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Numbers

Numbers

Their relation to power and organization

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Numbers and measurements are central devices in organizational planning and execution. The search for symbols of precision, accuracy, and accountability often leads to numbers. The bureaucratic model, with laws and regulations to be followed in both decisions and execution, implies the use of numbers to quantify organizational behaviour. In New Public Management (NPM) and, more to the point, NPM tools such as Balanced Scorecard, proponents argue that the use of numbers is not merely a symbol, but the only way to both produce a secure coherence from goals through strategies to organizational outputs, and also to control the relation between resource input and production output (Carter 1989; Carter 1991; Corporater.com 2008; Mayston 1985; McNamara 2008).

In studying the relationship between numbers and governance, concepts such as organization and governing tend to come to the forefront. As social scientists, it intuitively makes more sense to study the social entity. Isolating numbers as object of study is a dangerous path that may lead to unrewarded determinism, as numbers are arguably social. Yet, this is what I do in this chapter. I first asked what happens when an organization observes itself and its relation to other entities through numbers. I also asked what happens when they communicate through the language of numbers: Does it matter, and if so, how?

However, for or against numbers is a debate that does not work, because numbers are symbols, and their meanings only exist through the processes they are part of. So I turned to the processes, and found Numbers to dissolve into four fundamentally different debates (and corresponding dilemmas). Expanding on these made it possible to discuss numbers in relation to, and also as representing power. Then it is possible to move forward to see these processes again as a whole. They are not a whole per se, but ‘use of numbers’ is seen as one uniform process; through this fallacy we can understand how use of numbers becomes part of processes of power (and feelings of powerlessness), and partakes in production of seemingly self-supporting systems of decision and control that sometimes makes no sense at all.

The first section of the chapter expands on the meaning of numbers and organization, and important research on this. The second expands on the four different dilemmas I found, thereby providing names and language as a new framework for understanding the use of numbers in organizations, and how the uses of numbers relate to power. The last section is a short summary and conclusion.

7.1 The ghost of Numbers. How Numbers are (not) seen, and why it's all so difficult

Looking into organizational use of numbers, it is plain to see that they produce anomalies. We all know examples of supposedly rational decisions based on objective facts (that is, those available) that to concerned, seem just silly – one spectacular example being how the Financial Accounting Standards Board arrived at the conclusion that 9/11 was not an extraordinary event, according to their accounting procedures (Liesman 2001)²². Another example could be the blindered focus on journal publications and similar accounting audits to measure research quality in universities (Fillitz 2000).

And yet, such measures are widespread and influential. This implies that we are observing a system of knowledge processes that are complex, powerful, and against which there is little relevant language and much feeling of powerlessness. Searching for the reason behind these decisions that seem so strange, we may find practices that should be named ‘bad statistics’, where simple lecturing would seemingly make the difference. But this is odd, because those

²² This example is also referred to in Lampland & Star, eds. (2009), a volume abundant with wonderful examples of accounting and standardizing practices that, ‘silly’ or not, do imply social consequences.

doing the calculations will generally be far more skilled than this author – and still argue on why they should push the limits of the methods towards a situation where precision and accuracy are words only referring to the numbers and not what they represent. This is bad statistics, but there are two ways of saying that: First, from inside the logic of statistical methodology, one can make a statement as to whether some judgement is based on mathematical proof or not, whether the handicraft is more or less well accomplished. Desrosières (2001) brings this kind of argument further, stating that a ‘realistic’ approach towards statistics may be seen as three different approaches: Statistics as pure measurement (metrological), as pragmatic accounting, or as database material for argumentative purposes. We could on the other hand choose a situational rather than a methodological contextualisation, and ask generally whether the output is reasonable or not (reasonable as opposed to rational). Desrosières accordingly suggests a fourth approach, statistics as “definition and coding of the measured variables are ‘constructed,’ conventional, and arrived at through negotiation” (*ibid.*: 340). The technician would argue that this kind of evaluation is part of the methodology, from the method-logic this is one of several validations of the accuracy of the analysis. From a context-logic it *is* the analysis, and so we have different terms and different room for thinking anew.

This leads on to a different, and maybe even stranger anomaly, the observation that those officials most closely connected to processes of calculation and analysis of numbers also seem to be, if not the most critical, at least those with the strongest arguments against their own practice. One could expect the opposite, that they were merely technocrats, and that they rarely reflected upon their work as more than calculation and measurement; but, my observation is the opposite. This is parallel to Latour’s description of the Janus-face of science; ‘Science in the doing’ and ‘Ready made science’ (Latour 1987). Although science is presented as ready made, packaged knowledge, the participants, actors creating this science, will still work on this knowledge as something in the doing, with shortcomings that seriously weaken the knowledge in question. Hence it is fully possible for those managing and operating the numbers, to also be those best equipped and even willing to criticise the very numbers they operate.

All these anomalies tell us something about the role of numbers in organizations. Numbers are blurry, contested, important, invisible, taken-for-granted, created, creating, compromise agreements; in short they are very similar to what Star and Griesemer name “boundary

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objects” (1989). One basic feature of boundary objects is that they are observed from different viewpoints at the same time, represented by different kinds of membership orientation. For one, this creates anomalies, because different points of observation imply the possibility, even probability, of observing different objects. There is no single understanding of how numbers work, nor uniform understanding of the relationship between the different viewpoints. Further, this means that the debate we enter into when discussing the use of numbers is not a clarified one. So we are at the risk of being side-tracked, or even fragmented, into various questions not initially posed.

Organizations are, as most of the entities of the present analysis, problematic concepts. In the words of Eco (1990: 59): "...in the natural sciences the conjecture has to try only the law, since the Result is under the eyes of everybody, while in textual interpretation only the discovery of a "good" Law makes the Result acceptable." Terms such as organization, technology, and governing, are all results of (con)textual interpretation, and are accordingly only acceptable when observed through a "good" perspective, theory, argument, or "Law". Following this, it is difficult to discern what is *organization* from what is *governing*, or for that matter what is *number* from what is *organization*. This may hamper arguments, but has not prevented scholars from approaching these kinds of relations, and attempting to name constituents and processes at some level of abstraction.

In his study of performance measurement systems, Power (2004) names them *counting*, *control* and *calculation*; however, he does not follow up on this distinction. Rather, he fronts two basic processes involved in these practices: First, the inherent reductionism we find in counting practices. Second, the relationship observed between measurement and technologies of monitoring and control. Again, the focus is on the observation of the relationship, and not so much on how there can be such a relationship. Hood's (2007) approach is to distinguish *targets*, *rankings* and *intelligence*²³ as different ways of operating performance measurement. Here the focus is entirely on the different effects of these kinds of measuring practices. Written from a management point of view, he concludes that the more standardized "target" measures are more useful for creating transparency in organizations. This is a different description from Desrosières' (2006) distinction between quantification (in general) as on the

²³ Targets, standard of performance or change in performance to be achieved over a period of time; Rankings, data allowing comparison among a set of (constructedly) rival units; Intelligence, background information (2007: 96).

one hand processes of comparing the incomparable and how this phenomenon has been debated, and on the other hand quantification as a process of simultaneous convention and measurement and how these two processes together make quantification possible. This distinction is traced back to the debates of Quetelet and Cournot. Lampland and Star (2009) rather crafts a new umbrella concept of formalizing practices under which we can observe standardization, quantification and formal representation as different ways of designing social practices.

These studies provide important insights to the different ways of numbers, and to the different roles of numbers in organizations, but not the big “Why”. Why are numbers so useful in organizations, and why do they relate to power? Is this possible to answer, provided the different meanings of organization we encounter through these analyses? This chapter concludes that this is possible, provided that we differentiate different debates (and corresponding dilemmas) concerning number practices. Through expanding on these dilemmas, I show how numbers can be described in relation to power, and representing power.

7.2 A model for critique of models

To better discuss practices concerning use of numbers, I suggest the terms *standardization*, *quantification*, *modelling*, and *accountable communication*, which I will expand on here. Standardization refers to the creation of formal norms or conventions for objectifying a process or object, rendering it possible to categorize and measure. Quantification refers to turning objects, standardized or not, into numbers. Modelling is the process of mediating reality into graspable mechanisms; concerning statistics, it is the process of using numbers to infer correlations and patterns of causality. Accountable communication refers to the phenomenon of personal communicative relationships being replaced with communicative relationships based on standards and numbers, e.g. through practices such as auditing. Each part is introduced with one or two examples to clarify the meaning of the concept.

This is an inquiry of the processes where numbers are used and about what it means to use numbers. Is it relevant, the semi-articulated feeling of power through numbers? I argue it is, and that to see it, the language employed has to separate these essentially different processes and debates, as is done here, to make it manageable.²⁴ I do not start at the notion of

²⁴ This may also be read as a mechanism. We may argue that standardization is a presumption for accountable communication, whilst modelling and quantification are different processes related to processes of accountable

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governance; I depart from the idea of numbers and statistics, and argue my way towards more observable kinds of governing.

7.2.1 Standardization – power to see through creating equals

Mari Storstein suffers from spinal muscular atrophy. Her muscles do not develop, so she is in a wheel chair and in need of assistance. Through a fairly recent reform, all Norwegians who receive governmental assistance are to be registered in an accounting system named IPLOS, where degree of functionality over a spectre of parameters is scored from 1 to 5. The intention of this register is, according to the Norwegian Directorate of Health (Helsedirektoratet 2009a), to promote transparency and control towards service units, and to provide data for research. Some municipalities also experiment with using accumulated IPLOS data to estimate nursing load, for allocation purposes. Storstein was shocked to realize that she was also registered, that somewhere there was a number for her capability of defecation and intimate hygiene. Through her televised documentary (Storstein and Storstein 2007), we are allowed to follow her struggle to find out her scores. Finally, after two years, she can lift the closed envelope and ironically state: "This is my life". Tears swell up she finds not only her scores for defecation, but that she has a low score on "socially acceptable clothing" and bottom score on "eating in a culturally acceptable manner". These do not represent her self-perception. So starts the struggle to be erased from the register, or at least to adjust the scores she resists.²⁵

If we are not happy with regarding the outer world as an infinite mass of undifferentiable experience, we will have to find ways of dividing it up into entities and putting things back together. Instead of a world of new and unanticipated experiences, we walk through a world

communication. This way they are part of the same object of study, namely a general perspective of use of statistics and numerization in organisation and power relations. I choose not to emphasise this for now, as it is not my intention to present a mechanism, a unitary model that would restrict the room for interpretation and negotiation, for rather to name a language through which it is possible debate these processes. Although I choose not to walk in that direction, I would like to thank Ellen Balka for pointing out to me the relationship between the concepts.

²⁵ It is clear through this documentary that Storstein was subject to a number of injustices, morally, formally and juridically. First of all, the general rule was that the scores were to be set in cooperation with the user where possible. In this and many similar cases, this was not done. Although the documentary did not invoke general debate, some debate has occurred and changes have followed. At the Ministry's homepages you will now find information and forms for "You who wish to see your IPLOS registration" and "...who wish to change your IPLOS registration" (Helsedirektoratet 2009b). Also, the general regulations have been revised in early 2009, including a stronger emphasis on user participation in registration (Helsedirektoratet.no 2009b). A whole other issue is whether this may redirect IPLOS from a standardization regime to a pastoral confession regime (Foucault, et al. 2007 [1977-78]).

of categories, based on our knowledge and those virtues in an object or process we choose to emphasise. If we agree on these categories and how to identify and evaluate them, the categories have turned into standards. Standardization is when we agree on how long a meter is, how to define production at the University, or how disabled a disabled person is.

Standardization opens up the boundaries of inside information, while running the risk of silencing essential tacit knowledge or even more explicit knowledge. Porter (1995) describes how relationships to powerful outsiders and reduced public trust accelerate processes of standardization. When a representative of an organization of knowledge and information engages in information exchange with other systems, trust, power, and relatedness are instructive to the degree of standardization he needs to follow.

Bowker and Star (1999) studies what happens to the objects that are standardized and categorized, which is a slightly different perspective on the same phenomenon. How can we trace the process of individual phenomena, objects or actors turning into one class, and what are the consequences? They argue that this is where it starts making sense to use the concept of “boundary objects”, because these classified pieces of information can move between subsystems of the organisation with less friction (1999: 152, 296-98)

Three central questions occur: First, why does it seem that standards are something we can trust in situations of mistrust? Second, is the power of the outsider that pushes for these standards one that is desirable? Third, in what way is power a part of this process of standardization in itself? From how we choose to answer these questions, we may derive the pros and cons of standardization.

There are many ways of approaching the trust in numbers; one that I will come back to through a discussion of Luhmann’s theory of communicative systems (1995) is that it is not really a matter of trust, but of possibility of communication. The more direct answer would be that it is actually a matter of trust in numbers’ ability to create transparency between separate systems. This is a belief we find e.g. in Hood (2007). Standards, he claims, create ways of knowing that are disconnected from knowledge systems and inside information, and thereby neutral and predictable. The problem with this lies in the notion of transparency²⁶, a taken-for-

²⁶ Inspired by Jonathan Kahn’s comments at the workshop “Statistics as a Boundary Object between Science and the State”, Trondheim May 2007. For further discussion of the notion of transparency, see Hovland (2008).

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granted concept that, examined more closely, contains an antagonism: What is it to be able to see through? From a point of view regarding the outside world as an objective reality ready to be reported on, this question is not relevant. However from a more constructivist point of view it is probably necessary to contrast transparency with visibility. For a phenomenon or object that exists within a system of knowledge to be visible, it has to be viewed with reference to the relevant system; in another system it is a different object. The transparency we assume in standardization applies an outside reference system, and the object or phenomena observed may or may not be the same as the one observed with reference to the logic of the system itself.

From this point of view, the influence of the powerful outsider becomes political. There is a potential of replacing visibility with a representation that serves other interest. On the other hand it provides the possibility of reducing power inside systems that develop in undesired ways. An example of the latter would be audit systems that could have exposed the Enron scam before it was too late. An example of the first would be e.g. audit systems in academia that restrict the faculty's possibilities for independent research (Strathern 2000). Taking the former view, IPLOS's standards could penetrate local knowledge frontiers, so that an accountant unfamiliar with the singular case could state that Storstein was receiving too little nursing resources according to her deficiency score. In the latter view, Storstein's score undermines seeing her as a social, productive, critical person, perhaps more well-functioning than many unregistered citizens. By now it should be clear that this debate is very much a struggle concerning power. Standards are a way of overcoming monopolies of knowledge and truth. This may create possibilities for open communication, predictability, and visibility, or may create a form of control that disrupts positive potentials found within that very monopoly.

7.2.2 Quantification – possibilities of knowledge, power of convention

The Three Strikes law in California (California Penal Code § 667, subdivisions (b)-(i)) has resulted in personal tragedies of Kafka-like disproportionality. Lampland (2009) provides us with a review of *The People of the State of California v. Vernell Gillard*, who was injured at work in 1993. While explaining at his first medical examination that he had been in a car-accident six years earlier, he did not mention this at the insurance company's medical examination. As the doctor who did the initial examination failed to send relevant information to the insurer's doctor before the examination, the insurance company was not informed of this. Mr. Gillard was convicted on three counts of insurance fraud and one

count of perjury, a felony which carries penalties ranging from one year in county jail up to five years in state prison. As Mr. Gillard had two prior felony convictions, he was, according to Section 667 sentenced to 25 years to life. He was released on parole after 8.5 years after a trial judge dismissed one of his earlier convictions (Lampland 2009).

A Norwegian municipality decided to intensify initiatives against victimization in schools. One school counsellor explained in a research interview how she decided which schools were advised to change their approaches to victimization: They summed up pupils' self-reported victimization, estimated the mean, and all schools above the mean were considered to have a problem and advised to review their practices.

Numbers work in mysterious ways, standardization is one aspect of how they move and also a presumption for accountable communication. When we are doing numbertalk we do more than this, one obvious part of numbertalk is quantification, essentially summing up classified objects, such as felony convictions or victimized pupils, into numbers. Whilst standardized information may or may not be represented by a number, they definitely turn into numbers when quantified.

Quantification seems not so complex a process as the others discussed here. There are strong reasons to quantify, as it makes it possible to sum up large amounts of knowledge and observation into small packets of information that are more easily handled, which presumably why ancient traders invented measures and even why revenue authorities invented numbers in the first place (Flegg 1983). And yet, this seemingly simple process also seems somehow a magical transformation. Indeed, measurement has been surrounded by superstition since ancient times: "He was the author of weights and measures, an innovation that changed the world of innocent and noble simplicity, in which people had hitherto lived without such systems, into one forever filled with dishonesty" (Flavius Josephus, cited in Kula 1986). Josephus is referring to Cain, pointing out the ancient roots of numbers' slightly dodgy reputation, a reputation maintained up to our day, for instance when a merchant fixes his weights. I'll go as far as to say that this is inherent in our collective cultural knowledge, it's a spinal reflex. Assuming this, it is not difficult to understand why criticism of measurement systems so often is brushed aside as old fashioned, as a reaction without reflection.

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As Desrosières (2006) points out, quantification is more than measurement; measurement in itself is nothing. Quantification is applied convention, and measurement based on this convention. In other words: We can quantify anything that we can create a convention for. We can quantify love if we agree on how to measure it; we can quantify production in municipalities if we know what it is for a municipality to produce.

Now we see that quantification is not so simple after all. The immediate reaction towards measurements revolves around possibilities for and experiences with cheating. If that were the entire diagnosis, more thorough audit would be the medicine. However, most of us are not quite sure what love is, and we do not really know what it is for a municipality to produce; this is a matter of debate and construction of a convention that was not there before. As soon as this convention is applied to a form of quantification through measurements we will necessarily observe a cementation of contested norms. This means that however open and auditable a process, the construction and stabilisation of the convention is a matter of power to define norms in a very explicit way.

The measurement (as opposed to the convention) is a logic rather than a praxis. Yes, we may well argue that general measurement systems, like arithmetic, is a social construct, yet then this construction is part of the convention. A systems' logic is never right or wrong, it is always one out of many communicative systems. Following Luhmann's definition of social systems (1995), systems are found through their differentiating boundaries of communication. Through communication, systems define which communications are internal and which cross their borders. Systems make decisions accordingly, and are reproduced through this self-reference. One system of logic, based on one system of communicative codes (e.g. measurement) cannot communicate with other systems without translating into different codes or basic assumptions for arguments, thereby altering the content of what is communicated. My point is therefore that apart from implying a socially constructed convention that may be contested, quantification also induces a logic of measurement. As a logic, it cannot be contested on its own terms; it can only be contested through contrasting systems of logic, systems powerful enough to contest it.

In the example of Mr. Gillard it is obviously the legal system that is in forefront; the judge's decision is based on whether the actions are legal or not, and which sections of the law that apply. Then a measurement with the specific benchmark (3 – the number of offences) is

applied and interferes with the legal system. In the municipality counsellor's procedure, good school/bad school becomes benchmark on a shifting scale of averages, where above is bad and below is good. The problems are obvious: Self-reported victimization may as well be an indicator of pupils' awareness as well as their victimization; a school doing a good job of sensitizing children to their rights may score poorly. Furthermore, the benchmark seen in isolation denotes some level of victimization (anything less than average) as acceptable – a position the municipal counsellor explicitly opposes elsewhere.

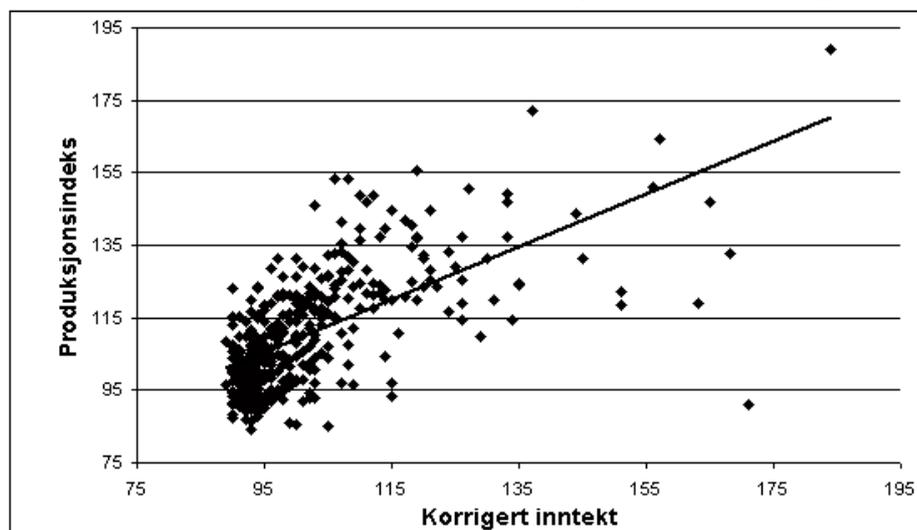
7.2.3 Modelling – mediators for understanding complexity

The Bell Curve (Herrnstein and Murray 1994) struck American public debate hard, and became one of America's bestselling popular science books of the nineties (Wikipedia.org 2009). The volume concerns questions relating to education, welfare, and population groups. The researchers found a significant coherence between IQ, and social status and welfare. Further they found minority groups to score generally lower on IQ. Based on this, they concluded that public welfare policies were missing the point as IQ was decisive, and minority groups were worse off because they had low IQ.

The Norwegian Bureau of Technical Calculation for Municipal and County Administration Economy (TBU)²⁷ provides annual statistical reports on the state of affairs around the country. In some of the reports we also find regression models of the current relation between income and production (Figure G - 1)

²⁷ Teknisk beregningsutvalg for kommunal og fylkeskommunal økonomi.

Figure G-1: OLS regression from TBU (2005: 58), municipal income and production. 'Produksjonsindeks' means 'Production index'; 'Korrigert inntekt' is 'Income corrected for costs of capital and earmarked grants':



The production index is a summary of different municipal activities, basically everything quantified. The regression model is used as an advisory scheme for municipalities to see if their production level is less than should be expected.

We always use models. Even the most surreal artist will use models for understanding and communicating insights. The difference lies not in using models in themselves, but whether or not the models are static or a reflexive part of the process of understanding, something in which also the anomalies are of interest as showing something the model is not able to allow for. This chapter is most definitely based on a model. Models can be viewed very broadly, as autonomous mediators (Morrison and Morgan 1999) that consist of ordered objects, relations, and operations on these objects (Suppes 1961 in *ibid.*). It may also be worth describing models as idealised systems described as mechanical texts (Giere 1988 in *ibid.*). Following a phenomenological point of view, modelling is a way of organising the world around us, a way of making sense and creating ideas of causality to be able to rationalise our actions and make decisions. Being a sociologist using models is maybe just as much human as it is scientific. As Wright Mills pointed out (1959), modelling through sociological terms is something everybody does to orient oneself in everyday world. The science comes from the systematic use of sociological imagination and inquiry.

In the context of this chapter, we can discuss modelling in a broad sense, or more specifically. The broad sense would be the way systems of performance measurement are based on different kinds of models. The specific point is made clearer when we look at the algorithms for inference analysis. When we are talking about use of statistics from outside the analytic construction, we talk less about the calculation itself, the brief moment in any report, analysis, or article that we may term the statistical moment. Usually we talk about and maybe criticise standardizations, the ideas of normal distribution, or how a given statistic it is used, but rarely the actual inference that is carried out.

In numbertalk, modelling is about statistical inference and its logic of modelling. The magnificent advance of development of statistical modelling is our increased ability to estimate precisely probability and causality, and general explanatory power. The evolution of statistical inference is truly a revolution, and our ability to investigate (and create) relations between phenomena has reached a level one could only dream of a century ago.

Most inference models related to social numbers (be it in social science or administrative statistics), are based on some kind of analysis of variance statistics – e.g. ANOVA and other residual-based tests. There are many other branches of statistics, but this is one we meet regularly and that I will focus on. The one important thing we all (should) know about ANOVA analysis, is that residual analysis is analysis of the relationship between values as the model predicts them, and values as they are found in the data. In other words it is a test of to what degree the values in the data fit into the model, not a test of the model's ability to describe the data (Hovland 2007).

This is also the main argument in Freedman's (1987) critique of path-analysis, as advocated by Blaloc, Duncan and Blau (Blalock 1964; Blau and Duncan 1967; Duncan 1966). Abbott (2001) maintains that path analysis struck sociology hard its day, and argues this was because these young mathematical sociologists claimed causality with a previously almost unheard-of self-assurance, backed with very complex methodology. As Blaloc states in a preface (1964: p.vii), "*Causal interpretations will undoubtedly be extremely useful if not necessary for a long time to come*". But, however new and complex their methods were, the assumptions were not. Through these assumptions Freedman (1987) deduct some sophisticated descriptions of the models of the world that are assumed if one accepts that path analysis

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provides pictures of causality. He concludes, to put it bluntly: It's crazy to believe path analysis displays causality.

Following this, it is not a very far stretch to state that ANOVA analysis is inherently conservative, as it only tests how closely the world as we observe it fits the ideas we already have. The principle is basically the same as when we apply theoretical models, but the mechanism becomes more evident and visible in these kinds of automated scripts.

This conservativeness may transform into a tool for governance. Evaluation of social and educational programmes changed during the Bush II administration from including a wide spectre of methodologies, to a situation where, according to House, only randomized experimental designs were accepted as sources of truth (House 2006). House connects this with processes of fundamentalism, and following this, processes of control. The fundamentalism has to do with the anxiety that only one way of evaluating is providing real source of truth, and that the watershed of qualitative methods has diluted scientific authority and should be curbed. As we have noted, these kinds of experiments do not produce ideas; they test ideas. This is where we again encounter the matter of control and power, that is, control through maintaining scientific authority in the evaluation programmes, but also through controlling the evaluations. As shown, models, such as randomized experimental designs, may more easily leave stakeholders outside, as the questions asked and experiments designed are (usually) moulded by authority.

Returning to *The Bell Curve* (Herrnstein and Murray 1994), the main argument rests on the model of analysis. There is not likely to be problems with the data, or the testing, but the model assumes one out of many possible causalities by defining IQ as independent variable, which it arguably is not. The regression figure from the TBU report above assumes that income is the independent variable towards production. But what is municipal production? The causality arrow points in an intuitively sensible direction, but other coherences may be just as important.

Both quantification and modelling are processes through which numbers are produced and mediated, but they differ both in the principles of the processing and the kinds of dilemmas we have to engage in and debate. Modelling is a mediator. The more powerful the mediator,

the more evident its results, and the more the model (re-)produces itself. The great danger of self-reproducing results comes when the model is no longer seen as a part of the process and is taken for granted, whether this concerns a statistical or a theoretical model.

7.2.4 Accountable communication – from human (dis)trust to numbers

How is the accounting made by the International Monetary Fund IMF made relevant in national accounting? The economy analysts at IMF have a “particular interest in the circumstances surrounding the emergence of financial imbalances [...], the policies to overcome such imbalances, and the corrective policy criteria for making loans. This involves going on missions to the country in question” (Harper 2000: 25). Harper provides a wonderful ethnography of how an IMF mission’s work was carried through in a country nicknamed Arcadia: During the first weeks after arrival the team worked intensively at registering tables of economic activity, gathering knowledge of the economy, and also controlling them towards international standards and reviews. Central in this process was to “sort out facts from the facts”, “build up a picture”, and talk to local sources to work out what the figures “really meant”. The turning point in the ethnography is where the IMF mission arranges an official meeting with the Central bank Governor. Through this five hour long meeting, tables are presented, while the Central bank officials run through and interpret the mission’s tables. The conclusion of the meeting is that they all agree to these tables, with some modifications. If this had not been the case, the mission would have faced new weeks of investigations, calculations and adjustments. As the accounting was sanctioned and verified by the Central bank it would now be possible to carry on working with the numbers in question, to structure the kinds of suggestions IMF would forward to the country in question, and also to be prepared for what kinds of demands IMF would impose, were the country to ask for financial support. In the words of one of the Arcadians the mission had been working with: “We’ve been waiting for you [*the mission*] to come back and solve these policy dilemmas. You should come back more often” (*ibid.*: 50).

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In one Norwegian municipality, the administration had recently reorganized into a 2-3 level hierarchy and introduced Balanced Scorecard software²⁸ as a governing tool. In a research interview, two chief officers explained why this was done:

City Manager: Lines of communication are [now] short from bottom to top, [you may call it] freedom of information – part regulation, part communication. Throughout the system towards leaders, the communication in that direction has been somehow problematic. Why do this? It concerns making it easier for the leaders to get hold of information, critical signals that are sent out by our employees.

Executive officer: With many parallel units, the span of control is much wider. You may say – it involves a whole other range of demands on leadership. Then you want this by person, each unit leader wants to speak with the chief officer, but the chief officer cannot discuss with 50 leaders, and then you need to find new ways to deal with such things. The flat organization is much harder to govern politically, you are provided with less political insight and governance.”²⁹

Accountable communication is comprised by processes whereby performance indicators, patient satisfaction queries, accounting practices and so forth are incorporated into administrative practices and routines so that they replace other relations as the link between (sub)systems, such as different divisions of an organization. This observation was in many ways the starting point of the study that inspired this chapter: What did it mean that municipal administrations embrace balanced scorecard-like tools into their organization? What kinds of processes does it derive from, and what does it result in? Is it about improved precision of efforts, and increased justice to those not heard? Or is it a matter of control? At least, if it is a matter of control, it is so deeply embedded in positions that it is problematic to speak of such at an individual level. It seems to be a matter of reducing responsibility and simultaneously staying in control.

The whole idea of these kinds of accountable communication rests upon a silenced debate and seeming consensus of standardization, with the arguments of transparency and predictability

²⁸ The main idea behind 'balanced scorecards' is to provide an information grid where all activity, not only economy numbers, but also quality measurements in their different guises is included. An example of balanced scorecard software can be found at www.corporater.com.

²⁹ My translation.

as central mantras. Also, accountable communication is necessarily tied up with processes of quantification and modelling, and thereby the debates related to these. In other words, we could have made accountable communication the object of this study, and present it as the sum of standardization, quantification and modelling. All these seem in themselves connected to statistics and society, and I have already shown how they are connected to power issues. However, we must be sure to distinguish the two contexts of scientific argument: In society, and inside science (Desrosières 1997). In society, statistics is, in addition to the methods in use, about a mutual reliance on processes of power and governing. These are processes through which relations and structures in the organization are made formally reducible to agreed routines, tests and actions – accountable communication. On the one hand this is not necessarily about statistics in the sense of numbers on a page; it is a question of organizational structure that infuse those numbers with power. On the other hand this *is* all about statistics, as accountable communication is depending on standardization and trust in methods and vice versa: The power of the numbers is dependant on relationships taking on the form of accountable communication, and the rituals of verification (Power 1997) preceding and accompanying this form. Therefore we must observe and try to understand this as a separate phenomenon and debate, although it is one that is more difficult to capture.

The IMF mission did not introduce accounting at the Arcadian Central bank, numbers were obviously already at the core of their activity. IMF's representatives worked their way towards their own accounting of the national economy, and through an identifiable ritual of verification (which could have turned out otherwise – non-verification) this account was turned into a meeting point both parties could work on. The municipality example is not all that different. In the everyday work of a unit leader, such as a headmaster or nursing home director, numbers and accountings are clearly important. Their primary job however, is to manage a good school or nursing home, not to provide accountable figures. Through the balanced scorecard the numbers become a medium of communication between unit leaders and the chief officer, an accountable communication through which the outcomes also should be expectable. If parents' satisfaction with the school drops below the mean, explanations and initiatives are expected, perhaps dependent on some ritual of verification.

I have defined this process of accountable communication as the replacement of personal relations with numbers. Of course this does not mean that human interaction is abolished, but that the measurements, models and standards, or in Hoods terms (2007) the targets, rankings

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and intelligence, make up the axis of the interaction, (e.g. between the unit leaders and the city manager or the manager's staff). We may talk about objects that operate in the interface between subsystems of the organization, and as previously argued, in this context it may make sense to talk of these as boundary objects. The question all along has been why the numbers have such a strong ability to occupy this position, where actors from different systems agree that these are neutral and possible to use (although, one of the major points concerning boundary objects is that they are read through, observed and created inside a subsystem). We could answer this very simply, by stating that they are connected with standards and thereby with transparency and predictability. And yet, "everybody knows" that statistics lie, that numbers deceive and that measures only show the measurable part of the picture.

To understand this anomaly, we have to ask: What's in a system? Until now this chapter has not explicitly discussed this. Talk of system has been implicitly linked towards formal, organizational systems and subsystems. We have also – implicitly - offered ideas inspired by Luhmann's concept of communicative codes. These are different ideas of system. Formal systems are observable activities in daily life, but the tools for observing them are not obvious. Luhmann's concept is an abstraction, a way of observing formal systems (but also of challenging their boundaries) as communicative fields, defined by the code of communication (Luhmann 1995; Luhmann 2000; Luhmann, et al. 2007). These codes of communication create systems not made up by actors or members, but by communications, and by referring to its own code, they become self-referential and self-maintaining (autopoiesis). Examples could be politics (system) and power/not power (code); economy (system) and profitable/not (code); media (system) newsworthy/not (code); law (system) legal/not (code) and so forth. Within a system any statement will be considered through the code. If it is not possible to decide through the code the statement is irrelevant for that system, but a different system might consider the same statement relevant.

The examples above illustrate that this argument does not rest on the assumption that numbers are introduced for the first time, or even that we are essentially talking about numbers. But let's say we are, as this chapter is dedicated to numbers. If we accept that quantifications are made up of a convention and a measurement, and that the convention is a social construct whilst the measurement is a logic, then Luhmann's understanding of system becomes relevant. There are two simultaneous ways of defining this logic as a code: One way – measurable or not – concerns the relationship between the number and the phenomenon it is claimed to

represent. The other – position on a numerical scale – concerns the size of that number. Both codes are attached to the numbers wherever they are observed. This is the twist: *If numbers operate as boundary objects between organisational subsystems, then by virtue of being numbers, they introduce communicative codes across these boundaries. Numbers are Trojan horses.*

7.3 The chicken and the egg, and other conclusions

What came first? The need to employ numbers, or the power the numbers gained from being used? The question is as backward as the chicken/egg – question. The chicken/egg question has a good Darwinist answer: The egg came first, laid as a mutation by a pre-chicken. The mistake lies in the question. The right question is: What processes of variation and selection turned the pre-chicken to chicken? Similarly for numbers: The numbers gain power from their positions. The power of numbers makes them adequate for organizations in need of trust and visions of accountability. However, this power is not straightforward, it's not in the numbers but in their processes, and it is far more than one uniform process. Through this paper I have shown four fundamental practices of numbers, and how these represent dilemmas and power.

Setting the standard: As we have seen, there is a very direct power in this, and the struggle over standards is very visible and important, both because it is important to imprint one's own outlook in what will appear in the standardized observation, but also because standards opens a door into knowledge systems: The standards and the indicators are frequently a tool for those outside a system of knowledge, with an urge to control something on its inside.

Calling the count: Quantification is representation through measurement. Measurement implies activating a convention for the measure, and utilizing a scale. Hence quantification is not a neutral practice; quantification is selecting one convention over others and also to introduce the logic of numbers and scale to a phenomenon. "What gets measured gets done. What gets paid for gets done more," is one of many punch lines of "management-guru" Tom Peters (1998: 284). To quantify is to activate power.

Limiting reason: Modelling with numbers is not essentially different from other modelling: It is a mediator. Models provide ways of depicting causality and coherence, through mediating information about the world as observed, but the model is also dependent on the knowledge we already employ, this employment arguably being a form of power. Modelling through

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numbers is a mediator of those ideas and knowledges we have accumulated from standards and from quantifications.

Amplification of thought: Simplifying to the absolute extreme: Systems of accountable communication, where numbers and counts replace other kinds of relations, produce organisations permeated by numbers on the boundaries of sub-systems. However, if we see numbers as representatives of a communicative system (not as organizational sub-systems), they are not on the boundaries, they define the system in themselves, and therefore the process of accountable communication (as defined here) is a way of colonizing subsystems with the logic of numbers and measures.

Is this really true? I think so, but there are a number of important questions to be answered: Do these structures of situational power work in these ways? Are actors and members of organizations inclined to be governed in these ways? Are these processes of organizational implementation of knowledge shaped in other ways than from the very act of counting?

Answers to these questions have tended to be slightly desperate, reflecting the feeling of debility that overwhelms participants in systems of counting, when ones only means of offloading frustration is through mocking humour. In the jokes and one-liners we see the stupid and silly manager or statistician. But they are neither silly nor stupid. What we really see is the (unrecognized?) observation of (unassailable?) power. Unrecognizability and unassailability may be because there is no language through which to debate this apparatus of power – a situational power that seems to sail under one flag, but which at a closer look fragments into a circle of processes. I am certain it is possible to find better languages than the one I suggest here. What is important is to gain a language through which this object becomes visible, and that this is a language that makes the essential differences and connections visible, and also that expresses the strengths and important, constructive virtues of these processes. This way we can study numbers as bureaucratic tools, or as tools of New Public Management or liberal arts of governing, with essentially the same framework. It would not be surprising to find differences in what kinds of number/power relations are fundamental in different regimes. We would also be likely to find that the numbers are often presented as good ideas and tools, friends, yet that they sometimes enable us to build monsters of systematic stupidity and ruthlessness.