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The Changing Modalities of ‘Frontiers of Existence’ and
‘Commodity/Resource Frontiers’: Preliminary Notes based on
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The Changing Modalities of 'Frontiers of Existence' and 'Commodity/Resource Frontiers': Preliminary Notes based on Deforestation in Brazil

Markus Kröger ¹

Abstract

Much research has been dedicated to the study of commodity and resource frontiers. These concepts have also been heavily criticized for many reasons, and been even called obsolete academic tools; in the 1990s, some Latin Americanists argued that the commodity and resource frontier had collapsed in the Brazilian Amazon, and did not capture the local complexities. The concept has also been criticized for its suggestion that physical changes in territory are central, and that clear frontiers could be found in landscapes; such critique has argued that we should primarily see frontiers as ideas and as dispersed processes. However, the recent 15 years' global agroextractivist expansion and land rush often based on immense deforestation and obliteration of existing lived environments and existences, suggests that clearly physically detectable, landscape-altering commodity frontiers are still expanding. The Brazilian pasture, soybean, corn, eucalyptus and sugarcane plantations, as well as forest-flooding dam expansions, are tangible frontiers, visible from land and satellites. These landscape changes imbue a redistribution in what exists and can exist, and where and how; most studies have omitted or paid little attention to these existential dynamics, a point that this paper would like to start to remedy. Existential redistribution, including mass extinctions of species and obliteration of innumerable existences e.g. in burned down Amazon and Cerrado forests, which the imposition of 'resource frontiers' creates and on which commodity frontiers rely at (to work for capital accumulation for example), is a key theoretical-empirical point that has not received concerted enough attention. This article offers a preliminary theoretical study on the importance of studying 'frontiers of existences', based on an exploration of existing studies and data collected on Brazilian commodity frontier openings, collapses, re-openings and possible closures. The article suggests that the existing frontier-research should, firstly, see that there are real, physical and landscape-altering frontiers, which have led to major changes in existences in the past 15 years – an overtly non-physical conceptualization of commodity frontiers is ontologically problematic as it hides existences. Second, agrarian political economies should be aware of the much-too-common vocabulary that hides existences (such as 'biodiversity', 'volume of meat produced'), considering frontiers also as places of existential redistributions and struggles.

Keywords: Amazon, Brazil, commodity frontiers, global capitalism, global land grabbing, frontiers of existence

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Dances with the Wolves (1990):

Major Fambrough: You're to be posted on the Frontier. [...] And they've sent you here to be posted?

John Dunbar: I'm here at my own request.

Major Fambrough: Really? Why?

John Dunbar: I've always wanted to see the frontier.

Major Fambrough: See the frontier—

John Dunbar: Yes, sir. Before it's gone.

1 Introduction

Resource or commodity frontiers can be seen as processes of appropriation (see Moore 2014) that physically and dramatically reshape the existing landscapes and “lived environments” (see Taylor 2015). These frontiers have received a lot of political economic analysis, also in the Brazilian Amazon (e.g. Foweraker 1981; Martins 1984; Schmink and Wood 1992; Cleary 1993; Jepson 2006; Barbier 2012); in this article, I will be using a slice of these literatures on the historic broad-scale changes, mainly since the 1950s, as a material to expound and suggest a new take on the classic frontier-readings. The article suggests that those areas which the powerholders start to regard and utilize as ‘resource frontiers’ (as which the Brazilian Amazon was framed by the government in the 1970s, see Marques 2007) do often undergo major and even dramatic, sometimes almost irreversible environmental changes. These are not only visible in physical landscapes (even when looked through satellite imagery), but, most importantly, reconstitute and rearrange what exists and what can exist in either side of the frontier of industrial-scale resource extraction.

Both Leftist and other political economies, as well as several political ecologies, typically do not seriously challenge the Cartesian dualism or modernity’s scales of valuing life (Gudynas 2017), which one reason this question of redistribution of existences, or the rights to exist, has not been a central issue, focus having been rather on the relations of capital, labor, socio-cultural dimensions, or other factors. There is however a need to understand that many of the recent (agro-)extractivist expansions constitute (also) three major redistributions of existences:

1. Who / what exists, can exist, and/or has the right to exist.
2. How they can exist (the quality of existence)
3. For how long they can exist.

By existences, I refer to human and extra-human existences of beings and species, thus re-framing for example ‘biodiversity’ as being constituted by multiple existences, wherein monoculture (plantations) for example are constituted of far fewer existences (species/beings). I refer particularly to visible existences, but this does not suggest an insensitiveness or denial of other types of possible existences, which for example political ontology has studied (see Blaser 2009; de la Cadena 2015). The exploration of these themes is important especially now, as the territorial changes caused by (agro)extractivisms is enormous (see e.g. Sauer and Leite 2012; Petras and Veltmeyer 2014; Oliveira and Hecht 2016; McKay 2017); consequently, I argue that it corresponds with an equally enormous redistribution in the rights to exist (what can exist in different places). For example, between 2005 and 2015, the hectare-area planted in Brazil with soybean expanded from 22,948,874 to 31,573,000, with sugarcane from 5,805,518 to 9,070,400, and with eucalyptus from 1,252,387 to 5,558,653, this last for

example being a 358.3% increase - and reshaping several existences as it takes place not uniformly but in certain areas targeted by that form of agroextractivist capital.² The last 10-15 years seem to constitute a historical change, even globally (Edelman et al. 2013); the Brazilian example expounds how we are living a unique transformation in what exists, where, and how, and how long. Such transformations have always existed, but what is crucial is that the scale and the pace of these transformations in the above three rights of existence has increased dramatically, a point which can be brought into light by espousing the physical and landscape-altering aspect of resource extraction.³ A re-reading of a slice of the existing 'resource frontier' scholarship will be helpful in this regard. The slice that I will use is the analysis of capitalist 'frontiers', particularly the study of 'commodity/resource frontier' in the past decades by some geographers, political economists and human ecologists of Brazil.

There is a large literature on 'resource frontiers', also in Brazil, where attention has been placed particularly on economy and development (e.g. Jepson 2006 and Barbier 2012) and political ecology of frontier-expansion (e.g. Schmink and Wood 1992). I will use the political economic studies which are helpful in assessing whether and how commodity frontiers could be having moments of 'opening', 'collapse', 're-opening', and 'closure' (in terms of landscape changes) – as these major changes in frontier modality can have major impacts on the three facets of existential distributions.⁴ This re-reading of the classic literatures is based on my participant observation since 2004 in major resource frontier expansion sites, wherein deforestation, plantation expansion, mining ventures, and other extractivisms are taking place.⁵

I use the concept of 'frontiers of existence' to consolidate and fine-tune two political economic arguments about the role of frontier in capitalist accumulation. The first argument, made both in the older literature on the Brazilian resource frontiers (Foweraker 1981; Martins 1984) and in general studies of capitalism as frontier (Marx 1887; Moore 2014), claims that frontiers are a necessary component of capitalist value-creation. I shed light on the role of existential redistributions in this 'capitalist value-creation': for example, the *volume* of meat production animals had increased from 71 million *tonnes* in 1961 to 296 million *tonnes* in 2010, and 92% of this *volume* was constituted by cattle, pig and poultry, the last one seeing a dramatically expanding relative increase in numbers (from 13% to 33% of the total share) (Weis 2013) (the vocabulary marked by italics is being a telling example of how existences are being hidden in much of the current thinking). This meat-production

² Data from [http://brasil.ipni.net/article/BRS-3001;http://www.conab.gov.br/OlalaCMS/uploads/arquivos/10_10_25_09_11_15_canaacucar.pdf;http://www.remade.com.br/banco-dados/81/silvicultura/areas-com-florestas-plantadas-de-eucalipto-no-brasil---por-estado---\(ha\)](http://brasil.ipni.net/article/BRS-3001;http://www.conab.gov.br/OlalaCMS/uploads/arquivos/10_10_25_09_11_15_canaacucar.pdf;http://www.remade.com.br/banco-dados/81/silvicultura/areas-com-florestas-plantadas-de-eucalipto-no-brasil---por-estado---(ha)) (accessed 14 August 2017).

³ I use the colloquial definition of landscape as "(a) a portion of land or scenery which the eye can view at once, and (b) a picture of it" (Wylie 2009: 409). In many parts of Brazil for example, one can quite easily see the dramatic difference between the capitalist extractivist landscapes of huge industrial monoculture plantations, pastures, dams, and mines; and forests with people living in them, such as the Multiple-Use Conservation Areas (such as the Tapajós-Arapiuns Extractive Reserve, whose extractive operations focus at natural rubber tapping and other actions whose impact on re-shaping existences is not modern or industrial in scale). Also elsewhere, such as in the Peruvian Amazon, titling indigenous land can be detected by remote sensing as a thicker and wider forest cover in those areas (Blackman et al. 2017).

⁴ I take such notions into introspection in their physical sense, which does not mean that they would not also have socio-cultural and other meanings that go beyond or are not visible in landscapes, and/or in redistributing existences in a major way. The purpose here is not to do a literature review; there are omissions.

⁵ The blunt and vast reality of major landscape changes became apparent through repeated multi-sited visits, for example via taking the same long bus-ride via an Amazon expanse within a few years. It can be difficult for one to fathom the dramatic physical changes without experiencing how a forest continuing for days long could be nowhere in sight, being replaced by soybean plantations or pasture-lands, in a matter of few years (as e.g. happened between 2005 and 2011 on several road-sides running from Pará and Maranhão to Western Bahia via Tocantins). This kind of broad view would not be possible via case-studies limited to certain areas, but require larger scale longitudinal observation.

increase signifies a historic change in the scales, durations, and qualities of existence, and is based to large extent on the expansion of industrial plantations in South America, producing the feed. This feed is produced for an ever-more limited number of species, typically living ever-shorter and more painful lives; the creation of these existences can be seen as replacing the multiple existences for example in those forests that were burned and logged to make space for plantations. The article contributes also to the recent political economic analysis of ‘frontier’ in Brazil by e.g. Fearnside (2007), Fernandes (2009), Marques (2012) and Oliveira and Hecht (2016), which suggests that new statism, neoliberalism and/or new capitalization techniques have been central in the vigorous resurgence of the commodity frontier in the 2000s in the Amazon. My take on this literature through the lens of existences allows for showing how the changed access to periphery by the center relies on reshaping existences, and resisting the attempts to fathom alternative, non-monoculture existences for example via *socioambientalismos*. This Brazilian socioenvironmentalism was an important process particularly in 1990-2010 (Hochstetler and Keck 2007; Hecht 2011), but has been since replaced by a post-environmentalism that is leading to rapid resurgence in deforestation for example (de Toledo et al. 2017), a situation can be approached through the idea of further frontier expansion.

Analysis is based on original empirical research in South America since 2003. This included participant observation among the key social movements operating in the area and observation of actual land use change dynamics by land investments in frontier areas such as those impacted by the cities of Santarém, Belém, Marabá, Imperatriz, Parauepebas, Palmas, Manaus, Presidente Figueredo, Brasília, Assis Brasil, and Rio Branco. Interviews with key state bureaucrats and company directors, as well as intellectuals, were conducted. The findings were compared with participant observation material I collected in other Latin American frontier-contexts (particularly Peru, Colombia and Venezuela), and in India. These field research experiences were essential in guiding the writing of this article. Particularly, the aim is to offer a new (and thus necessarily limited and less empirically detailed) take on the debate on ‘commodity frontier’ dynamics (opening, closure, collapse, re-opening) through a lens of how these may redistribute existences in major ways and be thus understandable also (and even foremost, in the cases of major landscape and deforestation changes) as frontiers of existence.

2 Frontiers as Accumulation

The extractivist imperative can be seen as being foremost based on a quest to accumulate capital (Moore 2014; Klein 2014), and this is a theme that political economy has discussed in detail, starting from Marx’s discussion of primitive accumulation. Modern states have taken up such accumulation strategies as key policies. Both these aspects are central in explaining how and why major redistributions of existences occur. The everyday processes of frontier-making are maintained by active agency by authorities using both law and violence until the process leads to chaos that brings the productivity of the project for the authorities to an end (Tsing 2005 cf. Hochstetler and Keck 2007: 154); frontiers are opened, they may collapse and re-open, and they may be closed, as I will discuss here.

The framing of Amazon as the ‘resource frontier’ was a government-strategy in the 1970s Brazil (Marques 2007) to make space for appropriation.⁶ Political economists argued that the frontier was

⁶The notion of “resource frontier” was adopted by the Brazilian government in the First National Plan of Development (I PND, 1972-74). The dictatorship used the term to differentiate the Amazon from the Northeast region; before they were considered synonymous in developmental policy; subsequently, the first was considered the developmental frontier to be integrated into national capital accumulation by building new infrastructure to access and utilize resources, while the latter was cast as a deprived region in the new envisioning that quickly took hold. The second PDA (1975-79) marked the Amazon even more strongly as a “natural resource frontier”, this signifying mineral extraction particularly. Investment focused on the Carajás iron-mining complex, a key government project. Another term, “tropical frontier”, has also started to be used since the second PDA: this signified not only mineral extraction, but also emphasized that there was ample “free space” to be used, “free

central in the creation of capitalism and would end up expanding capitalism (Foweraker 1981; Martins 1984), thus making a suggestion that the areas on the side of frontiers were non-capitalist (this discussion on capitalism having importance for the three qualities of existence listed above, as is later discussed). When coming to the 1990s, Cleary (1993) argued that the concept of ‘resource frontier’ was not academically or practically useful to describe the turn of the 1980s-90s period as the ‘frontier’ had ‘collapsed’ by then and had not created capitalist human ecologies in the way the political economists foresaw (a point that also merits study, since it suggests that the non-creation of capitalism could correspond with a lesser pressure on existing existences). The late 2000s global land grab (Edelman et al. 2013) has eased a resurgence of the ‘resource/commodity frontier’ as an academic concept, particularly to address the empirical reality of the expansion of capitalism with its socio-environmental frictions and underlying understanding of nature (Moore 2014). Such dynamics and analyses suggest a need to review and sharpen ‘frontier’ as an analytical and descriptive tool to capture the empirical realities of changing “lived environments” (including humans, see Taylor 2015).

The current global situation of increased competition for land access and control, and the dynamics this type of situation generates, can be opened up better when understanding that this is a situation of re-opening and looming closure of the (physical, material) commodity frontier. Geographers writing on this topic, such as Moore (2014), are starting to unravel the ways in which ‘nature’ is simultaneously both an ideological and physical condition of frontier expansion. Neil Smith (2003; 2008) saw frontiers as a combination of real spatial changes and capitalist fantasy wherein the configuration of landscape is essential to the survival of capitalism. In this argument, frontier arises from an act of colonialism and imperialism (Meinig 1986) rather than from ‘civilization’s’ expansion to ‘unused’ or ‘barbarian’ lands, as Frederick Jackson Turner (1893) famously argued. Geopolitical change of frontiers is therefore a key tool of capitalist value-creation (Smith 2003).⁷

Frontiers are also essential analytical elements in the world-ecological thinking developed by Moore (2014: 2), who theorizes that 1) “the expanded reproduction of [economic] value-relations turn on frontiers of uncapitalized natures, the source of the ‘Four Cheaps’ (labor power, food, energy, raw materials)” and that 2) these “frontiers are not ‘just there’ but are actively constituted through symbolic praxis and material transformation, at once unifying and alienating ‘mental’ and ‘manual’ work (base/superstructure).” In this view, capitalism is a frontier, and “the extension of capitalist power to new spaces that were uncommodified became the life-blood of capitalism” (Moore 2014: 5). I argue that it is essential to study commodity frontiers as particular ways of producing ‘nature’, that is, life, and link the changes in frontier-dynamics to distinct projects of redistributing and reshaping existences.⁸

‘Resource frontier’ is not an unambiguous concept however. The concept of ‘resource frontier’ has been criticized for its possible negative local impacts in the region to which such attribute is placed (typically from global power centers and by outsiders, see Barney 2009 – a notion I share), and for impreciseness in describing, capturing or foreseeing the complexity of rural socio-cultural and economic realities and their transformations in alleged frontier areas (Cleary 1993). I do not propose to

space” cast as a synonym of “tropical” in policy-making. (Marques 2007.)

⁷I define capitalism as formed by (1) notable class relations, that is, ‘unequal rights and powers of people over economically relevant assets’ (Wright 2005: 14) in the social and physical space - and (2) ‘an audacious fetishization of nature’ (Moore 2014: 5) that for example separates humans from the rest of nature in the symbolic space. I see that as a combination of relations 1 and 2, capitalism as a frontier can appropriate, in the words of Moore, “unpaid work [e.g. of women, slaves, forests, soils or rivers] in service to commodity production.”

⁸This does not mean that we could and should not still continue to explain the power relations behind frontier expansions by using the classic analytical elements in the political economy of frontiers, which according to Foweraker (1981) include the study of modes of production, the mechanisms of accumulation, the expropriation of surpluses to particular actors, as well as surveying the wide range of political, legal and ideological interventions by the state.

provide a detailed ethnographic description of the Amazon through this term, nor advance any ideas that ‘frontier’ would be ‘unused’ or ‘barbaric’ or ‘in need of investment’. Nor do I deny the claims on social complexity that is not captured by this term in many areas. Yet, there is a need to have concepts that can convey the rough and major changes occurring, as arguments striving towards place-based particularities and complexities cannot convey the general tendencies: such as the major redistributions of existences taking place now, largely in terms analogous to major landscape changes. I also see that the historic changes in whether the concept of ‘frontier’ was seen as useful, and for what purpose it was used, reflects the times in place, and the project in question.

To pursue these ideas, I will show how, firstly, the historical use and critique of the concept have reflected, at least partly, the reality at the time of writing (in the time that Cleary 1993 for example describes there was less pressure on the Amazon by government projects than right before or after that). Secondly, I argue that both the neo-developmental frontier, as well as the new spaces for what are called *socioambientalismos* (environments lived by traditional or original populations with most of the existences there sustained) created since 1980s and resisting the creation of ‘cheap nature’, have pushed the situation towards a ‘frontier closure’ in Brazil. This ‘closure’ situation means that much greater conflicts and havoc is being wrought, as the frontier has to be expanded to areas that are set-aside for conservation for example, or marked by other users already.

The frontier re-opening of the past years, typically not referred to as such but as a global land grab and land rush in the global South (see Edelman et al. 2013), or (agro)extractivism (see Gudynas 2012; Petras and Veltmeyer 2014), has taken place also within the dynamics of capitalist accumulation. According to Moore (2014), commodity frontiers are epoch-making as they extend the zone of appropriation (of natures’ unpaid work, including also extra-human natures) faster than the zone of commodification (commodity creation and exchange) or capitalization (productivity increase attained by new machinery or more labor-intensive techniques). Both capitalization and appropriation of nature are required, but the latter has to expand faster, argues Moore (2014).

The battle that this frontier dynamics creates is visible in the Brazilian landholders’ grabbing of land for their extractive projects.⁹ Most typically, landed elites take land from indigenous populations (living inside or outside official Indian Preservation Areas – see Reydon et al. 2015 for the institutional framework of the Brazilian land regulation), traditional communities (living inside or outside Multiple-use Conservation Units) and other rural poor,¹⁰ but resource frontiers expand also through the agency of smallholders and peasants in search of quick money or in the midst of alternatives by which to attain the new and desired levels of consumption (as has happened e.g. in several parts of the Chico Mendes Extractive Unit in Acre in the past years’, based on the author’s field research observations, May 2017). The elite has a strong hold of the state and the government, and has been increasingly cutting environmental laws (e.g. by the 2012 Forest Code), which has led to increased deforestation rates (Kröger 2017). The situation is becoming ever more dire, due to drastic changes by the Temer government which have watered down environmental and forest protection laws, as well as the budgets and abilities of environmental authorities and civil society to struggle against the new drive by the country’s elites to deforest (legally) and grab lands (Leahy 2017; Watts 2017). The most worrisome features in this include MP 759/2016, a June 2017 legal framework change with which the Temer government made it possible to get legal tenure on large illegally

⁹ Land grabbers in Brazil are both national and foreign. Foreign control is mostly indirect through trade and technology-sales, but grows also via visible and hidden land grabs, e.g. in the agricultural frontier expansion (Sauer and Leite 2012; Clements and Fernandes 2013). Domestic, traditional landholding elites are still the key players on actual politics and direct land ownership – although there are sectorial and regional specificities (Oliveira 2010).

¹⁰ In the Brazilian legislation, small-scale users of renewable resources are recognized as ‘traditional’ populations that are defined by their work in the nature as e.g. rubber-tappers, fruit/nut-collectors, or fishers, but not as artisanal miners, and hold territorial rights – they are not the same as indigenous, with whom they may sometimes have overlapping territorial claims.

grabbed lands; Brazil's rise to being the world's leading country in murders of environmental activists; and the spread of deforestation to areas where this has never happened before (Pedlowski 2017). Old resource frontiers are being re-opened, through landmark projects abandoned in the 1970s being re-fueled with state funds, and new frontiers are opened (for example within the conservation units that before were intact). Together these environmental and economic policy moves suggest that major commodity frontiers are being re-opened and opened, which in turn signifies that major reshuffling of what exists, including mass extinctions of existences, has gained traction. This, of course, is not only something that happens now: frontiers have histories, and it is to their changing expansion modalities to which I will turn after having first opened up the Brazilian political dynamics through which these can be explained. After having discussed the latest changes in Brazilian frontier expansion, I look at the broader history, and summarize the key ideas about the frontiers of existence as linked to resource frontiers.

3 The zones for neodevelopmentalism and its resistance in Brazil

Government policies are a key explanatory factor for existential changes that take place via frontier expansion. On 29 March 2010, the Workers' Party (PT) President Luiz Inácio 'Lula' da Silva launched the second phase of the Project for Acceleration of Growth (PAC), a R\$1,459 (€620) billion government boost initiated in 2007 to build new infrastructure, energy and natural resource extraction capacity in particular. Lula mentioned being impressed by the note by Dilma Rousseff (PT), the successive president of Brazil and the mother of the PAC plan, in which Rousseff emphasized "the last large infrastructure investment having been done by Geisel", a military president during Brazil's pre-1984 authoritarian regime (*UOL* 2010). Three and a half years later, on 17 September 2013, the Brazilian Landless Rural Workers Movement (MST), in the person of the movement's national coordinator, João Paulo Rodrigues, broke its formerly friendly relations with the Dilma government, claiming that her agrarian reform track record has been "the worst in Brazil since the Geisel government" (*Brasil 247* 2013). Both of these discourses, from the political leadership of the country and from the 1.5 million-member social movement, suggest that Brazil has started to undergo significant changes in its natural resource policies in recent years. A new chapter has opened in the country's developmental and environmental history (de Toledo et al. 2017). On the one hand, massive funds have been poured into developing new large-scale energy projects, such as the 11,233 megawatt capacity Belo Monte dam project in the town of Altamira in the middle of the eastern Amazonian forest. Much of the state funds have been spent on infrastructure for greenfield mining operations and for massive agricultural and forest industry investments. The Belo Monte project, costing 17 billion dollars, of which over ten billion has been paid by the National Development Bank, makes the dam the country's largest investment ever.¹¹ The rural social movements compared the Rousseff policy with the bonanza given to developmentalist projects during the Geisel government (1974-79), which threw money into infrastructure development such as highways to cross the Amazon even as distributive land reform was paralyzed.

The varieties of Latin American new developmentalisms were products of progressive governments that emphasize extractivism over the Nature, relied on modernity, and denied the *Buen Vivir* and similar ontologies which have rights of Nature; as Gudynas (2011; 2012; 2017) discusses, these extractivist policies clash with the Latin American consideration of Nature as *PachaMama* (Nature written in uppercase).¹² The practical effect of this extractivism, which includes cutting of

¹¹ Hydroelectric power generation is a major component of PAC, totaling 67.3 billion Euros in private and state investment in the whole of Brazil. Dams are fiercely resisted by the dispossessed populations as their lived environments are destroyed by flooding and other impacts. (Silva and Rothman 2011.)

¹² The Brazilian (socio-natural) extractive populations and their Extractive Units differ dramatically from the (corporate-state, neo-nature) extractivism discussed by e.g. Gudynas (2012), for which reason in the discussion of Brazil I mostly refer to extractivism as neo-developmentalism, in order to avoid confusion – the terms are interchangeable in Brazil as neo-developmentalism there is so strongly (state-corporate) extractivist.

environmental protection laws and infringement of existing laws by governments and companies, is blatant violence against rural communities via larger-scale mining, logging, replacement of native forests with tree plantations in conservation units, and other conversions of landscape into what Hecht (2011) has called ‘neo-natures’. I suggest that these ‘neo-natures’ can be identified as areas wherein existences are much more limited to only a few species, whose life-span (rotation) is very short, and which are tied to complex global commodity networks which produce human and animal suffering (e.g. via the feed complexes). Yet these sufferings are not created without causing damages also in the classic political economic sense. As a political economic consequence of such moves, Amazon is being fixed as a mineral-energetic colony for the rest of the country and multinational production capital, as Marques (2007; 2012) for example argues; and Brazil’s economy is being turned evermore reliant on raw material exports, with damaging social welfare and equity impacts (Young 2017).

Yet Brazil is not only host to primitive accumulation-strategies based on harnessing the environment’s bounty to the commoditization drive, but also to a myriad of different policies that shape where resource frontiers (with their redistribution of existences) can expand and where not. Hecht (2011) and Hochstetler and Keck (2007) cover the deforestation-curbing and alternative politics very well, which had succeeded by 2011 in diminishing Brazil’s rate of deforestation by more than 70% since 2004; putting 7.76% of Amazon land under complete environmental protection, creating indigenous reserves on 20% of Amazon land, and creating 15 million hectares of Multiple-use Conservation Areas. In total, these endeavors had placed over 40% of Amazon under some sort of protection, and 60% of these lands were under “socio-natures” (see below), i.e., governed by locals. Now the situation is again changing, as capital has started a counter-attack.

Frontier dynamics is also visible in the resisting communities’ direct action-resistance (e.g. land occupations). A discourse criticizing dams by Munduruku Chief Jairo Saw on 11 May 2015 illustrates how different ‘nature’-making, and *thereafter* the understanding of what should have the right to exist, is among the Brazilian socio-natures: “We are a part of the nature: we do not want that our knowledge disappears, our form of living, of organizing. We want that you respect us, that the world knows what we are feeling”.¹³ Such resistance running against such frontier expansion show that, together with extractivism, these opposing trends are leading towards a frontier closure; a point that Fernandes (2009) has also made, based on the governments’ unwillingness to do agrarian reform in the non-Amazonian regions of Brazil (which would ease the pressure on the Amazon deforestation, as the soy frontier has led to the expansion of the cattle frontier deeper into the Amazon, see Domingues and Bermann 2012). The joint impacts of different commodity frontiers is making the conflict more intense now in Brazil.¹⁴ This conflict has deep existential dimensions, re-shaping what exists and how. Prior political economic and political ecology thinking about dispossession, accumulation, and their impacts is helpful in understanding these moves.

Marx (1887) argued that dispossession results in new modes of being, turning for example ex-servants into beggars and robbers. In a similar way, the array of existences is strongly impacted by the type of process that is shaping the landscape. A key argument is that the variation in accumulation-modes corresponds to the different forms of the environment present in Brazil (and elsewhere), an idea that political ecology of the Amazon has started to discuss about by labelling the zone into roughly

¹³ Author’s translation from <http://m.greenpeace.org/brasil/pt/base/Noticias/As-veias-abertas-da-Amazonia---Parte-I/>

¹⁴ A key issue to consider now is that the frontier in Brazil is closing, as Fernandes (2009) mentions – there are ever fewer spaces that could easily be incorporated under global and Brazilian capitalisms. This closure argument emphasizes that the capitalist accumulation frontier is being closed; which is a very different closure argument in comparison to Frederick Jackson Turner’s classic frontier closure thesis (1893) in which he saw the closure of the Western frontier in the United States resulting positively in “the civilization of savage lands”. The Western frontier is however a classic example on the centrality of mass extinctions and redistribution of rights to exist in expanding resource frontiers; and nothing less serious is undergoing in those regions where the resource frontier is now being forcefully expanded (e.g. in the Amazon).

different areas (which I suggest should be seen as corresponding with roughly similar existential spaces):

“As simple analytical categories, Amazonia can be seen to be composed of landscapes of ‘Ur nature’ (sic) (the ‘wild nature’ of classic conservation), ‘Neo-natures’ (the agroindustrial modernist landscapes where land is basically a substrate for silvo-industrial, agro-industrial or livestock production, involving total landscape transformation into what are essentially monocultures) and ‘socio-natures’ (*socioambientalismo* as it is called in Brazil and elsewhere in Latin America), the inhabited forested or mosaic countryside” (Hecht 2011: 4).

While these types of rough classifications is helpful in explaining the large cleavages in whether and how people live in different Amazon environments, the usage of the word ‘nature’ in all these spheres has several problems. First, the concept of ‘wild’ nature is increasingly contested by scientists who have found growing evidence of human agency shaping what has been considered virgin nature for hundreds of years, and is still inhabited by human beings (Miller 2007). Second, and more importantly, the word ‘nature’ is one more tool to hide the major existential frontiers between the spaces that are referred to above; for example between an area that used be a primary rainforest with a traditional or indigenous population living there for centuries, and the same area a few days after it has been burnt down, or planted with grass monoculture. ‘Nature’ is not a very alive concept, but more of a structural thing, cast in the Western minds as something external: more fruitful and dynamic terms would be for example ‘web of life’ (Moore 2014) and ‘lived environment’ (Taylor 2015). Yet, call the environmental and ecological, life and nature changes as you will, with the frontier expansion, the loss in the number of different existences is massive. A par with Marx’s notion of dispossession’s creative power, the expansion in one or two kinds of existences, e.g. cattle and pasture grass, leads also to more voluminous existences of certain types.

The type of production system that is used at a resource frontier greatly influences the distribution of existences. According to John Walker et al. (2009) there have been two major capitalist boom periods in the Amazon basin, the first being the late 19th century rubber boom, and the second the current era characterized by a livestock boom. The main difference between these two is that the former expanded a cultural frontier of labor creation and capitalist exploitation of labor for global resource extraction (see Peluso 2012) while retaining most of the forest intact (for the natural rubber trees produced best in primary forests, until rubber plantations started to be expanded and largely replaced this system). The latter, not generating as great a capital accumulation as the former, has focused on expanding cattle capitalism via deforestation, principally replacing forests with pastures, by grabbing land and wiping lived environments of the landscapes they have physically occupied.¹⁵

¹⁵ The Amazon pasture-expansion is largely mere plunder and is not based on cutting-edge technologies that would allow for such a major increase in labor productivity as the new techniques of the 19th Century *aviamento*-system through which Amazon riverside populations were disciplined and forced to labor for rubber-extracting capitalists. Thus the current boom, mostly lacking in capitalization (although there are some pockets where also capitalization occurs alongside commodity-frontier expansion, such as new agribusiness, dam and mining projects), has not resulted in as great capital accumulation as the prior one (which relied on the model of more plunder than capitalization, *but both*). This has been used also as an argument to support alternative projects of land use, such as multiple-use conservation units. From the viewpoint of maintaining national political stability, under the current model of frontier expansion (*much* more plunder than capitalization), it is more costly, less profitable, and more disturbing socio-environmentally to expand the commodity frontier – or conversely, the creation of conservation areas implies lesser ‘opportunity costs’ for capitalists of today. However, paradoxically, the elite in Brazil still tries to rely on the current boom-model. Thus, dispossession from land and obliteration of existences are greater now; in the previous boom local labor reproduction had to be ensured as rubber extraction relied on forest-dwelling and forest-knowing populations and cultures, non-plantation rubber being thus a commodity relying on lived environments where a substantial population resided as a labor force in a primary forest area (which had all kinds of existences).

Considering the territorial extension, beef is the main commodity responsible for deforestation and the present expansion of the frontier (Walker et al. 2009). As much as 83% of the growth in Brazilian herd between 1990-2007 took place in the Amazon, of whose territory up to 80% would offer moderate to high net present values to those grabbing land (without buying it) for beef production (Bowman et al. 2012). Since land grabbing is an important driver of extensive ranching profitability (ibid), and widespread in Brazil, ranching is a main driver of frontier expansion. The main economic group directly responsible for deforestation is medium- and large-scale ranchers, one reason for this being that smallholders have shown the potential to stabilize frontier expansion based on improved land-use efficiency while large ranchers have continued expansion into forest partly because of their inefficient production methods (Godar et al. 2012).¹⁶ But considering the intensity of change, and considering particular investment projects as key drivers of consequent pasture expansion, state-led developmentalist projects and infrastructure-building have been essential in explaining frontier expansion.

The frontier is created by its investment sub-parts, including energy (Belo Monte and other dams), metals (mines, pig iron, steel and aluminum plants), biomass and fuel (forestry and palm oil, etc. plantation expansion), food and feed (pasture and soybean expansion), and infrastructure (railroads, Amazon road pavements, ports) and building. Taken together, these changes seem like a resurgence of the 1970s developmental model – especially when looked through the lens of existences. I will next situate the Brazilian frontier dynamics in their historical continuum, looking at the broader changes in modalities.

4 Frontier Modalities

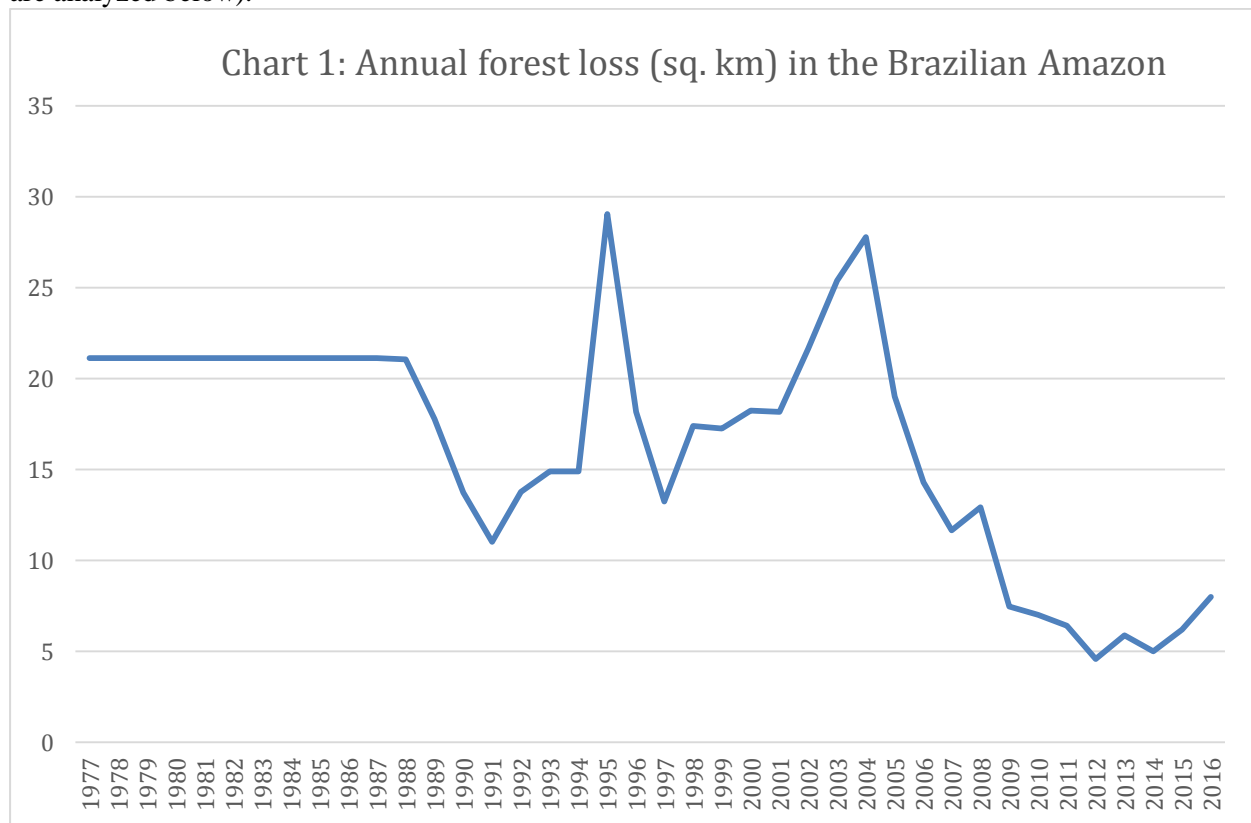
Chart 1 below tracks the annual rate of deforestation in the Brazilian Amazon since (before which there is no systematic data).¹⁷ The figures for years 1977-1997 are an average estimate based on the total loss during that time. During that decade, forest loss was high: this was the period when the classic political economies on the pioneer agrarian frontier were written (e.g. Foweraker, Martins). There clearly was an Amazon deforestation frontier that expanded during that period in a marked, landscape-changing, physical manner, these figures suggest; for which reason it made sense for scholars to write analysis and theories based on that modality of constantly opening up new frontiers.

¹⁶ Pacheco (2012) offers a diverging analysis in comparison to Godar et al. (2012), emphasizing the recent rise in deforestation activities and cattle-ranching among Amazonian smallholders, and arguing that ‘resource frontiers’ characterized by large cattle-ranches have better developmental outcomes than those characterized by smallholders. Considering that some of the smallholders joined with the rural caucus to defend the watering down of Brazil’s forest code in 2012 (RRI 2014), the perk of the new code giving much greater de jure freedoms for smallholders to raze forest than for large estates as an impetus, it is clear that smallholders are not a unified group in Brazil, and that some of them are very likely to start to play a much greater role in forest destruction than before, with the legal backing of the new forest code. In fact, this type of deforestation by smallholders, even by former socio-environmentalists who are now living in the multiple-use conservation units that they gained in their battles with and after Chico Mendes, is considered the most serious current threat in several of these conservation units. However, based on my field research, the key driving agent behind this expansion is the strong Brazilian cattle capitalism and the larger cattle-ranching, strongly participating in the corruption of smallholders and the resulting illegal deforestation; furthermore, my preliminary analysis (not discussed here) suggests that this process does not unfold where the socio-environmentalist agency is still active, where contentious agency is maintained by active and continued grassroots organizing, politicizing and mobilization.

¹⁷ Source: the Brazilian National Institute of Space Research (INPE) and the United Nations Food and Agriculture Organization (FAO) data, available here:

http://rainforests.mongabay.com/amazon/deforestation_calculations.html (accessed 16 August 2017). Data for years 1977-1986 is an average estimate, as there were no yearly figures. These figures do not include smaller-scale deforestation and degradation, or do not consider possible revegetation on these lands - this data is thus usable for analysing the large patterns and modality changes in the Brazilian Amazon deforestation frontiers.

The period from 1987 to 1991 shows a major relative decline in the expansion rate of the frontier; 1993 saw Cleary write that “the frontier has collapsed”, an observation related to the lessening rate of opening up new frontiers. However, the deforestation rate still remained globally and historically relatively high even during that downfall, for which reason Cleary's claim the concept of commodity frontier had become obsolete seems an overstatement a posteriori. Furthermore, the years right after 1993 show a massive peak in increased deforestation, the years showing the largest forest areas (with their existences) being destroyed between 1995-1996 (reasons for this and the other modality changes are analyzed below).



The chart plots out how there have been different modalities in the frontier dynamics. Based on it, the frontier could be said to have been 'opening' between 1977 and 1987, 'collapsing' (these being tendencies in the expansion pace) between 1988-1991; 're-opening' (in relation to the prior moment when the frontier expansion started) between 1992-1995; then relatively collapsing in 1996-1997 (these being however mere anomaly years, a cosmetic change, not to be continued); relatively re-opening again between 1998-2004; and then collapsing between 2005-2008. The frontier modality of the historically exceptionally low deforestation rates between 2009-2014 could maybe be more aptly described as being a frontier 'closure', rather than collapse, since a) the rates remain low for a longer time period than before, suggesting that it is not possible (for political and other reasons) to start a re-opening of the frontier after a relative collapse; b) there is only a relatively weak re-opening that has taken place after 2014. I would thus entertain the notion that the situation since 2009 has started to resemble a frontier closure situation: the expansion of conservation areas and other factors have led to a new modality. Yet, given the historical record the Chart 1 provides, it would be foolish to assume that this could not change: there have been periods of intense jumps from one modality to the next, as the peaks demonstrate.

When reflecting from the viewpoint of frontiers of existences, the square kilometers in Chart 1 give some estimates about the rate at which the annihilation of existences has been taking place. Another important dynamics is that frontiers of existence / resource frontiers not only change their modalities,

but also their place, these having a causal relation. When looking also outside of the Amazon, in the Cerrado savannah and forest regions, the Brazilian frontier dynamics of past 15 years' become clearer. Over half of the Cerrado has been destroyed, this biome being less known than the Amazon but spanning about a fifth of Brazil's territory. A relatively larger frontier expansion has taken place in this region since 2005 than in the Amazon, as there are far fewer restrictions on annihilating the existences in this area, which Mooney (2016) for example calls "an enormous region of dry forests and shrubs that hosts jaguars, rare birds and thousands of unique plants". Thereafter, while the Amazon deforestation frontier has shown signs of collapse or even closure (in some parts at least), this modality is likely to change once the Cerrado destruction frontier reaches deeper extensions, and turns its eye towards new lands. Spera et al. (2016) argue that the better curbing of deforestation in the Amazon and the scarcity of land in older frontier regions led farmers, states and the government to target instead the Cerrado since 2000; an argument that supports the analysis that the resource frontier in the Amazon has been collapsing for the reason of it becoming closer to being closed. The deforestation of the Cerrado and other important non-Amazonian lived environments – not visible in Chart 1 – are also helpful in explaining how the Workers' Party governments, and the agribusiness that wants to give a benign image of itself, have been able to argue that Brazil has been able to simultaneously curb deforestation and increase dramatically agricultural production.

Next, I will open up how the theories and views on frontiers as academic tools made historically are related to the above frontier modalities, and open up the political economic dynamics explaining the modality changes.

5 Frontier Opening, Collapse, Re-opening and Closure

Frontier theories that sought to explain Brazilian and global political economy became prominent in the late 1970s, following the dramatic opening of the pioneer frontier since the 1960s in Brazil. For example Foweraker (1981) studied the different pioneer frontiers of 1970s Brazil characterized by the struggle for land between peasants and large economic enterprises, mediated by an authoritarian capitalist state. He makes arguments on the importance and historical specificity of the frontier experiences in defining the economic, political and ideological aspects of state and society. Class struggle is an essential element in explaining how primitive accumulation takes place – a specific form of capitalist state, that of an authoritarian capitalist state, had to be devised in Brazil to allow for a violent frontier expansion in this context of intense class/land struggle. Foweraker (1981: 3) also argues that the 'pioneer frontier' served primarily not the integration of Brazil into world markets, but "the particular activity which integrates unexplored regions into the national economy".¹⁸ Importantly, the use of violence has been the lifeblood of these frontier openings: "Even when state and local governments in the region have not been overtly criminal, they have been almost by definition boosters of colonization and development within their jurisdictions, with few (and recent) exceptions" (Hochstetler and Keck 2007: 154).¹⁹ In terms of existences, the 'national economy' referred to above meant a replacement of multitudes of existences with commodity production spaces geared towards

¹⁸ Given the new statism, neomercantilism and neo-developmentalism in Brazil (Kröger 2013), the current frontier expansion also seems primarily to serve the goal of national economic integration, this signifying the expansion of cattle and agribusiness capitalism to there where these do not yet control the land there are alternative lived environments.

¹⁹ Violence against peasants (this category not including indigenous people) by elites has been greater in Brazil's pioneer frontiers than in the colonization of the American West (where the frontier that was considered free to colonize closed in the 1890s according to Turner's famous frontier thesis [1893]) (Alston et al. 1999). This is because "the expectation that invading and claiming public land will eventually be rewarded by a permanent land title ... has been the pattern in Brazil for over 400 years", resulting in greater expectations that landholders, including small ones, would receive government support eventually (Fearnside 2008: 10). This has meant that violence has been an essential part of frontier capitalism in Brazil up to now, and has been directed at usurping people with possible legal rights to land based on them having developed it.

capital accumulation (mostly in a non-sustained way, by making quick and not-so-high profits via burning forest and selling livestock to markets for a few years and then moving the frontier deeper).

The frontier opening modality of now and of the 1970s are altogether different from the late 1980s and 1990s modality. During that period, scholars (e.g., Cleary 1993) thought that Foweraker, Martins (1984) and others were mistaken in their prediction that authoritarian state capitalism would continue to homogenize and expand a capitalist frontier. The 1990s critics of frontier-theories based their claim on the abrupt stop in state-subsidized megaprojects in the Amazon and a dwindling towards a much more heterogeneous pattern of development.²⁰ Cleary argued in 1993 (page 335) that the frontier was not expanding or closing, but had collapsed: “The difference between the frontier experience of Brazil and the United States now appears to be that in the US the West was won, while the Brazilian frontier has collapsed before reaching much of the North.” Cleary (1993: 349) went even further, claiming that “the frontier has become meaningless as an academic construct”. Yet, read in terms of today’s globally rampant land-grabbing (see e.g. Edelman et al. 2013), the frontier seems to be anything but a meaningless analytical tool – especially when we start to see resource frontiers as being also (more or less) consciously used tools for existential redistributions (much of the accumulation taking place via the appropriation and exploitation of existences), rather than as heuristic devices that would open up in detail everything that happens on those frontier regions. Furthermore, right after Cleary’s claim, deforestation started a major new rise, and lead to record highs in 1995. As a reason for this, Hecht (2011) argues that, in contrast to the prior primarily state-opened frontiers, the neoliberal policies of the 1990s led to higher deforestation rates (the peaking of deforestation in 1995): she thus calls the expansion of deforestation the northward journey of a “neoliberal frontier” in the 1990s. The latter half of the 1990s were not so neoliberal as generally assumed, as the state still had a strong role in Brazil, retaining its essential power to direct the economy, and key economic institutions and relations created in the 1930s-1950s (Lazzarini 2011). The brutal privatizations of many other Latin American countries were not replicated as such in Brazil, and the government was for example putting resources in distributing lands in the South of Brazil for agrarian reform, and addressing the internationally acclaimed conflicts in the Amazon wherein landless workers had been murdered (these state maneuvers being part of the explanation for the relatively lower deforestation rates in the late 1990s).

Between the 1980s and now, much more heterogeneity has certainly taken root in Brazilian landscapes than the outright capitalist penetration-thesis would have predicted. But this should not be counted as a result of neoliberal or statist economic change, as both can have very similar effects on the environment, ecology, and existences; rather, the splintering of frontier dynamics to locally varying modalities is a result of democratic political development that has followed paradigmatic ideological and social changes, all of these rooted in changed territorial practices. The complex post-collapse situation of the 1990s, the period when direct state meddling in affairs had remained relatively more in the background of frontier expansion, allowed also for building new territories of socioenvironmentalism. The new political power vested by the landed and rooted socioenvironmentalists has brought the situation closer to a frontier closure.

In political economic terms, commodity frontier closure means the exhaustion of the physical expansion of capitalism in the nation-state landscape. Fearnside (2008: 11) sees the frontier closure as a positive thing that should be hastened to stop deforestation, but sees this as happening only if available land ends or “by an alteration of national policy that is sufficiently visible and consistently enforced to be accepted by the population.” The national economic policy under the Workers’ Party-led coalitions, centered on developmentalist ideology and mega-investment projects, was not this kind of alteration in policy; thus, any foreseeable closure depends on the end of available land, or a U-turn on government investment policy, which is even less likely under the Temer government than under

²⁰ The turning of new frontiers into old or mature frontiers had multiple impacts. In the political economy, the styles of accumulation most readily available tended to change. Speculation and slavery (related closely to deforestation logging) became less prominent accumulation-styles as initial frontiers matured, giving way to “traditional” beef productivity calculation as the basis of land-use decisions (Fearnside 2008).

the PT governments.²¹ The Temer government revamping of territorial and environmental legislations to allow for larger legitimized land grabbing and deforestation, especially by the large landholders, suggests that the frontier re-opening that started with the mix of neoliberalism and statism under president Cardoso, and continued under Lula's and Dilma's strong statist projects (the Belo Monte dam, highway sealing, mine expansion, railroad construction, and so forth), is continuing and becoming an ever-more privatized and capitalist process that directly targets the existences that have insofar been protected by conservation measures and activist agency. In Brazil, a consequence of closure is attempts to open up frontiers there where they have not been imagined to be possible even in the unruly legal situations on the Brazilian frontiers by dismantling former preservation areas and indigenous territories.²²

6 Discussion

Who benefits from the expansion of resource frontiers? The last frontiers are now being incorporated, for the needs of: 1) global capitalist economic growth, 2) the restoration of political economic control by the (national) elite clans in Brazil, and 3) the (wished-for, possible) raising of Brazil (or some Brazilians and Brazilian corporations at least) into new world power (by creating low costs in energy, infrastructure, etc. subsidized by the state). There's also a strong push coming from 4) the paradigmatic shift from a global carbon economy to a 'green economy', in which large-scale existential redistributions and deaths will play the key role in the form of flex-crops being planted evermore.

An interesting way of studying the political economy of frontier closure is to make inquiries into what political, landscape and economic changes the acceptance of frontier-closure causes. McCarthy (2010), studying the Indonesian palm oil frontier dynamics, found that those (few) peasants who understood that the whole land transaction dynamics has changed (no more chance to sell land and then buy it back or move on to a hinterland), and started accumulating land, became (capitalist) winners in the palm oil (and pulp) boom of recent years in Indonesia. A short window of opportunity for huge capital gains and even larger existential losses opens when the frontier closes. This change in dynamics can have very long-term impacts. When and how the frontier closes deeply entrenches the rules for changing power relations. A once-cut or burnt rainforest, particularly if the area is vast, is likely to remain as a plantation or pasture as its regeneration would be hard and as the land-grabber can use the logging-proceeds to buy hired guns to protect his "investment". An illegally built dam will stand, even if Supreme Court would order it to be torn down.²³ Such *fait accompli* are typical and widespread features of Brazil's developmental and land use policy (e.g. Oliveira 2010; Reydon et al. 2015), and this feature means that in Brazil frontier closures – making winners and losers – will create even more long-term and harder-to-dismantle class positions in the social and physical space. As a result of the dam-building and its requirement for a flooding frontier, the Brazilian public prosecutor

²¹ The sanctioning of MP 759/2016 by Temer in July 2017 is a very alarming sign of an upcoming major deforestation and legalized and violent land grabbing increase in Brazil, particularly in the Amazon. See e.g. <https://www.socioambiental.org/pt-br/noticias-socioambientais/michel-temer-sanciona-mp-da-grilagem> (accessed 14 August 2017).

²² For example, Erwin Kräutler, the Bishop of Xingu and the president of CIMI, Conselho Indigenista Missionário (a Catholic organization defending the rights of indigenous populations), argued in his speech at the Assembly of Brazilian Bishops in 22 May 2015 that "in the past two years we assisted a real 'uprising' against the indigenous populations and quilombolas and their fundamental rights to life and land" (author's translation from Portuguese). Kräutler assigned the prime responsibility for this "attack" on the Brazilian state and the media.

²³ In Belo Monte, the government does not follow Court closure orders, using "safety suspension", a decree created by the dictatorship (Law 8.437) to protect any government project from suspension to safeguard health, safety or the public economy (email communication from professor Sônia Magalhães, 5 June 2015).

Thais Santi has argued that “Belo Monte is an indigenous ethnocide”, as these people lose the lived environment in which their existence is based.²⁴

Physical frontier-closures are deeply critical junctures, supporting path dependencies. The same is true for technological revolutions and other periods when re-organization of labor by new techniques leads into higher accumulation through increased productivity. Those who are in an even slightly more advantageous starting position in terms of power over the means of production and wage labor, enrich themselves greatly. Such was the case of the rent farmers of the 15th Century England, who enriched at the cost of the landlords renting the land for farms for long term (such as 99 years) and the peasants, who did not have rental contracts but had just or mostly been selling their labor. Marx (1887: 522) argued that this is how the capitalist farmer was formed; which explains how the key agent behind modern and “civilized” resource frontier expansion was formed. Marx’s description that “capital comes [into the world] dripping from head to foot, from every pore, with blood and dirt”, on the other hand, rhymes in well with the notion of frontiers of existence.

In terms of existences, frontier closure signifies a thorough redistribution of existential rights and ways: what was before in one place is no more. Frontiers cannot be opened without legitimization: this was the case already in the 19th Century U.S. frontier expansion that required an ideology of romanticizing nature, which led to set-aside protection areas (Smith 2008). Thereafter, the creation of an idea of a void space – where there would not be lived environments or existences – is essential in pursuing frontier expansion. In this, the elites deny that there could be lack of land (May 1999), and try to emphasize through their publications and direct participation in the drafting of legislation the minimal and relatively insignificant size of the land they are transforming Martins (1984) argued that the Brazilian landed elites saw the land as a void site for private wealth-creation – a view that corresponds with the kind of landscape of existences trailing the frontier expansion. The framing has found fertile ground as the popular and international conception of Brazil is homologous with the ideology of endless usable land.²⁵ This persiflage creates new spaces that are officially called “free”, “unproductive” and “nationally undemocratic” (but which are in fact sparsely populated, large indigenous areas in the Amazon, rivers that have not been tapped, minerals that have not yet been mined) and then appropriated.

However, these capitalist transformations, creations of voids and land property, and even mass annihilations of existences can be reversed by politics. Lee Alston et al. (2012) compare frontier dynamics in Australia, Brazil and the U.S., showing how political force (*de facto* land control ability) has been used in frontier expansion and post-frontier situations to significantly alter the initial frontier boom to shape post-frontier property rights. In Brazil, with a long and slavery-based history of land-grabbing by commodity capitalists and violent resistance to *de jure* property rights offered to smallholders by the state, the government was forced by peasant mobilizations to allocate 63.2 million hectares of land to the landless between 1988 and 2000, while the *de facto* powers of organized peasants and landowners struggled for land in violent and sporadic conflicts. This political dynamic led to significant changes in the initial factor endowments which favored large landholdings and a tight grip on keeping labor on plantations and out of the smallholder frontier squatting business, held as a privilege of the commodity capitalists (e.g., coffee and later ranching elites). (Alston et al. 2012.) While the INCRA-based landless settlements in the Amazon are in many cases notorious for the

²⁴ https://brasil.elpais.com/brasil/2014/12/01/opinion/1417437633_930086.html (accessed 17 August 2017).

²⁵ This is a constant framing voiced for example by the Brazilian forestry industry, portraying the expansion of tree plantations as a proportion of Brazil’s whole land area instead of as a percentage of land use in those municipalities close-by to which there are large pulp mills (Kröger 2013). Or take the words of the cattle-rancher grabbing land from the indigenous peoples in the Xingu area in the Xingu film, based on the story of creating the Xingu reserve, attempting to lure the Villa-Boas brothers to join in with him into the turning of these ages-old lived indigenous environments into a sphere of private wealth accumulation (with the accompanying extinctions): ‘É um terra ótimo para criar boi’, ‘It is an excellent land to raise cattle.’

deforestation and absence of environmental regulation that follows these placements of people into forest areas, the multiple-use conservation areas and indigenous lands have mostly retained their multiple existences in different parts of the Amazon (Nepstad et al. 2006; Blackman et al. 2017). This suggests that states, as arbitrators of both *de facto* and *de jure* land claims, are key to understanding frontier dynamics; both those that deal with capital accumulation, and those that redistribute and reshape what exists (which might be in congruence, and often change a par, as I have argued).

7 Conclusions: An Accelerated Frontier Closure

I have argued that there are major landscape-altering transformations ongoing in a growing pace in the physical world, which fundamentally redistribute what exists, where, and how, and that these redistributions of existences, with the accompanying annihilations and creations, often accompany the expansion of ‘resource frontiers’. Thereafter, I assessed political economic studies on ‘commodity frontiers’, making preliminary observations on the potential and existing links between capital accumulation and existential frontiers. Much more study is required on this topic, this article serving the purpose of a preliminary uniting of the bulk of prior theorizing on the topic of commodity frontiers to an understanding of frontiers as sites of redefining the rights to exist. I argue that we need this kind of shift in our vocabulary, as even the emancipatory takes on agrarian political economy typically hide through their selection of words that there are actually lives, many existences, at play here. This issue is all the more actual due to the expansion of extractivism, which continues to divide lands and territories into monocultures (such as soybean or industrial forestry plantations) and those where multiple species can exist (such as primary or secondary forests). There is a visible and material frontier between these two in many places, as the clear-cut satellite images and photos on the plantation expansion frontier in the Amazon or Southeast Asia have demonstrated.²⁶ The concept of ‘frontiers of existences’ helps to understand the major differences in the rights to exist or not for the different species and beings of the world today; the existing tools of commodity frontier research within agrarian political economy are helpful in analysis of how and why these existences are distributed.

The concept of ‘frontier of existences’ was used to unite three different theoretical strands: 1) world-ecology, wherein capitalism is seen as a frontier, in whose expansion modern conceptualizations of ‘nature’ are essential in pursuing the appropriation of unpaid labour, that is, the rest of ‘nature’ that is not considered as requiring to be paid for its work, or to be noted called (‘cheap nature’) (Moore 2014). 2) The agrarian political economies of frontiers, including their ties to statist and neoliberal processes of accumulation (e.g. Foweraker 1981), as well as the critique of the concept of frontier (e.g. Cleary 1993). 3) Political ontology, wherein what exists and can exist in ecological and environmental conflicts is broadened to include non-modern entities and beings (e.g. Blaser 2009; de la Cadena 2015). Uniting these three strands of theory, the article demonstrated how ‘cheap nature’, created by extractivism, can be seen as a redistribution of existences: a creation of a larger volume of selected types of existences that are useful for capital, at the cost of destroying or neglecting all other existences.

I also assessed the modalities of frontier expansion: frontier opening, collapse, re-opening and closure were delineated as different types of modalities. I studied how the resource frontier has constantly expanded in Brazil during the past decades, although there have been different modalities (paces and directions of change) in this expansion, different key expansion areas (the Amazon forest, the Cerrado, etc), and different state-capital interactions (neoliberal and statist, neodevelopmentalist frontier expansions). These concepts can be used to analyze commodity frontiers as physically, materially

²⁶ See e.g. https://www.nasa.gov/mission_pages/landsat/news/40th-top10-amazon.html; <https://www.ecowatch.com/6-striking-aerial-images-show-how-deforestation-has-altered-the-earth-1882004620.html>; <http://maaproject.org/2016/hotspots-deforestacion2012-2014/> (accessed 14 August 2017).

delineated frontiers. The opening, expansion, collapse and closure of commodity frontiers redistributes existences in a mass scale. These existential redistributions are linked with political economic dynamics.

Recent years have seen the unexpected re-opening of the developmentalist frontier in Brazil, with the state being at the helm of this extractivist expansion between 2004-2016, spreading oligarchic and statist capitalism with national funds instead of the World Bank and other international loans (as in the 1970s). Meanwhile, a rising social movement, progressive state actor and scientist arguments and mobilization have led to a political-ideological setting in which socio-environmentally damaging frontier expansion is more difficult, and alternative developments are more forcefully present. Both greater regulation of post-frontier spaces, as well as blocking of further expansion in the hotspots of expansion pressure have occurred to a significant degree. The new push from the project of accelerated growth (PAC) together with the new power given to traditional and indigenous populations to govern their Multiple-Use Conservation Areas has brought the situation closer to a situation of frontier closure, lack of land for top-down developmentalist (or merely speculative or destructive capitalist) projects. This has led to greater pressures to either end capitalist expansion or pursue a major existential redistribution and curbing of existential rights inside e.g. conservation areas. It is in these pressure points that Foweraker's (1981) capitalist penetration and national market creation and integration, and Bunker and Ciccantell's (2005) unequal global resource extraction and global capitalist surplus accumulation theses apply forcefully, although they do not explain the totality of frontiers' political economic dynamics (see Browder et al. 2008), or the complex post-frontier dynamics (see Cleary 1993).

Business in the context of a closing frontier differs dramatically from non-frontier contexts as land and resource sales are *de jure* permanent due to the very rapid appreciation of asset values. Simultaneously with the global land-grabbing boom between 2008 and 2013 there has been a sharp decline in the *de jure* recognition of community and resources rights in tropical forest countries, despite commitments and pledges from powerholders to safeguard these rights, leading to a five-fold decrease in the area of forestland secured for community ownership in comparison to the 2002-2008 period (RRI 2014). The socioenvironmentalist era is being replaced by a post-environmentalist process (de Toledo et al. 2017); which bodes a greater frontier expansion and annihilation of existences, particularly as the Cerrado expansion is becoming physically harder, for which reason Amazon deforestation is being targeted evermore, as the frontier is not only a physical, but moreover a capitalist thinking and planning process. Because of the dramatically increasing value of land in monetary terms – which is counted towards GDP increase – governments fixated upon showing remarkable GDP-growth figures are prone to allow the process to dominate, even if harmful and led by private interests. This leads to an accelerated frontier closure as simultaneously lived environments backed by democratic ideologies also take over large land areas where capitalist, existence redistributing frontiers cannot be expanded (at least as) easily.

States, with their power to issue land tenure – the right to pollute and kill included – are key players in explaining where capitalism can expand, and in which form and pace. The analysis of frontier modalities above illustrated how these were related to changing political economic and existential dynamics. With frontier closure, the trajectories of wealth creation will change as quick wins are no longer available so easily. So why close the frontier, a (would-be) capitalist could ask. The observers of US frontier closure, Frederick Turner and Max Weber, saw that this would lead towards a more European dynamics where class struggles aiming for equality became more important (Foster and Holleman 2012: 1652). Greater conflicts have already ensued in Brazil. The plight of the non-organized individual leaseholders (*posseiros*), the afro-Brazilian quilombos (those who have escaped slavery and formed autonomous communities) and indigenous peoples has worsened, these being involved in a greater number of land conflicts than the organized peasants (Oliveira 2010: 75). But, instead of trying to distribute capital, particularly land, more equally, the governments of Lula and Dilma emphasized that they focused on the eradication of “extreme poverty” through a compensatory state rather than on agrarian reform (Oliveira 2010: 95), not to speak of promoting Nature's rights

(Gudynas 2011; 2012). Yet the most important political economic outcome of the Workers' Party era was the creation of National Champions, globally powerful sectoral corporations, a task which the Brazilian government wanted to support more than any other agenda (thus failing to remedy the underlying class and power cleavages in economic decision-making) (Kröger 2012): this led to a much stronger cattle capitalism for example. Posteriori, it can be said that this was a disservice to the Workers' party's original cause, since now that agenda of creating greater corporate power is backfiring, since capitalism the non-Amazonian lands on which the project was based are being exhausted (Cerrado etc), while the process in itself, has an even stronger appetite as the corporations are larger eyeing for new lands to continue their growth. With the Temer government's major privatizations, cuttings of environmental regulation, and perhaps most importantly, weakening of political opportunities for resistance to the appropriation of life suggest an even more lopsided, violent and rapid frontier expansion than the more markedly state-funded period of 2004-2016.

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New Extractivism, Peasantries and Social Dynamics: Critical Perspectives and Debates

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