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Editorial note

## Valuation Studies and the Spectacle of Valuation

Fabian Muniesa and Claes-Fredrik Helgesson

The making of valuations is not only an activity cherished by scholars engaging with this journal. The performance of valuations is at times furthermore something devoured as a public spectacle. Calling something a “spectacle” might sound defamatory, especially if one relies on the rather daunting turn the word took after Guy Debord’s 1967 *La Société du Spectacle* (Debord 1994), but it can sound positive too if emphasis is put on the collective enjoyment, on the memorable performance and, in short, on culture. In this editorial introduction we want to use the notion of *spectacle* to point to an interesting topic for valuation studies in general and for *Valuation Studies* (i.e. this journal) in particular. Valuation is not only something that is done, it is in addition something that people may watch, as a spectacle. It is this aspect of valuation that we aim to begin exploring here.

When we say that people watch the performance of valuations as a spectacle, we are to begin with thinking of television. Classic televised game-shows like *The Price is Right* (first aired in the United-States on NBC in 1956) or *The Dating Game* (on ABC in 1965) are landmarks in the global culture of assessment-qua-entertainment. They further constitute, we presume, critical ingredients of the education of hundreds of millions of persons. *Antiques Roadshow* is an example of a contemporary show where the multifaceted valuation of (preferably vintage) objects is the main attraction. The authenticity, curiosity, and market value of the objects are recurrent parts of the valuation

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spectacle. Premiering in the UK in the late 1970s, it has spread, generating among others: *Tussen Kunst & Kitsch* in the Netherlands (aired since 1984); *Antikrundan* in Sweden (aired since 1989), and a US version of *Antiques Roadshow* (aired since 1997). Watching an episode of *Dragons' Den*<sup>1</sup>, to take another example, can be a particularly thrilling experience for anyone interested in the spectacle of business valuation. This reality show relies on a dramatization of the encounter between the entrepreneur and the financier (both flesh and bone), the dramatic crux being the “live act” of the investment decision.

One interesting upshot of the proliferation of televised valuation spectacles is that they constitute a rich, and growing, collection of shows that demonstrate different ways in which a public valuation might be performed. This includes putting on display the variety of practices that may be used for assembling materials for valuation, which includes watching, listening, tasting, smelling, touching, imagining and inquiring. The collection further presents various practices that may be used for the very deliberation entailed in performing a valuation, such as debating, hesitating, comparing, sorting, ranking and quantifying. We can, from comparing different such televised valuation shows, moreover infer about different ways in which these practices may be organised. One configuration, for instance, rests on the equitable expert assembling and judging evidence after which an eloquent and balanced valuation is articulated. Other configurations exhibited rely on the expert, or not-so-expert, jury either voting or quibbling among themselves before reaching a consensus valuation. Still other configurations exhibit the possibility for the audience to participate in performing the valuation. There are certainly numerous comparative studies to be made focusing on the various practices and configurations of the valuations put on display in different television shows. Watching television can thus be a task in the effort to make a contribution to the study of valuation.

Another fascinating side of these televised valuation spectacles is their consumption as entertainment. There is something intriguing in the apparent widespread appeal to watch them. The voyeuristic attraction of consuming television shows has, for instance, been discussed in relation to reality shows like *Survivor*<sup>2</sup> (e.g. Metzl 2004). Yet, instead of the reality shows' promise of direct and unlimited access into private and even intimate interactions, the televised valuation spectacles offers to exhibit practices and articulations of valuation that are often concealed from public witnessing. A parallel

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<sup>1</sup> *Dragon's Den* was first aired in UK on BBC Two in 2005, after a Japanese version first aired on Nippon Television in 2001.

<sup>2</sup> *Survivor* debuted in Sweden as *Expedition Robinson* in 1997 and has henceforth been produced in many national versions.

can be made between the valuation spectacles on television and the voyeuristic aspect of the traditional English auction (see Wall 1997). The possibility of public witnessing of the regularly concealed movement of both goods and people lies “at the heart of the auction ethos” (Jarvenpa 2003, 557). One part of the voyeuristic attraction of an auction comes from the opportunity to compare one’s own deals with those of others, or seeing what others are willing to pay (Clark and Halford 1978). Yet, the voyeuristic attraction of the auction may in addition come from the auction making it possible to watch closely the putting to sale and financial valuation of recognised objects belonging to a neighbour (see Jarvenpa 2003).

The parallel to the voyeuristic aspects of the English auction suggests that the attraction of the televised valuation spectacles is rooted in the desirability to publicly witness the performance of valuations that in so many other instances are hidden or otherwise unavailable for public consumption. This argument thus situates the attraction of watching valuation spectacles not in the learning about the outcomes of valuations first-hand, but rather in the witnessing of the performance of the valuation and the observing of what values are articulated in this process. In addition, the attraction may further lie in the possibility to compare notes and discuss what has been displayed, an attraction that further may be tied to the recurrent link between televised valuation spectacles and articles related to these shows in tabloid newspapers. We further argue that the pleasure of watching televised valuations is linked to the creation of social knowledge about valuations and hence the different ways in which it can be determined what is valuable. The desire to look at valuations—their what, when, how, by whom and with what means—is thus clearly not confined to the rather small group of scholars interested in valuation studies and this journal.

For those of us thus inclined, there is another valuation-related facet to the televised valuation spectacles: they are themselves subject to valuations. Television formats are tradable and subject to economic valuations as to their worth. The Format Recognition and Protection Association, Frapa, provides, for instance, services for registering and calculating the worth of formats for television shows ([www.frapa.org](http://www.frapa.org)). Such valuations of television formats appear, however, not to be regularly publicly available.<sup>3</sup> (This very inaccessibility but further our cravings for a televised show centring on the valuation and trading of such formats.) Valuation-oriented television shows are naturally in addition rated by viewers, where, for instance, the original UK *Antiques Roadshow* show has a viewer rating of 6.9 on IMDb over its

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<sup>3</sup> We have, for instance, despite some effort not found a readily available public record of the going price for formats like the *Dragon’s Den*.

thirtyfour seasons.<sup>4</sup> In relation to the previous discussion on the voyeuristic aspect of different kinds of television shows, we should finally mention that a Voyeurism Television Consumption Index (VTCI) has been suggested for different genres of TV programming (Bagdasarov et al. 2010).<sup>5</sup>

Through the above exposé of televised valuation spectacles, we have explored themes related to the purchase of the public witnessing of valuation. When we say “witnessing” we are furthermore thinking of the practices of monitoring (of others and oneself) that characterize our reflexive modernity. As we write this, some of our colleagues are deeply engaged in the preparation of the periodic assessment exercise of their research institutions, looking into publication lists, compiling indicators, comparing scientific performances, embellishing reports, sometimes even asking us how publishing in a young journal such as *Valuation Studies* could, should or would be valued (see Pontille and Torny 2010). This is spectacular, in quite a number of senses: a public performance of critical consequences, a test on the crafts of authorship management, something that can be considered both as very serious and very superfluous, an exercise in representation that takes our time away from the “real” thing (Science?), a task that eventually would require, budget allowing, some consultancy in scientific communication. At the same time as these assessment practices have many deeply troubling tendencies, not the least bearing on fledgling journals like this one, we can not but acknowledge that there are also pleasures to be had in the public witnessing of the valuation of academic work. As a spectacle, we do wonder when will we see a televised version of an academic assessment exercise.

Valuation is thus not only a proliferated social practice, it can also be a spectacle. We have here begun to explore what gives valuations this quality. In relation to this exercise we would further want to stress that we think it is worthwhile for valuation studies to not only look into the *making* of valuations, but to in addition take the *valuation spectacle* as a topic all by its own.

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<sup>4</sup> [http://www.imdb.com/title/tt0200325/?ref\\_=ttep\\_ep\\_tt](http://www.imdb.com/title/tt0200325/?ref_=ttep_ep_tt) [accessed 28 October 2013]

<sup>5</sup> A test made in Bagdasarov et al. (2010) further suggests that reality shows (broadly defined) have more voyeuristic content than sports and political satire, but not statistically significant more so than, for instance, situation comedies. This test, however, did not use a definition of genres singling out televised valuation spectacles. The definition of VTCI (Voyeurism Television Consumption Index) did furthermore not specifically target the “valuation voyeurism” discussed above, but broader notions such as scoring high on propositions like “I like watching people when they don’t know that they are being watched.”

**Acknowledgements.** We are indebted to Jonas Bååth at Uppsala University for drawing our attention to the proliferation of what he called *valuetainment television shows* where the performance of valuations is a centrepiece. He has moreover, alongside Karin Svedberg Helgesson and Lotta Björklund Larsen, provided helpful comments on an earlier draft of this editorial note.

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# What Is a Good Tomato? A Case of Valuing in Practice

Frank Heuts and Annemarie Mol

## Abstract

As a contribution to the field of valuation studies this article lays out a number of lessons that follow from an exploratory inquiry into ‘good tomatoes’. We held interviews with tomato experts (developers, growers, sellers, processors, professional cooks and so-called consumers) in the Netherlands and analysed the transcriptions carefully. Grouping our informants’ concerns with tomatoes into clusters, we differentiate between five *registers of valuing*. These have to do with money, handling, historical time, what it is to be natural, and sensual appeal. There are tensions between and within these registers, that lead to clashes and compromises. Accordingly, valuing tomatoes does not fit into inclusive formal schemes. Neither is it simply a matter of making judgements. Our informants told us how they *know* whether a tomato *is* good, but also revealed what they *do* to *make* tomatoes good. Their valuing includes activities such as pruning tomato plants and preparing tomato dishes. But if such activities are meant to make tomatoes good, success is never guaranteed. This prompts us to import the notion of *care*. Care does not offer control, but involves sustained and respectful tinkering towards improvement. Which is not to say *in the end* the tomatoes our informants care for are good. *In the end* these tomatoes get eaten. And while eating performs tomatoes as ‘good to eat’, it also finishes them off. Valuing may lead on to destruction. An important lesson for valuation studies indeed.

Key words: valuation; valuing; practice; performativity; eating; food; care; tomatoes

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This article starts from the question: ‘What is a good tomato?’ However, it is not our aim to provide you with a conclusive answer to that question. It would have been possible to try. We might have gathered the views of a variety of experts and added these together to create an overall judgement. *These* are the four (or the twenty-seven) criteria that tomatoes should meet in order for them to deserve the predicate ‘good’. If that is the kind of lesson you are looking for, this article will disappoint you. But this does not mean that we are out to critique the activity of valuing tomatoes and to uncover what hides behind it—be it financial interests, political power, or the desire to stand out and distinguish oneself. Instead, we are curious about valuing itself: what kind of activity is this? What emerges in practices where the ‘goodness’ of figures such as ‘tomatoes’ is at stake? In short, by exploring what ‘good tomatoes’ might be, we hope to contribute to the theoretical repertoire of the young interdisciplinary field of valuation studies, where concerns with ‘values’ that were earlier dispersed are being drawn together.<sup>1</sup>

Prominent among the topics addressed in valuation studies are the ways in which monetary value is established and tied up with qualifications of whatever it is that money can buy.<sup>2</sup> But money and

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<sup>1</sup> The possibilities for engaging in a social science focussed on objects, here tomatoes, owes a lot to studies of ‘the social life of things’ (Appadurai 1986). At the same time, it has been fuelled by the social studies of science and technology, where ‘things’ that form the object of science and/or intertwine with technology in other ways, are followed—and where, accordingly, ‘the object’ got centred and decentred at the same time (Law 2002). For the connection between things and moralities, see e.g. Myers 2002.

<sup>2</sup> It was actually only after we were exploring *valuing* for some time, that we realised that this particular term tends to be primarily used in the context of economic values (see e.g. Greaber 2002). We decided to hold on to this term when we found that ‘valuation studies’ is seeking to engage with a wide range of ‘modes of valuing’ (see Helgesson and Muniesa 2013). Our particular way of working is inspired by that of a variety of French pragmatists. See e.g. Thévenot 2001; Méadel and Rabeharisoa 2001; Hennion 2004; Latour 2005.

markets are not the only contexts where valuing is a prominent activity. For instance, cultural sociologists are busy tackling how values are related to what they call *taste*; philosophers keep insisting on the relevance of *normativity* while separating this out into kinds; science and technology scholars wonder how the study of *goods and bads in practice* can best be added to the study of objects and subjects in practice; researchers of care analyse the pertinence of health, welfare and other goals locally cast as *improvement*; while in anthropological work embodied *appreciations* are being explored.<sup>3</sup> Against the background of these varied literatures we sought to think through ‘valuing’ by engaging in an exploratory study of a telling case. For crafting a rich theoretical repertoire, or so we contend, does not work by laying out solid abstracting generalisations, but rather by adding together ever shifting cases and learning from their specificities. The case of ‘good tomatoes’ is neither exotic, nor politically hot. To us that was part of its attraction: mundane cases tend to offer a researcher the license to explore freely while despite, or maybe because of, their mundanity, they may generate surprising lessons.

As we wanted to explore what a ‘good tomato’ might be, we sought informants in the know. But who is an expert on ‘good tomatoes’? In the Netherlands, where we did our research, there are many. The country is a hot spot for tomato breeding, growing, trading and processing, while tomatoes are also a popular ingredient of daily Dutch cuisine. With some effort, FH, who did the interviews, managed to talk with people from all these worlds: developers, growers, sellers, processors, professional cooks and so-called consumers (who talked about buying, preparing, as well as eating tomatoes). In total FH taped and fully transcribed thirteen interviews.<sup>4</sup> That we call all interviewees ‘experts’ signals that we were not invested in differentiating between groups of people, those in the know, experts, and those without specialised insights, so called lay people. Instead, we wanted to explore different ways of valuing, relevant to different practices. We took our informants to be experts in relation to the practices that they were routinely involved in it, be it professionally or privately. An additional advantage of staging our informants as experts was that it allowed us, as researchers, to curiously analyse our materials without having to know better.

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<sup>3</sup> See, for our earlier struggles with the topic of taste Mol 2011; Mann et al. 2011; of philosophy Mol 2008b; of combining the study of ontology with that of normativity Mol 2012; and of appreciation Mol, forthcoming.

<sup>4</sup> All interviews were held in Dutch and literally transcribed (if not to the standards of conversation analysis as that was not needed for our purposes). For the sake of this English language article, we translate just the quotes we use. In this translation, even if we have tried hard to bring across the soul of what is said, subtleties, nuances and things that resonate in the choice of words, are inevitably lost.

The aim of the interviews was to learn about valuing tomatoes *in practice*. Ideally, we would have wanted to do fieldwork and follow our informants in all their tomato related activities. This, however, wasn't easy to achieve in *our* practice. We had little time, wanted to know about diverse practices, and found that potential informants were not keen to be shadowed, either because this sounded intrusive to them, or because they did not want to negotiate it with their bosses. As our purposes were exploratory, interviewing proved a helpful enough proxy. We invited informants to talk as if they were their own ethnographers—or rather (as the object of conversation was not a tribe but a practice) their own praxiographers.<sup>5</sup> Here the art is to persistently ask questions about the specificities of activities that informants tend to take for granted. This incites them to not get stuck in relating their opinions, but to take a fresh look at their own practices. Our informants were generous with their expertise and on average the interviews lasted for about an hour. Once we had the rich and heartfelt stories on printouts in front of us, it was tempting to write up the results in the form of 'tomato life worlds'. For that would have been a good humanist way to go, to describe 'worlds' with human beings in their centre. Different worlds, as the world of a tomato grower is not quite that of a tomato eater, while the trials and tribulations of sellers differ from those of seed developers. However, we had set out to study not groups of people, but practices of valuing.<sup>6</sup> And as we kept foregrounding these, other ways to order our materials presented themselves.

A first one was to differentiate between various axes along which *goods* and *bads* get mapped. In making these axes we were, in a first instance, inspired by the differentiation that Boltanski and Thévenot made in the eighties between 'economies of worth'.<sup>7</sup> This work moved

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<sup>5</sup> For a more extensive introduction of this method, see Mol 2002.

<sup>6</sup> If we would have laid out the 'worlds' as differing between social groups, as a symbolic interactionist would, we might have wondered about the way such worlds relate, clash and share 'the tomato' as a so called 'boundary object' (cf. Star and Griesemer 1989). This we do not do. However, like symbolic interactionism, we investigate *valuing* as something our informants *do* rather than in a more structuralist way as something caught in or framed by a 'culture'. See for inspiring examples of the latter the contributions to Watson and Caldwell 2005.

<sup>7</sup> For the English translation, see Boltanski and Thévenot 2006. Their *économies* are inspired by the classics of Western philosophy as well as the rich and inspiring case studies of their research collaborators, that ranged from discussions in small town banks about giving or not giving out loans, to the question whether or not camembert remains authentic when it is safeguarded in a fridge. See Boltanski and Thévenot 1989. One of our reviewers wondered why we quote Boltanski and Thévenot since our approach has deviated so much from theirs. We hope that making the shifts explicit helps readers to better situate what we are after. There is obviously a lot of other work that is inspired by and then departs from the Boltanski and Thévenot line. See also Dodier 2012.

from a philosophy invested in judgements and a sociology of critique, to the exploration of the ways in which ordinary people ('the actors') go about justifying their acts by evaluating them against one or more out of seven scales, called 'economies of worth'. As we did not explore the justification of acts (against the background of political philosophy), but the valuing of tomatoes (as a contribution to valuation studies), we allowed our theoretical tools to rapidly drift. Hence, we shifted from talking about 'worth' (a quality) to foregrounding 'valuing' (an activity) and from 'economies' (that come with a single gradient each) to 'registers' (that indicate a shared relevance, while what is or isn't *good* in relation to this relevance may differ from one situation to another). We drew the 'registers of valuing' that we came to disentangle from our materials, where they appeared neither closed off nor incompatible, but showed overlaps as well as internal tensions. As making ever more divisions in the hope of reaching purity proved to be futile, we took the complexity that ensued not as an analytical flaw, but as an empirical fact about the valuing of 'good tomatoes'.<sup>8</sup> That there are tensions within and between the registers of valuing tomatoes implies that as analysts we do not have to spend a lot of effort on taking a critical distance from our materials so as to avoid getting trapped in apparent self-evidences. As different registers of valuing clash, they rob *each other* of any potential self-evidence. They instantiate each other's criticism.

Valuing tomatoes is not just complex; it is also *performative*. Recently Vatin has argued that valuation studies should not just study *evaluation*, the activity of classifying things as either valuable or not, but also *valorising*, the activity of making things (more) valuable.<sup>9</sup> Our materials back this up. As we asked our informants about 'good tomatoes' they did not just tell stories about how one might *know* which tomato is better or worse, but they also related what one might *do* to make a tomato better rather than worse. But while Vatin, in conversation with economic theories, locates *evaluation* in the market and *valorising* in the production process, in the case of good tomatoes both activities (as we will show below) are relevant all the way

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<sup>8</sup> For the argument that social science research should not hide the complexity of even messiness of the world, but find ways of bringing it out, see Law 2004.

<sup>9</sup> See Vatin 2013. Vatin relates his argument to the possibilities offered by the French language where *évaluer* and *valoriser* are more obviously different while in the English *valuation* these activities seem to merge; but also to the relation between economics and the sociology of economy invested in studying market relations and the sociology of work invested in studying work. In the domain of food studies there are related separations, but there attending to production implies including agriculture, while studies of consumption are not so much invested in price as in 'food cultures'. In that context the argument that the production and the consumption best be analysed together has been variously made for quite a while, see e.g. Whatmore 2002.

through. Stronger still, they are hard to separate out. The ‘assessment’ part and the ‘improvement’ part of dealing with tomatoes slide over into each other. Hence, we do not follow Vatin in his suggestion to use two different terms for these activities, evaluation and valorising. Instead we stick to a single one: *valuing*. This gerund seems best suited for exploring varied ways of performing ‘good tomatoes’, from assessing and appreciating, to adapting and improving. ‘Valuing’ also stresses that ‘valuation’ is active, but beware, liberal notions of ‘action’ do not fit. For one, our informants do not act alone but in conjunction with lots of materials (from water to bumble bees to trucks to vinegar). And second, however much these clustered socio-material figures seek to make tomatoes good, success is never guaranteed. Which is why we come to mobilise the term *care*. Caring is an activity in which valuing is implied—both caring *about* and caring *for* have a ‘good’ at their horizon. At the same time caring indicates efforts that are ongoing, adaptive, tinkering and open ended. But before we give all our conclusions away, let us look at the case of *good tomatoes*.

### Registers of Valuing

A first register relevant to valuing tomatoes is a *monetary* register, that has to do with financial costs. Most of the tomatoes that our informants talked about figure in market transactions, in which tomatoes move in one direction and money in the other. But money is even relevant to the amateur grower who neither sells nor buys his tomatoes: “It is a hobby. What with the plot, the seeds, the fertilizer and all, I doubt whether, as it is, I pay less than we would if we bought our tomatoes on the market. And then I don’t even count my time.” Stressing that in one’s own particular case money is not a decisive value still evokes its relevance. And relevant it is, money. It informs ever so many dealings with tomatoes. A grower: “You want to discharge a minimal amount of fertilizer, for fertilizer costs money and you do not want to flush *that* into your waste water. Sometimes you see a number going up, like sodium. Then you have to act on it.” But sometimes your own actions do not count for much. A grower: “Poland was too wet this year, Spain and Italy had a cold spring. That, when it comes to it, is what we thrive on.” The fact that tomato markets extend across considerable geographical distances means that growers in the Netherlands earn more when the weather is bad in Poland, Spain and Italy. It also means that industrial processors will buy their tomatoes wherever the price is low. Here is one of them: “The Dutch ones, in boxes or in small containers, you pay two euros for those in the supermarket. Which means that when they leave the farm they are roughly one euro a kilo. For us that is way too much. We buy tomatoes grown in large fields, harvested with machines. And those are, what, some ten cents a kilo.” Large Mediterranean fields, with no need for heating, yield cheap tomatoes. At the buying end of a

transaction this is a good thing, cheap. Here is a consumer: “When there is a discount. I buy tomatoes when there is a discount.” Thus, within the money register the good is not equivocal. ‘Cheap’ and ‘expensive’ are clashing goods. However, they both underscore the relevance of money.

A second register of valuing tomatoes has to do with *handling* them. One of the crucial concerns here is that of fragility. Fresh tomatoes are easily crushed and after a certain time, they perish. The spreadsheets of the market have no space for material specificities, nor for the passing of time, but when it comes to handling tomatoes, both are crucial. An industrial processor: “So they are harvested and then they go to the factory in big trucks. Ideally within eight hours. But, even if you are in a hurry, you should not pile up a tomato too high. Imagine what happens. If it is too high, your pile collapses.” Here, a *good tomato* is firm, able to withstand transportation, if only its limits are respected. But even firm tomatoes go off in the end. Here the factory comes in. In factories tomatoes are processed and thus preserved. By cooking them up to a paste or a sauce, by tinning or bottling them, tomatoes that might otherwise quickly rot, are kept for future use. When it comes to handling fresh tomatoes, meanwhile, it is not just their firmness that matters. In kitchen practices other qualities are relevant as well. A cook: “A juicy tomato—that’s nice. For a salad you want a juicy tomato. But not on bread, you don’t, for bread easily gets soaked.” Developers have taken this up as a challenge: how to avoid soaked bread and yet consume tomatoes? As one of them explains: “We have developed a tomato that is suited to being cut, the *Intense* tomato. This is a niche product. It is meant to be used in the sandwich industry, in catering. The *Intense* tomato won’t lose its juice when you cut it.” Thus, within this register the good again comes in varieties. But they all have to do with what makes a tomato good to handle.

In a third register, valuing proceeds by inserting tomatoes in *historical time*. Here it may be the past that is celebrated. A consumer: “When I was a kid. The way tomatoes tasted back then! Those were *real* tomatoes.” In some places, notably in North America, heirloom tomatoes, so called ‘old races’, are being glorified. The literature offers plenty of quotes that signal this nostalgia: “Heirlooms are like motherhood and apple pie. You can’t say anything bad about them. They’re a status symbol.”<sup>10</sup> However, such reverence for the past

<sup>10</sup> This is a quote of the famous US tomato expert Kanti Rawal and we found it in a book that is not about the *good*, but about the *perfect* tomato. See Allen 2010, 69. What we particularly like about this quote is that, by speaking about a ‘status symbol’, it is the *developer* who picks up on and mobilises a critical sociological repertoire. But mind you, he mobilises it to be critical, too, and in his own way: they may provide status, heirlooms, but there is still something left to develop and improve.

seems to be rare among tomato experts in the Netherlands. While some older eaters glorify the tomatoes of their youth, our materials contain more instances where people take pride in *breaking* with the past, in being innovative.<sup>11</sup> In this context the relevant ‘past’ is a fairly recent one, the nineteen eighties and early nineties, a time in which, as one of the growers put it, “we did not sufficiently attend to quality”. Famously, at some point during that period, the Germans had started to complain that the Dutch tomatoes that they imported were shiny and firm, but tasteless. A grower: “As the Germans started to call them ‘water bombs’, we felt we had to act. So with some colleagues we decided to do things differently. We talked to seed developers, we stopped using pesticides, we fine-tuned nutrients. We branded them, too, we called them *Tasty Tom*. They are more expensive, our *Tasty Tom*, but we found a market for them.” Such innovative zeal is more widely celebrated. Another grower: “Don’t think of farms as stagnant, horticulture is developing really fast. We have this ultramodern packaging machine. And now we are building a climate controlled glasshouse.” The innovative experiments may include the re-use of elements from the tradition. The first grower again: “We use bumblebees for fertilisation, and then we had to cut the pesticides because they make the bumblebees die off too quickly. So now we experiment with natural ways to discourage bugs.” But in one way or another in this register *good tomatoes* are put on a time line. The present is differentiated from the past. A consumer: “For me, at first, well, tomatoes were just that, tomatoes. I actually used quite a lot of them, without thinking much about it. But since a few years now, I buy these smaller ones, on bunches, in a small plastic tray. *Tasty Tom*. They have a lot more taste. I go for those, now, I try to avoid the bigger ones.”<sup>12</sup>

A fourth register of valuing mobilised by the experts whom we interviewed is that of *naturalness*. Here things are good if they have not been interfered with. Even (or maybe especially?) the expert who works in the huge ketchup and sauce company that thrives on processing tomatoes, mobilises this register. He hands us an advertisement leaflet in which the company proudly underscores the ‘goodness’ of its wares with the slogan ‘Grown, not made’. A short publicity film that shows how the tomatoes that go into Heinz ketchup

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<sup>11</sup> Now that we think of it, many people in the Netherlands wouldn’t have much trouble with saying bad things about motherhood and/or apple pie either. To be explored! See also, for the triumphs and tribulations of writing in English about Dutch field work, and questions to do with valuing and language, Mol, forthcoming; and Kuipers 2006.

<sup>12</sup> One may learn from Gomart and Hennion (1999) that the ability to discern which tomatoes have a good taste is not obvious but depends on training and dedication. Theirs was a breakthrough study into the activities required for ‘passionate attachment’. See also Hennion 2001, 2007.



are being grown has the same title. The suggestion is that what we see here is not an industrial but a biological endeavour. Tomatoes are not *products*; they are *natural*. It is quite an achievement of the Heinz marketing department that it manages to downplay the industrial activities necessary to grow and process tomatoes on a multinational scale. The informed bet is most likely that out there, in the public, the natural is widely celebrated. Some of our informants join in with that celebration. Here's a professional cook: "Look, if they [the growers] use pesticides and all, that bothers me. Then I won't buy there. I don't want them to interfere too much." But this is not to say that naturalness reigns supreme. Or even that, beyond advertisements, it may ever be achieved. A grower: "Organic tomatoes, well, of course that is a *belief*. Some aspects are good, they are good for the environment, they are rewarding on the market. But, you know, if consumers are being told, in the newspaper and all, that organic agriculture doesn't use any chemicals, what can I say? That is simply not true."

The fifth and final register of valuing that we draw out here is that of the *sensual*. Here, tomatoes are good if they are compelling to the senses. But which senses to seduce? First there are visual clues. A consumer: "Do they look good? Is their colour good, are they red? But also, do they have no mould, no weak and soft spots?" An attractive appearance may be pleasant in and of itself—for instance, used in a salad, a tomato should 'look good'. But appearance may also point to something else: a tomato with soft spots is on the verge of going off and a tomato with mould has already done so. Neither of these will taste good. Thus, visual signs may be used as an index of flavour and texture. But the signifying links are not always to be trusted. This was the problem with the 'waterbombs', they looked good, but they did not taste good. That visual signs may 'betray' those who look out for flavour is a contentious point, a crucial friction within the sensual register. A cook: "Some tomatoes have a tough skin. They may look good, but this is because they are hard, which is because they contain too much water. And then when you eat them, you get disappointed. They taste of nothing." So there may be tensions. Looks or taste. Smell or bite. The ideal is for a tomato to be appealing to all the senses at the same time. A developer: "Well, in the end, in one way or another, you want a tomato that is round, red, looks good and has a great taste."<sup>13</sup>

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<sup>13</sup> Anthropological studies on tasting often start out by saying that in 'the West' the eye is privileged among the senses, while 'elsewhere' smell or taste gets more attention (see e.g. Howes 1991). Others insist that in the way the body appreciates, the input from various sense organs flows over into each other; that humans are 'multisensorial'. What is striking in our tomato-materials, however, is how many different things people tell about the relation between what may be seen and what may be tasted. For a play on and with the senses—notably those of touch and taste—see Mann et al. 2011.

## Relations

These five registers do not simply jump from our materials. Instead, through careful analysis we have distilled them, like a chemist distils chemical components from a mixture. We used simple distillation techniques: if ‘money’ was mentioned in our materials a few times, we started using a colour pencil to colour all sentences with an allusions to money with a single colour. And if money was red, handling became blue, historical time pink, naturalness green and allusions to the senses yellow.<sup>14</sup> This technique allowed us to first assemble sentences that mobilise just a single register of valuing. So far we presented you with such single-coloured ones. However, they formed only a small part of our materials. More often sentences ended up having a few colours as various registers were used in combination. This begged the question how the registers relate. Do they add together, are there situations in which tomatoes easily combine different kinds of goodness? This happens. But sometimes, different registers of valuing pull and push in different directions. Then one register may be prioritised over the others, or a compromise may be crafted. Compromises between different kinds of goodness, in their turn, come in variants. Here, rather than seeking to present you with a comprehensive overview, we will offer you an open-ended list of telling examples.<sup>15</sup>

The most striking tension between registers, mentioned time and again, is that between monetary and sensual valuing. A grower: “People may say they want quality but what are they willing to pay?” The implied answer is: not a lot. That this calls for compromise is something our informants mention in so many words. Another grower: “Taste is not counted by the kilo, but we are paid by the kilo. So you have to compromise and opt for a stock with a reasonable taste, that is still good when it comes to kilos.” Consumers who buy and eat tomatoes also make compromises between money and taste. Then they buy something that is ‘a bit expensive’, but not ‘excessively so’, so as to eat something that may not be ‘stunning’ but is ‘good enough’. But looking for the ‘in between’ is not the only way of seeking a compromise. It is also possible to shift from one register to another according to the circumstances. As a consumer puts it: “If I put a tomato in my pasta sauce, I tend to buy a cheap one, because it disappears into a pan anyway. But if, for instance, if I make a salad, then I buy a beautifully red one, preferably one that looks tasty. Then I

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<sup>14</sup> In a first round we used more colours, but those that appeared only rarely were later left aside. It also took us some time to decide to group ‘the senses’ together, rather than using either a term like ‘quality’ or splitting between looks and taste. For other purposes other ways of clustering might obviously make more sense.

<sup>15</sup> For an inspiring exploration of the ‘complexity’ implied in another case, that of valuing a road planned in the Pyrenees, see Thévenot 2002a.

really enjoy that, that its looks are so appealing.” Here in one context, that of making sauce, money wins while in the other, making salad, sensual qualities count for most and tomatoes have to *look tasty*. But while the tension between costs and sensual qualities may be solved by a compromise (an in between) or distributed over situations (here this, there the other), sometimes one value overrules the other. Here is a consumer talking about the previously mentioned *Tasty Tom*: “Yes, I know them. I had them a few times when eating with a friend. They are very tasty. Really very tasty. But I never buy them myself. I think they are too expensive.”<sup>16</sup>

Sensual qualities may also be in tension with ease of handling. A good example here is the use of fridges or cooling trucks. It is possible to protect tomatoes and transport them cooled down, in the hope that in this way they do not perish so quickly. A seller explains that ‘in the old days’, when tomatoes were hard and had a lower sugar content, this wasn’t such a bad idea. But now it is. “You want to save them at a moderate temperature. Ideal is sixteen degrees. In a fridge tomatoes do not rot, but they go sour. The taste really deteriorates.” One of the professional cooks we talked with is vehement about this. He buys his tomatoes directly from trusted organic growers, driving up from his city restaurant to their farms just to avoid all cooling. “I have a greengrocer who delivers right here, to my door. But he carries all his vegetables cooled. And for some products this is fine, but, let me tell you, a cooled tomato is a disgrace. If we have inspectors coming in, when they see a tomato that hasn’t been cooled, they want to taste it. Why? Because they don’t know any more what it is to eat uncooled tomatoes.” However fierce this particular expert may be, many others have no inkling. A consumer tells that she saves her tomatoes in the fridge. Why? The very question surprises here. “Why I put them in the fridge? I guess because that’s what my mother did. Is it bad?” When the interviewer reveals that saving tomatoes in a fridge might be bad for their taste, she looks astonished. In practice, then, the tension between cool ease of handling and warm care for tasting, hardly leads to compromises. Instead, in some places cooling is a matter of course. While elsewhere it gets rejected as a disgrace.<sup>17</sup>

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<sup>16</sup> As this kind of consumer is widespread, growers have so far not been able to establish an ‘economy of qualities’ (Callon, Méadel, and Rabeharisoa 2002) where a higher price is accepted for higher quality, in connection with suitable, shared techniques for recognising the relevant ‘qualities’.

<sup>17</sup> Interestingly, among the case studies that helped to inspire Boltanski and Thévenot, there is one that is about the question of the tension between quality and fridges as well. It regards camembert and the question whether this may still be called ‘traditional’ when it is put in a fridge to last longer (Boisard and Letablier 1989).

The sensual quality of tastiness may also either go together or clash with the good of being natural. In some places tomatoes from what is called ‘mechanical production sites’ are discarded because they lack both taste and naturalness. A high end cook: “Some tomatoes are mass produced, on a scale that is gigantic. Go to Malaga, you will find gigantic farms run by Dutch owners, tomato *plantations*. And they produce for [names of down-market supermarkets]. Very interesting if you want to see something mechanical. *Bonkers*. No taste whatsoever. Just inedible.” But this is not to say that what gets positively valued in the register of naturalness and what comes out as good in a sensual register always go together. There may also be a clash. A grower: “The requirement for organic is: do not use potassium. But if you add potassium, tomatoes stay smaller. The sugar content goes up. Smaller tomatoes just taste better. For all kinds of reasons, organically grown veggies often taste great, but when it comes to tomatoes, they just do not. Ruling out potassium is a sad mistake.” Thus, here we hit upon an irredeemable tension. A tomato that is ‘natural’ is not as ‘tasty’ as one that has been supplied with potassium, while a ‘sweet’ one, that is tasty thanks to the addition of potassium, is—under the current regulatory regime—not ‘natural’.

## Care

In the practices that our informants talk about, valuing is not a matter of casting judgements after the facts. Instead, it is part and parcel of a variety of activities that experts engage in to care for their tomatoes.<sup>18</sup> We probed for this. At some point during his interviews FH would ask, ‘If I would have to do your job [run your household] next week what should I do?’<sup>19</sup> In this way we learned a lot about activities meant to *achieve* good tomatoes. For the qualities of tomatoes are not given, they may be tinkered with. A cook: “With a bad product, if you handle it with love, you may still improve that product.” That qualities are not fixed characteristics of the object qualified does not imply that they depend on the eyes of the beholder. Instead they rather depend on the active contributions of the experts, be they developers, growers, processors, buyers, cooks or eaters. There is a lot to be done. Growing tomatoes is an obvious case in point: it involves all but

<sup>18</sup> In this sense tomato experts resemble people involved in health care, who, likewise, are not primarily invested in judging, but rather seek to improve a situation—whatever ‘improve’ may locally mean—see e.g. Struhkamp, Mol, and Swierstra 2009. Shifting from *health care* to *tomato care* helps to strengthen an understanding of *care* as not so much a noun that designates a (social) domain, but rather a verb that signals an range of activities. See also Mol 2008a and the contributions to Mol, Moser, and Pols 2010. There is a resonance here as well with the notion ‘matters of concern’, see Latour 2004.

<sup>19</sup> Telling others what they should/might do to acquire something that ‘good’, is also a rich textual genre—in case of growing, processing tomatoes, see e.g. Gould 1992.

endless work. There is pruning. “The bunches, these we cut down to six tomatoes. If you do nothing you may get eight, nine, ten tomatoes. We prune all of them down to six, then you get good quality.” There is watering. “We put the plant in a drain, forty centimetres above the ground. You may water to a schedule, or adapt to how much light there is, or use a balance for if a plant evaporates a lot it loses weight, so you may add water according to weight loss.” There is the protection against parasites. “We have a biological way of countering bugs. As white flies deposit their eggs in the plant, we add ichneumon. These deposit their eggs in the eggs of the white flies, so that what comes out of such an egg is not a white fly, but an ichneumon.” And so on, the list could easily be extended.<sup>20</sup>

As they work with their tomatoes our informants seek to *make* them *good*. Thus valuing does not just have to do with the question how to appreciate reality as it is, but also with the question what is appropriate to do to improve things. Take processing. In a register where naturalness is celebrated, cooking, condensing and conserving do not qualify as improvements, as they ‘go against nature’. However, in a monetary register processing not only suits producers (who may earn a lot of money on this market) but also consumers (who tend to pay less for canned tomatoes than for similar amounts of fresh ones). In the register of handling, processing entails an improvement again as well, as it keeps tomatoes edible—still good to eat—long after the moment when, left to their own devices, they would have rotted. Processing may also make tomatoes easier to handle for a cook in an everyday kitchen, where opening a can and pouring the contents into a soup is a lot less work than peeling. Here is one of them: “To take the skin of a tomato, that’s not my favourite chore. It’s a nasty work, really. I only do it very rarely, you know. But, well, if I make a soup, this is a problem. For soup is simply not nice with wisps of skin in it. Argh. So then I peel. Or I cheat and use a can.” The potential disadvantage, in the kitchen, of using a can, lies in the register of the senses. Soup from canned tomatoes may be less enticing than soup from freshly peeled ones. But it doesn’t need to be. “When I make soup I use lots of fresh tomatoes. But then I add a can of tomato paste. There is so much taste in any single one of them!”

Valuing tomatoes, then, is embedded in activities that have other names—growing, cooking, eating, etc. And compromises between clashing values are not so much found (argumentatively) as well as

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<sup>20</sup> The list of the work involved would also get a lot longer if more experts would be interviewed, such as those who do the manual work (without also being in charge) on fields, in warehouses or in factories. That we have not included such informants is among the many limits of the present study; but see e.g. Barndt 2002. Another one is that we confined our investigations to conversations with informants in the Netherlands while tomatoes travel widely—and what they are or what is good or bad about them, varies along the way. See for this e.g. Rosset, Rice, and Watts 1999.

crafted (materially). They depend on the practical possibilities of attuning one's work to different kinds of good at the same time. Take the industrial processor involved in making ketchup. It hopes for tomatoes that are easy to handle in the production phase (withstand mechanical harvesting and transport); and that lead on to a ketchup easy to handle at the dinner table (flowing out of the bottle neither too fast nor too slow). This ketchup also better be appealing to the senses (it should have the 'right' colour, texture and taste). If such a tomato does not yet exist, it has to be invented. This, then, is what the Heinz company has done—and it has patented the seeds. The relevant experts among our informants seem proud of it: "A tomato has to have a high viscosity. Therefore, if you squeeze in a Heinz tomato only a bit of juice will come out. It is very beefy, so that you can make a good, thick ketchup with it. It also has a high sugar content, for the sweeter the tomato itself, the less sweetener you have to add. And it has to be sturdy, too, for you have to be able to transport it." As tomatoes are not given, good tomatoes are not given either. And in the process of developing them, divergent qualities and requirements may be tinkered with in combination.<sup>21</sup>

What the case of tomatoes helps to bring out, is that such tinkering is not a matter of taking control. For tomatoes may be adaptable, but only within limits. What exactly their limits are, is not obvious from the start. It can only be experimentally discovered in the process of tinkering. You try pruning away a few branches and find that this increases the taste of the tomatoes on the branches that remain. You make soup without thinking to peel and find that you do not like the bits of skin in it. You want to present your tomatoes in an attractive way for the customers of the supermarket, but you have learned from experience that you better respect their fragility. A seller: "You have to present them in the box in which they arrive. You should never take a load of tomatoes out of one box and put them in another. Of course if there are just a few left, you may pile these on top of the next lot, in the next box. But you should not start handling a whole load of them, picking them up and putting them down, let alone pouring them from one box into another. Some people do, but it is bad for their quality." The fragility of tomatoes calls for the attentiveness of those who work with them. But however hard you try, working to improve tomatoes

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<sup>21</sup> While there is a lot of talk about *healthy* food these days, to our surprise our analysis did not bring out 'healthy' as a relevant register of valuing. At some point we wondered whether we had missed something. When searching for it, we found off handed remarks about tomatoes being healthy, 'of course'. Gradually it dawned on us that if tomatoes are 'of course' healthy, this may become an uninteresting mode of valuing as there are no bad (unhealthy) tomatoes from which good (healthy) ones might differentiate. And as informants do not feel they have to *do* something to *make* tomatoes healthy. They just are. Some modes of preparation may be called *more healthy* than others—but among our informants that is the end of it.

does not necessarily lead on to success. It is not a matter of taking control and imposing an ideal, but of caringly playing with possibilities, while staying attentive to what is good, not just *about*, but also *for* your tomatoes. A grower: “Well, yes, we try to make them happy! Water, light, nutrients, the lot of it. We give them what they want.” If only you take proper care of your tomatoes, they care back.<sup>22</sup> This is not a symmetrical kind of care. Tomatoes owe their short lives to human beings, but then they get harvested, transported, sold, cooked up and eaten. Our informants, in their turn, owe (a part of) their income to tomatoes; or they thrive on them physically, as they enjoy, digest, absorb and metabolise tomatoes.<sup>23</sup> And who in this relation has the most to give? Here’s a cook: “When a tomato is good, you don’t have to do much. Just a drop of *balsamic*. Or olive oil, pepper and salt. And then you are in heaven.”

## Conclusion

How good this is, being in heaven, might need a case study of its own. For now the question is what we have learned about valuing from the present case, that of *good tomatoes*. For while some scholars argue that the field of valuation studies should work towards a coherent theory, here we have taken another route. Throughout this text, while laying out the case of ‘good tomatoes’, we have carefully abstained from firmly defining our crucial terms and we have no ambition whatsoever to legislate how others should be using them.<sup>24</sup> Opening up a research field, we contend, is not well served by fixing a collective language. This is not to say that cases should be studied in isolation from each other and engaged in their own corner. Instead, a good case study builds on and resonates with earlier ones while adding its own specificities to the collection. In this way each new case may help to expand and refine our collective abilities to recognise what *may* be the case in this or that site or situation. If as a research collective we abstain from fusing our different cases into a common scheme, but hold them in tension, each new case will better equip us to study *valuing* (valuation, evaluation, valorisation, etc.) in the next site or

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<sup>22</sup> Our analysis here is inspired by that of Harbers 2010, who mobilised a ‘care’ trope for analysing relations on the farm between farmers and animals—where farmers feed, water and otherwise care for the animals and the animals, by providing the farmers with a living, care back. In this, tomatoes, when it comes to it, are not so different. See also the wonderful chapter in Pollan 2002, where he analyses apple-growing from the perspective of the active apples.

<sup>23</sup> Tomatoes cross bodily boundaries and come to be absorbed, see also Abrahamsson and Simpson 2011.

<sup>24</sup> As to what the field should do, or might want to become, see the insightful overview of the members of the editorial and advisory boards of Valuation Studies (Kjellberg, Mallard et al. 2013).

situation—while remaining open to what so far has not been noticed. For what is irrelevant in one site or situation, may be striking in another. And what has been remarked upon in one case is subsequently a lot easier to recognise once more. So what as a collective might we learn from the case of good tomatoes?

First, this case resists the simplification of a two or three dimensional scheme. Valuing tomatoes is hardly formalised and intersections and interferences abound. We brought out various registers of valuing, to do with money; handling; historical time; naturalness; and sensual appeal. But while each of these registers singles out a particular concern, what is *good* in relation to this concern varies between experts (sellers want to earn money, while buyers, by and large, do not like spending it)<sup>25</sup>; and it varies between situations (while juicy tomatoes are good in a salad, firm ones are better for sandwiches). What is more, while the registers are a unity in one context (sensual qualities may jointly clash with monetary costs), elsewhere there are clashes within a register (for instance between the sensual qualities of looks and those of taste). Clashing ‘goods’ may side-line or overrule each other, or become fused into compromise (*here* price overrules taste; *there* taste overrules price; while elsewhere the search is for a *middle way*). Jointly these complexities imply that it is impossible to fit the case of ‘good tomatoes’ into a nice schematic overview. Time and again there are new shifts, contrasts and surprises. Hence, while above we argued against formulating an encompassing theory of valuing that seeks to be valid between and beyond cases, this particular case suggest that it may even be difficult or impossible to draw coherent conclusions about valuing in a single case, such as that of ‘good tomatoes’. The lesson is that insights do not need to be schematised. Our informants, at least, never miss an inclusive formal scheme when in practice they value tomatoes.

Second, this case offers lessons about the performativity of valuing. So far, a lot of research into valuing has been informed by cases involving distant judgements. The justifications that Boltanski and Thévenot analysed took place before or after the act. The empirical studies in the fascinating book that accompanied their theoretical volume typically reported on meetings in which people deliberated about things being done outside the meeting room.<sup>26</sup> A lot of

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<sup>25</sup> The ‘by and large’ is a caveat that indexes that this is not always the case. One of our colleagues writes in his comments on an earlier draft that when he wants to treat himself, he buys expensive tomatoes, looking forward to their great taste. But he suggests that maybe that moment of spending extra money gives him more pleasure than the actual taste.

<sup>26</sup> Above we already mentioned the fabulous case of ‘good camembert’. Another memorable one was done in a local bank and investigated on which grounds people might get, or not get, a bank loan. However, it was a result of sitting in meetings again. See Boltanski and Thévenot 1989.



philosophical work on normativity implicitly reflects on the normative tasks of outsiders such as judges who qualify other people's actions while seated on an elevated platform in clothing that is visibly distinct. The favourite model of classic cultural sociology is the art critic who may either praise or discard a painting, but all the while keeps his hands on his backs. If he were to take out a black marker and add a few lines for additional contrast, the museum guards would intervene. In contrast, the experts whom we interviewed all have hands-on relations to their tomatoes. Their assessments and their improvements go together. In their practices valuing is not an exclusively judgemental, nor a separate activity, but mixes with developing, growing, processing, selling, cooking, cutting and eating. Hence, not just seed developers strive after 'good tomatoes', but so, too, do growers, processors, sellers (do not stock them too high!) cooks (do not keep them in the fridge! Add balsamico!) and even eaters (if only by actively attending). And as realising 'good tomatoes' is spread out, this case suggests that judging, improving, appreciating, and lots of other activities as well, may all be relevant for what it is to value.

Third, the activities meant to make tomatoes good do not offer control. Most of the mundane practices where tomatoes are being improved have not been tamed to fit standards. They are populated by all kinds of obdurate factors and actors (from soil, to trucks, to knives and everything in between) and whenever something happens, all of these respond in their own different ways. Sometimes they are predictable, but often they are not. Hence we called the work that our informants invest in achieving 'good tomatoes' *care*. The term 'care' suggests enduring work that seeks improvement but does not necessarily succeed. It also implies that the object of improvement should not be overpowered, but respected. Respect does not depend on leaving things and situations as they are. Instead it is a matter of calling on strengths and tinkering with weaknesses. The implication is that not just any goal can be set. Instead the values targeted, the objects being valued and valuing subjects come to gradually co-constitute each other. Hence, traits like viscosity and sugar content cannot all by themselves mark the 'value' of tomatoes. They intertwine with such things as the susceptibility of bumblebees to pesticides, the latest legislation about whether or not adding potassium is 'natural', or the vinegar at hand in one's kitchen. All these and many more materialities and practicalities inform and co-shape what valuing tomatoes comes to be in practice. Here is the lesson: valuing does not depend on fixed variables.

The fourth and final lesson of our case has to do with eating. So far we have left this in the shadow, but eating forms the soul of the case of

good tomatoes.<sup>27</sup> For a start, it is one of the many performative formats that valuing may take. For whether it is done attentively and in savouring mode, or hastily, out of routine or hunger, eating enacts the tomatoes being eaten as *good to eat*—rather than as inedible or waste. What is more, eating also forms the horizon of all the other tomato-activities in which our informants engage. It is, after all, because they are ‘good to eat’ that tomatoes are worth growing, transporting, buying, cooking or caring for in other ways. However many modes of valuing there are, and whatever the clashes and compromises between them, they would not occur if tomatoes were not *also* good to eat. But while the activity of eating crucially values tomatoes in a positive way, it also destroys them. After lunch the shiny red, juicy exemplar that looked so attractive in your salad, is no longer to be seen. Its taste may rapidly vanish or linger for some while, but one way or another your enjoyment doesn’t last. You may digest and absorb the components of your tomato and these may be put to work inside your body allowing you to smile, walk or read an article, but there is no longer a distinguishable ‘tomato’ left. As eaters chew, swallow and digest tomatoes, they perform them as good, but also finish them off. Hence, in the case of tomatoes valuing does not only go together with caring (improving, adding worth), but also with destroying (killing, metabolising, decomposing). This is an important lesson that the specificities of our case bring home. Exploring ‘good tomatoes’ is not just a contribution to valuation studies, but also suggests that devaluation studies are equally relevant to do.

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<sup>27</sup> ‘Eating’ brings with it crucial shifts to various theoretical concerns. See for issues of relating, Bertoni 2013; for the issues to do with economic demand versus food need, Yates-Doerr 2012; and for subjectivity, Mol 2008b.

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Research note

## Regulating Crisis: A Retrospective Ethnography of the 1982 Latin American Debt Crisis at the New York Federal Reserve Bank

Julia Elyachar

### Abstract

Since the financial crisis of 2008, the term “crisis” has proliferated as a folk concept, and yet remained largely unexamined as an analytic concept. In this essay, I draw on my experience as a research assistant and research analyst at the Federal Reserve Bank of New York, during what would come to be called the Latin American debt crisis, to contribute to rethinking of financial crisis. Putting aside the assumption that we know a priori the meaning of crisis, I bring into view the material devices, temporalities and, in the words of Bronislaw Malinowski, the “imponderabilia of daily life” entailed by perceiving and regulating crisis. Rather than high-level officials of the Federal Reserve Bank, the essay focuses on research assistants, junior economists, midlevel officials, and also mainframe computers with their glitches and bugs. The essay shows how local, historically specific processes of generating knowledge in a 1980s office of the Federal Reserve Bank were part of grand projects of social reinvention, in which even the lowliest research assistant helped shape a narrative of crisis.

Key words: crisis; finance; regulation; Federal Reserve; ethnography; Latin American Debt Crisis

In her book *Anti-Crisis*, Janet Roitman demonstrates how much we have come to rely on the term “crisis” to make sense of the world (Roitman 2013). Crisis is intimately linked with valuation—or better yet, revaluation. It usually refers to a moment of rupture, an event in

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which “true” value emerges from the shrouds of false, speculative value (Roitman 2013). Such a view has become increasingly untenable. From an exceptional event, crisis became part of the “new normal” (el-Erian 2008). It proliferates as a folk concept, but remains in the background unexamined as an analytic concept, due to its foundational place in Western thought (Roitman 2013). How, in fact, do we know that we are in a crisis? More specifically, how do financial regulators perceive crisis and what does it mean to regulate crisis?<sup>1</sup> In this essay, I reflect on these questions by drawing on my experience as a research assistant and research analyst at the Federal Reserve Bank of New York, during what would come to be known as the Latin American Debt Crisis. It could be called a memoir, in that it refers to a time past that I am remembering now, but for reasons I explain below, I call it a retrospective ethnography (Maurer 2012).

### **Memoir of a Research Assistant**

I was majoring in economics at Barnard College in 1982 when I went to work at the Federal Reserve Bank of New York. I put on stockings, carried a briefcase, and entered the world of bank regulation. I lived in downtown Manhattan at the time and walked to work through Soho—which was still an artists’ postindustrial neighborhood—and on to the financial district, which is now a high-end residential neighborhood but then was completely empty after 5:00 p.m. That New York is gone. From my lowly vantage point at the Fed, I saw a particular era of finance disappear as well. Today, we know that 1982 marked the beginning of the end of Glass-Steagall, and the beginning of what many consider an era of speculative finance.<sup>2</sup> It was the beginning of the end of a strange certainty, documented by scholarship (Chinn and Frieden 2011; Frieden 1987; Reinhart and Rogoff 2009) and commonly accepted among my peers, that loans to sovereigns from money center banks would be, unlike direct foreign investment, risk-free.

Thirty years later, all this seems impossibly long ago. My time at the Fed seems like a “deep history” of financial crisis (Shryock and Smail 2012) in which methods of critical financial studies do not apply. At the same time, as anthropologist Douglas Holmes has noted, I could walk into the NY Fed today and find pretty much the same

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<sup>1</sup> For ethnographies of financial regulation and regulators, see Holmes (2013), Miyazaki (2012), and Riles (2010) and for analysis by a financial journalist trained as an anthropologist, see Tett (2009).

<sup>2</sup> The Glass-Steagall Act, or the Banking Act of 1933, separated commercial from investment banking and created the FDIC, or Federal Deposit Insurance Corporation. Many observers see the repeal of Glass-Steagall, as it is usually called in the United States, as a first step leading to the financial crisis of 2008.



atmosphere, if better computers (Holmes, email communication 2012). One financial “crisis” has tumbled into another ever since.

My claim to fame as a bank regulator is small. Of a key speech given by former Federal Reserve chairman Paul Volcker to Congress about the debt crisis in 1982, I wrote two sentences.<sup>3</sup> Those sentences were originally part of a memo I wrote for my manager and her superiors at the NY Fed. The memo made its way up levels of the institutional bureaucracy of the NY Fed, and then the Federal Reserve Bank, in numerous revisions and incorporations with other memos. I took part in other research projects concerning the elimination of Glass-Steagall, the rise of options, and the rise of what was then called “computerized banking,” ATMs, and smartcards. After the 2008 financial crisis, I became fascinated by the way I kept hearing about the 1982 Latin American Debt Crisis. It floated in the air, as a faraway starting point for the financial crisis of 2008. I read nothing that conveyed a sense of what it was like to live through that crisis *in situ*, from an ethnographic perspective. Since there was no such thing as the anthropology of finance in 1982, and thus no ethnographic data about finance from that decade, it seemed a worthwhile exercise to return to my memories, notes, and writings of the time. There I found recorded some of the “imponderabilia of everyday life,” to use Bronislaw Malinowski’s classic term, that ethnography is so good at capturing and which can help open up that black box of “crisis.”

### On the Street and in the Fed

Working at the Fed was my first ethnographic experience, though I didn’t have that training or conceptual language at the time. Much of what stays with me is the sensory experience of the Fed and NYC at the beginning of the 1980s. As a native New Yorker, I lived the financial revolution through changes on the streets of downtown New York as well. I started working at the Fed while finishing up my BA in economics and figuring out what to do next. A friend had suggested working at the Fed. So one day I walked from home to the Fed, with my resume in my hand. The employment office arranged an immediate

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<sup>3</sup> The testimony is mentioned in a fascinating interview with Paul Volcker conducted by PBS (Public Broadcasting Service) in 2000. One section of the interview discusses the lessons learned from the Latin American Debt Crisis: “The lasting impact was disappointingly little in one respect: We went from that crisis into some other banking crises around the world. The banks didn’t exactly repeat the experience of Latin America, but they repeated a very similar experience elsewhere” (PBS 2000). Volcker also makes the interesting comment that the sense of crisis at the time pushed Mexico away from its protectionist policies and into NAFTA (the North American Free Trade Agreement): “the sense of crisis and the actuality of crisis pushed those countries away from their old controlled import substitution, isolation policies [and] into the world. It could have gone the other way, but it didn’t.” (PBS 2000)

interview with one of the economists and a manager of a research department. Half an hour later, walking in the door at home, I found the phone ringing with a job offer.

The NY Fed is housed in a massive squat stone building built as the fortress it is: an important part of the US gold reserves are stored there. Many floors of the main Fed building are underground. This was long before September 11, 2001. Once you flashed an ID, you could walk right in. There was no metal detector. The Fed still allowed public tours in the old building that included viewings of the gold reserves. Every day I would pass by the lines of tourists waiting to go in. Like a typical New Yorker, I never made the time to go on the tour. You could walk freely anywhere in the Financial District in those days, right up to the stairs of the Stock Exchange or anywhere else in the neighborhood. That remained true until after September 11.

I worked across the street, on Maiden Lane. My office was on the 33<sup>rd</sup> floor. As I approached the building, I would take my ID from my bag, and put it around my neck, flash it at the guard, and go up to my floor. Turning right from the elevators, I would enjoy the view out expansive windows facing south to the southern tip of Manhattan. Two small rooms to the left housed terminals for the mainframe computer. We would walk, paper in hand, to that room whenever we had to write or run code for our economists. One full-time computer programmer worked in there, on staff for the department. At the other end of the floor were the offices of the department manager, who had a PhD in economics, and her counterpart, who was a career bureaucrat at the Fed. Secretaries had their desks right outside the offices of the bank officers for whom they worked. One secretary was shared among three economists. There was a clear ethnic division of labor: The secretaries were African-American or Latina, except for the manager's secretary, who was white. The full-time programmer was from the Philippines. Economists and research assistants were white: half female and half male.

The organization of space reflected this hierarchy. Secretaries worked in open space. They had pictures of their kids on the walls, and neat, organized desks. Research assistants and research analysts worked in cubicles in the middle of the floor, with a modicum of privacy. No one had children: on the walls of the cubicles were postcards from friends, artwork, or nothing at all. The economists had their own offices with closed doors. But unlike the walls of the managers' offices, the walls of the economists' offices, facing the center of the room, were made of glass.

We research assistants were recent graduates from college with BAs, mainly but not only in economics. Many of us had gone to Ivy League schools, but not all; training programs at the investment banks paid more and attracted many of the Ivy League job candidates to the kind of training programs in investment banks studied

ethnographically by Karen Ho ten years later (2009). That was the case even before the financial boom of the 1990s. My first weeks at the Fed were spent taking in-house training courses in finance, accounting, and computer programming. I learned to program in the Fed's proprietary computer language. The instructor taught us more than programming. When we were working on deadline and needed to produce data in tense situations, he told us repeatedly that we needed to stay calm, focus, and slow down. When you are in a hurry, slow down! In my first months at the Fed, we were never in a hurry. But I would use those lessons he taught us when crisis hit.

### **Making Knowledge, Numbers, and Policy at the Fed**

My department conducted research on issues related to domestic banking regulation. International bank regulation was studied elsewhere. This division of knowledge reflected an assumption that domestic and international finance could be separated—which the Latin American Debt Crisis showed was untenable. When I started work, my department was a relative backwater. Economists found freedom in this status. Each research assistant worked for one or two economists.

I was originally hired to work for an economist focusing on risk. His research seemed very theoretical to me at the time. My job felt like an extension of school. I read articles related to his topic, asked lots of questions, and wrote simple computer programs for empirical tests of his theories. Things that took me a day or two of work to program could today be calculated in an instant. Another economist in our department was working on derivatives. I didn't work for her but struggled to understand what she was doing. Her research seemed incredibly abstract to me. And yet, it was central to issues that would go mainstream in the 1990s and 2000s. She was among those starting to think systematically about regulating the derivatives industry and how to integrate derivatives into the overall system of bank regulation.<sup>4</sup> I talked sometimes to other economists at the Fed as well. Until Mexico threatened default, life in our department was slow. We worked regular hours. We could leave early if we had an appointment. We reported, normally, only to "our" economist. Chinatown was a few blocks away. Sometimes I would meet a friend there for lunch. We had time to chat in each other's offices. I felt peripheral to the primary work of the Fed, which to me seemed to go on across the street in the main building.

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<sup>4</sup> For a fascinating account of regulation (and non-regulation) of derivatives, see Tett (2009).

### **Foreign Exchange at Night**

My friends Ed and John worked in Foreign Exchange across the street in the basement of the main building of the Fed. It was dark and had none of the niceties of our floor. We had met at training programs the first weeks of my employment. Where they worked, there were no secretaries, no pictures of kids, and no views. The mood of a guys' dorm room prevailed. Ed and John were computer geeks. They worked on their own, for all I could see. I never saw a supervisor in their office—although I knew that they had to produce data quickly and on deadline. They managed programs that charted currency transfers between the US and other countries. They worked on terminals of the Fed's mainframe computers. The computer was slow during the day. So they would come in around noon, and stay late at night, when the Fed's mainframe computers were faster. Their schedules were oriented around the downtime of the mainframe rather than the strictures of bureaucratic order.

At the end of my working day, we would order pizza, and sit around for hours as Ed and John worked. They would sit on their chairs by their terminals, waiting out response time from their input into the computers, which got faster as the evening wore on. I would shake off my high heels, move out of formal office mode, and watch as they input data and messed around with programs to try to get the balance of payments right. I had come out of my BA studies in economics, political economy, and finance thinking of foreign exchange balances as “real”—as reflecting underlying values in a transparent fashion. But some days the computers would fail, bugs in the programs would crop up, and those solid numbers about the US and its foreign exchange accounts began to look like a fiction. This was really dislocating for me.

Behind the apparently monolithic “Federal Reserve Bank,” as I had thought of it, were a bunch of kids and of older guys waiting for retirement stumbling their way through crashes, mess-ups, and yet somehow getting through. There was always a program crashing, data lost, an emergency to be fixed, a moment in which that lesson of our computer teacher—to slow down when in a hurry—would be put to good use. In this sense, “crisis” was an everyday experience at the Fed across the street. It came to seem amazing to me that anything functioned at all; the image I had held of “The Central Bank” started to seem a façade. I had my first ethnographic experience of bureaucracy and the state.

## Remembering Crisis

How do we know when crisis has begun? For me, the Latin American debt crisis began with the clicking of my manager's heels down the length of the open floor of our department, a memo in her hand. Her steps were faster than usual, the sound of her heels sharper. The Latin American banking crisis had been brewing for a while across the street at the main building of the Fed, as something that was "international" in character. That day, it migrated over to the "domestic" side of the bank. I was standing with some colleagues leaning on the back of a cubicle, chatting about something or other. Joan said that she needed someone to help her run data regarding Mexico and bank exposure. I jumped at the chance to help and offered to stay late to do so.

Unlike my colleagues, I knew this issue was important. My knowledge was not from my training in economics, as good and as heterodox as that had been. Rather, my intuition grew out of my involvement with left politics in NYC, including solidarity movements with Latin America, and from my engagement in the NY Marxist School (later the Brecht Forum). It was there that I met and listened to Cheryl Payer, who wrote the prescient book *The Debt Trap* (Payer 1974). I followed the Spanish language news closely. I had access to a clearer picture of what was going on in Latin America before it erupted into financial crisis impacting on the United States as well. In the years before NGOs performed the task of rendering tacit and internal knowledge accessible to outsiders and policy makers the world round, the left inadvertently served as a transmission channel for reliable analysis of politics and political economy (including finance) that was useful for many players besides the solidarity movement.

As a manager, Joan did not have her "own" research assistant. She managed the economists. Only through them did she have contact with research assistants. But in this moment of crisis, the ordinary chain of authority broke down. And the crisis showed faults in many of our models, assumptions, and categories of data. Data were not in place to test the implications for the US banking system of a default on sovereign debt in Latin America. It was not an issue of concern. To fix the gaps in knowledge, the manual labor of a research assistant was needed.

My first task was to write a simple computer program to show the impact on the large money center banks' capital if Mexico defaulted on its interest payments. I decided to write up a memo interpreting my findings and their implications as well. In the early 1980s, all bank data was input by hand and stored in the Fed's mainframe computer. Code had to be written to look at different possible scenarios of default. Over the next few days, I ran a few other scenarios, including the possibility of default on principal payments as well as payments on interest, and what would happen if there were contagion and other

countries defaulted as well. (Of course, work that took me a whole day would today be carried out in moments.) I mapped out exposure of the money center banks to various Latin American countries.

At an early stage of the crisis, I regularly went through printouts of confidential bank data available to the Fed regarding the exposure levels of individual money center banks to sovereign country debt (and total exposure) in various Latin American countries. I would then calculate how much of the sums that banks had counted as bank capital was in fact potentially bad debt exposure to Mexico and other Latin American countries. Data for the exposure of individual banks was given to me as printed pages with the words “highly confidential” on top. More macro data about banks were rated at an intermediate level of secrecy. I would keep these papers in a drawer in my desk in my cubicle. Some of the data I would input by hand into the programs I wrote to try to get a better picture of actual bank capital in the large money center banks. In short, I conducted a one-person stress test on the money center banks.

Help in the programming came from one of the department’s programmers, a Filipino woman with a BA in computer science who wore very high heels and lots of makeup, and who was very sharp and efficient. Her closest friend was my manager’s secretary. They shopped together at Filene’s Basement on Chambers Street during lunch hour and solved all of our computer or technical problems with ease.

I began to research memos on different aspects of the debt crisis and its regulatory implications. For one memo, I researched and summarized the range of possible legal and regulatory responses to the bank crisis for the Fed. I wrote some others that I do not recall. I do remember researching various approaches to the regulation of sovereign debt, and different approaches to calculating bank capital. By that time, I was working for my manager full time.

Joan had been drawn into the highest levels of discussion at the NY Fed and the Federal Reserve about how to deal with the crisis. On our floor, this was reflected in a changed pace and patterning of physical movement around the floor. Before the crisis people walked slowly and regularly stopped to chat. That changed. People moved more quickly. Joan began to disappear across the street for long periods of time. The door to her office or the conference room would close more often. As a research assistant, I was not part of those meetings. But the memos I wrote, and the data I generated, made their way across the table to her peers in her office and across the street to higher levels of the NY Fed and the Federal Reserve.

## Outcomes of the Crisis

According to Paul Volcker, outcomes of the Latin American Debt Crisis were limited. History repeated itself all too soon (PBS 2000). Outcomes within our department were more prosaic. I was promoted to Research Analyst. My manager left for a promotion. Life on our floor became boring, even as our work had gained prestige. Work slowed down. I missed crisis. My cohort would all soon depart for the next adventure: MBAs for some, PhDs for others. None of us would be career employees at the Fed. I don't know what happened with the geek workarounds in foreign exchange that my friends had engaged in to deal with regular bugs in programs and other mishaps. But I could not help but think of them as the LIBOR (London Interbank Offered Rate) scandal erupted in the summer of 2012. Explanations of how it all started with some data mismatches made sense to me.

Toward the end of my tenure, a senior colleague told me of the Brady Plan that "solved" the Latin American Debt Crisis in 1982. This entailed a creative innovation: securitizing bad sovereign debt. Such an outcome was shocking to me. It seemed a scam or a joke. Within the organization, this innovation spurred research, and further use of this new regulatory instrument. By 2012, the notion of securitizing sovereign debt had been normalized. Regulatory workarounds in 1982 were but part of a toolkit in 2012 to deal with the EU debt crisis.

The research I took part in concerning new models of risk in banking and finance was also important in crises to come over the next 30 years. This was certainly the case with our research on Glass-Steagall and its elimination. Neoliberal think tanks were pushing at the time for the deregulation of the Savings and Loan industry and the elimination of Glass-Steagall. I knew nothing about this. Who in the world would consider overturning Glass-Steagall? While the notion was pure theory, as one of our economists said when I asked him about why he was working on such an idea, we had to explore it. Of course, articles on elimination of Glass-Steagall were being published at the time by the Cato Institute journal, *Regulation: The Cato Review of Business and Government*, but I knew nothing about them. The Fed first began to pull back some of the provisions of Glass-Steagall in the mid-1980s, soon after I left the Fed. Our input into memos for managers and vice-presidents of the Federal Reserve helped create scientific legitimacy for the radical proposals being advanced to rewrite

the nature of finance and the broader political economy of the United States and the globe.<sup>5</sup>

The data and memos we had created flowed into a longer-term process of knowledge making and regulating crisis at the Fed. Our workarounds were part of a broader process of revaluation that included technical issues of how to measure, track, and regulate bank capital. Raw data about sovereign debt loans (and all other categories of loans) had been available at the time of the Latin American Debt Crisis. But that data had not entered into the models we had in domestic bank regulation for calculating the adequacy of bank capital. Prevalent categories of data had not allowed the Fed to “know” that the debt crisis was coming, or that bank capital might be inadequate. This is why I spent so much time pulling out individual bank exposure data concerning Latin American sovereign debt, revising estimations of bank capital by hand, and running a one-person stress test of the major money center banks in the face of apparently imminent Mexican default.

In his interview with PBS in 2000, Paul Volcker notes that he had become concerned about levels of borrowing by Mexico some time before the crisis erupted (PBS 2000). His concern at that point was based on anecdotal evidence of a kind that resembles ethnographic, on-the-ground knowledge (Holmes 2013). Volcker’s “sense” that something was off did not immediately move the bureaucracy to change its categories of data or assign research assistants to special research projects. It took “crisis” for that reorientation of categories and data to begin. Crisis is here not a sign of a falling rate of profit, or a slowdown in turnover time. It is not a decisive point of failure of a system and movement towards its transformation. Rather, crisis marks a moment when an ethnographic “sense” of things translates into an obvious seizing up of financial infrastructure. New forms of knowledge and data are sought out and brought to the fore due to the perceived seriousness of the situation. Crisis initiates a process of revision of models and data. Regulators had to study, like ethnographers, emergent realities for which no models existed.

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<sup>5</sup> PBS’s *The Wall Street Fix* puts the changes of the period as follows: “In December 1986, the Federal Reserve Board, which has regulatory jurisdiction over banking, reinterprets Section 20 of the Glass-Steagall Act, which bars commercial banks from being ‘engaged principally’ in securities business, deciding that banks can have *up to 5 percent* of gross revenues from investment banking business. The Fed Board then permits Bankers Trust, a commercial bank, to engage in certain commercial paper (unsecured, short-term credit) transactions. In the Bankers Trust decision, the Board concludes that the phrase ‘engaged principally’ in Section 20 allows banks to do a small amount of underwriting, so long as it does not become a large portion of revenue. This is the first time the Fed reinterprets Section 20 to allow some previously prohibited activities.” (PBS 2003).



## Revisiting Crisis

I have called this essay a retrospective ethnography. What might that mean? When I first drafted this essay in 2007, before the outbreak of what would become the 2008 Financial Crisis (with capital letters), I had in mind my positionality at the Fed. I conducted my work like a participant observer, gleaning out broader meanings from the imponderabilia of everyday life in the manner of classical ethnography. As such, when I returned to my archive of crisis, it was like returning to fieldnotes. But the notion of retrospective ethnography has further purchase, as noted by Bill Maurer when he suggests that we think of regulation itself as retrospective ethnography, a process through which “regulators format future action by resting on snapshots of previous modes of practice” (Maurer 2012, 303, fn. 9). The looping knowledge effect of regulation was explicitly on display with Timothy Geithner, former Secretary of the Treasury, and Ben Bernanke, former Chairman of the Federal Reserve, in the 2008 Financial Crisis: both were students of the history of financial regulation and brought their studies of the Great Depression (and of 1982) to bear on their approach to 2008.

But what of the end of Glass-Steagall, which was also being systematically worked out during my time at the Fed? Can we call that an exercise of retrospective ethnography? This idea makes a lot of sense in reference to emergent phenomena about which I wrote memos for my department in the 1980s, such as the “computerization of money,” smartcards, and unregulated Euromarkets. But looking back at our research on Glass-Steagall and its elimination, a different dynamic was at work. And here, other problems with how we think of financial crisis as an eruption become clear. Jane Guyer’s notion of punctuated time (2008) offers a better temporality for considering financial crisis. As a young person, I had no idea of the extent to which resources, both ideological and financial, were being poured into the elimination of Glass-Steagall, stubbornly and persistently, over decades in which such a notion seemed insane or, in my own young person’s voice, a “completely abstract” exercise to consider.

The end of Glass-Steagall was not the beginning of it all—of this post-2008 world in which we live. This time of financial regulation and crisis was indeed more punctuated. To understand the rhythm of that punctuation, we need to take into account a broader range of actors than appeared on the floor and in the back rooms of the Fed. Mainframe computers and their crunch times matter, but so does the persistent work of those funding research about eliminating Glass-Steagall. As we let go of our addiction to crisis, we have to look beyond, as Hart and Ortiz recently put it, the critique of finance as well (forthcoming). For one thing, as Roitman teaches us, crisis is inextricably bound up with critique. In the backrooms of crisis, in the

geek computer rooms, the programmers' desks, and the hallways resounding with the clicking heels of a manager's fast walk, we can better learn about forms of tacit knowledge and punctuated learning that are crucial to financial regulation (Elyachar 2012). We can simultaneously pay close attention to grand projects of social reinvention at work in those times. Here, we need to ask as well: what kind of work does finance do; where does it fit into the broader scheme of economy and society; what kind of projects will it help us build (Hart and Ortiz, forthcoming)? In what other work is crisis enmeshed? My students at a public university in California understood this all too well.

My graduate students at the University of California, Irvine, were fascinated by details to which I had given little thought. Material devices that to me were infrastructure, lying in the background of perception, were for them the main story. They found it odd to realize that I had worked on mainframe computers, coming in late at night to avoid lag time, walked from one room to another to input data into a computer terminal, walked memos down the hall, worked without email, programmed in obsolete languages, and taken all day to run simple calculations. This usefully interrupted our original assumption that we were talking about a shared terrain of "financial crisis."

My undergraduates in this public university were struck by different details. After 1982, the young people whose lives and futures were changed by the financial crisis lived in Mexico. For UC students at that time, problems of structural adjustment in the wake of financial crisis were abstract. By 2012, it was all too familiar. My students and their families were borrowing more money each year to pay for ever-rising tuition. They faced the terror of unemployment when they finished school and had no idea of how to repay their loans. The detail that struck them most in my story was that I had been offered a job after only one interview, a mere half hour after the fact. This notion made them speechless. This was the world for which they pined—though they would not have linked its disappearance to the 1982 Latin American debt crisis or the end of Glass-Steagall.

As my programming teacher taught me back in 1982, when crisis speeds up temporality, we need to slow down, to pay close attention to the ways in which new categories of data emerge, infrastructures seize up, workarounds emerge, and new realities take root. Much of what we thought of then as fraud is now normalized practice. We need to notice what has become normalized and how that took place. Only then can we understand how finance and the lowliest research assistant are enmeshed in grand historical processes of social reinvention.

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# The Conditional Sink: Counterfactual Display in the Valuation of a Carbon Offsetting Reforestation Project

Véra Ehrenstein and Fabian Muniesa

## Abstract

This paper examines counterfactual display in the valuation of carbon offsetting projects. Considered a legitimate way to encourage climate change mitigation, such projects rely on the establishment of procedures for the prospective assessment of their capacity to become carbon sinks. This requires imagining possible worlds and assessing their plausibility. The world inhabited by the project is articulated through conditional formulation and subjected to what we call “counterfactual display”: the production and circulation of documents that demonstrate and configure the counterfactual valuation. We present a case study on one carbon offsetting reforestation project in the Democratic Republic of Congo. We analyse the construction of the scene that allows the “What would have happened” question to make sense and become actionable. We highlight the operations of calculative framing that this requires, the reality constraints it relies upon, and the entrepreneurial conduct it stimulates.

Key words: carbon offsetting; reforestation; Democratic Republic of Congo; valuation; counterfactuals

Carbon offsetting constitutes one of the most widely used schemes for mitigating carbon release into the atmosphere. Reforestation projects can benefit financially from future carbon credits purchased by

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emitters (e.g. industrial companies) on the basis of the envisaged capacity of tree plantations to store carbon. But the actualization of this capacity and the value of an offsetting reforestation project—expressed in terms of purchasable emissions reductions—remains uncertain until the trees have grown enough so their carbon stock can be effectively quantified. Offsetting projects thus provide an opportunity to refine our understanding of projective valuation processes. In particular, they let us examine the meanders of what we call “counterfactual display”: how two future states of the world—one with the project and one without it—are played against each other and how the value of the project is derived from that interplay. We use the term “display” to emphasise the material-semiotic arrangement of counterfactual operations. These do not rely solely on reasoning and imagination, but also require the production, circulation, and exhibition of documents and devices essential to valuation processes.

Our contribution draws from a qualitative case study; we offer an empirical account of the procedures and conditions of counterfactual display in one particular project. While our analytical claims keep to the case, they aim at serving the lineaments of a sociological approach to counterfactual display in valuation studies. The case study focuses on a reforestation project in the Democratic Republic of Congo. The project is led by an entrepreneur who we call Olivier, a Belgian-Congolese agricultural engineer who runs a small family-owned business. Olivier plans to reforest 4200 hectares of savannah in a customary-owned area situated 150 kilometres north of Kinshasa, the capital of the country. In February 2011, the project was registered as part of the carbon market scheme created to reduce greenhouse gas emissions, under the supervision of the United Nations. The registration confirms the relevance of Olivier’s project for climate change mitigation; the plantation is expected to store more than 1.5 million tons of carbon dioxide (CO<sub>2</sub>) between 2008, the starting date of the project, and 2037. In 2011, the sequestration potential had been estimated, but its realization is not yet ensured. The relevance of the project is conditional. Its value is an expected value. However, Olivier has already sold some of the carbon credits that might be issued in the future to buyers interested in emissions offsetting.

Expectations about future states of the world can be the object of economic agreements in the present. These kinds of processes entail developing practices of projection and estimation, which have been studied at length in social-scientific literature. Economic sociology counts on significant discussions of the role that fictional expectations play in the organization of capitalist economies (e.g. Beckert 2013a, 2013b). Research on the development of new derivative markets has stressed the problems with the conventions of valuation that need to be put in place (Huault and Rainelli-Weiss 2011). Studies in the performative capacities of business plans and business models have

also contributed extensively to the understanding of the processes through which future scenarios of entrepreneurial ventures and their value are constructed (Giraudeau 2008; Doganova and Eyquem-Renault 2009). Anthropologists have explored at length the articulation of hope, future and prospect in economic endeavours (Maurer 2002; Elyachar 2005; Miyazaki 2006; Guyer 2007). Historical approaches to the politics of science and technology have highlighted the rationales of simulation techniques and forecasting methods in the construction of both economic and political realities (Armatte 2008; Dahan 2010; Edwards 2010; Jasanoff and Kim 2009; Mallard and Lakoff 2011). These analyses share what we could call a performative understanding of prospective valuation techniques: they consider that devices representing future states are tools through which the world is indeed transformed. Such work informs our viewpoint. Our contribution highlights the problems with counterfactual display, how it works, and what it means.

Three salient points characterise our contribution. The first is that counterfactual display requires a contrived scene, a calculative space or “centre of calculation” (Latour 1987) that has been carefully prepared to host prospective valuation. The second is that the rules governing counterfactual display rely on a realist approach (Stalnaker 1984) in which the “possible worlds” manipulated within the display characterise the present world. The third point is that counterfactual display emphasises an entrepreneurial interpretation of political (environmental) action and, accordingly, a certain spirit of capitalization, quite resonant with a neoliberal “project polity” (Boltanski and Chiapello 2005).

In the first section we present our research methodology. In the next section, we describe the tactical, political work necessary to frame the project as an object of prospective calculation. We outline the scheme and regulation in which our case study develops, climate change negotiations, the Kyoto Protocol, and its Clean Development Mechanism (CDM). We also introduce the main vehicle through which the prospective valuation of the offsetting project is performed and can thus be analysed, the Project Design Document (PDD). In the third section, we analyse the counterfactual display proper. We describe three prospective operations: first the delimitation of the project’s perimeter and characteristics, then the establishment of a reference scenario against which to value the project scenario, and finally the estimation of the expected carbon credits. In the final section, we highlight our research results by discussing calculative contrivance, counterfactual reality, and entrepreneurial drive. In our conclusion, we suggest a few directions for consideration.

## **Methodology**

Our case study relies on data gathered by the first co-author through field observations and interviews in Paris from January to March 2010 and in the Democratic Republic of Congo in March and April 2011. Semi-structured interviews were carried out with the project developer, consultants involved in preparing the project's registration, representatives of the organizations acting as credit buyers or investors for the project, and members of the Congolese administration. A total of nine interviews were carried out with eight actors and the interviews were recorded and transcribed. Field notes were produced regularly during the ethnographic missions. Access was granted to day-to-day project-related work during fieldwork in the Congo and also to all relevant project-related documentation. This documentation was reviewed in depth.<sup>1</sup>

Our qualitative analysis proceeded principally in a descriptive manner. We examined the textual accounts of the project, in particular the PDD, which describes the project for the purpose of registration, and the numerous documents it relies on (the modalities of the scheme, standard methods of demonstration, decisions by the regulator, etc.). We analysed the operations done in and by this documentation, in the light of field interviews and observations. This focus on paper devices was a deliberate choice because the scheme places considerable importance on documentation. The description and projection of the future activity is thus a key component in the analysed carbon market. Our approach was grounded in the material-semiotic stance of actor-network theory, which directs attention to operations of translation and the trails through which they are enacted (e.g. Callon 1986; Callon and Latour 1981; Latour 1983). The theoretical conclusions that we draw, in other words, our characterisation of counterfactual display, were extracted from the elements we observed.

## **The Carbon Market and Its Framing**

### **Registering a Forestry Carbon Offsetting Project**

Perceived as a cost-effective approach to reduce greenhouse gas emissions, carbon offsetting was implemented as a global policy response to climate change through the CDM, which is a project-based carbon market. The CDM is one of the policy instruments contained in the Kyoto Protocol that was established in the late 1990s (UNFCCC 1997). The CDM is a means to involve so-called developing countries in climate change mitigation. Developed countries are the only countries committed to emissions reduction, according to the Kyoto

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<sup>1</sup> The case study benefitted from the insights gained from a wider research project on international adjustments, tropical forests and carbon arrangements, carried out by the first co-author in the context of a doctoral project.



Protocol. Their governments and private companies can use the CDM to compensate for their emissions by contributing to mitigation activities in the developing world. An offsetting project is expected to lower CO<sub>2</sub> emissions and generate Certified Emission Reductions (CERs) (i.e. carbon credits). Reforestation is one of the eligible activities. In short, trees can be considered carbon sinks, planting them can be considered a way to remove carbon from the atmosphere, doing so can be considered a way to reduce emissions compared to what would have happened without such an initiative, and this can be considered a valuable service. The CDM has thus created a new economic activity: producing carbon credits and selling them to polluters wanting to compensate for their emissions.

This market differs from a cap-and-trade system where permits are allocated to polluters who can then trade them. In the CDM, carbon credits are literally produced, not assigned; they are created from projects in developing countries (MacKenzie 2009a, 137–176). By using the word “project” we mean a planned activity that will translate into a small-scale activity implemented by a few individuals during a given period of time. The market fosters the implementation of projects that would not have otherwise been developed and whose outcome—or one of their outcomes—is a new product: emissions reductions exchangeable in the form of carbon credits. Whereas cap-and-trade carbon markets heavily rely on models developed by economists, the project-based carbon markets have developed in a more experimental and practical manner (Callon 2009).

The CDM is organized as a certification scheme. Its ultimate authority is the Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC), which is composed by representatives of all the states recognizing the Convention—namely almost all countries in the world. Day-to-day supervisory work is undertaken by the Executive Board, a regulatory body that establishes the rules of the mechanism (UNFCCC 2001). The Executive Board decides whether projects presented by project developers such as Olivier will be formally accepted as activities capable of generating carbon credits. The process, through which carbon credits are issued, the CDM cycle, is marked by formal steps. To become part of this market, a project must be submitted to the Board and evaluated by an independent auditor. Once validated and registered, the activity is implemented and monitored by the project developer. Claims for the reduction of emissions must then be periodically verified by auditors in order for carbon credits to be issued. At the early submission stage, the value of the activity is estimated according to its potential contribution to a desirable effect—emissions reduction. This crucial step is carried out through the production and evaluation of the Project Design Document (PDD), a mandatory form that plays an essential role, from the very conception

of the project to the issuance of carbon credits some years after registration.

Different kinds of activities—from reforestation to waste disposal and hydropower dams—can be developed within the CDM. A variety of economic calculative instruments (MacKenzie 2009b), but also administrative procedures, narrative descriptions, property rights, and commercial contracts translate into the same outcome: emission reductions, in different quantities. The inclusion of forestry activities in this market has sparked controversy in climate change negotiations (Boyd, Corbera, and Estrada 2008; Lövbrand 2009). Offsetting reforestation projects have been criticized because they prompt a shift of responsibility from the industrial sector of developed countries to developing countries where local access to forestry resources may be hampered by such projects (Bäckstrand and Lövbrand 2006; Corbera and Brown 2008; Boyd 2009). While recognizing the relevance of such condemnation, we adopt a different perspective. We, too, are interested in showing the configuration of power relationships, but we suggest investigating them by focusing on the prospective economic operations required by the CDM that produce an uneven distribution of capacities to intervene (Callon and Muniesa 2005).

### **Writing Down Prospective Operations That Need to be Actualized**

As indicated, a project developer who wants to register a project has to submit an extensive description of the foreseen activity in the PDD. The document must establish timelines, it must present the technologies that will be used and describe the context of implementation. It must also identify the project participants and their characteristics. It has to display stabilized information, because the information will be used as reference during the implementation of the project.

In addition to the description of the project, the PDD contains other crucial narratives: a description of how the “baseline” is determined, a demonstration of the project’s “additionality,” and an “ex-ante estimation” of greenhouse gas emissions. The baseline represents what will happen in terms of greenhouse gas emissions if the project is not implemented. In other words, it describes a hypothetical situation in which the projected activities do not take place. The developer has to elaborate on this scenario to demonstrate the additionality of the emissions reduction. A project is considered additional if it cannot be implemented without access to the carbon market, that is, without the possibility of selling carbon credits. A CER generated by an activity represents one ton of CO<sub>2</sub> (or equivalent) whose release into the atmosphere has been avoided by virtue of the project benefitting from the carbon market. It corresponds to the difference between the baseline greenhouse gas emissions—the amount

of CO<sub>2</sub> that would have been released in the absence of the reforestation activity—and the actual emissions—the amount released by the projected activity (UNFCCC 2005). To obtain an ex-ante estimation of carbon credits, the developer has to quantify the level of emissions in the baseline scenario and the actual scenario and then subtract the latter from the former.

Once the PDD is finalized, it is submitted to a Designated Operational Entity (DOE), an independent private auditor accredited by the Executive Board. The auditor carries out the validation of the project: an evaluation of the project design and its projected benefits, which is based mainly on a short field visit and an extensive analysis of the PDD and its annexes (baseline methodology, calculation sheets, financial estimates, technical feasibility study, social and economic impact assessment, title deed, etc.). Once validated, a project requires further assessment from the Executive Board. If the latter ratify the validation report the project is registered. This happened to Olivier's reforestation project in February 2011.

After the project is registered, the PDD serves as a reference for its implementation and the monitoring of the reductions and their successive verifications by other independent auditors. This process is similar to contemporary audit practices of verification, which routinely rely on a ritualized referential work (Power 1997). Verifications will be run periodically during the crediting period. In Olivier's project that is supposed to be thirty years, from 2008 to 2037. Verification reports are based on the monitoring of data, which will have to be in line with what was documented in the PDD. Written acknowledgements of the fact that the activity has indeed reduced emissions follow. The Executive Board then issues the specified quantity of CERs for the corresponding period on the registry accounts of project participants. CERs are created, held, and transferred on an electronic database supervised by the Executive Board (UNFCCC 2005).

What happens throughout the drafting, submission, and evaluation of the project is crucial not only for the registration of the activity, but also for its subsequent implementation. Indeed, the scheme is organized to guarantee that the project developer respects and implements the project as described in the PDD. This document, and the audit procedures it is subjected to, makes the project governable by the international decision-making process on climate change acting through the Executive Board of the CDM.

### **Political Work and the Establishment of Calculability**

In order for the PDD to make sense, a set of *dramatis personae* needs to be established: principally the project developer and the purchasers of credits. The formation of these economic agents and the omission of other actors from the scope of the project and the transaction require political work, which is carried out previous to the presentation of the

project to the Executive Board for registration. To become the owner and seller of future carbon credits, Olivier's undertakings included the establishment of business networks and engagement with state apparatuses, public administrations, and local communities. A number of inscriptions (letter of intent, property rights, notarial act, and letter of approval) are used in the framing process, which transform the elaboration of the project into a matter of conditional prospective calculation.

In his original project, which was crafted in the late 1990s, Olivier had not intended to engage in climate change mitigation. Reforestation of family-owned land was envisaged with the purpose of producing charcoal. Political turmoil, and then war, jeopardized fundraising. In the early 2000s, when the Democratic Republic of Congo started to move to a less troubled situation, the project was still not considered a viable business by the investors Olivier approached. In the mid-2000s, Olivier identified the emergence of the carbon market as a potential opportunity to transform his unsuccessful project into a commercial activity. The World Bank had just created the BioCarbon Fund, a fund dedicated to the development of forestry projects in the CDM. Olivier submitted his reforestation project to the formal selection process and contacted representatives of the international organization in Kinshasa. These moves led to the signing of a letter of intent, which outlined an agreement between the fund as a credit buyer and Olivier as a project developer. The expression of the World Bank's intent in this quasi-legal document enabled Olivier to persuade investors and raise capital.

To become certified by the CDM, a project requires an authorization from the government of the developing country in which the activity will be implemented. This translates into the receipt of a letter of approval in which the government acknowledges the existence of the project and declares that it will contribute to the sustainable development of the country. According to the rules of the scheme, each country is expected to establish a national authority to issue this approval. To provide the formal authorization of Olivier's project the Ministry of the Environment of the Democratic Republic of Congo had, actually, to create the required national institution. In the letter of approval the Congolese government expressed a loose form of sovereign control over the carbon offsetting project. The document is a minimal vehicle of sovereign power, indeed, since it enacts the government's withdrawal from the project and the economic transaction the activity will be part of. This exemplifies to some extent the transformation of sovereign power that a "politics of economization" induces (see Foucault 2008) and is in line with a number of insights put forward in the literature on "carbon governmentality" (e.g. Lövbrand and Stripple 2012; Lovell and Liverman 2010).

The transformation of the initial project into a carbon project required Olivier, the project developer, to become the owner of the future emissions reductions. As in other forms of commodification, the establishment of formal property rights, as opposed to so-called “informal” ones, is crucial (Mitchell 2007). The texts setting the modalities of the carbon market do not provide a standard rule for the clarification of carbon property issues. For each project, a singular legal arrangement has to be constructed. In Olivier’s case, the arrangement was settled at the initiative of the World Bank, which required the establishment of explicit property rights during the due diligence phase of the project. The lack of written proof of any such rights (this is a case of informal property, indeed) prompted a process of clarification. The project’s land was subject to customary ownership rights, which Olivier inherited from his father. But the latter had not rendered his customary owner status into a state-delivered title, and the war that shook the country in the late 1990s and early 2000s favoured erratic evolutions in the occupation of the land. The clarification process involved, on one hand, negotiations with other customary chiefs to determine which area belonged to his family and, on the other hand, the procurement of a legal title. The recognition of Olivier’s traditional authority of eight thousand hectares of land was formalized through a notarial act, and then the entrepreneur obtained a title from the state for six thousand hectares of the area.

Both processes were supervised by representatives of the World Bank. The institution was interested in the second process to guarantee the ownership of the credits. It also paid attention to the first one because recognition of Olivier’s customary rights by the other chiefs constituted a means to evaluate the support of the surrounding communities for the project. A former representative of the World Bank involved in the BioCarbon Fund indicated that “in case of private property such as this one, it was important to make sure that there had been no despoliation of the poorest local communities” (Interview, January 18, 2010). According to Olivier, the organization “worried” about whether or not he was going to redistribute some of the future (and potential) benefits to the people living near the project area (Interview, March 17, 2010). The PDD indicates that 12% of the benefits generated by the sale of the credits would be used for so-called social investment. No details are given, however, about the kind of reality this ought to translate into (e.g. educational facility, healthcare centre, or else). The presence of the so-called local communities in the PDD is only rendered through such kinds of percentages, a tendency in development policies that has been amply criticized in the case of the CDM (see Fogel 2004) and more broadly in development projects (see Li 2007).

The PDD represents the project as an arrangement between economic parties in a transaction on carbon credits. The spatial and

temporal frames are settled, the current state of economic properties and identities is guaranteed. All that needs to be done for the project to make sense is to establish a calculative space to determine the conditions and the likelihood of the project's future value. As noted, this state of affairs is only possible through intense political work that is contained (both in the sense of accommodating and of curbing) within the prospective device.

## **Counterfactual Display**

### **The Description of the Project: Delimitation and Capitalization**

The PDD constitutes, first and foremost, an elaborate description of what will happen if the project is implemented, compared to a more short description of what would happen if it is not. As such, the PDD is a scene of a series of rhetorical moves that, together, construct the counterfactual display. Filling in the form, understanding its interpretive intricacies, and clearly demonstrating the project's realism, desirability, and appropriateness, require particular expertise, and that is why Olivier contracted the services of a specialized consultancy firm. As in the case of stream restoration and wetland mitigation banking, a consultancy industry practicing a "private sector science" has developed on climate change and offsetting issues (Lave, Doyle and Robertson 2010).

The description of the project starts with the delineating of the project's boundaries and a precise description of the object under the control of the project developer. The first boundary is temporal: the project developer has to determine the duration of the activity. The document indicates that Olivier's reforestation project will last at least thirty years. Supposing that the CDM still exists by the end of that period (its maintenance depends on the outcome of international negotiations), the project could generate carbon credits until 2037. The second boundary is spatial: the document must state the geographical coordinates of the reforested area. In Olivier's project, this means delimiting the 4200 hectares that will be monitored. The PDD form indicates that the circumscribed land has to be eligible for the CDM. This means showing that the project is "implemented on degraded lands, which are expected to remain degraded or to continue to degrade in the absence of the project, hence the land cannot be expected to revert to a non-degraded state without human intervention" (Field document: PDD, December 1, 2010, p. 32). Olivier's PDD explains that the project activity "will be implemented on savannah grassland that is subject to repeated annual wildfires," adding that "this main factor of degradation greatly reduces existing natural vegetation cover" (Field document: PDD, December 1, 2010, p. 34). In other words, the activity will appreciate the value of a degraded asset.

Once the geographical boundary has been determined and the eligibility of the land demonstrated, the document assesses potential leakages. Leakages are emissions that the implementation of the project could provoke outside the boundary, for example, by displacing or encouraging harvesting outside the perimeter. Olivier's PDD uses a very low population density (eight inhabitants per km<sup>2</sup>) as an argument against the likelihood of such leakage. The description of how leakage is expected to be minimized is followed by a reference to the legal title. The acquisition of property rights—both state-supplied and customary—is supposed to guarantee that Olivier effectively controls the area for the next thirty years. The PDD has therefore provided the elements of a calculative space (Callon and Muniesa 2005), that is, a material cognitive surface within which univocally defined entities can be manipulated and in which possible courses of action can be simulated, assessed, and acted upon numerically.

A large part of the document is devoted to the presentation of the reforestation plan, which identifies the main economic objective of the project: to produce charcoal. As counterintuitive as this may sound (using trees as carbon sinks to then produce charcoal and release carbon back again into the atmosphere), the use of trees as wood energy is not prohibited in the CDM scheme, given that the harvest for charcoal production will be deducted from the project's carbon accounting.<sup>2</sup> In addition, the project will produce timber, cultivate cassava, and store enough carbon to generate credits. The articulation of these different objectives contributes to the configuration of the future planting, which will be composed of acacia, pine, eucalyptus, and some local species. The design and dynamics of the future forest are calculated to optimize the economic viability of the project. Olivier summarizes this tricky operation in the following way:

Goal number one is to begin production of wood energy in the shortest time possible. The wood fuel production is also directly related to the purpose of storing CO<sub>2</sub>, and, here again, the largest quantity possible in the shortest time possible. And to achieve this, we must work with fast-growing species. It is this reason that determined the choice of acacia. [...]. The other secondary species such as exotic pine and eucalyptus are also included to meet the rapid growth and CO<sub>2</sub> storage criteria, with another goal this time, which is the production of timber and lumber on longer cycles, that is to say ten years to twenty-five years. The third category is local species that are slow-growing [...] and because of what I just explained we have chosen much lower percentages. (Interview, March 17, 2010, our translation)

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<sup>2</sup> Moreover, charcoal is usually obtained through an uncontrolled exploitation of already standing trees, which poses a threat to the last forested land in the savannah. The controlled production of charcoal from reforested land is considered as an environmental improvement.

Acacia, the main tree species that Olivier expects to plant, constitutes a relatively profitable option, in carbon terms. An agronomist from the consultancy firm hired to write the PDD explained that the profitability is associated with the growth rate of the tree and the density of its wood. Given the poor quality of the soil, acacia can be considered a quick species and its wood is relatively dense. That is why, according to the consultant, Olivier “could hardly find better” (Interview, March 15, 2010). Eucalyptus could have been an alternative. However, cash flows derived from eucalyptus will be realized later than those from acacia because charcoal production will begin more quickly than timber production, with the first harvest of acacia being planned for 2013. Moreover, according to the consultant, acacia is “good for nitrogen fixation,” a significant quality given that Olivier plans to cultivate cassava between the trees. This agricultural production is supposed to provide “short-term cash flow for project implementation.” Planting acacias is a way to manage and enhance the fertility of the soil, which is otherwise “poor, chemically speaking,” in order to quickly generate a return on investment (Interview, March 15, 2010).

The choice of species, their exploitation rate, and their distribution on the field result from adjustments that seek to make the project as profitable as possible. Cash flows are projected and articulated. But the project should also be feasible, and the document takes care to demonstrate that acacias can grow in this area. The PDD indicates that Olivier has carried out small-scale field tests. It is also mentioned, as proof, that a large-scale acacia plantation financed by the European Union, as part of its development aid, is located not far from the project area. The agronomist from the consultancy firm considers that “the experience shows that it works well, so in principle it is not too risky to plant acacias” (Interview, March 15, 2010). The choice of acacia guarantees the biophysical possibility of a large-scale and long-standing plantation. The plantation design constitutes a safe and controlled option that is economically efficient and will secure a rapid return on investment. It represents the project in the near future, a project whose actualization seems thus to be technically, environmentally, and financially realistic.

Lowest risk, highest return, fast growing, secured cash flow: this is the vocabulary of financial investment. The project’s material vehicle for providing a robust, foreseeable, and viable future is acacia, because to make the future state happen means making it economic (i.e. profitable). The rules used to assess the economic viability of the future are the rules of financial investment and thus of capitalization (see Tsing 2000; Leyshon and Thrift 2007; Nitzan and Bichler 2009; Muniesa 2012). Three important observations can be drawn from this. The first is that financial reasoning finds in the calculative space driven by the PDD a particularly hospitable site. Designing the plantation is a



projective calculation on future viability. The discount methodologies provided by financial investment reasoning (the present value of an asset derives from its capacity to yield a return in the future) constitute a suitable frame for the determination of the value of the project. The second observation is that the figure of the investor is collapsed into the *persona* of the project developer. This reinforces the idea that, in a world in which political problems are addressed through economic projects, actors unfailingly adopt the identity of businesspersons, that is, entrepreneurs who integrate a capitalist reasoning. The third idea is that, construed as an object of investment, the projected forest becomes the material consequence of a discount methodology. The choice of species is heavily dependent on this reasoning, and the look of the future forest will most likely carry the mark of investment methodologies.

### Valuing the Project Against the Undesirable Counterfactual

The PDD has to demonstrate that if the project is not implemented another state will occur. This other future state is called the baseline and requires a form of counterfactual projective proof. Counterfactual reasoning entails reflecting on possible worlds and imagining and manipulating events that are not actualized. It also involves the fulfilment of a credibility constraint: the imagined world needs to be different from the actual one, but at the same time similar to it. While the baseline needs to display strong likelihood, it also has to be less desirable than the world that the project would bring into existence. The project has value precisely because it foresees the construction of a world that is better than the one resulting from the imaginary manipulation translated into the baseline. The PDD not only has to create possible worlds, but also to demonstrate their veracity—endorsing in practice a realist approach to counterfactuals (Lewis 1973; Stalnaker 1976; 1984, 147–169)—and to compare their respective environmental value.

Olivier likes to present the baseline as an obvious and evident matter of fact: if the project is not implemented, the land will repeatedly be degraded by fire. This is, in his words, “the reality” (Interview, March 17, 2010). But not everybody considers such kind of counterfactual benchmark an obvious matter. The idea of the baseline and the principle of additionality were hotly debated during the conception and fine-tuning of the CDM (Michaelowa 2005). It is still subjected to assessment in the economic academic literature (Schneider 2009; Grubb, Laing, Counsell, and Willan 2011), and critics of carbon markets often stress this point. Larry Lohmann, a researcher and activist, considers that “to disentangle a single baseline necessitates framing the political question of what would have happened without projects as matter of technical prediction in a deterministic system about which near-perfect knowledge is in

principle possible” (Lohmann 2009, 511; see also Lohmann 2005). This, apart from being deeply difficult, means avoiding the political nature of collective decisions.

The fact that the project developer has to elaborate a baseline signifies that he is the only free decision-maker, while other actors—the government, surrounding inhabitants, etc.—are framed as passive agents. Referring to Callon (1998), Lohmann states that such framing creates overflows which he describes as political. He illustrates this point with the case of a reforestation project in Brazil supported by the World Bank. The project’s argumentation was as follows: without the plantation project, which was meant to produce charcoal, the company’s pig iron energy needs would be supplied by coal, a source of energy that emits more carbon. With the help of an NGO, residents wrote to the CDM Executive Board to demand it reject the project, given the implausibility of the counterfactual scenario. Described as “absurd,” insofar as the company had always sustained a plantation for its energy needs, the baseline was even considered a form of blackmail. For Lohmann, this request was a way for opponents to contest the denial of their agency implied by the nature of the counterfactual demonstration. It should be understood as a means for them to criticize the environmental damages produced by the company’s activities and not as a demand to correct the baseline.

In a sense, Lohmann takes the counterfactual claim required by the CDM as a denotative, factual claim. He does so in order to expose its lack of verisimilitude. This mirrors in a sense the positive defence of the reality of the counterfactual advocated by Olivier. But the counterfactual claim is, quite literally, a fiction responding to a set of rules. The counterfactual exercise proceeds “as if” the project developer could master the environment and the PDD could be read as some sort of a demiurgic narrative. Yet, the fiction needs to respect a number of narrative constraints, and one of them is continuity with the existing world (Stalnaker 1984). The case analysed by Lohmann breaks that rule: it is absurd because it introduces a sudden and radical breach of reality (the sudden decision to use coal instead of charcoal, when the latter was the source of energy for years, is indeed absurd given that nothing has change that would warrant such a shift).

In order produce counterfactual realism, instructions have been established. The CDM rules oblige the project developer to determine the baseline and to demonstrate the project’s additionality by following a standard methodology, a “combined tool to identify the baseline scenario and demonstrate the additionality” published by the Executive Board (UNFCCC 2007). This procedure is divided into sequential rhetoric operations. The first requirement is to “identify credible alternative land-use scenarios that would have occurred on the land within the proposed project boundary in the absence of the afforestation or reforestation project activity under the clean

development mechanism (CDM)” (UNFCCC 2007, p. 2). The list of realistic and credible scenarios must include one that contemplates the continued pre-project use of the land and another one that contemplates the implementation of the project but not its registration within the CDM (i.e. the project without carbon credits).

The guideline provides some clues about what it means for a baseline to be credible (for example, the “switch to land-use typical for the region”) and, perhaps more clear, what it means to not be credible (for instance, the construction of an airport in “a rural region with low density population and weak road infrastructure”) (UNFCCC 2007, 2–3). Extreme scenarios such as political or technological breakthroughs are not acceptable. But the whole idea of plausibility remains rather vague, as a consultant contributing to Olivier’s PDD indicated, “We must show a little imagination. But we are not going to invent something completely hare-brained. [...] We should try to stick to what actually seems plausible, considering the kind of activity that may take place in the area.” (Interview, March 15, 2010, our translation)

A *lector in fabula* operates within the counterfactual narrative (Eco 1979). The PDD is written for a particular reader: the Executive Board. Another consultant explained that the Executive Board’s previous registration decisions for reforestation projects are good sources for understanding what the Board considers to be “credible.” Once a project is registered, its PDD is published on the CDM’s website. Examining how accepted applications articulate credibility criteria enables reasoning by analogy and helps project developers anticipate the expectations of the final reader, the Executive Board.

Olivier’s PDD identifies four counterfactual scenarios: pre-project continuation (“unmanaged grassland with wildfire-dominated ecological conditions and natural succession regrowth dynamics”), two alternative scenarios (“fire control without introducing agricultural activities” and “slow agricultural and cattle breeding development through conventional activities”), and the project scenario with no CDM support (Field document: PDD, December 1, 2010, p. 38). These scenarios are considered to be realistic for the following reasons: “the sectorial and local economic situation (dominated by subsistence farming), national policy (the area is not part of forest policy priorities) and international interests (to date aid programmes have only ventured into meeting local fuelwood needs with pilot plantations)” (Field document: PDD, December 1, 2010, p. 38).

The next step for the construction of the baseline is to “identify realistic and credible barriers that prevent realization of the land-use scenarios identified” and to assess which of the scenarios is “not prevented by these barriers” (UNFCCC 2007, p. 4). This one will be the baseline. Among all possible credible scenarios, some of them

would meet obstacles that could hamper their hypothetical actualization. The document provides examples of foreseeable barriers: investment barriers such as “lack access of credit” (UNFCCC 2007, p. 5) or technological barriers such as “lack of infrastructure for implementation of the technology.” Making the potential obstacles explicit is an instrument for demonstrating the likelihood of the different scenarios being actualized.

The scenario for slow agricultural development, for example, is supposed to be prevented by investment barriers, such as “existing activities similar to this scenario show low returns on investment” in the Democratic Republic of Congo; institutional barriers, such as “public funding for agricultural development is low”; and technological barriers, such as “the prevailing practices in the region is subsistence farming.” The PDD demonstrates that the fire control scenario is also prevented by similar obstacles. Finally, the hampering of the scenario for a project with no CDM support is based mainly on an investment barrier: “the financial support of [the investors] to the present project is conditioned on CDM eligibility in order to make the whole project viable” (Field document: PDD December 1, 2010, p. 38–41). Indeed, Olivier managed to secure investments after the World Bank signed the letter of intent and showed interest in the project and its emissions reduction potential.

In Olivier’s case, the baseline is the “business-as-usual” scenario: that the land will continue to be degraded by periodic fires is the counterfactual against which the outcomes of the project will be compared. This baseline scenario can rightly be considered as quite matter-of-fact. In conversation, Olivier would insist that “you just need to visit the Congo and look at the land to come up with this.” The rhetorical elaboration of the baseline is thus not a matter of reaching an intricate and sophisticated possible reality against which to value the reality of the project. It is rather a matter of constructing a narrative proof that forces to document and clarify a number of facts relative to the situation of the country and the foreseen activity. These facts are then inscribed into a stable and durable document, the PDD, which can be read and deemed robust by distant actors, such as the Executive Board of the CDM.

### **Estimating the Credits: Virtual Metrology and Forward Sale**

Carbon credits generated by a reforestation project represent the difference between the “actual net greenhouse gas removals by sinks,” that is, what is removed from the atmosphere as a result of the project, and the “baseline net greenhouse gas removals by sinks,” that is, what would have been removed if the baseline was actualized (UNFCCC 2005). The production of this commodity and the calibration of its value require first a work of prospective estimation based on the difference between the project scenario and the baseline scenario.

In the PDD, Olivier and the consultants have to accurately quantify something that does not yet exist. The quantification of the carbon hypothetically stored in the baseline condition is the easiest part. The CDM instructions indicate that in the case of reforestation, if the baseline is the pre-project land use, the baseline removals equal zero. The reasoning is based on the assumption that a degraded land will stay degraded. The ex-ante estimation of the carbon sequestered by the project scenario is more difficult. It requires the construction on paper of a virtual forest, a collection of trees with no biophysical connections reduced to quantities of different species— $x$  acacias,  $y$  eucalyptus—planted at specified dates.<sup>3</sup>

To quantify the carbon stock, the PDD refers to default values and standard methods. Expected annual volume growth of trunks and expected volume of the aerial biomass (the branches)—obtained from the former through standard values of biomass expansion factor—are first determined. This expected total volume is then adjusted based on the standard density of the wood of the species and its standard carbon fraction. Through these operations, the virtual forest is translated into an anticipated amount of stored carbon. The project envisages the plantation of different varieties of acacia. Usually the carbon stored by a tree is highly dependent on the local conditions (soil, climate, slope, etc.). However, the PDD subsumes the different varieties into the generic designation “acacia” and default values are used. These values are provided by the guidebook of the Intergovernmental Panel on Climate Change (IPCC 2003), an intergovernmental body which provides expertise for climate negotiations (Edwards and Schneider 2001; Miller 2004). The IPCC’s standards result from a massive work of data centralization, classification, and combination. The objective is to render the complexity of terrestrial carbon flows accessible to and actionable by policy-makers and non-experts.

The PDD’s narrative simulates the growth of a virtual plantation of generic acacias and estimates the evolution of its carbon stock over the project’s lifetime. This stock is expected to increase slowly at first and more rapidly after 2015. Such calculations determine the amount of carbon credits the project is expected to produce. They are required by the CDM instructions, but they are also necessary for a forward sale to be negotiated. As put by one of the consultants:

This is a work that is essential for the project developer in particular during the phase of the project’s financial packaging, especially on a project like this one, where there are contracts to purchase carbon credits that were signed before the first field audit. This allows buyers to know what quantities they can expect after

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<sup>3</sup> Carbon is also stored in the soil, the dead wood and litter but the modalities of the CDM enable project developers to exclude this other carbon pools from their monitoring.

how many years. However, there is no guarantee that the reality will be exactly the same as the one initially estimated. It gives, let's say, a good approximation. But that's all. (Interview, March 15, 2010, our translation)

The World Bank, as a trustee of the BioCarbon Fund, participates in the calculation of the ex-ante quantification of carbon stocks. Since it committed itself in 2009 to buy half a million credits generated in 2017, it needs to be sure that at least half a million tons of carbon are going to be stored by that date. Olivier sold part of the anticipated credits before the submission of the PDD to the World Bank. The latter purchased the credits on behalf of the investors of the fund, mostly governments committed to reducing their emissions. Olivier also sold some credits to a French investment bank, which agreed to buy the future commodities to resell them to clients seeking to voluntarily offset their emissions.

By signing transaction contracts called Emissions Reduction Purchase Agreement (ERPA), the buyers purchased primary credits, which are carbon credits bought directly from the project. As in Olivier's case, this often occurs before the CER credits are properly issued, meaning before the activity is fully implemented and verified. The emissions reductions become secondary credits when the first buyer resells them to a final user, which will use them to offset its own emissions. This second transaction often occurs once the credits appear on a registry and represent the actual physical removal of carbon from the atmosphere. As one of the representatives of the French investment bank put it, "these credits have been certified already, which means that they in fact exist!" (Interview, March 5, 2010). Olivier's primary credits exist only by virtue of the ex-ante estimations included in the PDD and mentioned in the ERPA. The contracts enact a forward sale and the price is supposed to reflect the risk of non-delivery. Its determination seemed to have been unilateral because, according to Olivier, the World Bank imposed its price, four dollars a ton. The price determined in the contract between Olivier and the French investment bank approached the same amount. Indeed, forestry is a rather marginal sector of the global carbon market. Few buyers participate in this market, which translates into such forms of asymmetry in pricing power.<sup>4</sup>

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<sup>4</sup> Several things explain this. First the credits produced by reforestation projects are considered by the CDM to be temporary. They offset emissions just during a limited period. Thus, after a while, the buyer will need to replace them. Second, given their temporary nature and the controversies generated by the inclusion of reforestation activities in the CDM, these credits were excluded from the European cap-and-trade carbon market (see MacKenzie 2009a for a description of this other scheme). The European regulation authorizes the use of CERs from other kinds of activities and makes them fungible with quotas. As this market is the main demand for credits, the exclusion of the forestry CERs hampers the ability for project developers to find buyers.

The signing of the ERPA between Olivier and the French investment bank depended on the “quality” of the project. The quality is to be understood as the project’s capacity to demonstrate that the initiative is likely to be accepted by the Executive Board and that its implementation will be consistent with the *ex-ante* estimates, especially in terms of the amount of credits. To resell the credits, the bank has to make sure that they will actually be generated. The registration of the project within the CDM is the *sine qua non* condition of getting the primary emissions reductions purchased in advance and reselling them as secondary credits. It depends on the success of the project developer performing the different prospective operations and in particular demonstrating that the project could not have occurred without the access to the carbon market. 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, as a representative of the French investment bank put it (Interview, January 18, 2010). This informant added that, 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:

We really are in a country that is emerging from war, with people completely idle. And it is clear that any economic activity that we could promote is essential for the stability in the country. There are truly enormous social impacts and then, for that project, there are also tremendous environmental impacts, because the purpose of this project is to supply Kinshasa, which is one of the largest African capitals, with firewood, firewood that is normally exploited illegally in natural forests. Therefore one of the consequences of the project is a drop in pressure on natural forests and an involvement in the protection of the Congo basin and thus in the conservation of biodiversity. (Interview, January 18, 2010)

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” (Neyland and Simakova 2009). Olivier’s project even appears on an advertising document that the marketing director of the French investment bank likes to circulate. 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. It is circulated, publicised, and enacted in business fairs and events such as the Carbon Expo—an annual event

organized by the World Bank and a consortium of enterprises in order to stimulate encounters within the carbon market. There, to anyone interested, Olivier told the story of the Congo war in the 1990s, his father's land, the customary chiefdom identifiable by the feather in his hat, the transformation into a carbon project, and the opportunity to supply Kinshasa with sustainable charcoal.

### **Discussion: Calculative Contrivance, Counterfactual Reality, and Entrepreneurial Drive**

The case study we have presented illustrates the important role played by counterfactual display in the valuation of projects that rely on the establishment of a prospective reality. The notion of counterfactual display refers to the articulation of a difference between two possible and plausible realities: one controlled by the project under valuation, and one in which this project is absent. Counterfactual display is more than counterfactual reasoning. It is a form of demonstration that involves exhibiting technical documentation, following rhetorical moves orchestrated by rules, and framing prospective calculation. The description of the offsetting reforestation project is based on the construction of a virtual forest, and the project's value stems from its contrast with its virtual absence. But here, quite in line with the performative understanding of virtuality that can be found in process philosophy and pragmatism, "virtual" means "consequential" rather than "not real" (Muniesa, forthcoming).

The first insight that can be extracted from our research is on calculative contrivance. The scene set for the counterfactual display is contrived. It is the outcome of intense political preparation. However, as our research suggests, one crucial objective of this work is to create a space in which this preparation is no longer visible. The objective is to purify the expression of the counterfactual display and to provide a site of calculation that no longer requires tactical negotiations, strategic alliances, and critique of terms. In a sense, the counterfactual scene and its attached documentary apparatus fit the characteristics of a "centre of calculation," as theorized by Latour (1987): it allows novel realities to form (it calculates), but at the expenses of concealing the background displacements on which it stands. This is consequential insofar as the actual future reality resulting from calculation (a reality of trees, land, people, carbon, and money) ought to inherit from this condition of calculative contrivance.

The second insight is on counterfactual reality. What the counterfactual display does is to play a series of scenarios against each other, that is, of commensurable possible worlds which articulate actionable answers to a set of conditional queries (What will happen if the project does not take place? What will happen if the project takes place? What will happen if carbon credits are not allowed?). The differences between these scenarios translate directly into the valuation



of the project, valuation in the sense of the estimation of its desirability and of the likelihood of its delivery. They also translate, quite prosaically, in the amount of carbon credits to be produced and hence, by extension, into the revenues of the project. Calling this compound of possible worlds a fiction should not be read as a disqualification of its reality. Agreeing that a possible world is indeed possible means siding, in a sense, with the realist approach to counterfactuals defended in philosophy by Stalnaker (1984, 147–169). Conditional counterfactual expressions can be claims for truth and assessed as such. Possible worlds are indeed virtual worlds that characterise the actual one. The rules of plausibility, contiguity, and, above all, auditability that govern counterfactual display in our case study meet with this viewpoint.

The third insight is on entrepreneurial drive. Our case study raised questions about the “how” of this counterfactual characterisation, and also the “by who” and “for whom.” The counterfactual display emphasises the entrepreneurial nature of the projected reality. The anticipation of economic return and the aversion to business risks in the Democratic Republic of Congo act as essential criteria for both the viability of the activity and the determination of a scenario’s reliability. Here, as is often the case with business parlance, a “credible project” means a project that can attract capital investment and generate profits in a reasonable time (i.e. rather quickly). This is why we suggest that the logic of capitalization determines to a great extent the template of the imagined possible worlds. This is why the entrepreneur, the buyer, and, to a lesser extent, the investor occupy central positions in the project’s conditional plot. The Congolese administration is excluded from the prospective operations enacted within the PDD and from the market transaction, as are the people in the area surrounding the project site. These traditional political institutions—the state and its population—fade in favour of the CDM regulatory framework and its audit procedures. In contemporary capitalism, the “project” stands as an archetypical form of economic conduct, a standard for the expression of the connectedness and creativity of a liberal entrepreneur, as signalled by Boltanski and Chiapello (2005). Climate change negotiations have come to adopt this form as a critical instrument for the implementation of international climate policy and the promotion of collective action.

These insights are limited to the type of prospective valuation practices examined here and, perhaps more narrowly, to a single case. However, we conjecture that they would be helpful in understanding the problems of prospective valuation in general. Counterfactual display is something that can be more or less explicit, more or less articulate. Its explicitness and articulation are rather significant in carbon offsetting and, more generally, in climate change politics. But counterfactual display is at work, with its nuances and traits, in many

other instances of economic valuation. The anthropology of financial valuation presented by Ortiz (2013), for example, interrogates the virtual scenarios that govern the practices of investment in the financial services industry, which implies drawing attention to the meanderings of counterfactual display in financial valuation formulas. Tracing the moral and political work that translates into the organization of a particular calculative setting, examining the criteria of truth and reality that inform the idea of future value, and scrutinizing the *persona* of the “free investor” that confers meaning to valuation, as Ortiz (2013) does, amounts to enriching the understanding of calculative contrivance, counterfactual reality, and entrepreneurial drive in valuation practices. Similarly, the comparative sociology of the monetary valuation of environmental damage proposed by Fourcade (2011) involves an inquiry into the articulation of possible worlds that is at stake in the analysis of contingent valuation. Putting emphasis on the different styles of statistical practice and their effects, engaging with the ways in which the “What if” question is made actionable, and observing the operations of a capitalist mode of thought are also part, in our view, of an elucidation of the three significant aspects of counterfactual display that we extracted from our case study.

## Conclusion

Today, planting trees is one initiative in the collective struggle against climate change. But these carbon sinks, it is said, need to be economically viable. The system propelled by the Kyoto Protocol relies on the instauration of economic incentives that are meant to enable, at the lowest possible cost, favourable arrangements for the reduction of carbon emissions or for the removal of carbon from the atmosphere. Carbon offsetting reforestation projects are one example of such arrangements. As our case study illustrates, they rely on documentation. And it is within this documentation where the craft of counterfactual display resides: the demonstration of the value of the conditional world controlled by the project developer and made possible by the purchasers of the generated carbon credits and by the investors interested in the profitability of the activity.

There are several ways in which things could have been different. Reforestation initiatives could have been bound to sovereign determination and relied exclusively on the mechanisms of state policing and public finance, with the idea of carbon offsetting being dropped and a democratic state being placed at the centre of the climate arrangement. It is all a question of plausibility. But plausibility is a ductile condition, and the propagation of modes of valuation that orient reality in one direction makes other possible worlds less and less “credible.” Today, for example, negotiations around REDD+ (Reducing Emissions from Deforestation and Forest Degradation in

Developing Countries) are reopening the debate about how to organize collective action. While some negotiators defend a neater implication of governments, a more nuanced role for private entrepreneurship, and a more affirmative presence of civil society, the project polity is a persistent option, which gains solidity from the fact that offsetting forestry projects are already implemented.<sup>5</sup>

We suggest that reflection on the transformation of the politics of global nature requires an examination of the devices of valuation that are mobilized. The notion of counterfactual display contributes, we believe, to that task. Defined as the practice of articulating and demonstrating prospective conditional scenarios, and considered from the vantage point of an anthropology of documentation, counterfactual display can be identified in a number of situations and, hence, be considered as a promising topic in the emerging repertoire of valuation studies.

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<sup>5</sup> This observation is based on the first author's doctoral research, which includes an investigation on REDD+ negotiations.

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