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# A number is worth more than a thousand pictures: The case of designers' cynical resistance through quantification

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## abstract

This article draws on an ethnographic investigation of product development at an engineering organization to examine the struggle faced by designers in justifying design proposals when cooperating with engineers and managers. Frustrated by the priority given to numbers over other modes of evaluation traditionally used in design, designers in this case developed and mobilized their own evaluation device to quantitatively prove the validity and worth of their work. This quasi-parodic form of evaluation enables designers to criticize and influence strategic project decisions. At the same time, this cynical act of resistance paradoxically endorses the quantitative approach and undermines designers' own professional expertise as a valid way of conceiving worth, which ultimately renders this move more indeterminate than what a distinction between resistance and conformity denotes. Overall, the study adds to our understanding of how modes and principles of justification typically embraced by professional groups can be unsettled by attempts to protect them. In doing so, it brings to light the ambivalent nature of resistance through a cynical embrace of quantification.

## Introduction

In the wake of a wide-ranging neoliberal impulse to 'modernize' organizations, attempts to evaluate, monitor, rank and audit performance in

the name of accountability, transparency and efficiency have become common features of organizational life (Dahler-Larsen, 2012; Muller, 2018). The development and implementation of evaluation devices and indicators underpins much of the project of Strategic Management and the orientation known as New Public Management. The use of these tools is often justified as a universal good that helps organizations meet market demands and ensure quality standards. This presentation of evaluation devices and indicators as uncontroversially beneficial has helped them proliferate to such an extent that we can now talk of the widespread institutionalization of evaluation in contemporary culture. However, as many critics have argued, the zeal for such approaches has increasingly led to evaluations being treated as ends in themselves, conducted for their own sake in a manner that amounts to little more than a 'shallow ritual' (Power, 1997) or even a 'tyranny' (Muller, 2018). For instance, the introduction of evaluation devices and indicators has been said to undermine the autonomy and discretion of professionals (Champy, 2006; Dahler-Larsen, 2012; Shore and Wright, 2015; Styhre, 2013) and to trigger dynamics of conformity and resistance (Espeland and Sauder, 2007; Forseth et al., 2019; Townley et al., 2003).

This article contributes to the growing literature on valuation studies (Helgesson and Muniesa, 2013; Lamont, 2012), as well as to debates on the managerialization of professional work (Noordegraaf, 2011; Styhre, 2013). It does so by examining how two professional groups with distinct concerns and conceptions of value – designers and engineers – negotiate tensions as they grapple with the imperative of measured performance in the context of a large manufacturing company with a long engineering tradition, *Ares Construction Machinery* (ACM). To put it crudely, while engineers in the study tend to adhere to a prevailing managerial regime tied to principles of efficiency and optimization, designers are habitually more concerned with principles of aesthetics and perception. In a context that is committed to the notion of measurable efficiency, designers struggle to justify their design proposals and communicate their concerns effectively in their cooperation with engineers. Frustrated by the widespread acceptance of a value framework that is unable to account for the aesthetic contribution of their work, some designers engage in an experimental political manoeuvre with

cynical undertones: the concoction of their own evaluation device to quantitatively 'prove' the validity and worth of their work. This quasi-parodic form of evaluation enables designers to influence strategic project decisions. However, the use of the device, and in particular its implicit – albeit ironic – endorsement of the evaluation agenda, leaves an ambivalent aftertaste that proves controversial among designers. This study probes this ambiguous blurring of boundaries, drawing on insights from organizational literature on cynicism and resistance (Butler et al., 2015; Fleming and Spicer, 2002; 2003; Karlsen and Villadsen, 2015).

Following recent calls for the study of the 'dynamic intertwinement' between devices of valuation and valuation cultures (Zuiderent-Jerak and van Egmond, 2015: 66), this article focuses on the performativity of the novel evaluation device as it intersects with the working values of professionals labouring at ACM. The study adopts a 'post-critical perspective' that foregrounds the critical capacities (Boltanski and Thévenot, 2006) and experimental dispositions of actors in the field (Winthereik and Jensen, 2017) in order to illustrate how unsettled values are inherent to situations in which collectives of people and technologies vie to shape what counts in an organization (Dussauge et al., 2015; Hauge, 2018). It tells the story of a group of designers who develop an evaluation device to measure their own work and then mobilize the numerical output as a form of critique and justification (Boltanski and Thévenot, 2006). I argue that this critical experiment can be viewed as an organizational micropolitical variety of 'statactivism' (Bruno, Didier and Prévieux, 2014), that is, the use of quantification for purposes of critique and emancipation. This approach enables designers to reconfigure power relations and secure room for manoeuvre in ways that obfuscate any neat distinction between conformity and resistance to the managerial regime.

In the first section of the article, I delineate the theoretical background of the study, before going on to describe the methods and the research setting. The empirical narrative is divided into two parts: the first describes the struggles designers face in justifying their views when they disagree with engineers and managers; the second describes the genesis and deployment of the evaluation device as an experimental form of critique and resistance.

The discussion section then expounds upon the implications of this research. The study contributes to the literature on (e)valuations in organizations by illustrating how efforts to quantify the unquantifiable as a form of cynical resistance can afford punctual political victories for professional groups, while at the same time implicitly endorsing the disregard of values that cannot be measured.

## Theoretical background

*Towards a post-critical approach to measurement and managerialism*

In *The postmodern condition*, Jean-François Lyotard (1984) delineated a profound cultural shift in the status of knowledge in computerized societies, arguing that the apparatus of legitimation hitherto supplied by grand narratives had come to be replaced by a generalized spirit of performativity. By this he meant that, after the deflation of the teleological claims associated with modernity, the worth and legitimacy of knowledge had now become a function of the technological criterion of efficiency; that is, the telos of knowledge was no longer 'truth' but heightened performance measured in terms of an input-output ratio. One could argue that the subsequent proliferation of evaluation systems in organizations constitutes a manifest confirmation of this aspect of Lyotard's (1984) thesis.

In resonance with Lyotard's analysis (1984), critics of audit and measurement cultures have thereafter argued that the credo of measured performance betrays an obsession with efficiency and control as paramount principles (Muller, 2018; Power, 1997). Such unbridled impetus for efficiency, Lyotard (1984: xxiv) argued, is neither harmless nor neutral for it 'entails a certain level of terror, whether soft or hard: be operational (that is, commensurable) or disappear'. Following this line of thought, it is not shocking that some have postulated that the ghost of Taylorism still lingers and haunts the ideal of managerial efficiency underpinning and justifying the cognate projects of Strategic Management (Stoney, 2001) and New Public Management (Tolsby, 2000).

In fact, many scholars in the social sciences have opted for a largely tyrannical or oppressive reading of the spread of quantitative measures in organizations (see e.g. S.J. Ball, 2003; K. Ball, 2010; Larner and Le Heron, 2005; Muller, 2018; Shore and Wright, 2015; Strathern, 2000). One recurrent aspect of this line of critique is that, as Shore and Wright (2015: 25) argued, the drive for performance measurement 'reshapes organizations into ever-expanding systems of measuring, costing, monitoring and ranking', instituting new authoritarian forms of governance to 'manage' and 'control' employees, who, wittingly or not, end up 'calibrat[ing] their work and worth against their organisation's performance indicators' (*ibid*.: 26). Even more nuanced analyses have drawn similar conclusions, underscoring the self-disciplining effects wrought by quantitative measures (Sauder and Espeland, 2009) and showing how people alter their behaviour when subjected to evaluation in ways that conform to or resist those measures (Espeland and Sauder, 2007; Townley et al., 2003).

Widely similar critiques have been undertaken within the sociological literature on professions, where the pressures of managerialism and quantification have drawn a great deal of attention (see e.g. Ackroyd et al., 2007; Farrell and Morris, 2003; Leicht et al., 2009; Leicht and Fennell, 1997; Styhre, 2013). Such critiques depart from the premise that the very idea and institution of professionalism is under threat by managerialist interventions and instruments. Professionals are now expected to justify their work and meet principles of evaluation prescribed in balanced scorecards, key performance indicators and other quantitative assessments, under whose authority professional judgement and discretion find themselves increasingly subsumed (Leicht et al., 2009; Styhre, 2013). However, these overlapping critiques on the effects of performance evaluation in organizations and the managerialization of professions, respectively, tend to 'victimize' the subjects of evaluation, generating unhelpful purified dichotomies between managerialism and professionalism (Noordegraaf, 2011; 2016), between structure and agency (Gleeson and Knights, 2006). Here, evaluation is liable to be portrayed as an overwhelming external pressure or a management-sanctioned initiative of which employees or professionals are either the helpless victims or the strategic dissenters. Such

analyses tend to assume the efficacy of technologies of quantification, their normative pressure being explicitly or implicitly characterized as a unilateral fait accompli, allowing for only two possible responses: conformity or resistance.

This article, by contrast, seeks to engage in a different critical gesture that is more aligned with what some have called a 'post-critical perspective' (Winthereik and Jensen, 2017), drawing inspiration from the 'symmetrical twins' (Guggenheim and Potthast, 2012) of actor-network theory (ANT) (Latour, 2005) and the sociology of critical capacity (Boltanski and Thévenot, 2006). Such perspective entails a 'lateral' movement to displace the task of critique from the privileged position of the analyst to the actors themselves (Guggenheim and Potthast, 2012), replacing the notion of critical distance for a probing empirical proximity to everyday controversies and the critical reactions they elicit from those involved in them (Boltanski and Thévenot, 2006). Here the critical edge lies in the production of descriptions that refrain from cleaning up controversies (Latour, 1993), bringing matters of concern to the fore (Latour, 2004). So, rather than reifying the 'evaluation monster' as managerialism personified, this study seeks to foreground its *contingent* character (O'Doherty and Ratner, 2017) by approaching evaluation as a *distributed set of practices* that are mobilized for justification and critique by actors in the field, and whose performative effects entail more indeterminacy than what a straightforward distinction between conformity and resistance lets on. To develop this post-critical perspective I rely on the conceptual resources offered by the aforementioned 'symmetrical twins' not only in relation to the notion of critique, as presented above, but also in relation to evaluation, with the aid of literature on valuation studies.

*Justification work and valuation devices*

As Zuiderent-Jerak and van Egmond (2015: 47) argued, the field of valuation studies has two main inspirations: economic sociology and science and technology studies. Within these disciplines, the sociology of critical capacity and ANT remain two very influential approaches, respectively. Both have been widely mobilized in the transdisciplinary domain of valuation

studies: the former notably in relation to its attention to how people assign worth to things based on a variety of principles of justification (Boltanski and Thévenot, 2006), and the latter notably in relation to the role of devices in the construction of collectives, such as markets (Muniesa et al., 2007).

On the one hand, with respect to the sociology of critical capacity, this article particularly draws on its emphasis on 'justification work' (Jagd, 2011). Boltanski and Thévenot (2006) focus on those everyday moments of tension in which people are compelled to justify their actions during the course of a disagreement or dispute. They observed that, confronted to this imperative of justification, people may appeal to different and incompatible modes or principles of evaluation to prove the justness or correctness of their claims or actions. Distinct modes are incommensurable since they embrace particular notions of the good, the right, the desirable, and thus conceive of value in a fundamentally different manner by mobilizing 'discrete metrics, measuring "instruments," and proofs of worth objectified in artefacts and objects in the material world' (Stark, 2009: 13).

On the other hand, with respect to ANT, this article emulates the focus on devices that emerged in STS (Akrich, 1992; Callon, 1987) and was further developed in social studies of markets (Callon, 1998; Callon et al., 2007). The latter stream of literature has demonstrated how devices such as benchmarking procedures or accounting methods are neither mere instruments in the hands of economic actors nor tokens of some version of technological determinism, but can be better grasped as 'material and discursive assemblages that intervene in the construction of markets' (Muniesa et al., 2007: 2). By transcending in this manner traditional human/non-human agency divides, this perspective foregrounds how devices perform and organize collective action in a variety of ways, attending to the mechanisms that facilitate and solidify economic valuations. Recently, this notion of device has become an entry point for the analysis of situations of valuation that go beyond marketization to include a variety of '*valuation devices* that are mobilised in queries about the value of things and attempts at making things valuable' (Doganova, 2019: 256).

Indeed, several studies of valuation in organizations have paid particular attention to the work of devices (see e.g. Espeland and Sauder, 2007; Forseth et al., 2019; Muniesa and Linhardt, 2011; Sauder and Espeland, 2009). By surveying their effects, studies in this vein recount how evaluation devices do not simply measure the value of something, but actually intervene in making things valuable (Kornberger et al., 2015). That is to say, devices such as rankings or key performance indicators shape the phenomena they are supposed to evaluate.

Now, while both of the symmetrical twins converge on a broad definition of valuation as 'any social practice where the value or values of something is established, assessed, negotiated, provoked, maintained, constructed and/or contested' (Doganova et al., 2014: 87), they diverge in their understanding of the 'stuff' that makes these valuation practices (Hauge, 2016; Zuiderent-Jerak and van Egmond, 2015): whereas ANT-informed accounts emphasize the stern influence of devices (Doganova, 2019), perspectives informed by Boltanski and Thévenot (2006) give pre-eminence to the role of cultures or worlds of worth said to ultimately frame the work of devices. This problematic culture-device opposition has led to calls for greater attention to their 'dynamic intertwinement' (Zuiderent-Jerak and van Egmond, 2015: 66) so as to avoid reproducing stale, deterministic debates that oppose 'the social' to 'the technical', which has prompted suggestions for an 'organizational turn' in valuation studies (Hauge, 2016). The empirical case of this article lends itself to this effort by unfolding how the deployment of an evaluation device intersects with and unsettles the working values of professionals whose expertise is suffused with particular principles and ideas of what constitutes worth.

*The politics of quantified measurement: Activist and cynical forms of resistance*

The study of valuation is intrinsically tied to political questions (Helgesson et al., 2017). Since evaluation devices and measurement techniques establish demarcations of what gets valued in the first place, of what gets 'taken into account' (Whittle and Mueller, 2010), they are irremediably bounded up with issues of inclusion and exclusion (Mennicken and Sjögren, 2015). Here, the dominance of quantification as the prime technology of performance

assessment (Espeland and Stevens, 2008) and the power of numbers as a privileged mode of communication and persuasion in social life more broadly (Porter, 1995) cannot be overlooked. Indeed, numbers entail commensuration, that is, they turn qualities into quantities and transform all difference into a question of magnitude, which implies a repudiation of incommensurable values (Espeland and Stevens, 1998).

That said, there are two contrasting senses in which evaluation devices and measuring instruments are often deemed 'political' (Helgesson et al., 2017). One has to do with the idea of considering these technologies as a means of control, as most critical perspectives tend to do; the other one refers to 'situations of disruption, conflict, dissent and controversy, rather than of control' (*ibid*.: 3). The latter sense best aligns with the post-critical perspective adopted in this study. Rather than viewing quantification as a tool of oppression and control unilaterally wielded by the powerful (i.e. management), here the researcher is encouraged to scrutinize how it is put on trial (Muniesa and Linhardt, 2011), enacted at the margins (Mennicken and Sjögren, 2015), and maintained across collectives of people and artefacts (O'Doherty and Ratner, 2017).

Not only does this perspective allow for the consideration of quantification as an arena of political struggle, but also of experimentation (Winthereik and Jensen, 2017). The notion of 'statactivism' (Bruno, Didier and Prévieux, 2014) seeks to designate those subversive enactments of quantification at the margins. Proponents of this neologism, formed by the contraction of *statistics* and *activism*, use it to describe those experiments aimed at deploying statistics and other forms of quantification as means of activist contention and resistance to criticize and influence particular states of affairs (Bruno, Didier and Prévieux, 2014; Bruno, Didier and Vitale, 2014; Didier, 2018). Resistance to the monopoly of statistics and the proliferation of managerialist instruments takes on an active form wherein fire is fought with fire, as it were. In this manner, statactivism underscores that quantification can also be a mode of resistance that galvanizes collective action, contrasting heavily with more 'passive' notions of resistance to measurement in organizations characterized by scepticism and cynicism (see e.g. Townley et al., 2003).

Indeed, cynicism, like humour more generally (Butler, 2015), constitutes an ambiguous mode of resistance in organizational life (Fleming and Spicer, 2002; 2003; Karlsen and Villadsen, 2015). A stream of critical management research has argued that, despite exuding an aura of transgression, the act of keeping a 'cynical distance' often assumes the status of consent or conformity (Fleming and Spicer, 2002); that is, even if employees distance themselves by being sceptical or scoffing about managerial claims or demands, they end up performing their prescribed roles in everyday practices, ultimately reinforcing the power relations they meant to criticize (du Gay and Salaman, 1992; Fleming and Spicer, 2003; Kunda, 1991). In other words, cynicism inadvertently bolsters up managerial prescriptions by the very fact that it gives cynical employees the illusion that they are detached, autonomous agents (Fleming and Spicer, 2002; 2003), ultimately granting cynical resistance a rather passive, if not futile, character. This impasse has prompted efforts to revisit cynicism's critical-subversive potential (Karlsen and Villadsen, 2015). Yet what is clear from this literature is that it is very difficult to make a clear-cut distinction between conformity and resistance when it comes to cynical attitudes towards managerial instruments and prescriptions; what is transgressive and subversive in a particular sense and set of circumstances, may be conservative and subservient in others (Fleming and Spicer, 2002).

This article deploys these insights to probe into the ambiguities found in the empirical case, which, as will be shown, displays a curious amalgamation between activist and cynical forms of resistance. However, consistent with the post-critical perspective delineated above, this analysis rejects the top-down version of critique espoused in critical management literature and thus refrains from any attempt to 'unveil' actors' illusions, letting them instead perform their own critiques.

## Method and setting

This article draws on an ethnographic study of design work at a manufacturing firm. The study sought to gain an in-depth understanding of organizational life at the company's design department. The fieldwork was

carried out between 2012 and 2015 and included participant and non-participant observation of team meetings, meetings with engineers and product planners, design reviews, presentations, strategy workshops, exhibitions and informal gatherings. Digital documentation such as slide-decks, spreadsheets, posters, mood boards, reports, prototypes, diagrams, videos and other digital artefacts of the sort were also gathered. Most of the observational material was recorded using field notes, except for two meetings that were audio-recorded. There are approximately 50 fieldwork entries corresponding to the observed events. The field notes included a record of interactions, conversations, and the use of artefacts. Also, 32 semi-structured interviews were conducted, generating around 40 hours of recordings. The semi-structured interviews were designed drawing on the insights derived from fieldwork observations. Most of the interviewees were people working at the design studio, but several people external to it were also interviewed. The interviews were all audio-recorded and lasted between 45 and 100 minutes each. Almost all interviews were fully transcribed.

In ethnography, as Kunda (2013) argued, 'data collection', 'data analysis' and 'writing' are not distinct stages on a conceptual, practical or temporal level. So, when it comes to collecting and analysing the material, I set out to abide by an emic commitment to withhold pre-established analytical categories and let the actors deploy their own worlds. More specifically, my aim was to let the actors perform their own critiques and articulate their own ideas of what is valuable, as I followed their evaluation practices. By using controversies as a focal point to examine rich articulations of conflicting values (Dussauge et al., 2015), I was able to construct a picture of engineers' and designers' particular conceptions of value and position it in relation to managerial demands of performance evaluation. This picture was further informed by interviews and documentary analysis of reports and evaluations. The analysis of evaluation practices consisted in unfolding the performative capacity of the evaluation device with special attention to its 'script' (Akrich, 1992), that is, the assumptions that devices 'embed on what is valuable, who is entitled to value and whom is to be valued' (Doganova, 2019: 260). At the same time, I moved strategically between emic and etic registers to attempt to generate novel interpretations of 'what is going on

here' (Barley and Kunda, 2001). The use of the notions of 'conformity' and 'resistance', 'cynicism' and 'statactivism' reveals a clear example of such move towards the etic in an endeavour to further the academic discussion around the effects of quantitative measures in organizations. In this manner, the present account was constructed through an iterative movement between the emic and the etic, between the empirical material and the literature.

The design team at the centre of this study worked at the design department of a large manufacturer of construction machinery and equipment, pseudonymously referred to as *Ares Construction Machinery* (ACM) in the study. Over the years, ACM expanded its product range and market penetration by means of a series of acquisitions. This meant that, as a result of this growth strategy, ACM had different product platforms located in different countries around the world with dedicated engineering teams specialized in particular product ranges (e.g. excavators, wheel loaders, pavers, etc.), but with a centralized product planning function (PPL) located in Sweden.

As a corollary, brand consistency became a continual challenge for ACM. In the mid-2000's, the first design director for ACM was appointed, assembling the first in-house design team at the company in an attempt to create a consistent range of ACM products and promote commonality between the different technology platforms. Prior to this, design work was done by engineers or often commissioned to external design consultants. So, at the time of the study, the in-house design team was still a relatively new addition to the organization, and was still in the process of building legitimacy at ACM. In this context, PPL acted as management, coordinating the work of engineers and designers in product development efforts.

Here, it is worth noting that the professions of design that emerged in the wake of the industrial revolution, such as industrial design, have not attained the same stature as more established professions such as engineering or architecture. In the construction equipment industry, moreover, the contribution of designers is not as celebrated as in other branches of the automotive industry. Indeed, construction vehicles are

sturdy, rational machines considerably less glamourized than transportation vehicles.

On top of that, at the time of the study, cost reduction had become an operational priority at ACM. The company had been struggling to boost profitability ever since the financial crisis. In 2013, sales fell almost 10 percent and net profit dropped by two-thirds. This prompted job cuts and a series of operational restrictions to reduce costs. In response to the underwhelming financial results, the company launched a 'cost-efficiency strategy' running until the end of 2015. In this context, cost-efficiency became the default principle of evaluation and a central arbiter in the definition of what counts.

## Justification struggles – or the problem of measuring design

Since the advent of integrated product development, designers working in industrial settings have been expected to participate in the early stages of the product development process as members of cross-functional teams. As a company, ACM strove for working in this manner through the establishment of support processes to inscribe and facilitate the early involvement of relevant actors in product development projects, but having geographically spread-out product platforms made this ambition difficult to realize. On repeated occasions, projects started without designers being involved from the outset. And while they were used to negotiate and integrate competing interests and concerns to deliver a design, some designers felt like they were not operating on a level playing field, as one designer pointed out: 'It's frustrating that we don't have an authority. We're not seen as the experts, but more like a supporting function'. They connected this perceived lack of authority to the fact that their concerns frequently failed to resonate with engineers and carried little weight in project decisions. In this context, designers and engineers would often find themselves in principled disagreements over what counts.

Added to this, following the new operational restrictions, key performance indicators (KPIs) were established to reward employees for furthering cost-saving efforts in development projects. This reduced design work to a

redundant, cost-adding activity in the eyes of many engineers who perceived the involvement of designers as a hindrance rather than an aid. Designers, on the other hand, felt threatened by what they viewed as an excessive focus on cost reduction and operational efficiency. As one designer put it, 'there's a focus on reducing costs that resembles a fetish, and it consumes every decision'. In internal meetings at the design department, designers often discussed and complained about this. Design proposals to change the colour of handrails or add a bend on a panel became a matter of contestation as engineers scrutinized every cost-adding move set forth by designers. One designer qualified this state of affairs as 'Tayloristic' and 'very mechanical', and another likened it to working with a 'hand tied on your back.' As it stood, efforts to promote 'good design' were at odds with a prevalent fixation on cost reduction. A fixation that left them in a weak position to make their concerns count, as one designer underscored: 'you have us trying to push for good design in projects, and we don't have that much pull because the people making the decision, they only make decisions driven by cost.'

Their work being considered largely superfluous and peripheral compared to the centrality of cost considerations, operational efficiency and technical precision, designers were constantly faced with the challenge of going an extra length to provide justifications for their work, which proved to be no easy task in an engineering-oriented context, let alone in a cost-sensitive one. The emphasis on efficiency as preferred principle of evaluation enacted in various performance indicators often undermined designers' efforts to articulate their own conception of value. But what did designers conceive as valuable? What was at stake for them when stepping into a project?

The designers in the study often tied their conception of value to principles of aesthetics, understood in a broad sense as the experience of the embodied senses. During weekly meetings, designers gathered to comment on each other's ongoing work and, in their discussions, they often underscored the importance of building compelling in-vehicle experiences whereby operators could feel supported to complete their tasks. Their attentiveness to how people experience things was closely connected to a strong sense of craftsmanship and attention to material details. As a general rule, designers

cared deeply about the 'character' and the 'look and feel' of products, taking great pride in translating the ACM brand into designs characterized by a certain style that could be consistently recognized across product ranges, as stated in documents describing their 'design philosophy'. The 'impression' generated by their designs was also a critical factor for many of them. That is to say, designers generally had great regard for how designs affected people emotionally.

Engineers in the study, on the other hand, often tied their conception of value to principles of efficiency in relation to technical aspects such as reliability, safety and productivity, but also operational aspects such as cost. These concerns were also largely upheld by management, that is, PPL, which was mainly made up of engineers. As Styhre (2013: 203) pointed out, engineers are among the professional categories that are more likely to embrace or actively participate in the development of certain managerial initiatives or routines. In company reports, ACM engineers were celebrated for developing 'world-class technical solutions'. This conception of value rooted on technical efficiency was also made evident in situations of dispute whereby some engineers produced justifications to support their criticism of designers' work by appealing to cost and emphasizing compliance with technical specifications as the chief concern. For many engineers, matters of technical performance took precedence over matters pertaining to 'character' or 'impression', which were more or less dispensable aspects as evinced in their negotiations with designers.

At the same time, disagreements between designers and engineers played out not only at the level of principles, but also – necessarily – at the level of measures of performance. Crucially, contrary to the work of designers, engineering work was quantifiable. When developing a product, engineers' performance could be measured in a very straightforward fashion. For example, fuel efficiency, the relationship between distance travelled and the amount of fuel consumed by a construction vehicle, could be accurately calculated. The same went for engine power, travel speed, engine noise, cost, etc. Design work, by contrast, could not be measured in the same manner. How does one measure the look and feel of a product? The character? The impression? There were no unequivocal metrics or

performance indicators to account for that. For designers, 'measuring performance' was closest to the notion of providing constructive critique to an evolving design proposal, rather than establishing metrics tabulated in a list of specifications. Formal design reviews took place at different stages of the design process in which people internal and external to the design department were gathered to evaluate and comment on a particular design. In addition to this, life in the design studio was imbued with informal, evaluative engagements whereby designers would casually invite colleagues to judge their work and provide feedback. In this manner, designers measured performance by making qualitative judgements, not by performing numerical calculations.

These struggles were often a matter of formal and informal discussion among designers. One time, during their annual 'strategy workshop', designers discussed at length how hard it was to communicate the 'value' that design 'brings to the table' outside of the design department. This was attributed to the notion that, unlike engineering, design was a practice richly informed by 'intangibles,' such as 'values and emotions' which were hard to articulate. Encapsulating the quandary they found themselves in, one senior designer emphasized: 'We need to convey what we do, essentially. The thing is that engineers can measure everything they do, but what about us?' Some designers concluded that traditional 'measures of performance' carried out in the design studio were insufficient, since these were performed *on their own terms*. Typically, designers raised their concerns through visualizations in an attempt to bring their perspectives to bear upon project decisions and future strategies. They crafted sophisticated visuals to explain what was at stake in the project and to justify design decisions. Measures of performance were tied to the attribution of aesthetic and perceptual qualities to designs, using words and images. For instance, documents detailing the evaluation of design work on certain products included descriptions abounding in qualificatives such as 'emotional', 'stylish', 'smart', 'open', 'nice', 'caring', 'warm', 'friendly', 'rounded', 'pleasing', 'flowing', 'streamlined'.

In short, whereas the concerns of designers were expressed in words and images, the concerns of engineers were expressed in numbers. Therefore, as it turned out, the issue for designers was not only about upholding their

conception of value in principle, but also about finding the right ways to assess or evaluate their concerns in order to make them compelling to others in determining courses of action. This led designers to rethink the question of measurement altogether.

## Critique through an evaluation device – or the work of measuring design

A controversial incident during a project would prove decisive in the emergence of a new measurement technology, an evaluation device for design features. The project in question was the development of a soil compactor machine. To define a positioning strategy, PPL usually employed a standardized system which listed, ranked and compared the technical features of all the machines within the same category, competing in the same market (e.g. fuel efficiency, vibration frequency, oscillation angle, centrifugal force). Through a formula, the system calculated a feature index, which allowed PPL to examine the relationship between feature offering, price and market share, thus providing a frame to define a target position for ACM products in relation to the competition.

At the time, a competitor was producing and commercializing high-quality soil compactors in the same market. So, in the customary analysis performed by PPL at the outset of the development process, not unexpectedly, this competitor got a fair score of 75 percent in feature offering. It was then decided that ACM's soil compactor would compete in this market by outperforming this competitor in technical features. The goal was to produce a machine with a feature index of 90 percent. The dedicated product platform for this type of machine was based in a remote location, where engineers began working on the project. With the imperative of cost-efficiency bestriding operations at ACM, these engineers set out to make the cheapest possible machine without compromising the feature offering previously determined by PPL.

The project was well under way when designers got involved after a late-coming management decision. The engineers had basically designed the machine by themselves at that point. Usually, designers hated it whenever

that happened because it meant they had simply been called to provide 'cosmetic fixes' to an almost finished design. 'If we just come now really late and painted the pig, would that matter?', told me one designer when asked about their late involvement in the project. However, this time a certain sense of satisfaction and even hilarity accompanied their sense of injustice. What the engineers had come up with looked utterly precarious, far from the stylish appearance that designers thought preferable. During one internal meeting at the design department, the CAD model made by the engineers was shown, producing a steady stream of laughter in the room.

Some of the senior designers thought that maybe this turning of events would help them drive their criticism home and get more recognition for their work. Assuming that the problem would be self-evident, two senior designers approached PPL expecting they would recognize that the machine was clearly not acceptable, that this was not 'good design'. However, they were left perplexed when PPL did not 'see' the problem. One of them recalled: 'We showed this to really high up managers, and they said: what do you mean? They just couldn't see it. That's kind of amazing!'

PPL's justification was that the machine was fulfilling the identity manual. This was a document authored by the design department and updated every year detailing a series of guidelines and recommendations to be taken into account when designing ACM machines. Considered an asset by designers in the beginning, the identity manual became a matter of controversy over the years. With no little derision, some designers called it 'the cookbook' because it purportedly reduced design to a recipe. Essentially, the manual established rules for colour schemes for different parts, iron mark applications, gauge positions, and so on. The identity manual was useful over time because it set a standard that enabled designers to create a consistent range of ACM machines across the different product platforms.

However, according to some designers, the identity manual gave a wrong impression of what design work really entailed. When it came to project decisions, the authority of designers was limited to the guidelines established in the identity manual, and in situations where disagreements went beyond the elements included in the document, designers remained

unable to defend what was at stake for them. Since the authority rested on the manual rather than on their professional judgment, many designers felt like they had no significant influence. Therefore, most designers were critical towards the identity manual and wanted to do away with it altogether. In their view, compliance with the identity manual could not be equated with 'good design'. In this case, the engineers involved in the project had simply followed the recommendations laid out in the identity manual. And ugly and misshapen though it might have been, the result was acceptable to PPL because it was compliant with the identity manual and had the necessary technical features. This was hard to swallow for designers in the project, who tried to reason with PPL by explaining why the machine, as it stood, did not 'look right'. Yet their critique of the poor aesthetic quality of the machine seemed to fall on deaf ears. As it turned out, what constituted 'evidence' for these designers was not evident to PPL or engineers.

Designers were then left with very little room for manoeuvre. They came up with a few proposals, but this state of affairs exuded an air of injustice that motivated them to experiment using quantification to defend their own agenda. Inspired by the feature index employed by PPL, designers came up with their own 'design feature index tool'. One designer amusedly explained the rationale underpinning this experiment: 'design is not measurable and that's what we are trying to fix'. So, they decided to measure what they called 'effort spent on design'. Here, effort was defined in terms of how much money was needed to produce a particular feature by looking at the materials and techniques employed. It was about the 'complexity' of a feature. Generally, the more complex it was, the costlier it was to produce. To put it another way, to get top score one would have to do something really expensive and complex. The objective of this evaluation device was one of critique; they sought to empirically verify how much competitors were willing to invest in design features, and contrast that with ACM's poor commitment to design investment.

Designers in the project identified all the soil compactors competing in the market. They looked at what they considered to be the most important and visually differentiating components of the machine and identified the

features that, in their eyes, drove cost and quality by analysing the materials and production techniques employed. They set a scale from 0 to 100, and assigned each feature area a weight relative to its importance. The results confirmed what was already obvious to them: although technically capable and efficient, the ACM machine was not up to par aesthetically. The distinctions produced by the scores had already been predicted by designers, but the evaluation device allowed them to define these distinctions as 'real' for others to see, confirming and amplifying designers' initial expectation. Now, armed with more than just their aesthetic judgment, they had 'factual evidence' to make their case: numbers and graphs.

Next, one senior designer called for a new meeting with PPL. During the meeting, the design team showed the results of their assessment. While the image of the CAD model had previously failed to make an impression, this time numbers proved to be a strong enough argument for PPL to recognize the existence of a problem. The senior designer leading the meeting was astonished by this, as he told me in an interview shortly after the meeting: 'Nobody asked me how I came up with the figures, no one was interested in that. But once I had a figure, we had a problem'.

The deployment of the device secured room for manoeuvre for designers in the negotiations, making their concerns visible and worthy of consideration only thanks to these numerical comparisons. Through the act of measuring, not only were designers making different machines commensurable with each other, but they were also making commensurable the separate worlds of their concerns and those of engineers and managers. At ACM, a number seemed to be worth more than a thousand pictures, disrupting the old adage. The replacement of the aesthetics of images with the parsimony of numbers in the presentation of design work was willingly, if insincerely, embraced by some designers, as one of them put it in a somewhat derisive tone:

> Even if it's basically the same work [...], we're actually now putting some figures on it, and people start trusting it. It's an Excel file so it looks scientific [chuckles], and now it becomes something. But if it's a picture in a PowerPoint presentation, or a picture on a board, forget about it.

As informants, designers did not shy away from highlighting the parodical nature of the whole operation; it was all a delicately staged performance, a sort of charade. The striking effect of the scores as they travelled reinforced the cynical attitude underlying the experiment. 'That's the beauty of it: there is a number', said one designer bemused during an interview. 'It's quantified! Graphs! Numbers! This company is run by engineers, and they love those things, so we can speak the right language', he added. Another designer highlighted that quantification was their 'game to play now'. And play the game they did.

After this, designers decided to systematize the approach and use it at the beginning of every new project. They set out to fine-tune and further standardize the scoring procedure, in an attempt to look rational and reliable. Designers upheld the device's seriousness in external interactions with engineers and managers, but internally, the quantification exercise was taken with a dose of humour by some designers, including its main proponents, who made fun of the fact that they had to go to such lengths for their work to be valued. 'If we were at Apple or a car company where design is more integrated, we wouldn't need [the device]', one designer said to me, 'but here we are so heavily an engineering organization, so this is the stuff we need [chuckles]'. Clearly, the designers that developed the device did not entertain any presumptions of objectivity, their goal being first and foremost political in character. One of them described the device as an 'anchoring material' that he used for 'political reasons' consisting in 'actually putting a value to design in numbers, not because it's totally correct, but just for something that other people can do some tangible stuff with', referring to engineers taking designers' proposals on board.

Concomitantly, this systematization of the procedure led to a concerted effort to repress aesthetic discourse in project negotiations. This marked an important change of approach for designers who, as a professional group, prided themselves on their sense of being an 'odd' community or 'sub-culture' of 'creatives' in this large organization. Now, rather than affirming their difference as a value, they began to downplay it for the sake of extending their influence in project decisions. Though insincerely done and humorously rationalized, designers began to effectively import and embrace

the formalized reporting and measuring techniques used by engineers and managers, paradoxically, in their battle to defend aesthetic considerations and push back against the managerial regime, thus cultivating a form of 'cynical proximity'. Where previously associations with artistry and the aesthetic were unapologetically embraced and adamantly promoted, now some designers opted for cautious restraint and focused instead on bolstering techno-scientific associations with new aplomb.

The irony of this move was not lost on designers. In fact, this new direction was not met without pushback from within the design department. Some designers expressed concerns that the translation of design qualities into numerical valuations was misleading. They complained that the device wrongly equated high scores with 'good design'. The focus on 'features' implied that design meant adding more and more elements, contradicting one of the celebrated principles of good design by Dieter Rams, the influential industrial designer of Braun whose work was venerated by designers at ACM: 'good design is as little design as possible'. Therefore, some designers argued that removing and simplifying was often more fundamental to improve a design rather than adding. While sympathetic with the political cause of the promoters of the device, designers who expressed disagreement thought that the device reproduced the mistake of the identity manual: sending the wrong signals as to what the value of design 'really' was.

## Discussion

Demortain (2019) argued that the sociological interest in quantification is split into two strains of research corresponding to two distinct 'regimes of quantification' (see also Mennicken and Espeland, 2019). One is concerned with quantification as a technology of governmental and managerial control contributing to the expansion of disciplinary power and neoliberal tendencies in the administration of societies (e.g. Larner and Le Heron, 2005; Shore and Wright, 2015). The other (more emergent) one underscores that quantification is also a technology that can be subverted and appropriated to facilitate collective action and mobilization (e.g. Bruno,

Didier and Vitale, 2014; Didier, 2018). Social studies of valuations in organizations have tended to enlist in the first regime by focusing on the disciplinary effects of evaluation on organizational members whose reaction is often characterized in terms of conformity or resistance. For instance, in their seminal study on reactivity and public measures, Espeland and Sauder (2007) showed how the introduction of rankings changed the way in which people made sense of and reacted to situations at educational institutions, inducing important organizational changes that enhanced conformance with ranking criteria. Forseth et al. (2019) complemented these insights by showing how patterns of reactivity can also morph from initial agreement into discord and resistance over time. The present study identifies a different pattern in which quantification is not merely a unilateral fait accompli disciplining individuals who either provide consent or resist the colonization of numerical targets and indicators, but reveals itself as a form of subversive mobilization, which aligns more with the second regime identified by Demortain (2019).

Indeed, more than a measure, the quantification of design work described in the study can be viewed as a micropolitical variety of 'statactivism' (Bruno, Didier and Prévieux, 2014), understood as the use of quantification as a tool for struggle and resistance. For designers in the study, quantification and commensuration were never ends but means of overcoming their justification quandaries. Their main concern was not the issue of the truthfulness of numbers as precise representations, but the capacity afforded by numbers to promote design interests and resist their drowning out by other considerations. This was done duplicitously with a conspicuous self-awareness that the whole operation of quantifying design work was nothing more than a ridiculous but necessary *mise-en-scène* for them to be taken seriously. Hence, the quantification of design work can be viewed as a cynical experiment in emancipation, which, as shown before, enabled the effective articulation of justifications and new forms of coordination by rendering designers' concerns intelligible and visible to engineers and managers. The study contributes in this way to a limited body of research concerned with quantification as a form of critique and mobilization in

organizational life, providing an unconventional account of resistance to measurement *by measurement*.

At the same time, a closer look at the empirical case reveals that there is more than simply a shift of regime from quantification as a form of control to quantification as a form of collective action at play in the focal organization. In fact, considering the two regimes separately would seem to reproduce the perennial distinction between structure and agency that has long afflicted the social sciences. Demortain (2019) suggested that a fruitful avenue of research lies at the frontier of the two regimes, arguing that it is by bridging this 'gap' that a more nuanced understanding of the aggregate political effects of quantification can emerge. The present research straddles both regimes and thus contributes to this end at the organizational level by illustrating how quantification, as a prevalent mode of justification, imposes its discipline yet is also enacted at the margins for subversive ends in a manner that introduces new indeterminacies and blurs any straightforward distinction between conformity and resistance, between structure and agency. The ANT-derived notion of device deployed in the study, in particular, is helpful not so much in that it bridges the 'gap' between structure and agency, but in that it reframes the question altogether by offering a different perspective concerning the political character of quantified measurement.

In line with previous studies on the performative capacity of devices to reconfigure situations of valuation (Doganova, 2019), the study illustrates how the evaluation device intervened in the redistribution of agency by expanding the demarcation of what counts. Yet, this was not just the mere instrumentalization of a particular technology by politically-minded individuals. To analyse the work of the device as an 'assemblage' (Muniesa et al., 2007) implies paying closer attention to how the subject/professional is enacted through it. That is, it implies attending to the 'script' of the device (Akrich, 1992; Doganova, 2019). As previously discussed, the device *did* contribute to the coordination of action, but what was being valued by it? By means of commensuration, the device indeed valorised concrete designs, which, in one sense, was expedient to designers' activist ambitions. Yet, in another sense, the political expediency of shifting the basis of justification

from professional judgment and expertise to quantification came at a cost. Values related to aesthetics and perception – core to the design profession – eluded the device's script, and purposefully so, as shown in the repression of aesthetic vocabulary. However, it is precisely this consistent profession of a specific set of values and principles attached to their expertise which defines the distinction and legitimacy of professional groups (Abbott, 1988). So viewed, the deployment of the device as a form of organizational statactivism had the collateral effect of undermining the value of designers' aesthetic judgment, reinforcing the misapprehension of their expertise, and weakening their professional distinctiveness. These findings suggest that, well-intentioned though it may be, the phenomenon of organizational statactivism raises questions about the unintended consequences of such a disinhibited universalization of quantification. More and more, quantification becomes less of an imposition and more of a shared framework of worth that, regardless of political intent, concedes an understanding of value as rational efficiency.

The device was not, therefore, a mere tool subordinated to the interests and intentions of designers. To construe it as a mere extension of their agency is untenable in light of the empirical evidence. Rather, the device introduced new uncertainties that worked to unsettle the bounds of ideas and principles of what is valuable among designers. For instance, it gave rise to a contest about the precise meaning of 'good design'. The notion of 'good design' enacted by the device was a major issue of contention; it favoured an analytic rationale of efficiency which stood at odds with the synthetic unity of aesthetics. Some designers were not comfortable with the standard or rationale that the device embedded, whereas its promoters justified it on the basis of the immediate political gains it afforded them. The empirical insights thus reveal the instability of values in situations of dissent and controversy wherein different devices and collectives vie to shape what counts in an organization (Dussauge et al., 2015; Hauge, 2018). In this manner, the study contributes to the analytic rapprochement between devices and particular cultures or worlds of worth that has been called for in valuation studies (Hauge, 2016; Zuiderent-Jerak and van Egmond, 2015), adding to our understanding of how the bounds of modes or principles of

justification typically embraced by professional groups can be unsettled in the very attempt to protect them by means of quantification.

In this light, the fundamental political problem of quantified measurement in organizations does not simply pertain to the struggle between managerialism and professionalism or between 'dominant' and 'dominated' groups that critical postures have tended to highlight, but rather it concerns how quantification, as a technology of valuation, partakes in the composition or institution of particular organizational realities, favouring specific modes of being in organizational life over others. As evidenced in the study, the 'managerial regime' and its measuring instruments are not some sort of reification of hegemonic corporate power, but a distributed phenomenon that struggles to reproduce itself in mundane practices across collectives of people and technologies (Law, 1994; O'Doherty and Ratner, 2017), and whose translation, appropriation, or subversion can be generative of unforeseen effects that defy easy categorizations that posit domination versus emancipation. This perspective challenges anthropocentric readings of organizational life by eschewing any recourse to a distinction between structure and agency, between an objective technical domain and a subjective cultural one. In this manner, this research follows the line of inquiry of other post-critical studies of management and measurement that have sought to deal with the impasse that traditional critique has generated in our understanding of managerial activities (O'Doherty, 2017; O'Doherty and Ratner, 2017; Winthereik and Jensen, 2017), as well as of previous research in the sociology of professions that has sought a more thoughtful engagement with the phenomenon of managerialism as more than a mere offshoot of neoliberalism (Gleeson and Knights, 2006; Noordegraaf, 2011; 2016).

So, what to make, ultimately, of designers' cynical resistance through quantification? The ambiguity at the heart of their cynical use of quantitative measures disturbs any assessment of the aggregate political effect of quantification – and of cynicism, for that matter – in definite terms, and commands nuance instead (Demortain, 2019). What is less ambiguous, perhaps, is how cynicism, despite its ambivalent status as a mode of resistance (Fleming and Spicer, 2002; 2003), made the work of

quantifying design more tolerable, if no less absurd. As Muniesa (2018: 498) playfully observed, the practices connected to the realm of postmodern knowledge in the sense of Lyotard (1984) seem to be bearable only insofar as they are accompanied by a sense of derision at the entertaining sight of their constitutive contrivances.

## Concluding remarks

This article has presented an empirical account of how professional designers mobilized quantitative measures to critique a reality and gain political leverage in a context where numbers were worth more than pictures. It has illustrated how the experimental translation of qualities into quantities afforded comparisons that enabled the effective articulation of justifications and new forms of coordination. Nevertheless, this movement towards emancipation had paradoxical repercussions. Not only was the act of cynical resistance through quantification duplicitous in its motive, but also in its effects for designers: helpful to influence concrete product decisions, but unhelpful to legitimize their aesthetic judgment and expertise. The empirical insights point to the problematic orientation pervading organizational life whereby that which cannot be measured falls outside of the realm of what can be valued – and managed. This is why, as Painter-Morland (2017) argued, organizations struggle to factor in aesthetic considerations, an aspect of design that remains too incalculable (Tonkinwise, 2011). This raises important questions about the implications that the implementation of quantification as a monistic measuring rod has for resources and forms of professional expertise that elude this general standard of value. As Espeland and Stevens (2008: 432) argued in their case for an 'ethics of quantification', measurement 'can narrow our appraisal of value and relevance to what can be measured easily, at the expense of other ways of knowing'. So perhaps an attention to aesthetics in all its ordinariness as the experience of the embodied senses can be helpful in acknowledging the limits of quantitative calculation and enable the re-discovery of modes of being in organizational life that have been obscured by an obsession with the pretence of mastery and control that is often enacted through measurement.

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