TOWARD THE ABSTRACTORS:
Modes of Care and Lineages of Becoming

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Abstract
This paper explores an ontological version of 'abstraction' as it manifests in the commonalities and differences across social scientific research events. Drawing on a range of writings that focus on the potentiality of the event, on Whitehead's concept of the 'eternal object', and on the notion of attractor as discussed by DeLanda, the notion of abstractor' is tentatively proposed. The aim is to show how abstractors introduce particular potentialities, or 'lineages of becoming'. However, in the specific context of the research event, these abstractors are subject to modes of care (with their own linages of becoming) that inform how analysts might engage with the potentialities of a research event (understood as an inventive problem space). This broad schema is initially illustrated through a particular abstractor of the 'blackest black' as partially actualized in the nanotechnology VANTAblack. Subsequently, the case of VANTAblack is used to prompt a number of heuristic questions with regard to how we might practically and carefully explore the commonalities and differences across research events. The paper closes with reflections on the broader status of the approach sketched here.

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Introduction

A common problematic within qualitative social research concerns the extent to which a particular research event - that is an empirical engagement that can vary in terms of method and extent – can be generalized. Various authors have considered the ways in which some insight or principle can be abstracted from a case study, and shown to be applicable to other events (eg Flyvbjerg, 2006; Berlant, 2007: Tight, 2010). I too want to engage empirically with the doing of 'abstraction' in the sense of addressing what is common across empirical and research events. However, I wish to treat 'abstraction' ontologically.

In this respect, the present paper draws inspiration from the writings of Whitehead and various other process-oriented thinkers, and in this regard the argument is by no means faithful to the detail of Whitehead's metaphysics. The main purpose of the discussion is to explore the implications of thinking of 'abstraction' ontologically – as a feature of the world – that enters, or ingresses, into events.[1] In the process of this ingression, 'abstraction' is both realized in its specificity and introduces specific potentialities into the case, event or phenomenon. Put otherwise, one aim of the present paper is to add to the usual logic of 'abstraction' that attends to what is commonplace about an event, and to ask also how 'abstraction' is an element in its uniqueness (as well as in its commonality).

In light of this broad outline, the paper pursues a number of questions: How do we approach 'abstraction' as a part of the empirical world? How does it serve in both the opening up and closing down of potentiality? How does 'abstraction' allow for both the emergence of similarity and the proliferation of difference? Needless to say, these are weighty and unwieldy issues with an extended philosophical lineage. The approach adopted here is largely an empirical one in which these questions are addressed through a series of case studies or 'eventuations'. The reason for this is that I do not wish to abstract a singular version of 'abstraction', but rather examine how it is manifested in its empirical specificity, a specificity which includes the particular presence and emergence of the researcher. Accordingly, the overarching aim of the paper is to propose a number of heuristic questions that alerts the empirical researcher to the complex practices entailed in 'abstraction'.

The paper begins with some conceptual ground-clearing in which the present version of 'abstraction' is demarcated. As such, there will be a discussion of the key concept

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[1] The use of inverted commas, here and below, serves to indicate that the term 'abstraction' is used in the sense of an ontological commonality across events as opposed to an epistemologically-derived commonality, and, crucially, to distinguish it from Whitehead's technical version).

of 'eternal object' and its relation to 'abstraction' (as a form of addressing what is common across events). This will then be related to the notion of attractor as a way of highlighting the potentiality and unattainability introduced by the ontologically abstract. The upshot is the neologism 'abstractor' which is a tentative attempt to capture the interplay between how potentiality is introduced into an event, how that potentiality is abstracted across events, and how potentiality remains unattainable (including in relation to the practical use of the terms 'abstraction', eternal object and attrtactor). Additionally, in the context of the research event, it is proposed that abstraction and its relation to potentiality requires 'practical care'. On this score, the notion of abstractor is supplemented with two additional terms, 'lineage of potentiality' and 'mode of care'. This schema, skeletal as it is, is then illustrated through the example of how a particular colour (a favourite 'eternal object' of Whitehead's) enters into and potentializes a number of events. The colour chosen is black, or rather, the blackest black as partially actualized through the nanotechnology VANTAblack. As we shall see, across three eventuations what the blackest black 'is' varies: that is, it becomes in its specificity. We then go on to reflect on our own analytic engagement with these empirical cases - not simply as a matter of empirically studying them, but also in terms of the researcher themselves being an element within the 'research event'. In sum, the paper discusses ways in which research practice can carefully do 'abstraction' and proposes a number of heuristic questions by which to orient toward this. The paper closes with some reflection on the status of the approach developed here.

'Abstraction' and Abstractor
For Whitehead (eg 1929), the event is key to his processual ontology. It is characterized by the merging or concrescence of heterogeneous component ingredients or prehensions (ranging from, for instance, the subatomic to the macrosocial) whose manner of concrescence leads to the emergence of actual entities or occasions. These are punctuations in the processual flow of a 'world of becoming' as Connolly (2011) would frame it. In this respect, for Whitehead the world is atomistic as well as processual, composed of singular actual entities and occasions which themselves process as prehensions in the concrescence of 'subsequent' actual entities and occasions. These concrescent eventuations entail what Whitehead calls a 'satisfaction' - a completion - in which there is both the inclusion and exclusion of prehensions, depending on the peculiarity of the event.[2] There is, therefore, in Whitehead's account both an element of the teleological (what prehensions can 'go together' in the process of a specific 'eventuation') and the aesthetic (these prehensions 'experience' one another, to produce a 'harmony' in their collective conformation - see Shaviro, 2014).

If this suggests that the event is the site of a sort of ontological congealment, this could not be further from the truth. Thus, Fraser (2010) notes how the event also involves a co-becoming of its component elements. As these prehensions come together and 'experience' one another, they also 'proposition' one another. In Latour's reading, such propositions are "occasions given to different entities to enter into contact. These occasions for interaction allow the entities to modify their

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[2] Eventuation is here used simply to connote the processuality of the event, that is, how it takes form and becomes cogent, or attains 'satisfaction'.

definitions over the course of an event" (Latour 1999, 141). It follows that with the mutual becoming of these elements that make up an event, what the event 'is' is itself fluid, in the process of becoming, opening up to potentiality.

From an empirical point of view, as researchers involved in what might be called the research event, we ourselves co-become as researchers along with the 'objects of our study', thereby potentially transforming the character of that research event - research, researched and researcher co-emerge, in other words (Michael, 2012). One implication is that the event is not readily graspable, for the process of 'grasping' is an event in itself (thus ontological rather than epistemological) - it therefore inevitably involves a degree of speculation. Drawing on Stengers' (2010a, p. 57) work, this perspective "affirms the possible.…actively resists the plausible and the probable targeted by approaches that claim to be neutral." Under these circumstances, the aim becomes not to find a definitive 'solution' to the meaning of an event. Rather, it invites us to ask more inventive questions, and derive more interesting problems (Fraser, 2010) that explore the potential meanings of the event. Now, it might be argued that such speculation is illegitimate insofar as the metaphysical analysis of the event does not readily translate into the study of empirical cases (e.g., Hanson, 2015). Accordingly, while in the flow of eventuation, one cannot engage with its potential because one too is in the process of eventuation and thus emergent (a version of the 'no time out' dictum of ethnomethodology perhaps – Heritage, 1984), Alternatively, it can be argued that one can still partake of the potential if this is understood as a range or set of possibilities that is evoked by the posing interesting questions or through proposing inventive problems. One does not demarcate a singular potential so much as creatively compose a problem space, in which 'one' is also a 'problem'.

In summary, we have on the one hand an event marked by satisfaction, harmony and singularity, and on the other an event marked by co-becoming, emergence problem-making and potentiality. However, for present purposes I want to focus on events that while unique also bear similarities to one another both in terms of their singularity and their potentialities. In the context of the present discussion, we might want to ask how do we address ourselves to the brute observation that across a number of empirical cases or events, commonalities are clearly in evidence. We can ask what makes event X similar to event Y, Z...n? Here we turn initially to Whitehead's notion of 'eternal objects'.

An eternal object 'ingresses' into a particular event, in the process affecting the potentiality that is realized through that event. Drawing on the example of colour, as favoured by Whitehead, we can state that this specific car is concresced with the eternal object 'redness' to eventuate a particular red car. Notably, the redness of the red car is itself specific to that eventuation – it co-becomes in the process of eventuation. A key point is that the potentiality of redness is not used up or expended by any given eventuation. As Debaise (2017) notes, Whitehead characterizes eternal objects as essentially abstract: "they exist entirely through their ingressions, without ever being entirely adequate to or identifiable with them.…(nevertheless) they are fully engaged in existence (yet)…indifferent or neutral to it". It is because of this that they can be "simultaneously incarnated in several entities without altering their nature, without changing or modifying in relation to their actualizations" (p. 99). Moreover, according to Whitehead (1967) every

eternal object enters every concrescence but their role is variable as they are more or less consonant with and within the emerging event; in other words, some have rather more influence than others. One implication of this is that, as we shall see below, research events can entail different potentialities that enable different sorts of similarities to be drawn across events.

So, an eternal object can enter into any eventuation (Halewood and Michael, 2008, call this poly-ingression), though in each instance how it eventuates is specific to that event. The specificity of an eternal object's manifestation reflects its non-idealized status: for Whitehead, the eternal object (such as 'redness', or blackness - see below) does not belong to some idealized realm, but is always eventuated in its concrete particularity, thereby affecting the specific potentiality of an event, even though such eternal objects are themselves "pure possibilities", and as such "refer directly to nothing that exists" (Debaise, 2017, p.94).

In sum, the eternal object has a strange status as a pure abstract potential that is only actualized in specific events, yet remains itself unaffected by that specific actualization so that it can ingress into a multitude of actualizations. This allows us to engage with the abstractness of research events – that is to say, the ways in which they embody, in an albeit concretely discrete way, a real 'abstraction' (as mentioned above, this does not refer to Whitehead's own complex notion of abstraction) that is instanciated (again in a concretely discrete way) in other events.

There is one aspect of the above schema that remains relatively unaddressed. How do we take into account the unattainabillity of the abstraction. As we have noted, the abstraction escapes our complete grasp, not least because it is never actualized, notg least because 'our grasp' is itself emergent in relation to it. One potentially fruitful way of approaching this is via the notion of attractor, especially as explicated by DeLanda (2002). It is important to note however that, while in the present instance we draw on DeLanda's account of the attractor, this is heuristic insofar as it highlights particular dimensions of the eternal object and its relation to abstraction. Reflexively, we need to treat the attractor and its use in terms of the unattainability signalled in the very term 'attractor'. In other words, we need to be wary that the notion of attractor does not serve in any simple way as an attractor itself. As MacKenzie's (2005) reflections indicate, we should be wary of too ready an application of the term attractor. After all, there are variations in its use (metaphorical versus non-metaphorical) and its applicability ('structural', 'mimetic', or 'contingent').

With these circumspections in mind, we can draw on DeLanda for whom an attractor is a point, or singularity, or state, toward which the trajectories of becoming of objects or events move, but always asymptotically: "they approach it indefinitely close but never reach it" (p.29). As with the eternal object, "attractors are never actualized" (p.29). And again, paralleling eternal objects, the attractors, for all their lack of actuality are "nevertheless real and have definite effects on actual entities". What the attractor serves to emphasise is the movement toward an unattainable abstracted 'end-point' within a given eventuation, including the eventuation of 'abstraction' in the practice of empirical research.

To be sure there are differences between eternal objects and attractors, however, this is not a philosophical treatise (not that the author would be capable of such) and

so these will not be explored here. Rather, to reiterate, the present paper is an exploratory reflection on the ways in which the abstract eternal objects/attractors can be empirically engaged, but also how that process of engagement itself will entail eternal objects/attractors. In pointing to these formal similarities between eternal object and attractor, I tentatively propose the neologism 'abstractor' which while it connotes the properties of abstraction, the eternal object, and the attractor, at the same time, it reflexively connotes the fact that these are themselves not attainable – research events can approach them but not actualize them. But further, it also hints at the care we must take in being cautious about identifying abstractors that remain inherentkly out of reach.

On this last score, there is one more aspect to the process of abstraction in the research event to note. Stengers suggests that is a need to take care of the event and the 'possible' entailed by the event (Stengers, 2010b). The research event as an engagement with the world (humans and nonhumans) which, in all its multiplicity, messiness and mutuality, involves a process practical attunement (Mol, 2008). As Puig del la Bellacasa (2011) frames it, such care is a material vital doing in which one affects and is affected, is critical of and creative toward the relations that compose the event. This is simply another way of saying that the researcher is at once partly constitutive of, and emergent from, the research event, and the process of abstraction (as entailed in the research event of comparing across research events). But it is also a way of marking the uncertainty or contingency involved in dealing with abstractions – the fact that care needs to be exercised given their unattainability. a particularly pertinent statement of this is Rosengarten and Savransky's (2018, p.6) acutely observed point that to relate "to abstractions is always a pragmatic challenge, a question of the relevance of a specific abstraction to a particular situation. This pragmatic challenge, we argue, demands that one learns to care for the ways in which abstractions operate in concrete situations".

In what follows, we too propose a particular pragmatic route toward caring for what we call abstractors, one that is sensitive to the work necessary to derive abstractors (despite the recalcitrance of their unattainability). As we shall also see, this is further complicated when we take into account Delanda's analysis of multiplicity of attractors (or, for us, 'abstractors') that affect an event's potentiality, and to those 'counter-abstractors' that do not simply complicate but also 'undermine' (or 'detract from') the abstractor of research interest. This again raises the issue of how we as researchers not only care for abstractors, but also deploy abstractors in the practice of caring for abstractors. We tentatively call this iterative process of care, a 'mode of care': not only do we engage with how care has been pragmatically exercised by those who enact abstractions (such as randomised control trials), but also how we exercise care in the process of engaging with others' care.

The 'Abstractor Blackest Black': The several eventuations of VANTAblack®
In this section, I begin to illustrate the use of the abstractor in relation to a particular colour, namely, black. More specifically, I refer to the 'blackest black' as realised through the nanotechnology VANTAblack. As we shall see, the blackest black of VANTAblack comes with a number of potentialities that affect its eventuation, even while it is also transformed in its specificity.

I first became aware of VANTAblack when I overheard a news report on the UK's BBC Radio 4 in which a number of artists who were disputing the exclusive rights to use VANTAblack that had been awarded to one of their contemporaries, Anish Kapoor. Having never heard of VANTAblack I was intrigued by it, and followed up, discovering that it was a carbon nanotube technology comprising tightly packed (1,000 million per cm^2) nanotubes of approximately 20 nanometre diameter, either in the form of a 'forest-like' or a 'coral-like' structure. The upshot of this technology is a surface coated with it could absorb around 99.95% of the light that strikes it. This renders anything coated with it flat and featureless, as light absorption is so extreme, any contours can no longer reflect light differentially and thus indicate an uneven surface. Perceptually, VANTAblack is uncanny: it is like looking at something (for example, scrunched-up aluminium foil)[3] that one knows has three-dimensional features, but which is, where the VANTAblack is applied, experienced as a flat black surface. In a sense, VANTAblack embodies the western quandary when it comes to the colour black: is it a substance or an absence, material stuff or darkness (see Harvey, 2013)?

Even though VANTAblack has been promoted by its manufacturer Surrey NanoSystems primarily as technology for use in optics and imaging, it has, as my initial encounter with it implies, nevertheless been eventuated in a number of ways (see Michael, 2018, for more details). For present purposes I focus on three.

Firstly, there is VANTAblack's eventuation within the art-world. Here, it is understood to have qualities which according to Amish Kapoor can disorient to the point of upsetting the sense of self, time and space. However, a controversy surrounds who is best placed to exploit this aesthetic potentiality. For some commentators, given his track record in producing perceptually disorienting pieces, it is Kapoor. For others, no single artist should have exclusive rights - the use of VANTAblack should be an endeavour distributed across a range of artists: it is out of this multiplicity of works, that VANTAblack's disorienting qualities as the blackest black can be explored and potentially put to surprising aesthetic use.

Secondly, VANTAblack is eventuated in the commercial setting of a marketing campaign. Specifically, it was sprayed onto a Lynx Black deodorant canister which was then displayed at a gallery and presented as a YouTube clip. This was accompanied by press releases and media reports. As David Titman, marketing manager for Lynx stated in a trade paper, Lynx Black was "the world's first consumer product wrapped in this material" which "is really exciting".[4] In addition to this connection with novelty, the YouTube clips feature young models who, perplexed but intrigued, stare intently at the coated Lynx cannister, clearly fascinated by its resemblance to the "black hole" referenced in the trade paper article. Presumably the YouTube clip viewer is meant to appeal to audiences who might wish to identify with the conventionally good-looking young models. Here, VANTAblack eventuates

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[3] https://www.surreynanosystems.com/media/images-videos - last accessed 4 April 2018
[4] http://www.campaignlive.co.uk/article/1355044/lynx-creates-coated-blackest-material-planet# - last accessed 4 April 2018

as a commercial aid: the sense of the sublime that arises with its blackest blackness serves in at once constituting, and appealing to, a market sector.

Finally, VANTAblack has been the subject of 'science communication', both on BBC TV's popular One Show and at London's Science Museum. In the former, the presenter visited Surrey NanoSystems to see one of two brass masks of his face coated in VANTAblack. In the latter, VANTAblack was part of a 'Technology Now' display in which, along with the masks, there was an array of explicatory panels and video screens which described its potential uses (for example, eliminating stray light in cameras and telescopes thereby vastly improving their operation). In both the TV feature and the museum display, VANTAblack eventuates as a serious innovation, that because of its undeniable spectacular, sublime qualities as the blackest black deserves to be treated as a viable technology.

We might, in the first instance, say that these three eventuations – named for convenience as, respectively, art, marketing and science communication – each draw on the abstractor of the blackest black that incorporates both the specific physical properties of VANTAblack and the particular capacities of seeing human eyes. In each case, this 'abstractor blackest black' underpins the potentiality of: in the case of Kapoor's artistic use of it, an aesthetic experience of a loss of space, time and self; in the case of the advertised association with Lynx Black, a sense of shared fascination and an identification with peer consumers; and in the case of the One Show and the Science Museum, a 'perceptual' demonstration of the promise of VANTAblack's technological viability. Here, we see how the abstractor blackest black adds potentiality to each of these eventuations, even if these potentialities differ in their specificity. In other words, the same abstractor ingresses into and attracts each of these eventuations, retaining its abstract character even while manifesting in a distinctive way in each of the three eventuation.

In terms of our care of these empirical cases, we can once again refer to Puig de la Bellacasa's (2011) depiction of care as, at the most basic level, a process, at once practical, ethical and political, that is sensitive to the ways in which the object of care is multiply emergent. However, as she further insists, we also need to attend to specific ways in which others do care in relation to the particular object. Here, we have cared for VANTAblack as an object of academic interest that is intriguing because of the way in which it has been promoted as an innovation as much in terms of its aesthetic and perceptual qualities as in terms of its technical applications (see Michael, 2018). By comparison, others have cared for it in very different ways. VANTAblack has been cared for respectively as an object of aesthetic and artistic potential, as an object of marketing potential, and as an object of potential science communication. Put baldly, these involve their own 'additional' abstractors which might be called, to echo our initial classification: art, marketing and science communication. Each of these inflects with the blackest black abstractor to eventuate their particular version of VANTAblack. This is in keeping DeLanda's account of how events might well entail many attractors: we are simply suggesting that these events also entail other abstractors. On this score, each of the three eventuations of VANTAblack simultaneously belong to a different class of eventuations (with their associated abstractors and, what we above we called, 'modes of care'). That is to say, there are three different 'lineages of becoming' (see below) into which

VANTAblack steps in the above cases, even as it brings its own lineage of becoming (attached as it is to a lineage of physics and physiology) to these eventuations.

The supplementary point is that we can also add a fourth to these three lineages – our own research-oriented abstractor: the Science and Technology Studies (STS) abstractor (along with its mode of care). Now, this might seem to subsume the other three in so far as it seems to 'sit above them', deriving their abstractors from the epistemological high ground. However, in the spirit of caring, we see this as in fact on the same ontological plane. The STS abstractor is simply another ingression (like that of art, marketing and science communications) that affects a particular eventuation.

Abstractors and their Lineages of Becoming
To clarify, many abstractors can enter into an eventuation. Each of them belong to what be terned a 'lineage of becoming' – a particular set of potentialities that reflect the specific abstracted essence of the abstractor (even if that essence is never actualized in practice). As we have hinted above, the relations between the abstractors can take various forms; how they concresce within a specific eventuation – the extent to which they are consonant or dissonant - will affect how that eventuation unfolds.

In the case of VANTAblack such relations can be consonant: the abstractor blackest black (and its physical and physiological lineage of becoming) resonates with the marketing abstractor. The sublime disorientation of VANTAblack can connote the 'mystery' of Lynx Black. In the process, the (loosely put) spectacle of VANTAblack is used to entice consumers not least by building up a sense of shared experience of the sublime, of mystery, even of a pseudo-community, as Guy Debord might put it (Debord, 1967; see also Fox Gotham and Krier, 2008).

In the case of the VANTAblack's eventuation in relation to the art abstractor, things seem to be both more complicated and less consonant (not least because the 'art' abstractor has been over-condensed in the discussion above). To focus initially on the consonance, the art abstractor introduced with the award of exclusive rights to Anish Kapoor has a particular lineage of becoming. 'Aesthetically', it brings with it a particular modernist function for art, to trouble affectively our existing sense of the normal (in this case, the stabilities of space, time and selfhood). 'Professionally', it brings with it a model of the artist as 'genius' – as the singular individual capable of aesthetically realising VANTAblack's physical and physiological lineage of becoming, as it were. However, we also need to situate VANTAblack within its extended eventuation: as noted above, there was (and continues to be) considerable controversy regarding Kapoor's monopoly on VANTAblack's artistic use. Various artists have disputed this right on moral grounds: there should be a non-exclusivity to the use of all colours and it is the community of artists that can, through its multiplicity, explore the potentially of a colour such as VANTAblack. Inevitably this has included a satirical backlash: thus Stuart Semple, a well-know British artist, "….has released his own brand of pink paint called PINK. It's not just any old pink paint though, it's the world's pinkest pigment and is available to everyone...except Anish Kapoor."[5] Others, however, have come to Kapoor's defence.

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[5] Anish Kapoor is Banned From Buying the World's Pinkest Paint,

With all due respect – not much, really – to the minor painters who are kicking up a fuss, Kapoor is an ideal artist to experiment with this freaky black….
This creator of sublime chromatic effects is just the guy to make Vantablack look like the new black.[6]

Here, then, we can point (minimally) to two different art-world abstractors. Against the 'genius artist' lineage of becoming, there can be counterposed something like a 'collective exploration' lineage of becoming. As a corollary, against the scrambling of the senses promised with Kapoor, are aesthetic effects yet to be determined. (We can also take note that this also maps onto the marketing abstractor discussed above – Kapoor can be read as a brand like Lynx that, within the art market, is enhanced by exclusive rights of use).

There are three issues to raise here. Firstly, 'care' sometimes needs to be actively exercised in the process of sustaining an abstractor such as 'genius artist' – witness the journalistic support Kapoor received. Secondly, analytically, we are abstracting abstractors – identifying, disaggregating and deploying different abstractors within the 'art' eventuation of VANTAblack. Thirdly, eventuation is itself analytically eventuated in the sense that the borders of an event can be expanded or contracted as more or fewer prehensions and abstractors are invited and incorporated into the academic account: after all, the art eventuation of VANTAblack has been extended from the Kapoor's skilled use to the controversy surrounding Kapoor's exclusive use. We shall return to discuss these three issues in more detail below, when we begin to sketch a number of heuristic questions for empirically engaging with abstractors.

Before that, let us turn to the science communication abstractor. As mentioned above, this seems to resonate with VANTAblack's physical and physiological lineage of becoming. VANTAblack is enacted as an object that is communicated to publics as a sensorially strange but nevertheless valuable and valid innovative technology. Or rather, it is demonstrated as such to the publics. There is a lot of care that has gone into tightly demarcating the parameters of VANTAblack's promise: over and above the specific display of its sensorial properties, it is also tied to a set of potential uses. In a sense this is 'immunizing' VANTAblack against the charge of triviality and needless novelty (Michael, 1997), a charge that is referenced in the One Show. Here is a different sort of abstractor – we might call it a hope/hype abstractor whose lineage of becoming encompasses the raising of technological expectations that then fail to materialize (Brown, 2003). However, analytically, as we attempt to grasp what is going on in this eventuation of the science communication of VANTAblack, we can also invite and incorporate other abstractors. In particular, we can propose that a particular version of the science communication abstractor is in play, namely that of 'demonstration'. Drawing on the seminal works of Collins (1987,1988), demonstration is a way of displaying scientific or technological 'findings' and their reality by seeming to engage in an experiment whose outcome is not known.

Kevin Holmesm November 10 2016, The creators project.
http://thecreatorsproject.vice.com/blog/the-worlds-pinkest-paint - accessed 16 January 2017
[6] https://www.theguardian.com/artanddesign/shortcuts/2016/feb/29/anish-kapoor-vantablack-paint - accessed 16 January 2017

However, because it is a demonstration, then the conditions of the display are so tightly controlled (and pre-tested) that there is little possibility of the display/experiment going off-script as it were (although, occasionally, things do go awry and the demonstration unexpectedly turns into an experiment). In the case of VANTAblack, both the One Show and the Science Museum, ensure that we clearly see the strangeness of VANTAblack. This experience serves to undergird the technical promise of VANTAblack. However, what remains outwith the demonstration is, for instance, the possibility of touching VANTAblack and a getting a feel for its fragility. How, we might ask, would this impact on the promise of VANTAblack?

Once again, we see how the eventuation of VANTAblack entails particular practical 'care'. On the one hand, there are the local practices typical of science communication that entail the frequent repetition, insistent statement, and designerly representation of the promise and potential of VANTAblack. These serve to dispel the dissonant hope/hype abstractor that, arguably, especially under current circumstances, regularly threatens to invite itself into an event of science communication. On the other hand, there is the practical care of analysis that suggests another dissonant abstractor, that of experimentation (along with its lineage of becoming), that, when invited into the analytic eventuation of VANTAblack, serves to highlight the extent of the care that has gone into demonstration.

In the next to section, we consider how the complex consonant and dissonant role of abstractors in eventuation are 'cared' for. More specifically, we consider the local practices that both repair and repel abstractors, but also invite and incorporate other abstractors and thus open eventuation to other lineages of becoming. These local practices of care, as we have implied in the foregoing, are part of eventuations that are, variously, objects of study and processes of analysis.

Abstractors and Care
It should hopefully be clear that, in the present account, eventuation entails a caring for different abstractors that attends to their consonance and dissonance. In each of the three cases of VANTAblack's eventuation, its blackest black abstractor was met with other abstractors – the art (genius) abstractor, the marketing abstractor, and the science communication (demonstration) abstractor. Where, other dissonant abstractors were likely to ingress into the specific eventuation of VANTAblack, care had to be taken. In the case of the art eventuation, there was an ingression of a 'community of art' abstractor that was explicitly combatted (the journalistic derogation of 'lesser' artists). In the case of science communication, care for this version of VANTAblack was expressed in that the dissonant abstractor of experimentation was effectively excluded. This took place through simple local practices like ensuring that no direct access to (the fragility of) VANTAblack was possible. Given the expense of this nanomaterial, this is hardly surprising; nevertheless the fragility could have been better foregrounded in the process of representing VANTAblack.

As Puig de la Bellacasa (2011) notes, caring entails a complex process in which others who care for the same object must be subject to care, that is, to both respect and critique. To be sure, this is not always evident in the cases we have described above. However, it behooves us to reflect on our own practices of care in relation to the abstractors we have cared for in the process of the present analytic eventuation of VANTAblack. Here, we focus on five elements, each of which reflects on the

particular modes of care that have entered into our analytic practice (and our discussions of abstractors). In the process, there is an attempt to articulate these elements in terms of heuristic questions that alert us to the issues that are faced in seeking out abstractors.

Firstly, we can address how care is entailed in identifying the 'key' abstractors, and the more or less fine distinctions drawn amongst and 'within' these. Thus across the three cases, the blackest black abstractor has been treated as if it were self-evident, not least in so far as it has served to bring these cases into the same category. Yet, the presence of VANTAblack in an eventuation need not be accompanied by this abstractor. One can imagine many eventuations of VANTAblack – an accident in the laboratory, say - where this is not relevant. The question here is: when caring for an abstractor, how do we establish its relevance (on relevance, see Savransky, 2016). In the Kapoor case presented above, distinctions were drawn between two versions of the art abstractor. The mode of care here involved attending to the empirical quality of the controversy and the different ways in which 'good' art was enacted ('genius' versus 'collective'). In the process of such analytic care, we could ask: what are the distinctions we are drawing amongst abstractors, to what extent are they legitimate, and how do they illuminate the cases? More generally, we can also ask how the particular pattern of abstractor ingression make the event unique.

At the same time, and this is the second mode of care, we also need to engage with how care was practiced within the particular case: that is, the means by which there was practical care for abstractors with respect to their consonance or dissonance. In the case of Lynx Black, the ostensible consonance of the blackest black abstractor and the marketing abstractor seems to have been fully nurtured, not least through the design of particular advertising imagery along with public relations activities. Here, the question we might pose is: what are the forms of caring might we detect amongst practitioners or actors as they align or otherwise the abstractors that enter the eventuations in which they are embroiled?

However, analytically, a third mode of care queries the extent to which we have shaped the empirical eventuations that are our objects of study. For instance, in the Kapoor case, we extended Kapoor's eventuation of VANTAblack outward to encompass the controversy that surrounded it, and the contestation of a particular version of artistic production. Here we might ask: to what degree have we extended the borders of the case, what abstractors have we invited into the eventuation, and what makes us stop identifying additional abstractors (given that such extensions are potentially infinite in both Whitehead's schema, and that of cognate approaches such as actor-network theory, Callon and Law, 1995, or agential realism, Barad, 2007)? Put otherwise, how does our mode of care within a research event pattern the ways in which the case we study is at once common to an abstractor (blackest black) and unique in a specific way (as the blackest black is partially actualized through a particular art-world controversy).

Fourthly, and relatedly, in our analytic practice we might also introduce abstractors that are 'present' in the eventuation by virtue of their absence (see Debaise, 2017). In the case of the science communication eventuation of VANTAblack, we proposed that a demonstration-oriented abstractor predominated to the exclusion of an experimental abstractor. Yet, the experimental abstractor was derived in part through

a particular eventuation of the STS literature. Put otherwise, a particular STS abstractor was invited (in order that it be shown to be excluded) through our analytic care of the science communication eventuation of VANTAblack. In light of this we might consider the following: what is the mode of care involved in our research practices, not least when identifying the absent presences of abstractors, especially when these are abstracted through a scholarly reading of a literature (that is to say, abstracted by deploying a 'scholarly' abstractor with its own lineage of becoming)?

Fifthly, and as a corollary (and echo) of the foregoing, in eventuating our analysis, we too - as analysts - have absented the presence of other abstractors, we too have demarcated the borders of our analytic eventuations, and cared for dissonant and consonant abstractors. For example, in the case of the science communication eventuation of VANTAblack, we might have placed the demonstration of VANTAblack's potential in relation to a commercial abstractor through which VANTAblack is eventuated as a marker of British innovation and its economic promise. Similarly, across the three cases, the common ingression of the blackest black abstractor might be contrasted to a different abstractor – a commercial one in which companies raise the profile of their product, along with expectations of uses, in order to make themselves more attractive to investors. We are not saying that this is so for Surrey NanoSystems, merely that this is another abstractor that could have been shared amongst these cases. The issues that arise here can be stated in this way: what is the mode of care that allows for a reflection on, and circumspection about, the mode of caring for our cases? Or, how do we as carers emerge in the process opf caring, that is, are 'cared for' throiugh our case studies?

Concluding Remark

This paper has attempted to discuss 'abstraction' in terms of something that ontologically enters into a process of eventuation and thus links that eventuation to others similarly affected, that is a class of eventuations. The term developed to address this process is abstractor and, hopefully, the paper has usefully suggested some of the ways this might be put into action. In particular, it has been suggested that abstractors bring with them particular linked lineages of becoming which indicate the potentialities for how an eventuation unfolds, but also how this unfolding is also mediated through some sort of local practical activity, or mode of care as it has been called here. Working through the example of VANTAblack, a range of issues came into focus which were articulated as a series of heuristic questions - or prompts for reflection. In summary they can be re-stated as follows: How do researchers identify and distinguish amongst abstractors? How do researchers identify the modes of caring as practiced by practitioners in relation to the various abstractors entailed in eventuation? What are the pragmatic limits of adding abstractors to an eventuation? What abstractors are effective by their absence and what modes of care are needed in identifying these? How do we practice modes of care in identifying the modes of care of our practitioners, and what are the abstractors that enter into this research process?

This arguments presented here can together be read as a first tentative step toward thinking about how to operationalize the role of an ontological version of 'abstraction' for the doing of social scientific empirical research. Inevitably it is speculative in that it is subject to its own peculiar lineages of becoming in which a problem space for thinking inventively about the role of abstractors has been roughly sketched. In that

spirit, no great claims are made for the specific terms - abstractors, lineages of becoming, and modes of care - introduced here, other than they hint at potential ways for raising inventive problems and interesting questions about the practical work of engaging the 'abstractions' as they manifest in empirical research events. It is not difficult to imagine an alternative vocabulary (say, respectively, logics, potential and practices). That said, hopefully, the paper and its terminology lures other modes of care, abstractors, and lineages of becoming in an eventuation that can speculatively deepen, or carefully trouble, the approach to abstrcation outlined so sketchily here.

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