentially the 'natural capitalism' platform (Hawken, Lovins, & Lovins, 1999), which privileges reconciling environmental impact with profitable business while neglecting discussion of social issues entirely.

Conversely, addressing inequality while pursuing high economic return must increase environmental impact. We see this, for instance, in the neoextractivist strategies pursued by some left-leaning regimes (e.g. Ecuador, Bolivia) in the Andean belt of South America (Escobar, 2010).

Meanwhile, internalizing environmental costs while simultaneously seeking to reduce inequality must compromise the potential for profit. We are observing, for example, how difficult it is to find profitable avenues for investment in pro-poor environmental conservation initiatives despite two decades of experimentation (Dempsey & Suarez, 2016).

Finally, simultaneously internalizing environmental costs and redressing inequality while maintaining substantial profit, as argued earlier, would require price increases such that capitalist markets would collapse altogether, likely precipitating an overaccumulation crisis of considerable magnitude.

The potential alternative to all this, of course, is to produce 'fictitious' value deriving from no real material source whatsoever. In promoting a 'dematerialized economy', therefore, what UNEP seems to be advocating, essentially, is increased reliance on 'fictitious capitalism' via financialization (Harvey, 1989). The 'dematerialization' that decoupling promotes, in other words, appears to be precisely the transition from the standard M-C-M' route to capital

accumulation to an M-M' strategy⁶ in which money multiples directly upon itself without recourse to conversion into commodities. Yet, this can hardly be a sustainable long-term strategy as Harvey (1989) considers this type of 'casino capitalism' a major destabilizing force in the global economy. Indeed, such a shift from M-C-M' to M-M' as the basis of global accumulation is commonly seen as a signal crisis portending the exhaustion of a given accumulation cycle altogether (Arrighi, 1994; Harvey, 2014). After all, during the same period in which UNEP identifies relative decoupling in the global economy, the majority of economic value has been financed primarily through the creation of massive quantities of debt due to the introduction of 'post-credit' money and financial derivative markets enabling value to multiply seemingly ad infinitum (Bjerg, 2014; Harvey, 2014). Regardless of the nature of this debt (public or private, corporate or household, etc.), its multiplication contributes to the likelihood of overaccumulation crisis down the road. Hence, increased decoupling may constitute merely another capitalist 'fix' (Harvey, 1989) that delays but ultimately exacerbates economic crisis in the long run.

Conclusion

This dramatic disjuncture between the blind optimism of the decoupling proposal and the daunting (thermodynamic, financial, and distributive) obstacles in the face of its realization suggests that the concept works as a Lacanian fantasy, presenting both the prospect of sustainable development at some unknown future point and a convenient a priori explanation for why this aim is not achieved. The solution to sustainable development is decoupling, this perspective asserts, hence if sustainable development is not achieved, it is because decoupling has failed. The solution, then, is more decoupling. In this way, decoupling serves as 'an ideological instrument of the passive revolution of green economy/growth through which the predominance of economic growth over environmental sustainability is maintained and environmental realities are obfuscated' (Wanner, 2015, p. 31).

The pressing danger, of course, is that even if decoupling is infeasible, it will take some time for this to be demonstrated to the satisfaction of its proponents as well as those merely using it as a smokescreen to continue business as usual for as long as they still can. Thus, the decoupling fantasy may allow us to maintain an increasingly destructive path with both the promise of success and demonstration of its impossibility deferred into the future. This danger is compounded by the fact that decoupling, like fantasies in general, remains 'reflexively buffered' (Huysen 1988, p. 16) against critique through 'cynical reason' (Sloterdijk, 1988; Žižek, 1989). As Sachs's Sustainable Development Solutions Network asserts:

There are many pessimists regarding decoupling who feel that the only way to limit resource use is to limit overall economic growth. We disagree. Decoupling has not yet been tried as a serious global strategy, and we believe that advances in areas such as information and communications technologies, energy technologies, materials science, advanced manufacturing processes, and agriculture will permit continued economic growth combined with a massive reduction in the use and waste of key primary commodities, a sharp drop in greenhouse gas emissions and other forms of pollution.⁷

In such framing, decoupling advocacy requires not evidence or even coherent conceptualization but merely faith in its potential—faith that cannot be dispelled until the project has been rolled out in a coherent global program. In this way, as Žižek observes of successful ideologies, 'even the facts which at first sight contradict' the project 'start to function as arguments in its favour' (1989, p. 50).

As a cornerstone of the SDGs agenda intended to guide global policy for the next several decades, the decoupling project demands a program of sustained analysis, both empirical and

conceptual. We hope in this article to have emphasized the importance of this analysis and outlined some of the contours of its realization. We have advanced Lacanian psychoanalysis as a useful perspective for analyzing not only deficiencies in the agenda itself but for how faith in its potential is sustained despite this reality. Of course, given the largely conceptual nature of the decoupling agenda thus far, our own analysis has remained largely exploratory as well. We look forward to seeing others further develop this analysis in future work.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Notes

- 1 <https://sustainabledevelopment.un.org/sdgsproposal> (last accessed 8 February 2015).
- 2 <http://unsdsn.org/resources/goals-and-targets/goal-2-promote-economic-growth-and-decent-jobs-within-planetary-boundaries/> (last accessed 9 June 2016).
- 3 <http://www.ecosystemmarketplace.com/articles/21-countries-reducing-carbon-emissions-growing-gdp/> (last accessed 9 June 2016).
- 4 <http://unsdsn.org/resources/goals-and-targets/goal-2-promote-economic-growth-and-decent-jobs-within-planetary-boundaries/> (last accessed 18 October 2015).
- 5 Yet, even this reported drop in extreme poverty may be overestimated, as it relies on headcount ratio statistics that may not assign sufficient weight to food prices in consumption expenditures of the poor and thus may exaggerate household purchasing power (Reddy, 2008).
- 6 In Marx's classic formulation M-C-M' represents the investment of money (M) to produce a commodity (C) that is sold for more money (M'), while M-M' is investment of money for direct financial return (e.g. in stock and derivative markets).
- 7 <http://unsdsn.org/resources/goals-and-targets/goal-2-promote-economic-growth-and-decent-jobs-within-planetary-boundaries/> (last accessed 18 October 2015).

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Robert Fletcher is Associate Professor in the Sociology of Development and Change group at Wageningen University in the Netherlands. His research interests include conservation, development, tourism, climate change, globalization, and resistance and social movements. He is the author of *Romancing the wild: Cultural dimensions of ecotourism* (Duke University, 2014) and co-editor of *NatureTM Inc.: Environmental conservation in the neoliberal age* (University of Arizona, 2014).

Crelis Rammelt is a Postdoctoral Researcher in International Development Studies at Utrecht University in the Netherlands, and a Lecturer at the Institute for Interdisciplinary Studies, University of Amsterdam. He is also the Co-Founder of the Arsenic Mitigation & Research Foundation, a collaborative effort for the implementation of water and health projects in Bangladesh. He is currently researching the effects of road infrastructure developments on inclusive productive employment in Tigray, Ethiopia.