

The Social Life Of Measures.

Conceptualising Measure-Value Environments

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Abstract. Issues of measure and measurement, and their relation to value and values, are of concern in several major threads in contemporary social theory and social research. In this paper, the notion of 'measure-value environments' is introduced as a theoretical lens through which the life of measures can be better understood. A number of points are made which represent both a continuation and a slight change in emphasis vis-à-vis the existing scholarship. First, it is argued that the relation between measure and value is necessarily circular – better, entangled. Second, a conceptualisation of measures as territorialising devices is advanced. Third, importance is given to the fact that measures are not simply tools in our hands, they are also environments in which we live. Fourth, attention is drawn to the fact that the unit (n=1) is not just a quantitative happening among others, but is qualitatively distinct.

Keywords: social life of measures; value and worth; measure-value environment; value creation; valorisation (accretion of value); social logic/social teleology; metrics

*Measure is not the opposite of the revolt;
instead, the revolt itself is the measure.*

Camus

*You never know what is enough unless you
know what is more than enough.*

Blake

Introduction

Issues of measure and measurement, and their relation to value and values, seem to be of concern in several major threads in contemporary social theory and social research. Particularly in the newer variants of pragmatism, in the new economic sociology and the studies of valuation activities, in organisation studies focusing on standardisation and objectification, in the social studies of science and technology, in accounting studies as well as in the sociology of data and the digital domain (notably, big data and social approaches to data science), a rich theoretical elaboration of the *problématique* of measure has occurred over the last couple of decades. In social theory, an important prompt has come from ethnomethodology, in particular Garfinkel's (1967, 2016) grasp of objectivity as a 'practical accomplishment'. A shift of emphasis from entity to process has contradistinguished a range of works on crucial topics in the study of science,

such as accuracy (MacKenzie 1993), objectivity (Porter 1996; Galison and Daston 2007) and standards (Timmermans and Berg 1997). These regulatory ideals have been increasingly described as peculiar creations, as bounded and contingent practices aimed to stabilise certain courses of action and interaction patterns. In his classic reflection on valuation, Dewey (1939) already posed the problem concerning the priority of value as *noun* (the value) vis-à-vis value as *verb* (to value, to value). Is value – he asked – a substantive phenomenon that measure is just supposed to reveal or is it, on the contrary, the product of the very act of valuation?

In an attempt to overcome the pitfalls of objectivism and subjectivism, Dewey provided a pragmatist, behavioural explanation of valuation as a type of activity. As known, what contradistinguishes the pragmatist approach to knowledge is, in general, the fact of regarding logical and semiotic processes as relational instead of substantial, contextual instead of absolute, and modal instead of determined in a single way. The new French pragmatist approach to social research (Boltanski and Thévenot 1991, Callon and Muniesa 2005; Cochoy 2008) also seems to have retrieved and made the most of such earlier theoretical invitations. Thanks to these major developments, acts of measurement have been recently described as a type of practice that constantly repositions subjects and objects in virtue of its own performance. Calculation thus appears as not merely mathematical or metrical in nature, but rather as a composite work made of different stages including objectification, separation, individualisation, comparison, association, transformation, disembedding and distribution. Concurrently, valuation appears as a practice that is not simply appreciative of value, but valorising in itself. How precisely is it so, however, is still open to debate. For instance, Boltanski has recently remarked that valuation studies are sometimes trapped in the tension between constructivism and realism (Boltanski and Esquerre 2015). The international literature has been particularly receptive to these insights and debates. Measures, it has been pointed out, thrive as both ‘data’ (Adkins and Lury 2012) and ‘orders of worth’ (Stark 2000). Increasingly, data loops upon itself, generating a surplus of information that corresponds to novel forms of value creation. But instead of being merely metrical, repertoires or registers of worth are involved in the operation of value creation and value accretion, so that inevitably ‘all economies have a moral component’ (Stark 2009: 7). ‘Value’ thus functions as a tool to justify quantities whenever they get or might get contested (Boltanski and Thévenot 1991). Questions of measure, we may gloss, are also always questions of legitimation.

This paper positions itself within this rich and already dense scenery. Its contribution lies in inviting the enlargement of the historical horizon of relevance. It highlights how contemporary reflections on measure are better understood through a long-term genealogical regard grounded in 19th and 20th century epistemological transformations, with even deeper sources in the classical and early modern history of Western culture. Also, an attempt is made to apply the current theoretical reflections on measure and value to cases that are in part different from those dominant in the literature. In particular, measurement and valorisation phenomena concerning the body, the many, the city and the media (in a very wide understanding of these terms) will be scrutinised. Theoretically, a number of points are made which represent both a continuation and a slight change in emphasis vis-à-vis the existing scholarship.

First, importance is given to the fact that measures are not simply tools in our hands, they are also environments in which we live. While our focal awareness is inevitably attracted towards measures as technical devices and formal procedures, from the moment in which measures become infrastructural they also become an ‘air’ that we breathe, an atmospheric component of society. The notion of ‘measure-value environment’ is introduced as a theoretical lens through which the life of measures at large might be better understood, observed and studied. Second, and consequently, it is argued that the relation between measure and value is necessarily circular – better, entangled. In this light, value exists *before* as well as *after* measure, and precisely

in such 'circumnavigation of measure' lies a transformation and concretion of the nature of value. As we shall see, 'value-as-immeasurable' functions as a driving factor for the production of 'measured-values' (magnitudes, prices etc.), but also as an unsettling force that transforms measure and its apparatus as a whole. Third, here measures are conceptualised as 'territorialising' devices, that is, social territory-making acts;ⁱⁱ as such, they appear to be part of social territories and their encounters, clashes, as well as capillary intermingling (Brighenti 2010). Fourth, the argument is made that, in a general study of measures and the measure-value nexus, special attention should be paid to the special case 'n=1'. This means that the unit is not just a quantitative happening among others, but is qualitatively meaningful in itself. The tendency to treat data in the aggregate, and to break down entities in order to extract data from them, hides the significance of the unit as the element that, so to speak, 'sets the pace' for the particular measure in place. A city, for instance, can be measured in many ways that make it comparable to other cities through a number of analytic traits, such as population, area, organisation, municipal budget, etc. Yet, the uniqueness of the city in which we live, or which we love, possesses a unity and singularity – or a unity-in-singularity – that resists both decomposition into a bunch of traits and aggregation across other comparable urban entities.

In the early 21st century, we are experiencing a rapid transformation of the measures in place. Certainly, the trend towards the universalisation of basic physical measures, which has been under way since late-18th-century Revolutionary France, has reached a seeming end-point with international standardisation and the deputed United Nations organisation known as ISO.ⁱⁱⁱ While units such as meters and kilos go seemingly unchallenged, however, many relevant measure units for contemporary life are much more controversial. What about, for instance, the productivity of workers, which neoliberal management based on performance control and assessment has propelled so forcefully? Which measures are apt for human mobility (including the exceptional mobilities of refugees), which is increasingly turning into a new factor of social inequality? What about the new formations of the polity, given the insufficiency of both traditional national frameworks and the established supra-national institutions? And even, is it possible (and does anyone still care) to measure the happiness of citizens, the revolutionary right first stated in the American Declaration of Independence of 1776?

A number of societal challenges to be faced and met in the near future – challenges regarding, in particular, our models of economic growth and well being, social and spatial justice and human development, as well as the quality of human life in a shared environment at the time of geological anthropocene – all concern the establishment of viable measures for our epoch. Far from being a mere technical search for increased precision in measurement, the search for measures is inherently the quest for an axiologically-charged *just* or *good* arrangement in human affairs (of course, from the perspective of the involved actors). This is why the history of measures only makes sense insofar as what is being measured is *per se* *valuable* – or, more amply, *worthy*.^{iv} Value is what, ultimately, the *problématique* of measure is about. Yet, as we shall see, value is a most complex, metamorphic and elusive notion. The beginning of the 21st century marks one of those historical moments when a new ratio between, on the one hand, humans and other humans, and, on the other, humans and the Earth in its physical and biological dimensions, badly calls for new formulations and new imagination. If so, besides the pragmatist view of measure as activity, we also need to take into account the imaginative dimension of value-making experiences and practices. A whole social imaginary may evolve from, and concrete around, the gap between the cold side of measure (which Dewey called 'estimate') and the hot side of it ('esteem'). Understanding this gap calls for a wide interpretive framework.

A measure is, with Mauss, a ‘total social fact’, and the creation of new measures always entails the introduction of new ways of making, stabilising and transforming how we associate with others in shared environments. The ‘totality’ of measure (better, of measure-value circuits) thus refers to the fact that there is virtually no adjective which cannot be attached to the terms ‘measure’ and ‘value’: economic measure/value, moral measure/value, as well as political, aesthetic, religious, legal, psychological, biological and so on. To capture these ‘circuits’, these forth-and-back between measure and value, we may introduce the notion of ‘measure-value environments’. This notion, as we hope to show, could be helpful to unpack the bundle of facets enveloped in every single measure and each measurement act. If, following the new French pragmatists, all measurement entails the constitution of ‘spaces of equivalence’ (Callon and Muniesa 2005)^v, the notion of environment can be employed to stress the heterogeneity and complexity of the interactions occurring in such spaces. From this point of view, the words ‘complex’, ‘assemblage’ and ‘entanglement’ could also be employed. However, ‘environment’ is preferred to stress the peculiarly ‘enveloping’ aspect of measures as they conjure up veritable ‘worlds’ in which we live. A social-theoretical notion of ‘environment’ recognises the existence of a plurality of ‘regimes of nature’ (Escobar 1999, Smith 2010), and it recognises that any type of science works by creating archives of memory traces, that is, collective transformations of experienced environments (Bowker 2005). In other words, measures are simultaneously technological-material, legal-political and cultural. Every technical measurement system functions not only as an epistemic model but also, inevitably, as a power tool. No power system, no institutional organisation can exist without a whole ecology of the mind (Bateson 1972), or cosmology – even *theodicy* (justification) – of measures. Severed from the measure-value environments in which they are produced, numerical and metrical measurements are devoid of sense.

Today, certainly, it is above all *numbers*, technically crafted through digitisation, that seem to provide the master narrative of control and measurement. This fact can be read as the prolongation of a long-term trend in industrial civilisation which the historian John Nef (1964: 24) once dubbed ‘the relentlessly growing thirst for quantitative information’. By and large, the homo oeconomicus is a producer of measurable action (Foucault 2004b[1978-79]: 272). The proliferation of indexes such as performance rankings, developmental indices and productivity benchmarks amply testifies this trend (Strathern 2000; McKenzie 2001; Merry 2011; Burrows 2012; Wouters *et al.* 2015; Beer 2016). For instance, as observed by Miller and Power (2013), numerical estimates of financial returns and risk assessments play an increasing role in activities ranging from manufacturing, through healthcare, to education. Increasingly, measures appear as metrics we must live by – and stick to. These strangely flexible-yet-draconian measures have attracted the attention of scholars because of their apparently endless applicability, but also their discretionary nature as well as undesirable outcomes, including for instance surveillance and vulnerability to manipulation. However, a global history of measures cannot be reduced to a mere history of quantification. Certainly, we can easily visualise measures as metrics. Yet we should not overlook the fact that, essentially, a measure is a *ratio*, a relation. The sociology of quantification has explained how, in the act of measurement, heterogeneous beings are made comparable through a work of selection and abstraction of their properties so as to make them transferable across different domains (Desrosières 2008; Espeland & Stevens 2008; Stark 2009; Saetnan, Lomell & Hammer 2010; Thévenot 2015). In the 19th century, it had already been remarked by Peirce (1931[1857-1866] C.P.1, §1.275) that the activity of measurement is, essentially, of the same nature as the activity of classification. For Peirce, computation itself is always classificatory – that is, inherently judgemental. For his part, in *The Genealogy of Morality* Nietzsche argued that thinking integrally coincides with an act of creating and conferring value to ideas through incessant measure-making.^{vi} Indeed, thinking and measuring share the fact of producing ‘commensurate’ relations.

A measure is an inherently *relational* device, one that defines *relations of value* and assembles disparate beings by bringing them into given *configured relations* within a defined *environment*. Confusion derives from the fact that we end up calling 'value' the number produced by an act of measurement, while in fact the number or price is just the way in which the measure we are using helps us in approximating what is reputed to be an invisible real value, something that is of importance to us. Making measures is a way of making *meaning* and, concurrently, of making meaning *visible*. In this sense, the relationship between measure, value and visibility is intrinsic: if we aim to measure something it is because we deem that something, albeit existing at a 'latent' stage, to be of some value to us. Measuring presupposes that we approach something as worthy or valuable, even if we eventually find it wanting – for instance, under-specified, or wrongly specified. In any case, the act of measurement is an attempt to convert that worthiness, that a-priori unknowable value into a price; in turn, pricing is nothing else but an enactment of *visibilisation*. At about the same time as Nietzsche, Gabriel Tarde made a crucial observation in this respect: measures enable us to treat in *logical and quantitative* terms things that, in fact, pertain to the field of aims and ends. In other words, *measures turn what we want into what we believe*. This is made possible by the fact that measures 'give us back' values inscribed in a homogeneous medium, namely, 'the visible' (Brighenti, forthcoming).^{vii}

Scholars in valuation studies are currently debating how the study of valuation practices might serve to lay out a critique of valuation which avoids the 'stale discussions' and the 'entrenchments' of traditional approaches of both constructivist and critical persuasion (Doganova et al. 2014). What is clear is that measures immediately entail a whole *politics of visibility*: rather than simply epistemic constructs, measures are a domain of practical action. The ensuing visibility game is thus double: on the one hand, a whole complex work of knowledge and practice is necessary to bring a *multiplicity of elements* into a *single ratio* and, subsequently, to keep together that multiplicity; on the other hand, visible measurements do not cease to present themselves with an objective face, as if they were simple *things*. It is *the magic of measures*. Measures can be said to be magical because they entail a metamorphic move: after having turned what we want into what we believe, they lead our beliefs into producing different and further wants (something that Tarde had not considered).

To disentangle this puzzle, we may begin to consider three facets, or three axes along which a thorough investigation into measures could be pursued:

- a. Measure as *mètron*, measure unit and measure system, as well as all the empirical measurements made by applying the *mètron*. This notion corresponds to the *technological-scientific* facet of measure;
- b. Measure as undertaking aimed at implementing a policy or decision that pursue objectives fixed by a measure system or can be best made visible by such a system. This notion corresponds to the *political-administrative* facet of measure;
- c. Measure as balance, moderation, fairness, wisdom (*Sophrosyne*), as valuable and just behavior, attitude or judgment. This notion corresponds to the *moral-judiciary* facet of measure.

Usage is often ambiguous and may cover more than one meaning at the same time.^{viii} But this is not the only problem we face. The very idea of measure as *mètron* contains a duality and a tension between *process* and *object*. One illustration may clarify how measures are tied to different civilisations and historical periods: for a definite period in the history of humanity, *the book* has functioned as a measure unit in the sphere of culture and knowledge transmission. Books have made their appearance in the Gutenberg age, as McLuhan (1971) famously called it, despite the fact that movable type in China predates Gutenberg by over one millennium. Before Gutenberg typography, something similar to books certainly existed – namely, the *codex*, but as a manuscript. The difference the manuscript and the book is not only material, but conceptual:

in the Antiquity and the Middle Age manuscripts were, in fact, assemblages created as units only by scribes, librarian or bookbinders, rather than by authors – whose names, in any case, were in most cases absent (Illich 1996). Only in its typographic modern form could the book become a private, portable instrument with precise authorship and a whole authorial-readership circuit. In this sense, the perception of the book as single *unit* hides a number of technological and cultural moves that conjured up the object itself. In the digital age, the measure unit ‘book’ tends again to dissolve in favor of new measures of reading: indeed, social media contents could hardly be transferred or translated into anything like a book. The example highlights how each measure *unit* is, in fact, a heterogeneous composition in *transition* as well as in *translation*.

2. Constitutive tensions within measure-value environments

The existence of three facets in the semantic field of measure illuminates three *crucial tensions* that seem to characterise the social life of measures. The *first* tension arises between *paradigm* and *syntagm*. Measures are simultaneously formal standards and empirical practices: on the one hand, measures build upon a carefully defined, stabilised body of knowledge, epitomised in the handbook of a certain scientific discipline; on the other hand, however, they are performed through practical – often even tacit – arrangements on the ground, which may thwart, or implicitly contradict, official procedures. So, the practical workings of measures cannot be reduced to the syntagmatic actualisation of a pre-given paradigmatic matrix. Far from being an epiphenomenon of its paradigmatic existence, the syntagmatic dimension of measure reveals the inherently pragmatic *metamorphic* state of each measurement system.

Accordingly, the *second* tension arises between *episteme* and *power*: measures are ways of getting to know something about the world as well as, simultaneously, active tools to act upon the world and purposefully transform it. Deliberate, strategic activities carried out by actors such as political states, institutions and organisations, are of this type. Such activities include governing, planning, designing, and social engineering. Not simply: the very circulation of given measurements (first meaning) might engender actual effects (second meaning), introducing or enhancing social self-reflexivity through the public display of given information. Some of the most important contemporary currents in social theory have touched upon this point. For instance, system theory has helped explaining how the very fact of setting information in motion within a social system fundamentally alters its performance (Luhmann 1995[1984]), while ethnomethodology has illustrated how the work of categorisation is publicly enacted through an eminently reflexive property, namely accountability (Garfinkel 1967).

A *third* tension ensues, which concerns the unsettled relation between *means* and *ends*. Every time measures turn into targets they end up replacing the phenomenon they were supposed to apprehend in the first place. Such a ‘precession of measures’ – to borrow from Baudrillard’s (1981) famous expression, ‘the precession of simulacra’ – over measured objects is particularly clear in the case of the current thrust towards productivity and quality rankings. Academic scholars, for instance, are increasingly asked to be accountable to their H-index as a measure of their productivity, with the paradoxical outcome of having them spend their time and efforts in producing such accounts to the detriment of a focus on actual research. Instead of measuring their current work, the production of measures and related preoccupations turn into an increasingly largest share of their work.

The three tensions just outlined are evident in two opposite situations: *cheating* and *revolution*. Witold Kula (2014[1970]) first suggested that the history of measures is the history of cheating. Cheating, however, only works insofar as it remains *sub rosa*, invisible. As recounted by James C. Scott (1985), cheating is widely employed by the subaltern classes as an invisible ‘art of resistance’ against domination. Avoiding direct confrontation and symbolic challenge, the

subaltern classes resort to a constellation of actions which include dissimulation, false compliance, pilfering, feigned ignorance, foot dragging, slander, arson, and sabotage. All these actions are aimed to defuse the potential outcomes of the established measure systems. At the polar opposite, since the Enlightenment, the modern European project has consisted in a Promethean affirmation and self-definition of social subjects who aim to assert themselves as *sovereign*: the modern revolutions have always come with new measures of time and space. As reconstructed by Peter Wagner (2008), self-determination is the bold dream of modernity. Revolutionary self-determinations are moments when ‘the people’, the constituent demos of democracy, outspokenly reclaim a new right to assert measures for the polity.

In this sense, as Albert Camus (1951) beautifully put it, ‘measure is not the opposite of revolt, instead, each revolt makes its own measure.’ In a different context, yet with intriguing consonance, George Bataille (1967) defined sovereignty as a manifestation of expenditure [*dépense*], i.e. utter disregard towards established measures. Measures nurture a whole imaginary about what is worth of measure and why – In short, they are *figures of desire*. So, if measures always exist *in the plural*, it is because they correspond to a plurality of forms of – and dreams about – social existence. Consequently, measures lie at the point of convergence and tension between – on the one hand – the *inertial* and *conservative* forces of custom, habit and routine, as well as those of false compliance (and even, more generally, free riding and queue jumping), and – on the other – the openly *transformative* forces of dream, revolt and revolution, as well as those of reform, design and planning. If anything like social physics exists, it is definitely unlike Newtonian physics; instead, it may resemble more quantum mechanics, especially *via* the latter’s insight that *any measurement is a type of interaction* always bound to affect the state of things under observation.

3. Outline of an inquiry into contemporary value-measure environments

In this section, the outline of a general study of measure-value environments is sketched out. The argument made here is that measures are ‘atmospheric’: they evoke whole environments. Atmospheres are ‘synthetic’ events, in that each ambience summarises a bundle of traits, a composition of elements, *plus* a subtle, magical quid – a characteristic *Stimmung*, or *genius loci*. An environment is not a territory, but a milieu where territories can be created and installed. Actors, practices, formats, dynamics, transformations and resistances are the analytical elements that compose value-measure environments and reveal the previously mentioned constitutive tensions.

Turning to the actors who establish and enforce certain measures and measurement systems, a *history of governance* took shape since the 16th and 17th century, with the consolidation of the modern state and its apparatus for the government of the population. From Max Weber’s (1922: I, III, § 5) analyses of *Massenverwaltung* [mass administration] to Michel Foucault’s (2004a[1977-78]) studies in biopower and security apparatuses, we know that the legal and judiciary systems have deployed a whole array of measure-notions aimed at binding legal subjects, while the discourse of political economy has gauged the governmental tools themselves, striking a balance between the regulation and the non-regulation of economic actors (governing in order to create freedom). By outlining the regularities that concern aggregate population dynamics, statistical reasoning represented a crucial format of knowledge in the modern history of governance (Desrosières 1993). Political struggle, class conflict and scientific knowledge thus give shape to those social groups that, at each time, find themselves deploying sets of measures addressed at controlling the conduct of other groups. For instance, if we consider macro-economic measures such as the GDP, internal and external debt, or unemployment rates, we

realize how trustworthy bureaucratic state apparatuses (but increasingly private agencies, too) are essentially involved in the production and circulation of such measures (Morgan 2007).

Thanks to the consolidation of networks of agencies and institutions that preside over given measures, local actors and practices prolong into generalised systems. Practices get structured into formats. The *montée en généralité*, i.e., the passage from local to global, from the accidental to the universal, reassures about the neutrality, objectivity, uniformity, impersonality, replicability and reliability of measurement systems. Only thanks to these guarantees can measures function as repertoires of *justification* (Boltanski and Thévenot 1991). As science and technology studies have highlighted, technical infrastructures systematically recede into invisibility, so that the memory of previous specific choices comes to be transcribed into the environment itself (Bowker and Star 2000; Barry 2001; Bowker 2005). The objective, technological-scientific facet of measure-value environments may be employed to conceal their political facet thanks to appeals to the 'regularity of procedure' (hence, the tension between paradigm and syntagm).

Measures can be developed either explicitly or tacitly, either consciously or unconsciously. For instance, modern ideologies could be gauged as measure-setting programmes. The famous Marxian rally call, 'From each according to his ability, to each according to his need!' (Marx 1875) is a measure programme – unfortunately, an under-specified one. Yet, besides their existence as deliberate and planned means to certain ends, measures also seem to possess a sort of *natural history*. The tacit deployment of measures is, for instance, the topic of *Land and sea* by the then-leading-Nazi scholar Carl Schmitt (1942). Written at a time when he could still hope that Germany would win the war, *Land and sea* draws the emergence of new measures in European politics from a configuration of the geographical balance in the international order among nations. With his notion of *Maßnahme*, Schmitt provided one of the first conceptual histories of globalisation, where territorial occupation *is* itself described as an implementation of measure: indeed, occupation [*Nehmen*] and the ensuing division of the land [*Teilen*] are what, in Schmitt's view, found the productivity or value accretion [*Weiden*] of a given society and, consequently, enable the emergence of a legal order with its whole epistemology.

As the above examples illustrate, the episteme in which measure-value environments are imbued is deeply historical: it is dynamic and open to transformation. The procedures of visibilisation of value are not fixed even within a single discipline, and can be contested or re-articulated. Take the case of price understood as 'value made economically visible'. To explain the dynamic of value accretion, or valorisation (*Verwertung*), Marx (1867) famously criticised the paradigm of circulatory exchange. In his view, classical economics, based on a principle of generalised equivalence, failed to explain the creation of value. For Marx, by contrast, value is created in the background of circulation, that is, in the process of *production*. As concerns our analysis of the episteme-power nexus, two essential ideas can be retained from his analysis: first, value *changes*, and cannot but change (prices, incomes and profits go up and down); second, value *metamorphoses*, and cannot but metamorphose (even bare economic value always necessarily incorporates additional social dimensions, such as labour). A general inquiry into the dynamics of value creation and value accretion should be able to keep within a single theoretical grasp a wide range of value-operations, including conception, production, stabilisation, transformation, exchange, challenge, and so on. Also, valorisation processes are complex, multifaceted, inherently unstable dynamics of production, circulation and transmutation of not only material goods. For instance, in the case of urban places, economic land value precipitates and condenses a number of scattered, convergent or divergent, social forces which include discursive repertoires and representations, such as the public perception of local disorder, and so on.

Widening the scope of a reflection into the entwinement of measure and value might proceed via the realisation that the archi-principle of valorisation is not economic, but *religious*. Following Durkheim (1912), it is the existence of the sacred that, by instituting dichotomy as the basic operation of social episteme, creates value (sacred =1 Vs profane=0). But as we touch upon the sacred, we also understand better why all dynamics of valorisation raise the issue of the *limits* of what can be measured (tension between means and ends). As anticipated, the relation between 'value-as-immeasurable' and 'measured-values' can never be settled. New domains to be subjected to measure are constantly envisaged, and resisted. In the late 18th century, for instance, Jeremy Bentham nurtured the ambition to measure the sentiments of happiness and displeasure for public policy purposes. Perhaps in response, towards the end of the 19th century, two thinkers so diverse as Charles Sanders Peirce and Friedrich Nietzsche stressed the indelibility of the un-measurable in social life.^{ix}

The impossibility of measuring the wholeness of being is a constant theme in the vitalist philosophy of Bergson and Simmel – of which Camus is certainly a continuator by other means. In contemporary social theory, attempts have been made to *mediate* the separation between measure and the un-measurable. For instance, actor-network theory has insisted on the fact that judging (*putare*) and calculating (*computare*) are originally linked, so that (quantitative) calculation and (qualitative) non-calculation constantly build themselves 'with and against' each other by apparent contrast yet substantive cooperation (Callon and Muniesa 2005; Callon and Law 2005; Cochoy 2008). However, perhaps most interesting is the fact that un-measurability itself does not constitute a single, unified phenomenon, rather, one that comes in various forms, each of which represents a counterpoint capable of precipitating further appreciation, dissent and transformation of measures (again, the dialectic between paradigm and syntagm).

4. For a topology of value-measure environments

Encompassing quantitative calculations and qualitative non-calculations, measure-value environments conjure up variable spaces of measurement and valorisation. As anticipated, an invitation is made here to look at some measure units and measure fields that in part differ from the subjects covered in the existing literature. The city, the body, the many, and the media will be discussed as (non-mutually exclusive) units and fields (or spaces) of measure-value. The choice of these subjects also backs up our argument concerning the strong cultural significance of the 'unit' itself. The type of spatial theory required to tackle them, it is argued, is topology, the science of persistent properties in transformational spaces. The reason for this is that these four subjects retain a scale-less coherence through metrical transformation. Reconstructing a 'topology of territorialisations' is thus the exercise attempted in the following cases.

- **The city.** Measuring the city and its hinterland traces back to the Antiquity, considering that 'the city' stands not simply for a spatial expanse, but also for 'the polity' created by public space (civility and the urban experience) and the institution of public power. In Europe, the late Middle Age represents a key moment of urban revolution. While the medieval city – as blissfully painted in 1338 Ambrogio Lorenzetti's *Allegory of the Good and Bad Government* – is defined by city walls and city gates, the history of the modern city proceeds through tearing down protection walls to achieve outward spatial expansion, leading to suburbanisation. Historically, the city has constituted a powerful measure unit as both *a land* and *a polity* (Mumford 1961; Kostof 1991). Today, however, the type of unit represented by the city is less clear. Through various key moments such as the 19th Haussmannisation of Paris, the urban process has attained new scales, changing its nature and features. In this sense, it is easy to notice how paradigm and syntagm feed back onto each other. The urbanisation of increasingly extensive territories,

which has led to the appearance of metropolitan regions and megacities, and the insertion of cities in global flows, have fundamentally transformed the modern way of life. Since the late 19th century, the discipline of 'urbanism' – encompassing urban design and planning – has been pivotal in the imagination of new measures for an urban mass society (Cerdá 2005[1863]). During the course of the 20th century, the household, the flat, the high-rise, the car, and the highway have formed a constellation of measures of the urban (Le Corbusier 1966[1924]; Urry 2004). Today, even crisis-related phenomena, such as the shrinking of cities and the decay of peripheries, far from reducing the complexity of urbanised territories, actually increase and multiply the urban territorial complexity in terms of coexisting yet mismatched plans. This insight has been captured in terms of a splintering urbanism (Graham and Marvin 2001). Questions about the type of power structure that is called for to set up the new measures of the city inevitably ensue.

- **The body.** The idea of the body as a measure of society features in the image of the *body politic* since John of Salisbury's *Policraticus* (1159). Subsequently, the idea of a 'body of the state' emerges from the 'mystical' body of the king (Kantorowicz 1957). Modern sovereignty is thus grounded in an imagination of the 'body politic' that ultimately led to organicism (the cradle of the social science). The subsequent development of an organisational view of governance could not thoroughly delete traces of organicism, so that the body still represents the blueprint for articulating the nexus between unity and plurality in political theory (as clear, for instance, in Agamben's analysis of bare life). On the other hand, as recognised by early 20th century phenomenologists and psychologists, the mundane everyday body is the carrier of individual subjectivity and the space where intersubjectivity unfolds (Janet 2005[1929]; Mead 2009[1934]; Merleau-Ponty 1945). In this sense, the ways in which we socially experience our bodies are deeply related to measure-values. Featherstone (1982), for instance, analysed the turn towards a consumer culture that proclaims the body as the site of pleasure and excess vis-à-vis traditional normative restrictions on corporeal expressiveness. In fact, far from abolishing measure, the consumerist body has produced an incredible array of new measures. The body features in society as simultaneously a measure unit and measure field, with an endless circuit between the anatomical body [*Körper*] and the lived body [*Leib*] (Husserl 1929: V, § 44) – or, we may say, between the body as *testimony* and the body as *expression*. The former corresponds to a syntagm thoroughly subsumed by the paradigm, the second to a syntagm capable of forcing the limits of the paradigm. Since the end of the 19th century, the body has been apprehended through a wide array of measures. Anthropometric systems have been introduced and refined in order to univocally identify individuals within a population (Bertillon's fingerprints) as well as capture their inner nature so as to highlight their criminal dispositions (Lombroso's craniometry). The right 'punitive ratio', which the late 18th century liberal theorist Bentham had famously dubbed the 'just measure of pain', has been essentially a bodily measure – just like, on the opposite, the advancement of 'special needs education' to support the physically disabled body. In the spheres of both health and work, the human body has been subjected to measurements and controls, including vaccination practices (the generation of scientists following Pasteur and Koch) and the scientific calculation of workers' performance (Frederick Taylor's famous 'scientific management'). In the field of urban planning, Le Corbusier's *Modul'or* (1948), the golden model, encapsulates the modernist idea of linking the human body to its immediate surroundings (the spoon) as well as the larger milieu (the city). Since the body is simultaneously the carrier and the producer of measures, from time to time moral and governmental emphasis has been placed on either the 'testimonial' or the 'performative' features of the body. Between norm and performance, there lies the *mastery of oneself*, a domain of 'practical philosophy' that stretches from the ancient

confessional, penitential and spiritual exercises, to modern psychoanalytic therapy (Foucault's 2001[1981-82] 'technologies of the self', Sloterdijk's (2013) 'anthropotechnics'). For instance, the contemporary use of wearable self-tracking technologies (Crawford et al. 2015) such as bracelets and other devices that record bodily information (heartbeat, motility, sleep cycles) creates loops between external objective measurement and various forms of self-knowledge.

- **The many.** Social multiplicities, associations, social configurations and compositions are inherently ambiguous and polymorphic (Brighenti 2014). According to whether we imagine the many as crowds, constituent demos, groups, publics, masses or populations, the emphasis changes significantly. Each of these different images of the social subject comes with different measure-problems and measure-solutions. In the 19th century, for instance, crowds were feared as a threatening 'out-of-measure' vis-à-vis the harmonious organicist metaphor of a cooperative and solidary social body. Crowds, however, were also the visible manifestation of the people *qua* the foundational carrier of sovereignty first made visible at the end of the *ancien régime*. 'How to apprehend and govern crowds? How to reconcile them with the established power?' – such is the question that resonates among classic crowd psychologists, such as Gustave Le Bon (1895). In response, Durkheim's (1912) theorisation of the social group introduced a morally cohesive unit defined by ritual practices, which could serve as a reliable modern measure. On the contrary, Tarde's (1901) discussion of publics focused on a constantly shifting and unstable entity characterised by the production of opinion streams and the exposure to the spectacle of news. During the 20th century, the mass was described and vehemently criticised by Adorno and Horkheimer (2002[1944]) as the quintessential measure of the mediocrity of the 'average man' (the philistine); and it was not until the 1970s that Foucault's studies on the population as a modern biopolitical notion stressed the biological materiality that roots a social multiplicity in a given ecological environment.
- **The media.** The medium is, literally, what stands in the middle, lies in between the many. In an enlarged conception, the media are not limited to the mass media of communication, but include all sorts of infrastructures for association. McLuhan (1964) famously argued that a medium is something that alters the pace, scale, and pattern of social life in specific ways. A medium sets its own measure. At bottom, however, we should not forget that the medium is a humble object – an artefact, a worked flint. Mundane objects connect us to others, according to their rhythm and measure. As revealed by early anthropology, circulating object chains create social ensembles (Malinowski 1922). To study mediation thus means studying communication, circulation and transmission, at both their material and immaterial levels (Debray 1991). Money is a perfect example of medium, only deceptively describable as sheer quantity. Indeed, the media are neither mere stocks, nor neutral channels through which information and trust flow. Superseding their mere presence as 'something between us', the media envelop us – they are measure-environments. A whole politics of visibility applies to both the inner side of the media (contents) and its outer side (structure). This enables us to understand why media visibility has increasingly turned into a further object of measurement. Such tendency is most evident in digital networked media (Castells 1996). Digital traces left by crowd movements, including social cloud data, represent a major asset in contemporary capitalism, with data mining – the extraction of visible patterns from crowds of data – turning into a flourishing industry. Meanwhile, individual attitudes towards one's own visibility and the visibility of others has become the subjective correlate of such objective measurements and, ultimately, one of our current greatest obsessions. One of the many perverse effects of this includes for instance the market of 'fake followers', whereby

followership and 'likes' are sold and bought as assets to be accumulated in order to 'stand out' (Beauvisage and Mellet 2016) – a perversion that once again connects to what said above about means/ends relations in measure-value environments.

5. Conclusions

In this paper, the notion of 'measure-value environments' has been presented to advance the study of measurability and valorisation. This notion, it has been argued, highlights how measure and value exist in an entangled relation, and how measures function as territorialising devices. The first section has set the scene by presenting measures as total social facts, or, forms of social territorialisation that institute simultaneously a set of tools and the environments where they are deployed. The second section has analysed, from a dynamic perspective, a set of constitutive tensions inside instituted measure-value environments. With these tensions in mind, the third section has sketched the outline of a general inquiry into measure-value environments, breaking down analytically a number of elements involved – such as actors, practices, formats, dynamics, transformations, resistances, and perversions. The fourth section has probed 'topologically' four key subjects of measure-value – namely, the city, the body, the many and the media.

As we have seen, measures operate by transcribing the entities and phenomena to be handled and projecting them onto a different register of existence. By selecting and abstracting certain properties, they enable the de-singularisation of entities and the carrying out of a comparative work on isomorphic aggregates. Yet, as we have seen, establishing commensuration requires an environment in which the comparative operation makes sense. The environment is thus the invisible obverse of measure – better, it is that invisible medium from which measure comes and to which it incessantly returns. Recently, the sociology of quantification and the economy of conventions have clarified how measures are grounded in conventional procedures and practices. Yet if we take the idea of measure as *ratio* seriously, we also need to refine our understanding about how a given range of terms can enter into a commensurate relationship, and how the establishment of such relationships simultaneously feeds-back, transforming the initial terms – so that the epistemic production of commensurability is a *logically impossible yet practically on-going* accomplishment.

While many facets of the magic of measures have already been explored in the contemporary scholarship, the significance of *the unit* in itself has not always been thoroughly acknowledged. A specific power, as we have seen, resides in the moment when and the place where the abstract quantity '1' and the entity which is being produced are conjunct in a commensurate encounter. Thus, 'n=1' is not just a quantitative happening among others, but is a qualitatively distinct event: the unit is like a monad or *eigenstate* that directly and immediately condenses its environment. In this sense, to draw the topology of current value-measure environments, a vast critical genealogy of the present is required. To take an example mentioned earlier, in a recent reflection on the introduction of performance metrics in the academic work assessment, Roger Burrows (2012: 359) has remarked that 'it would be quite easy to generate a list of over 100 different (nested) measures to which each individual academic in the UK is now (potentially) subject.' While we might expect the initial drive towards the adoption of certain metrics to be based in a requirement of clarity and immediacy, as well as a governance strategy, what we in fact may face is a muddle of spinning numbers of performance none has a clear picture of – a kind of Wundtian 'heterogony of ends'.

As observed above, it is always an entanglement of classification and measurement, of judgement and calculation that defines a measure-value environment. Given that measure philosophies, measure techniques and measure implementations all converge in each single act of territorialisation, every measurement system produces simultaneously practical, political and

ethical effects. Inside measure-value environments, the technological-material, the legal-political and the cultural-imaginational lie entwined. This is why, we submit, Camus developed an attitude consisting in looking for *dis-measure inside measure*. Such is the mission he assigned to the figure he famously described as 'the rebel'. On the contrary, he warned, it is vain and delusional to look for any *measure inside dis-measure* – that, indeed, is what the terrorist does. Any conceptualisation of how new measures emerge, are administered and challenged is therefore only a preliminary step towards the experimentation and the crafting of a new imagination and a new design of measures for our age – and possibly, *viable, liveable* measures. Certainly, the notions of 'viability' and 'liveability' of measures should be more thoroughly explored in terms of social, technical, economic and political pre-conditions, needs, requirements, and outcomes. At bottom, however, one point is clear: because measures are immanent creatures, one type of measure is nothing else than a mode of existence – a way of life.

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Endnotes

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ⁱⁱ Miller and Power (2013) described the main function of accounting as a territorialising one. From this point of view, the argument proposed here could be read as an extension of that idea applied, not simply to accounting, but to the whole social life of measures. In turn, measure-value circuits might be helpful to develop a social territorialology.

ⁱⁱⁱ By contrast, calendars, that is societal temporal measures, appear to be much less universalised. This might reflect their directly political import.

^{iv} Of course, negative values – such as pollution, unemployment and insecurity – might also be at stake.

^v In mathematics, this insight is clearly expressed in the mid-19th century by Riemann, with his concept of manifold. 'Magnitude-notions – Riemann (1854: §1) remarked – are only possible where there is an antecedent general notion which admits of different specialisations.'

^{vi} 'To set prices, to measure values, to think up equivalencies, to exchange things – that preoccupied man's very first thinking to such a degree that in a certain sense it's what thinking itself is.' (Nietzsche 1887: II, §8)

^{vii} Tarde's argument deserves an extended quote, also considering that the text is not available in English: 'The idea of value owes its clarity and fruitfulness to the fact that it presents wills, desires, and wishes as pure judgments; it presents a relation between means and ends as a relation between principles and consequences; and, by doing so, it enables us to treat in a logical, even mathematical language, problems that are, at bottom, teleological' (Tarde 1893: I,V; my translation).

^{viii} This three-fold distinction emerges from an engaged discussion with Schiera (2011).

^{ix} See in particular Peirce's category of 'firstness' as freedom: 'Freedom can only manifest itself in unlimited and uncontrolled variety and multiplicity; and thus the first becomes predominant in the ideas of measureless variety and multiplicity' (Peirce 1931[1857-1866] *CP* 1, §1.302). For Nietzsche, 'there is nothing which could judge, measure, compare, or sentence our being, for that would mean judging, measuring, comparing, or sentencing the whole. But there is nothing besides the whole!' (1888: 'The four great errors', §8).