Tales of Carbon Offsets: Between Experiments and Indulgences?

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Markets in carbon offsetting have, since their inception, been defended by their proponents as 'experiments', when it comes to the scale and the scope of their purpose of governing climate mitigation. Yet, different counter-narratives or 'tales of defiance' have been mounted as critiques of offsetting. This article focuses in particular on a tale of defiance, which continually has dismissed offsetting as a form of indulgence payment. While acknowledging that there are clear similarities between offsets and indulgence payments, the article argues that the indulgence payment metaphor glosses over the complexity of both types of transactions. The historical development of indulgence payments in the past demonstrates the difficulty of using them as simple models for understanding the problems inherent to offsetting, even if both types of transactions have been controversial. The debates over carbon offsetting continue to evolve however, and recent developments seem to suggest a third tale, where the funding of emission-reducing projects are seen as donations of development aid, instead of being assumed to compensate for the donor's emissions.

Keywords: carbon offsetting, value, payment, indulgence, narrative

Introduction

In January and February 2020, the Danish newspaper *Politiken* ran a series of critical investigative articles under the tag 'the climate fraud' (Danish: *klimabedraget*). The purpose of the articles was to shed a critical light on the use of carbon offsetting in Denmark (Danish: *klimakompensation* or 'climate compensation'), and to reveal fraudulent cases. In addition, the articles exposed the uncritical stance towards offsetting mechanisms taken by several Danish companies and past Danish governments, in their efforts to reduce greenhouse gas emissions and comply with emission reduction targets.

While the series showed the problematic nature of both specific offsetting projects and of offsetting more generally, what is of interest to me in this article is not so much whether the claimed reductions worked or not. Instead, I want to focus on one specific aspect of the moral language employed in these and other articles more generally, about the use of carbon offsets to mitigate climate change. That is, in popular discourse but also among several scholars, such payments for voluntary offsetting[1] are often referred to as 'indulgence payments' (Danish: *købe aflad*). The term was used in 10 out of 40 of the *Politiken* articles to denigrate the engagement in offsetting as being a moral matter of 'guilt', 'shame', or 'convenience', but it has also appeared with increased frequency in other news sites, and in commentaries or op-ed pieces that address controversial offsetting projects.

References to indulgence payments are not new, neither in Denmark, nor internationally. A search in Danish news articles reveals that the term *aflad* has been used in relation to climate-related actions and compensations since the late 1990s; Brigitte Nerlich and Nelya Koteyko (2009) have hypothesized that 'the indulgence accusation' emerged in English-speaking media in the early 2000s, and the first thorough scholarly discussion of indulgence payments in relation to environmental concerns was carried out by the Australian philosopher Robert Goodin (1994). Several academic contributions have since referred more or less directly to indulgence payments as inspiration for the critical framing of offsetting as a political and moral question, rather than merely an economic and technocratic one (e.g., Lohmann 2006, Lovell, Bulkeley and Liverman 2009, Newell and Paterson 2010, Paterson 2010, Paterson and Stripple 2010, 2012, Spash 2010). Much of this inspiration stems from Goodin's treatment, from activist scholarship (especially Smith 2007), or from the popular media discourse which has been used as empirical evidence for the existence of a moral parallel between the two phenomena of indulgence payments and offsetting.

Whereas most of the above-cited contributions debate offsetting quite thoroughly, they are more superficial when it comes to outlining the history of indulgence payments. Their purpose has been to ask what carbon offsets are, and what the term covers, in order for offsetting to be similar to indulgence payments. My question is rather to pursue how adequate the comparisons are between indulgence transactions of the past and the more recent transactions of carbon offsetting? Given that a comparison between two phenomena – offsets and indulgence transactions – is a two-way operation, we must look back to the Christian finance of medieval history as much as forward to the practice of

[1] When it comes to carbon markets there are roughly speaking two types. One is referred to as regulated or compliance markets working through a 'cap and trade' model, the other as unregulated or voluntary markets. I will touch more upon this distinction below.

offsetting and climate finance mechanisms. The main contribution of this article, then, is to discuss the phenomenon of indulgence payments more in depth than has been done so far in the light of offsetting. This will in turn allow me to point out a number of shifting tales or narratives used to justify (or resist) the funding of emission reduction projects in the Global South in particular.

Consequently, I position the indulgence accusation as a tale or narrative used to delegitimize the transactions involved. That is, the growing controversy over the use of offsetting exemplifies the contrast between 'tales of experiment' and 'tales of defiance' posed by the guest editors of this special issue (Lopes, Faria and Faustino, this volume). The carbon markets were in their early stages more or less directly referred to as 'experimentation' by policymakers and market insiders (e.g., Delbeke 2005, p. xviii, Bayon et al. 2007, p. 4), and due to their performative nature, especially the regulated cap and trade markets have been labelled 'ongoing collective experiments' by academics (see Callon 2009, MacKenzie 2009b). Even if these positions do not present a unified valuation of offsetting as experiment (and in the case of Callon and MacKenzie, are more concerned with regulated markets than voluntary markets), they are both focused on the experimental setup of markets and how these are meant to reform efforts to mitigate climate change 'from within'. In contrast, the specific comparison of carbon offsets and indulgence payments is often constructed as a politically and morally motivated 'tale of defiance' in opposition to the way carbon markets (here, especially the voluntary markets) have been presented by their proponents as a key instrument to ensure climate change mitigation, within sectors not covered by the compliance markets. As an economic experiment, both types of carbon markets were meant to transform finance and mitigate climate change by introducing a new financial commodity, in the form of emission credits. While regulated markets such as the European Union's Emissions Trading Scheme were thought to be the cornerstone of this market-driven effort, voluntary markets were designed to supplement the regulated markets with their own project-generated credits, typically related to offsetting. Subsequently, journalists, activists, and academics criticizing the effectiveness of offsetting have employed the comparison of offsets and indulgence payments as a rhetorical strategy to counter the public acceptance of the voluntary markets in particular (e.g., Smith 2007).

The indulgence accusation is only one of several criticisms. The role of climate finance more generally has been regarded by green think tanks, NGOs, and anti-market movements as controversial for many reasons, and since their inception, carbon markets have faced radical opposition. As is probably common to capitalism as an adaptive system (Thrift 2005), much of the opposition towards the market ventures have nonetheless been internalized through processes of selfregulation aimed at restoring credibility (e.g., Lovell *et al.* 2009, p. 2375). Mainstream NGOs have correspondingly come to accept the voluntary carbon markets as a means to their own ends, in a coalition with financial interests (e.g. Paterson 2010). However, several critical voices have consistently pointed out how fraught they consider the carbon market system to be as a whole. Such critiques, some of which could similarly be termed as different tales of defiance, are numerous and include accusations of neo-colonialism or neo-imperialism (see Agarwal and Narain 1991, Bachram 2004); of providing perverse incentives that detract from the systemic changes necessary to achieve a genuine green transition (e.g. Lohmann 2008, Spash 2010); of being based more on postulate than actual scientific rigor (e.g. Lohmann 2008); of suffering from a lack of transparency (e.g. Spash 2010), or of being inefficient and impossible to develop in practice due to the immense amount of qualifications and quantifications needed in order to perform the required comparison of a diversity of human actions under one standard of value (MacKenzie 2009a, Lohmann 2010, 2011, Dalsgaard 2013).[2] The construction of emissions and matching non-emissions as commensurable and exchangeable is the whole foundation for the voluntary offset markets. However, even proponents of voluntary markets have been forced to admit that 20% of the carbon allowances on the market may be not be 'additional' (Sneyd and Shopley 2009, p. 84). That is, in reality they may not create emission reductions that would not have happened otherwise. A study conducted for the European Commission in 2016 assessed the amount of potentially non-additional offsets from the Clean Development Mechanism[3] to be as high as 85% (Cames *et al.* 2016).

My argument is not about the (lack of) effectiveness of offsets per se, nor about the politics or the economics of these transactions, although this perspective is surely important and will be brought in where relevant. My emphasis is on what 'indulgence payments' are assumed to be, and what this understanding does for our view of contemporary offsetting. While there are clear similarities between offsets and indulgence payments, I will argue that the indulgence payment metaphor becomes a conceptually blunt instrument when it is allowed to gloss over numerous other similarities and differences that emerge when one dives into motives, motivations, and values behind both types of transactions. Individuals, NGOs, governments, and businesses engage in offsetting with a diversity of interests (e.g. Ervine 2012, p. 18), and they may interpret the benefits of this engagement in different ways. Similarly, historical indulgence payments constituted more than simply one form of

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[2] As argued by Lovell and Liverman (2010), though, not all critiques have taken into account the considerable variation in types of offset projects – especially given the differences between voluntary and compliance markets.

[3] The Clean Development Mechanism is a market mechanism set in place by the Kyoto Protocol to facilitate the offsetting of emissions from industrial countries against emission reducing projects in developing countries.

transaction, which is easily compared to offsetting. In fact, the granting and selling of indulgences developed and changed over time, with the current understanding of payments being applicable to just one period of the late Middle Ages ending with the Catholic Counter-Reformation's abolishment of the sale of indulgence letters during the Council of Trent in 1562-63.

Overall, I want to demonstrate how the struggle over a moral tale takes part in defining how we interpret the role of offsetting as a tool within climate change mitigation, and in what ways the underlying conceptual and moral comparisons could be different both in their justification and in their representation of the actual practices of transacting. To be sure, defining the right narrative or tale is just one aspect of the political struggle over legitimacy of markets as a form of governance of climate change mitigation (see Paterson 2010). The tale is embodied in academic literature as well as media or online publications, which is why the primary material discussed here stems from such sources.

From here, I will first briefly elaborate on definitions of offsetting and on its role within carbon markets. Then, I will turn to the way that the two most cited texts – one academic (Goodin 1994) and one activist (Smith 2007) – have used the indulgence accusation. From there, I draw upon a more elaborate understanding of historical indulgence transactions to discuss the ways that offsetting has been marketed. This marketization has taken place through a rhetoric, which has tried to counter a simplistic commercialized view on the motivations behind offsetting as being a matter of obtaining indulgences. Finally, I will touch upon another tale which has been emerging as an alternative. This alternative suggests that emissions cannot be compensated elsewhere, but it accepts in its own right the value of funding projects meant to reduce or avoid emissions.

Offsetting and carbon markets – a brief overview

Carbon offsetting is a specific form of carbon trading, where an actor attempts to remedy their emissions by paying someone else to facilitate matching reductions elsewhere. The narrative that posits offsetting as experiment has been offered by both policymakers and researchers as cited in the introduction, so I will not pursue it any further here. Offsetting itself, however, is not something entirely new that first came into being with carbon markets. Similar schemes to deal with pollution were first discussed by the Chicago economist Ronald Coase in 1960, and an offsetting scheme was instituted in the USA in 1990 to deal with sulphur pollution (e.g., Lohmann 2006, Lane 2012). The contemporary carbon markets are much grander in scale and scope than the attempt to deal with sulphur, so they can rightly be said to experiment with the governance of human actions and technological development to an unprecedented extent.

Carbon credits or allowances used for offsetting come in many types and in different markets. The vast majority of carbon has, to date, been traded in what is called 'compliance markets', such as the European Emissions Trading Scheme, where industries and companies buy and sell emission allowances in order to keep their levels under a certain government-imposed cap. The compliance markets raised more than USD 48 billion in carbon revenue (carbon taxes and trading combined) in 2019, while transactions within what is referred to as 'voluntary carbon markets' had a market value just above USD 282 million (Poolen and Ryszka 2021, appendix 4). Nonetheless, voluntary carbon trading has grown in popularity during the last decade, which has coincided not only with a crash in the compliance markets in 2013 but also their subsequent stabilization with the adoption of the Paris Agreement in 2015 (World Bank 2020, p. 53).

Compliance markets are more strictly regulated and audited since they count towards national targets, whereas voluntary markets are markets where individuals, companies, or government entities themselves choose to offset some or all of their emissions (e.g. transportation or electricity use) by purchasing and 'retiring' a certificate that claims a corresponding reduction in emissions has been (or will be) achieved elsewhere. Credits that are meant for compliance markets can be accepted within voluntary offsetting (for CSR purposes for example), but usually not the other way around, even if voluntary markets also involve not only buyers and suppliers of offsets, but frequently also brokers, investment banks, third party verifiers, and digital registries, which facilitate the trade and claim to guarantee the reduction.

The voluntary markets are the ones that are of relevance here because of the voluntary principle implied by the indulgence tale. Older figures from 2009 state that within the voluntary markets the majority of credits (approximately 81%) were bought by private companies. Only 5% of credits were then estimated to be bought by private consumers. NGOs took perhaps 13% and governments less than 1%. A frequent conclusion has been that most of the transactions in voluntary offsets are motivated by corporate concerns with PR and CSR, rather than 'individual guilt tripping' as implied by the indulgence accusation (Paterson 2009, p. 248).[4]

[4] A reviewer suggested that the indulgence critique could likewise be applicable to corporate offset purchases, because some companies voluntarily offset on behalf of their customers – thus making the indulgence mechanism more broadly present.

The frequency by which the indulgence accusation is employed as a tale of defiance thus seems to have been disproportionate 10 years ago. It may be less so today with the current popularity of voluntary carbon trading, which could partly explain why the indulgence accusation has gained renewed life in Danish media. Even if it is unclear what proportion of transactions is perhaps driven by an individual (or a corporate) sense of guilt, the indulgence accusation is nonetheless recognizable in the public discourse. Adding to the attention is probably the fact that it befits a narrative where actions leading to climate change can be regarded as sinful by damaging our planet and its inhabitants both now and in the future. For example, the political scientist Mathew Paterson writes that 'In the public eye, carbon offsets are about enabling individuals feeling guilty about their consumption levels to purchase offsets for their flights (a particular focus in the marketing of offsets) or more generally, hence the criticism of offset markets as "the new indulgences". (2009, p. 248). Alas, Paterson and colleague Peter Newell elsewhere describe the incentives to engage in offsetting by referring to how offsets 'alleviate [...] guilt and claim to contribute to low-carbon development projects in poor countries [and] offer the prospect of compensating directly those whose livelihoods are threatened as a result of your actions [emissions].' (Newell and Paterson 2010, p. 108).

It seems from these references that the main focus for the indulgence accusation is the question of guilt. It is of course an open conceptual as well as empirical question what 'guilt' consists of for each individual engaged in offsetting – if this is a motivating factor at all. Apart from the question of what constitutes guilt, the indulgence accusation also revolves around a question of commercialization or commodification of whatever it is that is sold. I will get back to some of these issues below, but before I do so, I will first go into detail with some of the public as well as academic uses of the comparison, and in particular some of the contributions that have proposed the indulgence comparison. This will provide a picture of how the comparison has developed.

Offsets as indulgence transactions

The term 'indulgence payment' has been frequently employed in the public discourse about offsetting as alluded to above. In Nerlich's and Koteyko's (2009) linguistic analysis of lexical 'carbon compounds' in English language media, 'carbon indulgence' figured prominently. They suggested that carbon indulgence was a relatively new compound (probably from around 2000), which became part of heated media debates about offsetting in the late 2000s driven for example by publications by the writer and environmentalist George Monbiot in the UK, Al Gore's production of the film *An Inconvenient Truth*, but also many others with direct comparisons to religious meaning (Nerlich and Koteyko 2009, p. 347-50). Nerlich and Koteyko note that carbon indulgence has been used both metaphorically (when comparing offsetting to medieval Christianity) and metonymically when referring to the neutralization of emissions as an actor's 'self-indulgence'. Finally, to some people the term has simply become a synonym for offsetting, morally negative or not (ibid., p. 349).[5]

While Nerlich and Koteyko demonstrate the use and meanings of the indulgence accusation in English-speaking public media, the first critical discussion of offsetting which brought the analogy of indulgence payments into academic debates was an article by the Australian philosopher Robert Goodin from 1994. Goodin used the analogy to discuss the similarity between taxation and offsetting as two different yet highly congruent means to incentivize emitters in order to internalize the environmental cost of their emissions. Green taxes 'amount, in effect, to "selling rights to destroy nature"; [medieval indulgences] amount, in effect, to "selling God's grace".' (Goodin 1994, p. 575, my insertion).

As one could expect, the academic treatment by Goodin is more detailed than the media commentaries, in its discussion of the complexity of indulgences:

> 'The function of indulgences, in Catholic theology, is to remit time to be served by a sinner in purgatory. Indulgences were granted by church officials [...]. They were granted to those who have sinned (by definition the only ones in need of them). The practice of *granting* such indulgences goes back to the early history of the Church. The practice of *selling* them can be traced, fairly precisely, to the need of popes to provide incentives for Crusades – in the first instance for people to participate in them, in the second instance for people to pay for them (Purcell, 1975). From the eve of the Third Crusade in 1187 to the Council of Trent [...], selling indulgences became an increasingly common phenomenon.' (Goodin 1994, p. 577, italics in original).

What I find important about Goodin's treatment is that he keeps in mind the differentiation between the granting of indulgences and the selling of them. It was only during a brief period in their history

[5] In Danish the linguistic meanings of the term *aflad* resembles the words for 'unloading' or 'discharging' something but the etymology refers to 'letting go', 'remitting', 'forgiving' or 'cancelling'. That is, *aflad* does not carry the exact same metonymic reference as the English indulgence, but it has obtained the status of synonym in some news stories.

that indulgences were sold, where their effect could be automatically obtained through a purchase. Otherwise, indulgence has been something that had to be granted, and they were not only associated with the funding of crusades. They could also be achieved through pilgrimage. Granting indulgences was of course thought of as being elicited through the correct actions, attitudes of remorse, and altruistic gifts to the church, but the desired response was couched in the uncertainty of reciprocity that comes with gift exchange (cf. Bourdieu 1977).

In some scholarship, but especially among activists stressing the indulgence accusation in defiance of carbon offsetting, the most frequently cited depiction of Catholic indulgence payments as a model for carbon offsets is that introduced by Kevin Smith in a publication for the independent research collective Carbon Trade Watch:

> 'From the late Middle Ages, Western Europe became slowly but surely engulfed by the tide of mercantilism that superceded the feudal economy. [...] Mercantilism, simply put, is a system of economic relations in which goods purchased in one place are sold at a much higher price somewhere they are scarce. The Catholic Church, at the time suffering from a shortage of funds, decided to use the burgeoning market ethic to its own material advantage. Catholic doctrine maintains that to avoid time in Purgatory after you die, you need to expiate your sins via some sort of punishment or task that is an external manifestation of your repentance. The idea was that the clergy were doing more of such actions than their meager sins demanded, so they effectively had a surplus of good deeds. Under the logic of the emerging market, these could be sold as indulgences to sinners who had money, but not necessarily the time or inclination to repent for themselves. Chaucer's The Pardoner's Tale immortalized the sale of such indulgences by pardoners, which was essentially how the church took a market-based approach to sinning as a means of income generation. The Brazilian theologian Dr. Odair Pedroso Mateus pointed out in 2001 that indulgences are "not about grace and gratefulness but about exchanging goods, about buying and selling, about capitalism".' (2007, p. 5)

This depiction of indulgences is not wrong, although reductionist as we shall see below. Smith establishes the comparison to carbon offsets with this reference:

> 'Many centuries later, there are new indulgences on the market in the form of carbon offsets. The modern-day Pardoners are companies like Climate Care, the Carbon Neutral Company,

> Offset My Life and many others. These selfstyled "eco-capitalists" are building up what they claim are "good climate deeds" through projects which supposedly reduce or avoid greenhouse gas emissions. These wholesale emissions reductions can then be profitably sold back at retail prices to modern-day sinners who have money, but not necessarily the time or inclination to take responsibility for their emissions, and can afford to buy the surplus "good deeds" from the offset companies.' (ibid.)

In Smith's words, we have almost a one-to-one relationship between offsetting and indulgence payments, when it comes to people's motivations for engaging in them. One of the most significant critiques that follows from the comparison is that offsetting individualizes what is a collective problem, an argument which has been reiterated by many others (see Paterson and Stripple 2010). Offsets shift 'the focus of action about climate change onto lifestyles, detracting from the local participation and movement building that is critical to the realization of genuine social change.' (Smith 2007, p. 7). Offsetting focuses on the relation between the sinner and climate but promises to mediate that relationship, which ultimately is one of perpetual sin. Smith's overall purpose with this critique is to cast offsets as a political rather than a technocratic problem and to argue for the building of movements as a solution to the climate crisis. While not always directly referring to indulgences, the critique is repeated by many others taking up Smith's position that collective political action rather than individual sin must be the starting point for the generation of change (e.g. Lohmann 2006, p. 193, Paterson 2010, p. 351).

While much of the critique raised through the indulgence accusation is thus levelled at the de-politicization of the climate crisis (e.g., Swyngedouw 2010), my objective here is not to discuss the politics of offsetting beyond the making of the tale itself. These politics have been adequately addressed by many others as referenced in the introduction. Rather, I want to scrutinize how the idea of indulgence payments is treated and posit this against the ways that indulgence payments developed historically. It is possible to do justice to both indulgence transactions and offsetting by presenting a more nuanced picture of how salvation and repentance worked, and of how money and (financial) value was perceived in the Middle Ages. As an institution which developed over several centuries, indulgence payments were never just one thing, or one type of transaction. If taking practices of transacting that emerged over a long period of time from the 12th to the 16th century as seriously as we would any type of comparable practice of transacting today – that is, as a microsociological phenomenon – then we are almost certain to discover that things are more complicated. Today, indulgences are still a phenomenon of importance in the Catholic Church, but they are not regarded as a commercialized good (e.g., McGarry 2018).

Expanding on indulgence transactions

Taking a more thorough view of indulgence transactions may in turn help us in asking different questions about the labelling of offsets as indulgence payments. In order to approach the more nuanced depiction of indulgences, we can for a start turn to how Catholic sources present the indulgence theme in our own millennium. A recent (2018) newspaper article by the religious affairs correspondent Patsy McGarry states that:

> *'To attain a plenary indulgence Catholics must also attend confession, receive Communion, pray for the Pope's intentions and have a heart free of sin.* According to the Catechism of the Catholic Church "an indulgence is *a remission before God* of the temporal punishment due to sins whose guilt has already been forgiven". The Catechism teaches that all sin brings with it a temporal punishment which remains even after forgiveness. But *it can be purged on this side of the grave through good deeds, prayer and penance, or, after death, by a period in purgatory.* Indulgences are *granted* by the church under special conditions and *plenary indulgences mean a purging of all such temporal punishment.* A partial indulgence reduces such temporal punishment. Where the dead in purgatory are concerned they may be freed or have their period there reduced through indulgences gained on their behalf by the living.' (McGarry 2018, emphasis added)

Indulgences – in other words – are today not something you purchase, and obtaining indulgence involves many other actions and exchanges than just the transfer of money. As stressed in the quote above, they are *granted*, which as Goodin mentions was also the case prior to their marketization. This does not mean that they are granted as 'free gifts'. It is important, however, that the language here is one that characterizes a set of gift relationships between God, the Church, and the lay people rather than one of commercialized exchange.

Historically, it is clear that indulgence payments were not perceived to be morally fraught everywhere, or they would not have existed. But when one digs deeper into the historical development of indulgences, it also becomes clear that they were not even seen as fraught everywhere in the Protestant world, which came into existence partly through a critique of indulgence payments. Indulgences were, for example, debated in the Anglican church but not always thought of as a problem, and the English population had been rather 'keen on them' prior to the Reformation (Swanson 2007, p. 2-3). When looking at the language surrounding indulgences in early 15th century England, they were as much couched in a language of altruism. The 'payments' could be construed as altruistic by being charitable donations given to the local church to help the poor or to ensure maintenance of church buildings. What was rewarded was generosity – of course with God as the instance of supreme generosity (ibid.). Indulgences were likewise granted not in return for money, but also prayer and other devotional activities. Swanson, while accepting the proto-capitalist analogy, also nuances Chaucer's stereotyped portrait of the pardoner, which Smith relies upon (ibid., chapter 5).

Likewise, much of the rhetoric involved in 'the birth of purgatory' stemming from the 12th century revolves around the interiorization of religious feelings, demanding internal acts of conversion rather than external acts, but also a language of reciprocity (Le Goff 1990, p. 18-19). The debate – for Le Goff's work primarily located in France – stemmed from the Church's condemnation of usury as a way to make money (from interest) where nothing was really earned. Interest effectively related money to time, but given that time belonged to God, usurers could be accused of stealing from God. This immoral profit had to be repaid or reciprocated somehow – hence the need for a space, where this could happen. Purgatory was constructed as such a 'third space' space between Heaven and Hell, where sinners paid with 'waiting time'; a space of temporal punishment where their stay could nonetheless be sped up if appropriate gifts were given to the Church (Le Goff 1984). Purgatory is not mentioned in the Bible but came into being in the early Middle Ages as a space for human agency to affect God's judgment through gifts to the Church (Le Goff 1990, p. 76).

If we bring the above into a political economic comparison, it would be interesting to consider how the emergence of indulgences as a response to the immoral profit of usury could be a parallel to the rise of carbon markets as 'moral' and 'green' ways of preserving a capitalist system based upon extraction and consumption of fossil fuel in particular (see Spash 2010, Ervine 2012). Religion is the main authority in defining both theological and secular values in many parts of the world, as it was in medieval times. Offset firms have for this reason been labelled as 'priests' of environmentalism as a 'religion' (e.g., 'Carbon Calvinism'), and their role likened to that of the Church in the medieval economy when it defined and commercialized salvation as an abstract form of value (e.g., Garreau 2010). Political economic questions have surely been at the heart of the debates surrounding both indulgence payments and carbon offsetting as elements of (proto-)capitalism. Yet once we go into detail with the contexts of the respective transactions, the above-mentioned aspects of indulgence transactions (e.g., that offsetting would have an equivalent of purgatory where one will be cleansed; that internal acts of 'conversion' are more important than the external acts which affect the climate; or the notion of time involved) do not appear to be directly applicable to the comparison. What was – and is – to be understood as indulgence transactions in the Catholic Church has involved a multitude of ideas and is much broader than the decontextualized comparison to offsetting has allowed for. Focusing on only a selection of the aspects relevant to their development misses much of what makes them interesting as both parallels *and* as contrasts.

The nuances to the understanding of the development of indulgence accusations that I have mentioned above are lost in most of the tale of defiance aimed at offsetting. It is not surprising that this is the case in public discourse, where the indulgence term is used metaphorically, but academic work might have made more of it. As mentioned, Goodin is the only one who discusses this somewhat in depth, whereas others who mention the accusation often accept it without querying its fundamentals.

Putting the comparison in a new light?

If we return to offsetting, we may use the more nuanced understanding of indulgences to better ask questions about the differential logics or regimes of value involved in the purchase of offsets. In this way we can appreciate not only how this tale of defiance as a political narrative is based upon a limited view of indulgences as argued above, but also upon a limited view of offsetting practices and the motivations that people have for engaging in them.[6] In fact, several studies mention exactly the interwoven nature of gift and commodity narratives for offsetting, and I will bring two examples below. These studies were made after most of the academic discussion of the indulgence comparison had run its course, and it is not until recently that they have begun to feed into public speculation that could be seen as a new and emerging third tale in public discourse, namely of donations to climate projects as a form of gift-giving. Before I get back to this emerging tale, let me recapitulate how gift-giving logic is employed in different ways by industrial actors in order to emphasize an interpretation of offsetting, which on the one hand could be associated with the tale of experiment that the

[6] See Spash (2010) who rejects that the emission of carbon in itself can be seen as sinful.

indulgence accusation is a response to, but at the same time could be seen as shifting attention away from commodification.

As it was the case with indulgence transactions, a carbon offset may certainly be constructed, traded, sold, and purchased as a commodity, but it may also take on non-commodity forms or be embedded in non-commodity narratives. One might analytically argue that offsets thus become a hybrid gift-commodity form. Yet empirically speaking, the vendors and agents that sell carbon credits to the general public uphold a distinction when they invite buyers to interpret their purchase as involving a transformation of the commodity into a gift. This is evident, for example, when they deliberately market their products as potential ('green') gifts on their websites – gifts that a person may give either to friends or family, or to poor people to whom they want to donate carbon reducing technologies. For example, the German vendor Atmosfair provides both an offsetting option and a direct donation option (https://www.atmosfair.de/en/offset/). In other words, the buyer of offsets gets to choose whether they prefer to see their action as a commodity purchase, or as an engagement in a gift-giving relationship; whether they want to be a consumer or a donor. On the surface, these gifts appear as ready-made products, and it is up to each individual to discover the relevant gift-commodity distinctions – or lack thereof (cf. Carrier 1995).

Even if they come in a commercialized and in many ways impersonal and convenient package, these products are shrouded in narratives that appeal to personal values. Consider the following from sociologists Vera Ehrenstein and Fabian Muniesa, who recount how a representative of a French investment bank trading in carbon credits depict the 'quality' and thus value of credits to the potential client:

> 'But the quality of the project is also its ability to please the final user of the carbon credits. Additionality is in fact a marketing argument, along with "the story" that potential clients expect, [...] for the bank, "a forestry project that aims at producing eucalyptus biomass in Brazil is rubbish," because it is not likely to interest clients who want to compensate their emissions. In contrast, Olivier's reforestation project is deemed valuable because of the touching narrative it is embedded in [...] The "story" of the project is that it takes place in a difficult political context, an African post-war situation, and implies that buying carbon credits from the Belgo-Congolese project developer means changing this situation. As in the case of fair trade, such "producer story" is part of a "marketing of ethics" [...] Olivier's project even appears on an advertising document [...]. Next to a photography that represents black people

> working the land, a short text describes the social, economic, and environmental benefits of the activity, stressing that the project will "boost the region's economic activity." The success of the project thus relies on the establishment of a storyline, a plot that elaborates the counterfactual display.' (Ehrenstein and Muniesa 2013, p. 179).

Marketing narratives such as these add to the social construction of clients' or customers' personal feelings of 'guilt' as well as desires to 'do something' (giving gifts that 'do good') or being 'saviors' (e.g., Dalsgaard 2013, p. 88). What 'touches' people are key aspects of the marketing of credits. So, the offset here is not a commodity detached from its origin (this origin is in fact part of its value), and we see actors moved by what they can relate to personally rather than making choices that use limited resources to combat climate change efficiently.

The use of narratives in the marketing of offsets is also emphasized by geographers Heather Lovell, Harriet Bulkeley, and Diana Liverman (2009) who argue that

> 'the unusual, novel characteristics of voluntary carbon offsets mean that narratives about them and associated technologies have come to play a particularly important role in their production and consumption. It is through stories about particular carbon offset projects that these products have meaning and value. It is through images, brochures, website devices, and offset packaged products that the consumption of offsets is made easy and habitual for consumers. The offset narratives and technologies also act to reassure consumers about what it is they are buying, given the absence of both a tangible product and regulatory standards.' (Lovell *et al.* 2009, p. 2358)

Lovell, Bulkeley, and Liverman identify three different narratives or tales about carbon offsets in voluntary markets. They refer to the three as 'a quick fix for the planet', 'global-local connections', and 'avoiding the unavoidable'. These three narratives stem from the industry itself and each stress different aspects of what offsets are and what they do.[7] In this way they could be seen as part of the tale of experiment as mentioned above.

The first category of narrative relies on ideals of speed and effectiveness in setting up mitigating projects, which speaks to those who want to do something quickly and easily. However, as they point out, quick and easy for the consumer may not be quick for the atmosphere. For example,

[7] For a more general discussion of the work of differentiation or the making of alternatives see Dalsgaard (2014, 2016).

if the offsets rely on the growth of forests, where the process takes up to 70 years to absorb what was emitted (ibid., p. 2365-66).

The second category relies on the communication of 'co-benefits' or positive 'side-effects' (e.g. poverty alleviation, biodiversity conservation) in order to enhance the value of what is being sold. Given the global spatiality of emissions, these benefits can be accrued as sustainable development in the Global South. This category of narratives often specifies or even personalizes the product by telling stories of the concrete development project and the people (or animals or eco-systems) it benefits.

The third category, however, avoids any such focus of what the offset 'really' refers to, but instead plays on definitions of what consumers themselves are invited to see as unavoidable emissions. These narratives then focus on consumers who are 'self-governing carbon calculating subjects' aware of and trying to control their own emissions.

Of these categories, it is the second, which most clearly speaks to the question of guilt but also a gift-giving logic, which could have parallels in those parts of the history of indulgences, where altruism was highlighted. The third category on the other hand relies more on rhetorically allowing people to regain agency and control over something, which they are told they cannot control as such, because it is presented as unavoidable. I include all the categories in order to stress how offsetting can be shrouded in a variety of narratives, which run parallel or sometimes counter to the indulgence accusation, and thus how multifaceted the sociocultural construction of offsetting is too.

It may be relevant to mention in relation to the second narrative especially that it also points to overlaps between discourses of ethical and sustainable consumption (e.g. fair trade) and the marketing of voluntary carbon offsetting. Some of the technologies that have been featured in recent years as carbon reducing are technologies that have been around for decades. 'Clean Cookstoves', for example, have been funded under previous development and poverty alleviation paradigms prior to the emergence of the climate markets. They are now reframed within a discourse of carbon value rather than one of development (Lovell and Liverman 2010, p. 268). These overlaps with regards to ethics indicate motivations of altruism (helping the poor develop) and thus an entanglement of gift and commodity, when products are personalized or rely on ideas of reciprocity. It is a transaction meant to 'do good' in the world by contributing to something beyond the self of the donor (see Coleman 2004). Affective desire for doing good through offsetting may itself be socioculturally produced as argued above and even deliberately mobilized as marketing techniques (see also Deschenau and Paterson 2011, Paterson and Stripple 2012). Such techniques may act together with project documentation as ‘spectacles’ which obscure the power and even violence going into the making of the offsets in the first place (cf. Cavanagh and Benjaminsen 2014, Bryant et al. 2015). Revealing these techniques is often integral to the indulgence accusation as a tale of defiance, because further transparency with regards to how offsets are produced will negate the possibility that offsetting can alleviate guilt.

Lovell, Bulkeley, and Liverman (2009, p. 2373) demonstrate that some of the rhetoric of the effectiveness of offsets is largely a fiction for both ethical and technical reasons. This means that the ‘altruistic value’ of offsets is also doubtful. For example, while the third narrative invites consumers to first avoid or reduce emissions rather than merely buy offsets, what one considers unavoidable is still highly culturally and socially specific. It is thus open to both the indulgence payment accusation and to accusations of neocolonialism or imperialism if what one considers unavoidable is what others in the Global South would see as ‘luxury emissions’. The ideas of additionality versus business-as-usual (that emission savings must be ‘in addition’ to what otherwise would have happened as defined by a ‘baseline’), and the temporality (duration) of emissions versus their corresponding offsets, also leave much uncertainty for both consumers and not least the climate.

While carbon markets as a form of climate governance rely on commercialization, it is important to note that there is simultaneously much involvement in the making of as well as the paying for offsets, which stems from non-market and personalized values. While this involvement is surely promoted by industrial actors acting out of commercial interest, it cannot be accounted for by this factor alone. Some may purchase carbon offsets without thinking much about what they are, or where they come from, but at the same time offsets are marketed in a way that invites consumers to purchase them to strengthen their own relationships and values. Many offsets are not constructed simply as pure commodities, because in many cases the value of this commodity relies on its traceability to relationships that are outside the market (see also Tsing 2013). This aspect is important when it comes to the emergence of a potential third tale.

A third tale as synthesis

In this last section, I will return to the responses that appeared in Danish media after offsetting began to increase in popularity, and especially after the revelation of the offsetting scams mentioned in the introduction. A significant but somewhat overlooked response was suggestions that could be seen as a ‘synthesis’ of the tales of experiment (‘thesis’) and defiance (‘antithesis’). That is, as a result of the interpretation of offset transactions as partly involving gift-giving rhetoric (voluntary donations rather than commodity purchases), it is possible to draw attention to the emergence of an alternative third tale revolving around the suggestion that offsetting could be decoupled from the funding of emission reduction projects. Paying or giving money to emission reductions elsewhere should in this tale not compensate for one’s own emissions. It should be something ‘extra’. The third tale draws upon the prior established role of development and thus aims at reforming ‘from within’ an accepted economic structure. However, it is in defiance of the idea that the effect of the transactions in question could compensate for the donor’s lifestyle in general and achieve a carbon footprint of zero.

The suggestions I have in mind came from several actors commenting independently of each other. One commentator writing prior to the revelations of the *Politiken* articles stated, among other things, that the categorization of offsets as *aflad* indicated something was ‘completely wrong’, and that financial support for a ‘green transition’ was better *donated* (Malmbak 2019). Experts from climate think tanks and NGOs such as Action Aid Denmark, New Climate, or Carbon Market Watch more recently suggested that the funding of emission reductions could more favorably be pursued as something extra on top of cutting down one’s own emissions, or that a better term was ‘climate aid’ (Krøijer and Koch 2020; Skjoldager *et al.* 2020a). Small Danish vendors of carbon credits such as Trofaco and Climaider have reacted by stressing that their reforestation projects should not be seen as offsetting but rather as development projects, where they emphasize the value of lifting people out of extreme poverty rather than what their results allegedly compensate for. When interviewed about this by *Politiken* journalists, a representative from The Gold Standard, the non-profit foundation behind offsetting standards, likewise suggested that climate compensation should be extra and beyond what the actors reduce themselves (Skjoldager *et al.* 2020b). To be sure, some of these suggestions were not new per se, and they went well in line with previous positions held by actors in the development industry and the principle of the voluntary markets stressing the need first to reduce, then to offset. However, in relation to the accusations against carbon offsetting, the tale reverted to an altruistic motivation rather than a motivation aimed at achieving a carbon footprint of zero, and it thus presented a way out for some of the carbon offsetting vendors after offsetting experiments and the accuracy of their reductions became questionable.

In short, there are indications that a tale, which posits payments for emission reductions as a form of altruistic development aid, has begun to congeal. It is in many ways the reinvigoration of a belief in the obligation for countries and institutions in the Global North to fund development projects in the Global South. For this and other reasons, the tale does not necessarily circumvent the accusation that emission reducing projects are a form of neocolonialism or climate imperialism, and it subjects such initiatives to critiques that have been levelled against the development industry for decades (see Cavanagh and Benjaminsen 2014). Also, such donations may still be accused of being motivated by the donor's own feelings of guilt and desire for moral redemption, but if they are decoupled from attempts to compensate, then the payments are not as easily criticized for motivating the donor to avoid reducing their own emissions (cf. Spash 2010, p. 186-88).

Conclusion

The series of articles in *Politiken* demonstrated that the use of offsetting in Denmark had increased significantly during 2019 and that offsets were purchased by several public and private actors, small and large. Most critically, the investigative journalism proved that the effect of several of the emission reduction projects funded by Danish companies and Danish government institutions were of a dubious nature, and some were even clear-cut scams. Proponents of carbon markets may retain that these are unfortunate side effects with reference to a tale of markets as experiment. Yet, offsetting has continually been shown to be problematic by both academic and activist critiques. Some of these critiques have relied upon a tale of defiance depicting offsetting as comparable to the medieval Catholic practice of making indulgence payments. However, this depiction, of which I have brought up the two must cited (Goodin 1994, Smith 2007), has largely been occupied with a moral and political critique of offsetting, and paid little attention to the historical nuances of indulgence transactions. This article has attempted to rectify the shortcoming by relating in more detail the assumptions and the content of the comparison behind the indulgence accusation as a tale of defiance.

Firstly, contemporary critiques of carbon markets simplify the multifaceted character of medieval Catholic practices of transacting in indulgences. These transactions were in many ways economic, but not in the sense that the term 'economic' refers to today. They were much more. Religious, social, legal, cultural etc. They were in other words – following Karl Polanyi and others – embedded in local social and cultural life, and as such the meaning of their value also changed over time from gift-giving to a more commercialized nature. Today the Church's emphasis is once again on indulgence as something granted. Offsetting practices likewise rely on gift-giving as much as commercial logics. A rhetoric of gift-giving has previously been proposed by vendors as marketing strategies (masking an underlying commercial logic), but recently it has been voiced by activist as well as development industry actors, stressing that donations to emission reducing development projects are seen by them as positive as long as they are decoupled from the belief that one's own emissions can thereby be compensated.

Secondly, if we accept that indulgence transactions in the medieval period were much more nuanced practices of relating to God (as well as to fellow human beings as sinners) than the critiques allow for, then we may get inspiration to also accept that the Western climate-conscious consumer's practical engagement with carbon offsets are much more complicated actions than what public discourse, but also some academic treatments, depict them to be (e.g. Smith 2007). I am in agreement with the political intention behind the criticism (that carbon offsets do not deliver what they promise, that they individualize responsibility, that they offer an opportunity for corporate greenwashing, and that they take focus away from structural and collective responses), but the depiction of both indulgence payments and offsets as only commercial is reductionist. All in all, both the voluntary purchase of carbon offsets and the purchase of indulgences in the Catholic Church – in so far as they can be regarded as a protocapitalist attempt to commercialize an abstract form of value such as salvation – were complicated transactions, driven by a variety of values and logics. Both spring from tensions within the respective political and economic systems of their times, and they must be seen in the same analytical light involving hybrid gift-commodity forms and shifting tales of justification or critique, to permit a full comparison.

It is clear that offsetting schemes are unlikely to go away despite continuous criticism. However, the more they evolve, the more nuanced a discussion may evolve simultaneously, and we should not be surprised if they congeal around other tales synthesizing the existing configurations of disagreement.

Acknowledgements

I would like to thank in particular the editors of the special issue, Daniel Seabra Lopes, Inês Faria and Sandra Faustino, but also Priscila Santos da Costa and the two anonymous reviewers for their detailed comments.

References

Agarwal, A. and Narain, S., 1991. *Global warming in an unequal world: a case of environmental colonialism.* New Delhi, India: Centre for Science and Environment.

Bachram, H., 2004. Climate fraud and carbon colonialism: the new trade in greenhouse gases. *Capitalism Nature Socialism*, 15 (4), 5–20.

Bayon, R., Hawn, A, and Hamilton, K., 2007. The big picture. *In*: R. Bayon, A. Hawn, and K. Hamilton, eds. *Voluntary carbon markets: an international business guide to what they are and how they work*. London: Earthscan, 1–17.

Bourdieu, P., 1977. *Outline of a theory of practice*. Cambridge: Cambridge University Press.

Bryant, G., Dabhi, S. and Böhm, S., 2015. 'Fixing' the climate crisis: capital, states, and carbon offsetting in India. *Environment and Planning A*, 47, 2047-2063.

Callon, M., 2009. Civilizing markets: carbon trading between in vitro and in vivo experiments. *Accounting, Organizations and Society*, 34 (3–4), 535-548.

Cames, M., *et al.*, 2016. *How additional is the Clean Development Mechanism?* Institute for Applied Ecology, Berlin.

Carrier, J.G., 1995. *Gifts and commodities: exchange and western capitalism since 1700*. London: Routledge.

Cavanagh, C. and Benjaminsen, T., 2014. Virtual nature, violent accumulation: the 'spectacular failure' of carbon offsetting at a Ugandan National Park. *Geoforum*, 56, 55-65.

Coleman, S., 2004. The charismatic gift. *Journal of the Royal Anthropological Institute*, 10 (2), 421–442.

Dalsgaard, S. 2013. The commensurability of carbon: making value and money of climate change. *HAU: Journal of Ethnographic Theory*, 3 (1), 80-98.

Dalsgaard, S. 2014. Carbon value between equivalence and differentiation. *Environment and Society: Advances in Research* 5, 86-102.

Dalsgaard, S. 2016. Carbon valuation: alternatives, alternations and lateral measures? *Valuation Studies*, 4 (1), 67-91.

Delbeke, J., 2005. Foreword. *In*: F. Yamin, ed. *Climate change and carbon markets: a handbook of emission reduction mechanisms*. London: Earthscan. xvii-xix.

Ehrenstein, V. and Muniesa, F., 2013. The conditional sink: counterfactual display in the valuation of a carbon offsetting reforestation project. *Valuation Studies*, 1 (2), 161–188.

Ervine, K., 2012. The politics and practice of carbon offsetting: silencing dissent. *New Political Scientist*, 34 (1), 1-20.

Garreau, J. 2010. Environmentalism as religion. *The New Atlantis*, 28, 61-74.

Goodin, R.E., 1994. Selling environmental indulgences. *Kyklos*, 47 (4), 573–596.

Krøijer, S. and Koch, L., 2020. Mellemfolkeligt Samvirke: Shells tilbud om klimakompensation er i værste fald direkte klimafuskeri. *Politiken* 6 November 2020. https://politiken.dk/debat/art7987271/Shells-tilbud-om-klimakompensation-er-i-værste-fald-direkte-klimafuskeri, accessed 8 January 2021.

Lane, R., 2012. The promiscuous history of market efficiency: the development of early emissions trading systems. *Environmental Politics*, 21 (4), 583–603.

Le Goff, J., 1984. *The birth of purgatory*. Chicago: University of Chicago Press.

Le Goff, J., 1990. *Your money or your life: economy and religion in the middle ages*. 1. pbk ed., 5. print. New York, N.Y: Zone Books.

Lohmann, L., 2006. Carbon trading: A critical conversation on climate change, privatisation and power. *Development Dialogue*, 48.

Lohmann, L., 2008. Carbon trading, climate justice and the production of ignorance: ten examples. *Development*, 51, 359-365.

Lohmann, L., 2009. Toward a different debate in environmental accounting: The cases of carbon and cost–benefit. *Accounting, Organizations and Society*, 34 (3–4), 499–534.

Lohmann, L., 2010. Uncertainty markets and carbon markets: variations on Polanyian themes. *New Political Economy*, 15 (2), 225–254.

Lohmann, L., 2011. The endless algebra of climate markets. *Capitalism Nature Socialism*, 22 (4), 93–116.

Lovell, H., Bulkeley, H., and Liverman, D., 2009. Carbon offsetting: sustaining consumption? *Environment and Planning A: Economy and Space*, 41 (10), 2357–2379.

Lovell, H. and Liverman, D., 2010. Understanding carbon offset technologies. *New Political Economy*, 15 (2), 255–273.

MacKenzie, D., 2009a. Making things the same: gases, emission rights and the politics of carbon markets. *Accounting, Organizations and Society*, 34 (3–4), 440–455.

MacKenzie, D., 2009b. *Material markets: how economic agents are constructed.* Oxford: Oxford University Press.

Malmbak, L., 2019. Klimaaflad har en besk eftersmag. *Politiken* 24 April 2019. https://politiken.dk/debat/klummer/art7153871/Klimaaflad-har-en-besk-eftersmag, accessed 10 January 2021.

McGarry, P., 2018. Pope to Grant Indulgences at Dublin World Meeting of Families. [online]. *The Irish Times*. Available from: https://www.irishtimes.com/news/social-affairs/religion-and-beliefs/pope-to-grant-indulgences-at-dublin-world-meeting-of-families-1.3507711.

Nerlich, B. and Koteyko, N., 2009. Compounds, creativity and complexity in climate change communication: the case of 'carbon indulgences'. *Global Environmental Change*, 19, 345-353.

Newell, P. and Paterson, M., 2010. *Climate capitalism: global warming and the transformation of the global economy*. Cambridge: Cambridge University Press.

Paterson, M., 2009. Resistance makes carbon markets. *In*: S. Böhm and S. Dabhi, eds. *Upsetting the offset: the political economy of carbon markets*. London: Mayfly, 244–254.

Paterson, M., 2010. Legitimation and accumulation in climate change governance. *New Political Economy*, 15 (3), 345–368.

Paterson, M. and Stripple, J., 2010. My space: governing individuals' carbon emissions. *Environment and Planning D: Society and Space*, 28, 341-362.

Paterson, M. and Stripple, J., 2012. Virtuous carbon. *Environmental Politics*, 21 (4), 563-582.

Poolen, D. and Ryszka, K. 2021. Can voluntary carbon markets change the game for climate change? Utrecht: Rabobank. https://economics.rabobank.com/publications/2021/march/can%2Dvoluntary%2Dcarbon%2Dmarkets%2Dchange%2Dthe%2Dgame%2Dfor%2Dclimate%2Dchange/, accessed 5 July 2021.

Skjoldager, M., Arnfred, C.E. and Kjeldtoft, S.S., 2020a. 5 eksperter giver dig overblikket: bør du som grøn forbruger købe klimakompensation? *Politiken* 24 January 2020. https://politiken.dk/indland/art7617224/Bør-du-som-grøn-forbruger-købe-klimakompensation, accessed 8 January 2021.

Skjoldager, M., Arnfred, C.E. and Kjeldtoft, S.S., 2020b. Det grønne kontrolorgan Gold Standard: du har et personligt ansvar, selv om du klimakompenserer. *Politiken* 21 January 2020. https://politiken.dk/indland/art7608634/Du-har-et-personligt-ansvar-selv-om-du-klimakompenserer, accessed 8 January 2021.

Smith, K., 2007. *The carbon neutral myth: offset indulgences for your climate sins*. Amsterdam: Carbon Trade Watch.

Sneyd, B. and Shopley, J., 2009. A retailer's perspective on the voluntary carbon markets. *In*: R. Bayon, A. Hawn, and K. Hamilton, eds. *Voluntary carbon markets: an international business guide to what they are and how they work*. London: Earthscan, 82–87.

Spash, C.L., 2010. The brave new world of carbon trading. *New Political Economy*, 15 (2), 169–195.

Swanson, R.N., 2007. *Indulgences in late medieval England: passports to paradise?* Cambridge: Cambridge University Press.

Swyngedouw, E., 2010. Apocalypse forever? Post-political populism and the spectre of climate change. *Theory, Culture & Society*, 27 (2-3), 213-232.

Thrift, N.J., 2005. *Knowing capitalism*. London: SAGE Publications.

Tsing, A., 2013. Sorting out commodities: How capitalist value is made through gifts. *HAU: Journal of Ethnographic Theory*, 3 (1), 21–43.

World Bank 2020. *State and trends of carbon pricing 2020*. Washington DC: World Bank Group.