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INDICATORS AS A TECHNOLOGY OF GLOBAL GOVERNANCE

By Kevin E. Davis, Benedict Kingsbury, Sally Engle Merry^{*}

Abstract

The use of indicators is a prominent feature of contemporary global governance. Indicators are produced by organizations ranging from public actors such as the World Bank or the US State Department, to NGOs such as Freedom House, to hybrid entities such as the Global Fund, to private sector political risk rating agencies. They are used to compare and rank states for purposes as varied as deciding how to allocate foreign aid or investment and whether states have complied with their treaty obligations. This paper defines the concept of an “indicator”, analyzes distinctive features of indicators as technologies of governance, and identifies various ways in which the use of indicators has the potential to alter the topology and dynamics of global governance. Particular attention is paid to how indicators can affect processes of standard-setting, decision-making, and contestation in global governance. The World Bank Doing Business indicators and the United Nations Human Development Index are analyzed as case studies.

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I. Introduction

The production and use of indicators in global governance is increasing rapidly. Users include public international development agencies such as the World Bank and the United Nations, national governmental aid agencies such as the US government's Millennium Challenge Corporation ("MCC"), global businesses and investors, bodies concerned with assessing or enforcing compliance with existing legal standards such as human rights treaty monitoring bodies, advocacy groups including many NGOs, and various scientific or expert communities, especially in the field of political science. Examples of prominent indicators and their producers or promulgators include: Doing Business Indicators produced by the International Finance Corporation (a member of the World Bank Group); Governance Indicators, including The Control of Corruption and Rule of Law, under the imprimatur of the World Bank; the Millennium Development Goals indicators under UN auspices; the Corruption Perceptions Index created by Transparency International; the Human Development Index produced by the United Nations Development Program (UNDP); the Trafficking in Persons indicators produced by the US State Department; and various indicators produced by consultancies specialized in advising investors on political risks. The Office of the United Nations High Commissioner for Human Rights has developed indicators for several core human rights.

The burgeoning production and use of indicators in global governance has the potential to alter the forms, the exercise, and perhaps even the distributions of power in certain spheres of global governance. Yet the increasing use of indicators has not been accompanied by systematic study of and reflection on the implications, possibilities and pitfalls of this practice. As a result, little attention has been paid to questions such as: What social processes surround the creation and use of indicators? How do the conditions of production influence the kinds of knowledge that indicators provide? How does the use of indicators in global governance change the nature of decision-making and the use of law? How does it affect the distribution of power between and among those who govern and those who are governed? What is the nature of responses to the exercises of power through indicators, including forms of contestation and attempts to regulate the production or use of indicators? The answers to these questions all have significant normative, theoretical and practical implications.

Investigation of the significance of indicators as a social technology affecting power and legal relations in global governance can build usefully on several existing bodies of scholarship. In this paper we draw particularly on work in three areas.

First, we use portions of the substantial body of work on connections of law and power in global governance, some but not all of which are socio-legal in methodology and in the research questions addressed (Koh 1997; Chayes and Chayes 1998; Dezalay and Garth 2002; Rajagopal 2003; Braithwaite 2004; Slaughter 2004; Santos and Rodriguez-Garavito 2005; Kingsbury et al 2005; Halliday and Oskinsky 2006; Merry 2006; Goodale and Merry 2007; Halliday 2009; Halliday and Carruthers 2009; Kingsbury et al. 2009; Simmons 2009; Symposium 2010). This scholarship seeks to theorize modes of governance operating outside or across states, including works addressing shifts from command and control approaches to more managerial and participatory processes, or to private governance and non-centralized networks. It also examines shifts connected in varying ways with neoliberalism, market hegemony, economic globalization, and new forms of information, communication and social relations. Other important areas of governance scholarship deal with “new governance” and experimentalist learning models (de Burca 2010; Symposium 2010; Sabel and Zeitlin 2010), with theories of governmentality (Miller and Rose 2008), and with networks, materiality, and other drivers of changes in relations between individuals and society or parts and the whole (Latour 2008, 2011) .

A second starting point is theoretical writings on quantification and indicators as social phenomena, both general works (Hacking 1990; Porter 1995; Desrosières 1999; Espeland and Stevens 1998, 2008; Espeland and Sauder 2007; Saetnan, Lomell and Hammer 2011) and a small but growing body of studies relating to specific uses of indicators and quantification in global governance contexts (Arndt and Oman 2006; Davis and Kruse 2007; Hood, Dixon and Beeston 2008; Arndt 2008; Bogdandy and Goldmann 2008; Fougner 2008; Rosga and Satterthwaite 2008; Ravallion 2010b; Satterthwaite 2011; Merry 2011; Davis, Fisher, Kingsbury and Merry 2012)

Third, important insights and perspectives on indicators come from science and technology studies (STS) (Bowker and Star 1999; Latour 1987; Lampland and Star 2009; Saetnan, Lomell and Hammer 2011), including actor network theory (Latour 2005, 2011),

Indicators are an increasingly important technology within many forms of global governance. This paper proposes an approach to the investigation of the role of indicators

starting from the following combination of conceptual claims and hypotheses: Indicators represent a distinctive method of producing knowledge about societies. A particular feature of global governance indicators is the way they tacitly embody theories about both the appropriate standards against which to measure societies (or institutions) and the appropriate ways in which to measure compliance with those standards. Many also embody theories about social change. Those theories are generated through dynamic collective processes that differ in significant ways from other political processes. Shrouding these sorts of theoretical claims in an indicator will, depending on various circumstances discussed at greater length below, make them either more or less influential and either more or less open to various forms of contestation and regulation. Consequently, using any given indicator in global governance involves tacitly accepting both a very particular set of claims about the standards against which societies or institutions ought to be evaluated and a particular process for generating those claims. The use of indicators affects not only the kinds of power and influence commanded by global decision-makers but also the most effective ways of contesting and regulating their decisions.

Part II below sets out our conceptual claims regarding the defining characteristics of indicators. Part III identifies defining features of governance and global governance and sets out several hypotheses concerning the reasons for, and the implications of, the turn to indicators in global governance. Part IV presents case studies of the World Bank's Doing Business indicators and the United Nations' Human Development Index which provide some preliminary confirming evidence for several of the hypotheses presented in Part III concerning how the production, use, contestation and review of indicators can alter the nature of global governance. Part V concludes.

II. What is an Indicator?

A. Indicators defined

There is no agreed meaning of 'indicator', but for the purposes of our inquiry into indicators as an important emerging technology in the practice of global governance the concept can be delimited in the following way.

An indicator is a named collection of rank-ordered data that purports to represent the past or projected performance of different units. The data are generated through a process that simplifies raw data about a complex social phenomenon. The data, in this simplified and processed form, are capable of being used to compare particular units of

analysis (such as countries or institutions or corporations), synchronically or over time, and to evaluate their performance by reference to one or more standards.

This working definition subsumes indexes, rankings, and composites which aggregate different indicators. Many of the best-known indicators are aggregations or ‘mash-up’ compilations (Ravallion 2010a), with substantial discretion available to the compiler in choosing what specific indicators to include, with what weightings and what devices to limit double-counting or to smooth over data unavailability. Examples include the HDI and the World Governance Indicators. While the processes and uses of aggregation raise many special issues, for the purposes of this paper the term “indicators” also includes these aggregations. We focus on the subset of indicators that are used for evaluation or judgment, and have effects specifically on decision-making or other effects in global governance. The term is also used in other ways – for example to refer to a diagnostic characteristic (such as an indicator of a person who has been trafficked, or an indicator species for an ecosystem) – but these usages are outside the concept we are examining.

Indicators often take the form of, or can readily be transformed into, numerical data. A key challenge is whether and how indicators ought to be distinguished from other compilations of numerically-rendered data. The differences lie in how indicators simplify ‘raw’ data and then name the resulting product. That simplification can involve aggregation of data from multiple sources. It can also involve filtering that excludes certain data, including outliers or other data deemed to be unreliable or irrelevant. Sometimes data are filtered out and replaced with statistics, such as means or standard deviations, meant to convey similar information. In still other cases missing data are filled in with values estimated from existing data. The specific name given to data that have been organized and simplified in these ways typically denotes the social phenomenon the data ought to be taken to represent. So for example, a census report containing data on the numbers of people between the ages of 0-14, 15-64 and 65+ is not in itself an indicator. But suppose that data is aggregated in particular way, for instance by dividing the sum of the first and third figures by the figure for the number of people in the 15-64 group. If that number is then labeled a “dependency ratio”, and the same calculation is made for other units or other times, the collection of processed data is capable of being used for the purposes of inter-country or inter-temporal comparisons of “dependency” and qualifies as an indicator.

Indicators can also be contrasted with other representations of social phenomena. In principle, any given social phenomenon can be represented in multiple ways. For example, the level of respect for the rule of law in a given country in a given year may be represented by an indicator such as a rule of law index. Alternatively, however, it might be represented by a paragraph of text describing patterns of respect or disregard for the rule of law during the relevant period, or by a series of striking photographs or a video recording. All of these representations may purport to capture the same phenomenon. Each involves some form of simplification (although the forms vary), and each may be given a suggestive name by its producer. However, the indicator is distinctive in the ways in which it represents and conveys compiled numerical data, and it has particular attractions as a means of representation for use in comparing or evaluating particular units of analysis. Different representations are likely to convey different impressions and stimulate different responses, in ways that vary with the type of audience. Indicators cater to demand for (and receptivity to) numerical, rank-ordered and comparable data.

There is considerable room for variation within the scope of our broad definition of an indicator. Some indicators have names that are highly evocative of evaluative standards; some provide more complete orderings of the units being analyzed; some involve greater simplification of raw data. Analyzing the significance of these kinds of variations is an important topic for further research but is beyond the scope of this paper.

B. Salient characteristics of indicators

Our working definition highlights several features of indicators, including (1) the significance of the name of the indicator and the associated assertion of its power to define and represent a phenomenon such as “the rule of law”, (2) the ordinal structure enabling comparison and ranking and exerting pressure for ‘improvement’ as measured by the indicator, (3) the simplification of complex social phenomena, and (4) the potential to be used for evaluative purposes. We elaborate on the significance of these features in the following paragraphs.

1. Naming the indicator

The assertion that an indicator has been brought into existence and given life is typically marked by naming it. The name itself is usually a simplification of what the index purports to

measure or rank. The name's constancy may mask changes over time in the indicator itself. Calling an indicator a measure of "transparency" or "human development" asserts a claim that there is such a phenomenon and that the numerical representation measures it. An indicator may even create the phenomenon it claims to measure, as IQ tests came to define intelligence. Labeling this measure an Indicator, Index, Ranking, League Table, etc implies a claim to knowing and measuring a phenomenon. As a result, the indicator represents an assertion of power to produce knowledge and to define or shape the way the world is understood.

2. Rank-ordered structure

All indicators are fundamentally comparative, and some element of ordinal ranking is a feature of the indicators we are studying. Indicators usually enable comparison of different units but in a few cases only permit comparison of the same unit at different times. However, an indicator need not rank all data points or all units in a transitive way. Influential indicators are usually cardinal (attributing separately defined values to each unit), and most use one or other of a standard menu of scaling methods (e.g. a purely ordinal scale, an equal-interval scale, or a ratio scale), but it is possible to have an indicator which does not have these attributes. Some listings with most of the attributes of indicators may merely divide units into categories described nominally, identifying difference without ranking the categories. These do not fall within our definition of an indicator. Other nominal listings may have an element of hierarchy among broad categories (red, yellow, green). These do qualify as indicators for our purposes.

3. Simplification

Simplification (or reductionism) is central to the appeal (and probably the impact) of indicators. They are often numerical representations of complex phenomena intended to render these more simple and comparable with other complex phenomena which have also been represented numerically. Indicators are typically aimed at policymakers and are intended to be convenient, easy to understand, and easy to use. Yet, the transformation of particularistic knowledge into numerical representations that are readily comparable strips meaning and context from the phenomenon. In this numerical form, such knowledge carries a distinctive authority that shifts configurations and uses of power and of counter-power. This transformation reflects, but also contributes to, changes in decision-making structures and processes.

Indicators also often present the world in black and white, with few ambiguous intermediate shades. They take flawed and incomplete data that may have been collected for other purposes, and merge them together to produce an apparently coherent and complete picture. Wendy Espeland and Mitchell Stevens identify this as a potential consequence of what March and Simon refer to as uncertainty absorption, which “takes place when inferences are drawn from a body of evidence, and the inferences instead of the evidence itself, are then communicated” (1958:165). As Espeland and Stevens describe this process, “‘Raw’ information typically is collected and compiled by workers near the bottom of organizational hierarchies; but as it is manipulated, parsed, and moved upward, it is transformed so as to make it accessible and amenable for those near the top, who make the big decision. This ‘editing’ removes assumptions, discretion and ambiguity, a process that results in ‘uncertainty absorption’: information appears more robust than it actually is...The premises behind the numbers disappear, with the consequence that decisions seem more obvious than they might otherwise have been. An often unintended effect of this phenomenon is numbers that appear more authoritative as they move up a chain of command. The authority of the information parallels the authority of its handlers in the hierarchy” (2008: 421-2). The degree of uncertainty beneath the surface of many of the most influential simplifying indicators in global governance is quite intensively scrutinized, but usually only in specialized scientific literature (Morse 2004; Hood, Dixon and Beeston, 2008; Hoyland, Moene and Willumsen 2011).¹

4. Indicators as tools for evaluation

We single out indicators from other collections of data based on their potential use in evaluating performance. Indicators set standards. The standard against which performance is to be measured is often suggested by the name of the indicator—corruption, protection of human rights, respect for the rule of law, etc. To the extent that an indicator is used to evaluate performance against one standard rather than another the use of that indicator embodies a theoretical claim about the appropriate standards for evaluating actors’ conduct. Indicators often have embedded within them, or are placeholders for, a much more far-reaching theory—which

¹ Hoyland, Moene and Willumsen 2011 reintroduce the uncertainty that is filtered out of the Human Development Index indicators and the Doing Business indicators when these are aggregated into rankings. They calculate, for example, that the ranking of the top four countries as shown in the 2008 HDI has less than 1% probability of being the true top rank. The estimated confidence intervals for Georgia in the 2007 Doing Business rankings are 11th place to 59th place, rather than the definitive 18th place Georgia was given in the report.

some might call an ‘ideology’—of what a good society is, or how governance should ideally be conducted to achieve the best possible approximation of a good society or good policy. At a minimum they are produced as, or used as, markers for larger policy ideas. They may measure ‘success’ directly along this axis, or they may measure what, from the standpoint of the theory or policy idea, are pathologies or problems to be overcome. More frequently they address simply some measurable elements within a wider scenario envisaged by the theory or policy idea. Often the theory or policy idea is not spelled out at all in the indicator but remains implicit.²

The theory or idea embedded in an indicator may be developed or reframed by its users or by other actors in ways that differ from anything intended by the producers. Indicators often express ideologies about the ideal society and the process of achieving it. But what they actually communicate, and to whom, may not be what their producers and promulgators sought to communicate. This communicative element makes it essential to consider the indicator’s audience and how it is engaged by the indicator.

Use of the indicator in evaluative processes requires that its audience include active evaluators. Those evaluators may or may not exert significant governance power over the actor being evaluated. An indicator may be taken up by its audience (sometimes without any explicit intention on their part) in social processes that do not directly involve evaluation, including: establishing or cementing key concepts (such as ‘human development’), influencing actor identities, condensing and redefining status and hierarchies in quantified forms, framing standards or causal theories which may then be rendered in other ways (for example, in an organizational policy or a statement of ‘best practices), influencing decisions as to what is measured or how statistics are compiled, crudely validating and calling into question other ideas or evaluative impressions. These other roles or uses of indicators do not alter the definitional requirement that an indicator must be *capable* of being used for evaluation, even while some of its roles and effects do not depend on the operation of specific evaluative processes.

² The use of numerical information to understand the world reflects the creation of what Mary Poovey calls the ‘modern fact’ as a form of knowledge. (Poovey 1998: xii). Numbers have become the bedrock of systematic knowledge because they seem neutral and descriptive. The reality that numbers are not free of interpretation but instead embody theoretical assumptions about what should be counted, how to understand material reality, and how quantification contributes to systematic knowledge about the world, has been obscured. It is a distinctive feature of modernity that numbers appear as an objective description of reality outside interpretation. (Poovey 1998: xii).

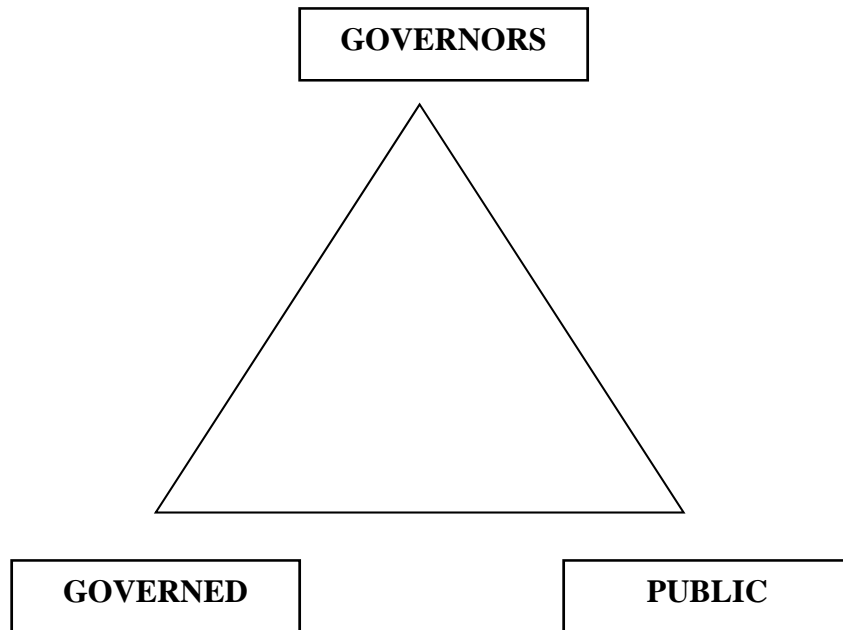
III. Indicators as technologies of global governance

A. **Global governance defined**

Governance comprises the means used to influence behavior, the production of resources, and the distribution of resources. Thus governance is a broader concept than regulation, which refers to means used to influence the behavior of regulated actors (Braithwaite, Coglianese and Levi Faur 2007); however, the distinction is often a fine one because the process of allocating resources, and even the process of generating or not generating resources, can also serve as a means of regulation. Analyses of the means and impacts of governance vary in focus. Some address mainly material allocations and influences, as in the epigram that politics is who gets what, when and how (Lasswell 1936). Others in Foucauldian or Marxian veins are concerned with the impact of power relations on identity and consciousness, the constitution of the subject and the analysis of structures of power or domination which the actors may not themselves be aware of. Others examine governance in the interactions of largely autonomous systems (Teubner and Fischer-Lescano 2004), or in self-organizing systems that lack apparent intentionality (cf Camazine et al 2001), or in certain actor-network forms that have not (or not yet) supported the delineation and articulation of forms of authority and governance (Latour 2011).

In many situations across this range (but not all), governance can be modeled using a standard triangular schematic which posits relations between the actors (the *governors*) who allocate resources among or exert influence over the behavior of other actors, the actors subject to governance (the *governed*), and other interested constituencies (the *public*). (See e.g. Ayres and Braithwaite 1992; Braithwaite, Coglianese and Levi-Faur 2007; Abbott and Snidal, 2009.)

The process of governance is often itself subject to governance. In other words, governors are often simultaneously among the governed, in the sense that their actions are typically subject to various forms of contestation and control. Contestation can take many forms, including, depending on the context, violence, deliberate non-compliance, litigation, behind-the-scenes lobbying, or voting. Meanwhile control can range from resistance to specific decisions concerning specific actors, to much more systematic and generalized efforts at regulation. This last scenario can involve what Grabosky (1995) describes as ‘layers of regulation’, citing situations in which private actors who serve as regulators are in turn subject to monitoring and control by public actors.



Governance can be effected through a wide variety of mechanisms, including military action, transfers of funds, promulgation of legal instruments, publication of scientific reports, advertising campaigns, or educational programs. Following Miller and Rose (2008), we call such mechanisms “technologies” of governance (see also Porter 1995; Espeland and Sauder 2008). Different technologies of governance involve generation and allocation of different kinds of resources, including both material resources such as money or personnel, and intangible resources such as status and information. Different technologies also exert different kinds of influence over the governed. The governor may have *physical influence*, through being in a position to block or use force against the governed actor. The governor might wield *economic influence*, stemming from its ability to allocate material resources, or *social influence*, the ability to alter the governed actor’s relations with other actors. The governor may be able to persuade the other actor of the merits of a certain course of action due to being perceived to have special insight which might be termed *scientific expertise* or *moral expertise*. Finally, different technologies of governance may be more or less amenable to particular forms of contestation or subject to different forms of regulation. So for instance, financial auditing as a technology of corporate governance may be influenced especially strongly by a combination of legal regulation and detailed self-regulation, while environmental auditing is shaped by pressures from a more diffuse set of actors articulating less detailed norms (Power 1997).

The term global governance is used in this paper simply to denote governance beyond a single state. The governmental agencies of a state are often subject to governance conducted, at

least in part, by entities outside the state. These entities may be inter-governmental organizations, non-governmental organizations, or other states. The ways in which such governance operates are often immensely intricate, creating substantial empirical and analytical challenges in efforts to understand the roles of indicators as a technology of such governance.

B. Possible effects of indicators on global governance

The use of indicators as a technology of global governance can be expected to affect: where, by whom, and in relation to whom governance takes place (the “topology of governance”); the processes through which standards are set; the processes through which decisions are made about the application of standards to particular cases; and the means and the dynamics of contesting and regulating exercises of power in global governance. In the subsections that follow we elaborate on each of these claims.

1. Topology of governance

The idea that indicators and other quantitative ways of representing social phenomena can serve as technologies of governance has distinctive implications for the topology of global governance. Indicators are one of the technologies of ‘government at a distance’ (Miller and Rose 2008), allowing certain actors to exercise influence over the conduct of large numbers of geographically dispersed actors, that are readily adapted to forms of governance outside or reaching across distances beyond the state. In particular settings of global governance, using indicators as a technology calls for expansion in ordinary political conceptions of who qualifies as a governor, while at the same time complicating models of governance premised on clear distinctions between governors, governed, and others.

Recognizing indicators as a technology of global governance implies that actors who promulgate indicators ought to be counted among the governors, even if they otherwise would not be recognized as wielders of power in global governance, or would be only to a lesser extent. Thus indicators help constitute or embed power relations. Moreover, simple producers of indicators used in global governance, or actors whose decisions have a significant impact on the form or content of such indicators, may exercise power even where they are not the formal promulgators or users of the indicator.

Including producers of indicators in the class of governors does not mean that tracing the strands of agency and power relations is necessarily straightforward. While in some cases (such as between credit rating agencies and their clients who pay to be rated) there is a symbiotic relationship between those who measure and those who are measured, particularly when the measured entity actively consents to the measuring, in other cases the measurer unilaterally exercises power over the measured. These complex and variegated power relations do not map neatly onto the distinction between governors and governed.

Another complicating factor is that the production of the indicators used in global governance is often a collective process. In many cases promulgators attach their names to indicators whose production involves contributions from a number of other actors. For example, reports and rankings for the Programme of International Student Assessment (PISA) are promulgated by the OECD, but are actually prepared and produced by an Australian consultancy under a contract with the OECD (Bogdandy and Goldmann 2008). Moreover, the promulgators of indicators typically rely on data collected by a large network of independent actors stretching from international agencies, to national statistical agencies, to local and national NGOs, to villages and local communities. They also rely upon analytical techniques generated by some segment of the scientific community. Consequently, the promulgator of an indicator may or may not be the actor most involved in determining its content. Instead, the promulgator is often more like the ‘manufacturer’ of a consumer product, whose main contribution is to lend its brand name and perhaps its design and marketing expertise and quality control power to the collective product of a global supply chain.

The production of indicators also draws into the practice of global governance, through their own use of the indicators, people who would otherwise be regarded simply as members of the public. For example, when the United States State Department publishes its annual glossy report with indicators of countries’ compliance with anti-trafficking standards, these can be read by activist groups who may influence economic agents such as prospective tourists in Toronto, just as easily as they can be read by government officials. Learning of Costa Rica’s low score may lead a Toronto resident to alter her perceptions of Costa Rica, a country downgraded to the Tier 2 ‘watch list’ in 2011 (United States Department of State 2011). In particular her travel decisions, in combination with the decisions of other members of the public, may (hypothetically) have a material effect on Costa Rica’s tourism revenues.

Indicators may also play significant roles in global governance in helping to constitute actors and shape identities. Some organizations, such as Freedom House or Transparency International, depend for their prominence and influence primarily on indicators they produce. In many organizations, indicator production is important to the business model, helping generate website traffic or a demand for the organization's consultancy services; some indicators are sold commercially (Davis, Fisher, Kingsbury and Merry 2012). Disparate actors in different categories may become linked through an indicator which they help construct, or which measures behavior they are concerned with. Indicators may thus play roles in shaping highly decentralized or non-formal governance structures such as networks. Indicators may be important in such governance modalities even where no clear delineation of governors and governed and interested public can be made, and where clear overarching human intentionality is lacking or where structural or non-animate elements (such as technological elements) greatly shape outcomes.

The use of indicators in global governance enhances the role played in global governance by the subset of the public that comprises the scientific community. The scientific community determines the scientific authority of an indicator, which in turn may affect the extent of the indicator's influence. Producers of indicators are well aware of this fact. For example, Kaufmann and Kraay assert that their World Governance Indicators are more reliable because they are published in scientific journals and peer-reviewed (Kaufmann, Kraay and Zoido-Lobaton 1999: p. 32; see also Kaufmann, Kraay and Mastruzzi 2009). Indicators typically rest on claims to objectivity and social science knowledge, but they differ significantly in the extent to which they reflect social science research and analysis. There are close relations between indicators developed for social science theory testing and those which address policy questions, with the data and analysis of one informing the other.

2. Standard-setting

As we have explained, indicators are standard-setting instruments. But while the processes which generate indicators ultimately result in the production of specific goals and targets against which societies are measured, they may be different from other more politically explicit standard-setting processes (Lampland and Star 2009; Büthe and Mattli 2011). Whereas political efforts to formulate norms and standards, for example in multilateral inter-governmental

negotiations conducted by diplomats, tend to involve processes such as voting or interest-group bargaining or the exercise of material power, the processes in specialist agencies and expert meetings where the standards embedded in indicators are produced, accepted, and supported tend to involve derivation of power from scientific knowledge. As the awareness or the significance of indicators as standards rises, indicator design and production is likely to become increasingly subject to demands made of other standard-setting processes, including demands for transparency, participation, reason-giving, and review (Kingsbury et al 2005; Bogdandy and Goldmann 2008).

Because indicators are by stipulation capable of being used in evaluation, they frequently blend standard-setting with evaluation, by conveying information such as a ranking of the state's performance relative to that of other states and a direction of change in the state's relative or absolute performance by comparison to previous iterations of the indicator. This has the potential to intensify demands for 'due process', especially within inter-governmental bodies, as each specific ranked entity has a direct focused interest, going beyond the general interest in good standards, which it may regard as conferring 'standing' to raise a challenge.

3. Decision-making

In the practice of global governance, many decisions by governing entities are in some way influenced by indicators, although few rely entirely and mechanically on indicators. In the most straightforward case, an indicator promulgated by an extra-national entity is then used by that entity in generating or allocating resources or in influencing behavior. This is for example what the World Bank does in promulgating 'good governance' indicators, which are used by the World Bank itself in deciding how to allocate aid. A modest extension of this occurs where one entity's indicators are used for governance purposes by other entities in the same sector, as when the MCC uses World Bank indicators. A more subtle case arises where the promulgation of the indicator by an extra-national entity spurs demands and governance-related action by diffuse but nonetheless influential groups of other actors. For instance, as we will discuss at greater length below, the World Bank claims that it has prompted many countries to reform their legal systems simply by promulgating and promoting its country-level indicators on the ease of doing business. The US State Department's Trafficking in Persons Report claims that it has fostered national anti-trafficking legislation. The regulatory influence of these indicators does not stem exclusively

from the ways in which they are used by the World Bank or other development agencies, but also from the ways in which they are expected to be used in lobbying and decision-making by local political constituencies or prospective foreign investors. This shades into a further scenario, in which the indicators have regulatory effects primarily because they have been embraced as guides to appropriate conduct by actors within the state shaping national governmental decisions on national governance. The majority of prominent indicators appear to operate in global governance in even more diffuse ways than this, by influencing professional, public and political opinion to craft new approaches or take different policy orientations.

Indicators are attractive to decision makers and designers of decision making processes because processes that rely on indicators can be presented as efficient, consistent, transparent, scientific, and impartial. (Porter (1995) refers to these virtues compendiously as “objectivity.”) It is difficult to say which of these factors is most important in any given context. Efficiency and consistency may be factors of special importance in high-volume decision-making; transparency, scientific authority and impartiality are considerations relevant to the use of indicators in both standard-setting and decision-making, although special issues arise in decision-making.

a. Efficiency

The use of easily-produced or already-available indicators (which simplify more complex and unruly information) is likely to reduce the burden of processing information in the course of decision-making. In principle therefore, reliance on indicators should reduce the time, money, expertise and other resources required to make decisions. One of the appeals of an indicator technology for human rights treaty bodies is to help in coping with the growing burden of processing country reports as the number of reports increases. On the other hand, selecting or amalgamating among a high volume of different indicators requires expertise and can be costly. It may be viable and attractive for a sophisticated organization. But a multiplication of indicators, some poorly-grounded and some extensively marketed, may lead to confusion and worse decision-making for other organizations and their constituencies.

The cost-benefit attractions of relying on indicators are particularly pronounced when sophisticated numerical data and information processing technology are readily available. It seems likely that the expansion in the use of global indicators since the 1990s is linked to the increasing accessibility and quality of social and economic statistics, the ever-declining cost of computing, as well as improvements in and dissemination of statistical techniques. National

statistical systems are generally improving. For example, developers of an indicator for the right to health in the early 2000s were able to present data on 72 indicators for 194 countries using data available on the Internet (Backman et. al. 2008)

In some contexts, the quality of indicators may actually be a function of the total supply of indicators because some indicators are arguably most useful when aggregated with other similar indicators (Kaufmann, Kraay, Zoido-Lobaton 1999). This raises the intriguing possibility that, at least for relatively sophisticated actors, the use of indicators may be a self-reinforcing phenomenon: as more indicators are produced, aggregations of indicators become more reliable, more indicators are used, more indicators are produced, et cetera. Greater supply of indicators also influences the ecology of indicators, with comparisons among them enabling selection of the most robust and reliable, and possibilities of continuous improvement.

It seems plausible that reducing the costs of decision-making becomes more attractive (sometimes even imperative) as the amount of decision-making and the need for rapid decisions increases. Thus, the striking increase over the decades since 1990 in the creation and use of indicators as forms of knowledge for global governance arguably reflects the greater demand for readily available and easily used comparative knowledge to inform decision-making as well as the increasing supply of information. The reliance on indicators in global governance seems to be associated with developments such as increases in population and in levels of economic activity, which in turn determine the scale and intensity of social and economic interactions susceptible to governance, and with specific institutional developments affecting the nature of governance decision-making.

b. Consistency

To the extent that indicators provide unequivocal ordinal data, they can be translated into numerical form and used as inputs into decisions made in accordance with rules expressed in mathematical form (such as ‘approve the grant if $(A * B) / C > 3$ ’). A distinctive feature of rules that can be expressed as these kinds of mathematical operations is that they yield consistent results; given the same inputs, the output will be the same regardless of who is applying the rule or when it is being applied. Holding this process constant also enables consistency over time. Consistency is likely to increase the legal or moral authority of decision-making in some contexts.

c. Transparency

The simplicity of indicators makes it relatively easy to communicate them to third parties. This is significant whenever an effort is made to give third parties access to the informational basis for a decision; it should be relatively easy to communicate the basis for a decision based on indicators. This transparency can be superficial because the raw data used to construct indicators, and the methods used to simplify those data, are not necessarily easy to communicate and may in fact be treated as confidential. Even when such detailed information is provided, users may well not delve into the complexities and limitations of the underlying data and the analytic choices made in converting it into an indicator.

d. Scientific authority

Reliance on indicators has the potential to displace unmediated subjective data and replace it with data whose relevance and reliability has been endorsed, to some extent, by a community of scientists. This in turn means that the credibility of decisions based on indicators can depend in part on the extent to which the indicator is seen to be endorsed by various scientific communities and the amount of authority commanded by those communities. As the case studies indicate, an indicator may gain credibility from its association with particularly prominent individual scholars.

e. Impartiality

Basing governance decisions solely on publicly-disseminated indicators excludes the possibility of basing them on subjective considerations of, or private data known only to, the particular decision-maker. As Porter (1995) has argued at length, the less a governor is trusted the more appealing this kind of demonstrated impartiality becomes. This impartiality is limited, however. The reasons for simplifying raw data in one way instead of another, or choosing to rely upon one indicator rather than another, may be highly subjective. The decision-maker may be involved in this process, whether by constructing the indicator, determining itself which indicator to use, or signaling a demand for an indicator conforming to its preferences which a supplier then meets. It is in any case almost inevitable that indicators are shaped by the knowledge and experience of the experts who produce them. This knowledge and experience may in some cases be dominated by that of the first movers or early adopters of quantification in a particular area of social policy.

4. Contestation

A great deal remains to be learned about when, how and why the governed (or rival governors) contest the use of indicators, but we expect it to take both general and long-established forms such as lobbying and litigation as well as distinctive forms that are especially suited to changing or resisting governance through indicators, such as refusal to participate in data collection, challenges to scientific validity, or creation of alternative indicators. Contestation can take the form of debates about the data used and not used in indicators, the weightings criteria for the indicators, or about the embedded social and political theory of the indicator. Contestation strategies can include the creation of new indicators, and resistance to or discrediting of existing indicators and their producers or users. This may in turn prompt modifications to the indicator, or counter-strategies by producers and users. However, because they obscure the socio-political theoretical claims embedded in their construction, the use of indicators can make it relatively difficult to contest the use of those theories in global governance. Indicators may mask large areas of missing or incomplete data, inability to draw significant distinctions between entities that are nonetheless hierarchically ranked, much higher levels of underlying uncertainty than the indicator depicts, and choices about weighting of different components of composite indicators (which in some notable privately-produced indicators are not disclosed at all). On the other hand, those with special expertise in the construction or analysis of indicators can overcome these impediments to technical contestation and exercise greater influence than they could in purely political settings. Limitations in the ability to contest the exercise of power by global decision-makers tend to shift the balance of power toward ‘technical’ experts, that is to say, people with expertise in the construction or analysis of indicators.

The rapid growth in prominent indicators in global governance is a time-compressed phenomenon that was initially sufficiently circumscribed for case studies about early patterns of debate, acceptance and challenge to be used as a basis for some cautious generalizations. Several of the most prominent indicators in global governance began as efforts led and shaped by social-science communities. Eventual ‘scientific’ acceptance of these indicators can be traced back to a time before ‘public’ knowledge is settled about the issue through various controversies and challenges. The development of these indicators instantiates, to some extent, the process of developing scientific knowledge described by Latour (1987). Like other forms of scientific

knowledge production, an indicator builds on existing concepts, techniques and categories of understanding that are taken for granted as correct, and on networks of experts. Indicators are shaped both by technical factors, such as the statistical properties of an indicator when compared to other indicators, and social factors, such as social networks, perceived expertise, relational interactions, institutions and allies (Latour 1987: 29). These processes are collective and take place over time. Once the indicator was established with wide scientific support (even while continuous scientific debate and refinement remains part of the further life of the indicator), a process of wider public acceptance occurs, as networks of actors and institutions adopt the indicator and consequently increase its credibility and legitimacy, perhaps even converting it into a standard against which other indicators are evaluated.

This pathway has had some effects on the levels and types of contestation. A survey we conducted of reporting about four major indicators—UNDP’s HDI, Transparency International’s Corruption Perception Index (Transparency International 2010), Freedom House’s Freedom in the World indicator (Freedom House 2010), and the World Bank’s Doing Business indicators—in three major US and UK opinion-shaping newspapers and magazines suggests that in the first year or two after an indicator is released, there is discussion and debate about the indicator itself, but after a few years, the indicator is presented in these news media largely as a fact that describes a country’s situation, with virtually no discussion about the source of the data or the nature of the indicator itself.³ In certain international political fora, however, efforts at contestation can be intense. As these indicators have become more and more significant as technologies of global governance, the stakes of contestation have risen. Producers of indicators who may have viewed themselves as scientists or technicians working outside political and legal arenas, have been drawn into highly political conflicts. The case studies below of the Doing Business indicators and the HDI show the intensity and ramifications of political debate among state representatives and technical producers of indicators within the relevant organizations that occurs episodically, and the general growth in demand for transparency, participation, and review of these indicators and of the uses made of them.

³ This survey examined news stories in the *New York Times*, the *Washington Post*, and the *Economist*. The first two are standard-setting American newspapers and the third is an internationally circulating British publication. The survey compared news coverage for the first year after the four indicators were created with news coverage in 2004 and 2009. We thank Jessica Shimmin for work on this.

5. Regulation

One outcome of contestation can be demands for regulation of indicator-related processes and activities. Some of these demands instantiate general patterns of demands for increased transparency, reason-giving, participation, review and accountability in global governance institutions and processes, particularly where public authority is being exercised but also in relation to some private governance actors (Kingsbury, Krisch and Stewart; 2005; Kingsbury 2009; Bogdandy 2009). Given the distinctive features of indicators as a technology of global governance, we expect growth in specifically-adapted proposals or efforts to regulate indicators. These may take a variety of forms, several of which have been manifested in debates about regulation relating to sovereign debt ratings by credit rating agencies (Sy 2009). For instance, *producers of indicators* could be subject to scrutiny (although not necessarily legal obligations) with reference to human rights standards, domestic constitutional norms, and principles of global administrative law. Others may be regulated in the same ways as private actors such as multinational corporations or networks of firms linked by transnational supply chains. These analogies suggest also the possible relevance of regulatory mechanisms such as competition law, transnational tort claims and self-regulation (cf Foucault 2008). Procedural obligations on producers might require them to be transparent about the methods used to produce indicators and their limitations, to allow interested parties to participate in some way in the design process, and or to accept some accountability in problematic cases for effects on external actors. Alternatively, producers might find their indicators held to externally administered standards of reliability and validity. Finally, structural interventions might be designed to foster healthy competition among producers. So, for example, public bodies might support or subsidize the production of competing indicators, or certain organizations already exercising other substantial powers as governors might be encouraged to refrain from promulgating indicators.

Other regulatory interventions might target the *users of indicators*. For example, use of indicators in global governance may spawn systematic efforts to educate users of indicators, and the members of the public who confer authority upon them, about both the costs and benefits associated with using indicators. Alternatively, regulation could focus on empowering *actors who are governed by indicators*, by for example giving them access to the scientific expertise they need to contest decisions based upon indicators.

IV. Case Studies

In this section we consider two influential global governance indicators in light of some of the hypotheses proposed in the previous section about the ways in which indicators operate and can have effects in global governance. These are the World Bank Group's Doing Business indicators, and the UNDP's HDI. We do not suggest that these are necessarily representative of a large class of global governance indicators. They do, however, illuminate some specific aspects of the operation and effects of indicators which have one or more of the attributes the Doing Business project and the HDI share. Among these shared attributes are:

- 1) Doing Business and the HDI are forms of knowledge produced through a social process in which a small cluster of scholars developed a signature idea which was taken up by individuals who became influential in a particular global inter-governmental institution. They agreed on methods of collecting data or collating existing data, and on the name for the indicator and its principal components. The relevant inter-governmental organizations, namely the World Bank Group and UNDP respectively, embraced the indicator, created an institutional home and staffing to support its production, and attached their own brand names to it. Each promulgated indicator is produced by distinct units, the Doing Business team and the Human Development Report Office respectively, with considerable independence. These teams include persons with social-science and statistical expertise, some of whom engage in lively public debates about the data, methodology and possible changes in measurement and items. Each indicator thus draws some authority from the scientific methods and expertise involved in its production.
- 2) The Doing Business indicators and the HDI are each produced annually, in a lengthy report, accompanied by a drive to engage news media, professionals in the field, and policymakers. Each is widely disseminated, attracts engagements from influential public media such as the *New York Times* or the *Economist* magazine,⁴ and is extensively used

⁴ The HDI and HDR Media Analysis by the Human Development Report Office of the UNDP of global media news and opinion coverage of the Human Development Index for October 5 to November 4, 2009, the period after its global launch for that year, found 208 articles, referring primarily to a country's ranking (90%), usually compared with its neighbors. Almost two thirds gave some definition of the HDI (60%). About half of the articles covered the top and bottom rankings. This survey covered publications in English, French, Spanish, Portuguese, Italian, and Russian.

or debated in academic writings.⁵ Producing the indicator annually builds familiarity among audiences, creates anticipation, enables year-to-year comparison which creates political leverage and media interest, and can have academic and policy utility provided changes in methodology do not render valid inter-temporal comparisons impossible. This annuality may be contrasted with, for example, IMF economic indicators for G20 economies which are compiled quarterly and updated as soon as new quarterly data for any country is available, or indices of different stock markets which are updated almost instantaneously as trading occurs. Numerous national and sub-national counterpart reports are produced directly by the Doing Business team, and national (or regional) human development reports are produced by national agencies aided and checked by the HDRO's National Human Development Report Unit.

- 3) Doing Business and (to a lesser extent) HDI each credibly appear to have effects on the creation or distribution of resources, and/or on the behavior of states or of other actors such as donors or investors or international institutions; each operates as a technology of governance. Each also has other effects, including conveying an important view of development. The governance effects and other effects differ between the two indicators.
- 4) Each has episodically been subject to sharp contestation, with political effects, from national governments, government representatives within international organizations, and other entities, as well as academic critiques addressed to fundamental policy issues as well as methodological matters. The reasons for and dynamics of these episodes of contestation, and assessments of the effects of different forms of contestation, are likely to illuminate analysis of indicator-related contestation in global governance more generally.

These elements will be addressed for each indicator, under three simplifying sub-headings. The sub-headings are: Genealogy, Design and Production (of the indicator); Governance Effects and Other Effects; and Contestation and Regulation.

⁵ A search of Google Scholar showed 4470 articles and other works published in 2010 which refer to any of the UNDP Human Development Reports from 1990 (Wagstaff 2011). Doing Business 2011 (World Bank 2011: 14) reported cumulative totals of 2060 working papers and 656 academic articles relating to DB by 2010.

A. The Doing Business Indicators

1. Genealogy, Design and Production

The Doing Business indicators measure the quality of business laws and related legal institutions across 183 countries (World Bank, 2011). The Doing Business team with a large group of partners, compiles the raw data by asking lawyers in each country to report on the steps that a hypothetical firm would have to undertake in order to perform various tasks, including, starting a business, hiring and firing workers and enforcing a contract. The indicators generally reflect the time, cost and number of procedures associated with each task. The creators of the Doing Business indicators are very explicit about their theoretical presumptions.

A fundamental premise of Doing Business is that economic activity requires good rules—rules that establish and clarify property rights and reduce the cost of resolving disputes; rules that increase the predictability of economic interactions and provide contractual partners with certainty and protection against abuse. The objective is regulations designed to be efficient, accessible to all and simple in their implementation. (World Bank, 2011: v).

These presumptions about the relationship between law and economic development inform every aspect of the construction of the Doing Business indicators. To begin with, the very existence of the indicators—which are not very costly to create by the standards of a large global organization—reflects a presumption that rules and regulations are important.⁶ Second, the fact that the indicators focus exclusively on rules embodied in the formal legal system reflects a presumption that it is those rules, as opposed to rules reflected in informal practices, that influence economic activity. Third, the idea that regulations which make transactions such as starting a business or firing a worker fast, cheap and simple are automatically desirable, clearly informs the choice of time, cost and simplicity as metrics. The Doing Business project’s empirical methodology implicitly presumes that elite lawyers are reliable sources of information about how small and medium-sized enterprises navigate the formal legal system. The project’s proponents tend to gloss over the fact that all of these claims are in fact contestable (Arruñada 2007; Davis & Kruse 2007; Santos 2009)

The intellectual heritage of the Doing Business project lies in a school of thought within economics known as the new institutional economics. The fundamental premise of the new

⁶ Simeon Djankov in 2005 estimated the annual cost of the Doing Business project at about \$2m. “Unblocking Business”, *The Economist*, September 15, 2005. We do not have information on revenue generated from the project.

institutional economics is that when it comes to explaining economic outcomes, ‘institutions matter.’ An indication of the status of the new institutional economics within the broader discipline is the fact that one of its most famous proponents, Douglass North, shared the 1993 Nobel Prize in economics for his pioneering contributions to the field.

The specific theoretical claims embodied in the Doing Business indicators reflect extensions of North’s ideas developed by prominent contemporary economists. Those ideas were disseminated through networks linking elite academic economists to the World Bank. For instance, the authors of the 2010 Doing Business report claim to have been inspired by the work of Peruvian economist Hernando de Soto. De Soto in the late 1980s ran simulations in which firms created by his research team struggled to comply with the voluminous formal requirements associated with entering various economic activities in Lima, Peru.⁷ De Soto’s work in turn inspired a team of economists led by Andrei Shleifer and Robert Vishny, together with their former students Rafael La Porta and Florencio Lopez-de-Silanes, to collect similar data from a large sample of countries for the purpose of testing claims about the relationship between legal institutions and various economic outcomes. All four of the economists were affiliated with top-ranked U.S. Ivy League economics departments or business schools, and the academic papers they produced are among the most widely-cited in the entire discipline of economics.⁸ The so-called ‘gang of four’ also collaborated on academic projects with economists at the World Bank, including most notably Simeon Djankov, who eventually became the leader of the Doing Business project, before entering government as Bulgaria’s Finance Minister in 2009.

2. Governance Effects and Other Effects

The Doing Business indicators are tremendously influential and exemplify the range of mechanisms through which power can be exercised beyond the state (Schueth 2011). To begin with, the Doing Business indicators are used, in combination with other indicators, to guide the allocation of foreign aid by multilateral development banks, as well as the United States’ MCC

⁷ Interestingly, although the Doing Business project cites de Soto’s time and motion studies as its inspiration, Doing Business’s empirical methodology diverges from de Soto’s in an important way. De Soto ran simulations because he did not trust lawyers to know how difficult it would be for small and medium-sized enterprises to comply with all of their formal legal obligations (de Soto 1989, 133). By contrast the Doing Business project relies on information gathered from local lawyers, supplemented by the Doing Business team’s own reading of the relevant legal instruments.

⁸ The Doing Business team claimed that through June 2007, the 10 research articles that serve as background papers for Doing Business had been cited in 676 academic papers (World Bank Independent Evaluation Group 2008: 42).

and USAID. For example, at the World Bank, five of the ten Doing Business indicators are used as “guideposts” (together with other sources) to assist country teams in determining country scores on “Business Regulatory Environment,” one of the 16 criteria of the Country Policy and Institutional Assessment (CPIA) (World Bank Operations Policy and Country Services, 2008).⁹ At the MCC, Doing Business indicators are used in two of the six indicators of whether countries are “Encouraging Economic Freedom”; countries must score above the median on at least three of the six indicators in this category to be eligible for MCC funding (Millennium Challenge Corporation 2009).¹⁰ Finally, USAID officials have informally expressed commitments to support countries that are willing to reform in areas measured by the Doing Business reports (Santos 2009: 60).

The Doing Business indicators also appear to be successful in attracting the attention of senior policymakers, government officials and business leaders in many of the World Bank’s client countries, as well as potential foreign investors in those countries, thus prompting significant amounts of benchmarking, dialogue and reform (World Bank Independent Evaluation Group 2008; Schueth 2011). Even critics of the Doing Business indicators seem to agree that their promulgation has prompted many countries to reform their legal systems (Benjamin and Theron, 2009). These impacts undoubtedly reflect some combination of the ease of use, transparency, and scientific authority of the indicators; the overall influence of the World Bank; and the substantial amount of effort that the Doing Business team and others have made to disseminate the indicators and the associated annual reports to the general public. The Doing Business team’s communications strategy includes a website, press conferences, road shows and workshops around the world. The Doing Business indicators are featured in news reports that appear in major publications such as the *New York Times*, the *Washington Post* and the *Economist*. The latter is particularly positive towards these indicators.¹¹ In at least one case—

⁹ The African Development Bank (2008) and the Asian Development Bank (2008) use Doing Business Indicators in similar ways.

¹⁰ The MCC is strongly committed to using indicators to guide the allocation of aid. Eligibility for MCC assistance is determined primarily by a country’s relative performance in three broad areas (named and defined by the MCC): ruling justly, investing in people, and economic freedom, as measured by 17 indicators. In order to be eligible a country must perform at or above the median on at least half of the indicators in each of the three categories. They must also be above the median on the corruption indicator. In addition, a country may be determined ineligible if it performs “substantially below” average on any indicator—in practice, below the 25th percentile—and has failed to take appropriate measures to address the problem (Millennium Challenge Corporation 2009).

¹¹ In 2009, *The Chicago Sun Times*, *The Houston Chronicle*, *The New York Times*, *The Philadelphia Inquirer*, and *The Washington Post* discussed the DB index eight times and the *Economist* referred to it thirteen times. The latter

Georgia—a country that has scored highly on the Doing Business indicators has bought advertisements in major news publications to tout its success (Schueth 2011: 68-70). We suspect that when the Doing Business indicators are summarized or endorsed by influential journalists, politicians, and economists, the effect is to enhance their weight with governing elites in the countries being assessed and with prospective foreign investors.

3. Contestation and Regulation

The Doing Business indicators also shed light on how governance through indicators can be contested and regulated. A case study of Georgia by Schueth (2011) shows that contestation sometimes involves resistance at the local level. Schueth reports that some time around 2006 USAID and the Saakashvili government made a priority of raising Georgia's rankings in the Doing Business indicators. Overall they enjoyed considerable success--in 2006 the Doing Business team named Georgia "Top Reformer"—but in some areas they were relatively unsuccessful. According to Schueth, some of the failures could be attributed to opposition from competing political interests. For example, at one point USAID proposed the adoption of a computerized system that would target only the most risky shipments and customs declarations for inspection. Schueth claims that large importers with histories of customs violations and mid-level bureaucrats blocked the reforms (66-67).

The Doing Business indicators have also provoked contestation at the global level. A transnational group of workers' representatives (spearheaded by the International Trade Union Confederation), together with the International Labour Organization, several key figures in the US Congress, and a range of academics and NGOs, campaigned to achieve significant change in the use of the World Bank's Employing Workers indicator ("EWI") (ILO 2007; Parks 2008; Bakvis 2009). The activists complained that the indicator was biased in favor of labor market deregulation and so was being used by international financial institutions to pressure developing countries to dismantle protections for workers. Their efforts involved both direct communications with the international financial institutions as well as actions at the national

magazine emphasized in various stories its capacity to translate vague knowledge into precise numbers and its impartiality. References to the indicator present it as credible and self-evident, without discussion of the sources of data or criticism of its rankings. Moreover, it reports that the measure has encouraged reform and made business easier. A special report in March 2009 says that the reforms it suggests provide a guide to prosperity for developing countries that will "improve their chances of getting it right" (March 14, 2009). Thus, its reporting underscores the theoretical model of the DB indicator and supports it.

level. In the United States, labor even succeeded in securing passage of legislation directing the Secretary of the Treasury to use his influence over the World Bank to effect change (Supplemental Appropriations Act, 2009, s. 1626). In April, 2009 the World Bank agreed that it would stop using the controversial indicator in its Country Policy and Institutional Assessments which affect decisions about the allocation of funds, and that it would begin revising the indicator to give more favorable scores to certain worker protection policies aligned with ILO Conventions, and establish a Consultative Group to formulate a new worker protection indicator (World Bank, 2009). In the Doing Business Report for 2011, the International Finance Corporation (the entity in the World Bank group which produces the indicators) ceased to give any weight to the EWI, while preparations were made for a replacement indicator much more closely aligned with ILO Convention standards.

The campaign against the labor indicators was aided by the release in 2008 of a report by the World Bank's Independent Evaluation Group (IEG) which endorsed complaints that the indicators were inconsistent with the spirit of key International Labor Organization conventions. The IEG's evaluation represents the kind of accountability mechanism that might serve as a model for future efforts to regulate the production of indicators. Not only did the IEG review the substance of the indicators in terms of reliability and compliance with ILO standards, it also took the Doing Business project to task for failing to be sufficiently transparent about certain aspects of the process of constructing the indicators and failing to include a systematic process for validating the information they contained. At the same time, the IEG's assessment revealed that decision-makers who used the Doing Business indicators typically used them in combination with a number of other indicators. This suggests that there is an upper bound on the potential impact of any effort to regulate the production as opposed to the use of indicators.

The IEG's evaluation of the Doing Business indicators made recommendations on how the indicators ought to be used by the World Bank (and other institutions). It also offered a few general principles to guide the use of other indicators in the Bank's operations. Thus the evaluation represents an effort to control the use as well as the production of indicators. Much of the IEG's analysis is consistent with our analysis of the advantages and disadvantages of using indicators as a technology of governance. For instance, the IEG concluded that the simplicity of the Doing Business indicators (and the language in the associated reports) combined with the fact that they were used to produce rankings were crucial components of their influence. The IEG

also acknowledged the tensions between the benefits and costs of simplification and offered a mild criticism of the balance struck by the Doing Business project, concluding, “DB’s simple and bold communication is integral to the product, but at times simplicity comes at the expense of rigor.” (World Bank Independent Evaluation Group 2008: 39) Finally, the IEG recognized that the Doing Business indicators are implicitly premised on claims that certain regulatory reforms bear a linear relationship to better development outcomes. The evaluation report noted that while they may be “credible” those claims are not necessarily universally valid. Thus, the IEG recommended “caution” in using the Doing Business indicators and suggested that they typically be used in conjunction with other country-specific information. Accordingly, the IEG expressed concern about how the Doing Business indicators were being used by the MCC (but not the IDA). (2008: 51, 53) The IEG did not, however, consider or propose mechanisms that might be used to monitor and control future uses of indicators such as the Doing Business one.

While no special-purpose control mechanism exists, concerns about the Doing Business indicators have prompted some Bank personnel and outside commentators to express private or public skepticism about relying (or overly relying) on the indicators to make policy. More formally, reports suggest that at the October 2010 meeting of the World Bank’s Executive Board, executive directors representing Brazil and China were among those expressing opposition to the Bank’s continued use of rankings in this area. Rogerio Studart, the executive director representing Brazil and several other countries on the Bank's board, has criticized the Doing Business report on methodological grounds, but also on the basis that the report reflects a particular ideology and privileges one regulatory approach above others without sufficient justification. He is reported to have said: “I’ve always been struck by the exuberance of the propaganda they made out of it and the pressure they would put on some governments by using the rankings to adopt reforms, as if those reforms would solve some fundamental problems that in my view they could not solve. Reducing the number of procedures and the number of days to open up a company -- this is always helpful. But portraying that as a way to create more jobs is a total jump.” (Bosco 2010)

B. The Human Development Index

1. Genealogy, Design and Production

Like the Doing Business indicators, the HDI was produced by a powerful international organization, developed by prominent scholars over a protracted period, and widely reported in the press. It also promotes a particular ideology, although one that is very different from the Doing Business indicators' emphasis on free markets and clear property rights. Moreover, where the Doing Business indicators address the experiences of businesses, the HDI is an indicator of the quality of a society for its human inhabitants.

Promulgated in 1990 to contest and perhaps displace GNP per capita as the measure of development, the HDI expresses the theory that social and economic development are inextricably related and need to be considered together. Development consists of both social and economic factors, not just income growth. Instead of focusing only on growth in gross national product, this indicator combines economic and social factors in what is called a "capabilities" approach that emphasizes ends, like a decent standard of living, over means, like income per capita. Following Amartya Sen's capabilities approach, it measures access to health, education, and goods that give individuals the capacity to achieve their desired state of being (Stanton 2007: 3; Sen 2003). Advocates have made innovative use of the HDI to attract the attention of policy makers, finding it particularly effective for advocacy and policy analysis.

The HDI combines proxies for three human capabilities: health (measured by life expectancy at birth), education (measured wholly or partly by literacy rates until 2010, when it was decided to measure education solely by mean and expected years of schooling), and income (measured from 2010 in gross national income per capita adjusted for purchasing power parity to eliminate differences in national price levels) (Klugman et al, 2011: 4). While the ways of calculating and indexing these three variables have been modified several times since 1990, the three measures have always been given equal weight and averaged together.

The launch of the HDI in 1990 grew out of almost thirty years of work and thinking in the field of development economics and represented a significant shift from a focus on utility to a focus on welfare. The impact of global events, the rise of the human rights movement, new concerns with gender inequality, all contributed to the change in theoretical orientation. Efforts to produce welfare-focused indicators began in the 1960s along with a critique of the dominant focus on growth in GDP, since this measure neglected issues of employment, income

distribution, and justice (Streeten 2003: 94). By the 1980s the previously-influential “basic needs” approach had come to seem too narrow for new concerns about women and children, the physical environment, human rights, political freedom and governance, and the role of culture. New theories of economic growth focused not on technological progress alone but also on the behavior of people, highlighting the importance of education and knowledge for productivity. Amartya Sen proposed an approach that expanded the basic needs idea by emphasizing the importance of freedom to choose as the basis for well-being. He argued that a standard of living should be judged by a person’s “capability” to lead the life that he or she values, from being well-fed and healthy to achieving self-respect and participating in the life of the community (Streeten 2003: 94-100). The HDI was intended to challenge the narrow focus on increasing Gross Domestic Product per capita that had come to dominate much development discourse in the 1980s “Washington Consensus” by expressing a competing theoretical orientation (McNeill 2007: 11-15; Klugman et al 2011: 8).

The creators of the HDI came from prominent academic institutions as well as the World Bank and the UN. Like those who formed the Doing Business indicators, they were supported by powerful international organizations. The principal architect of the concept of an HDI, Mahbub ul Haq, had experience in the World Bank, while his advisors held academic positions at Oxford, Cambridge, London School of Economics, Yale, and Boston University (Fukuda-Parr and Kumar 2003: 85-91 and 393-5). The creators and consultants behind the HDI came largely from the UK, India, Pakistan, Europe, and the US. They fully appreciated that the HDI was a simplification intended to represent only certain features, and designed to persuade. For example, Amartya Sen calls the HDI a “deliberately constructed crude measure,” but notes that its creator, Mahbub ul Haq, “... did succeed in getting the ear of the world through the high publicity associated with the transparent simplicity of the HDI as an index. But it is extremely important not to read more into the HDI than is there.” (2003: x). Sen was one of the principal consultants on the Human Development Report of 1990, which first presented the HDI, and he at first objected to a crude composite index like the HDI, since there was so much other information in the report that was not included. Haq replied, “We need a measure of the same level of vulgarity as GNP – just one number--but a measure that is not as blind to social aspects of human lives as GNP is.” (Stanton 2007: 14; see also Haq 2003). Sen also thought that using constant weights for the three constituent elements was an oversimplification. As Haq

commented, however, the reason for equal weights was that “all these choices were very important and that there was no a priori rationale for giving a higher weight to one choice than to another” (2005: 47) Sen says that Mahbub was impatient with theory. He created a broad vehicle that accommodated many theoretical approaches but did not necessarily resolve their differences. He wanted a practical accord, not conceptual agreement and was always ready to revise (Sen 2003: ix).

Within the development economics profession, critics of the HDI have variously argued that it is conceptually unsound, has poor data, uses the wrong indicators, uses the wrong formulas for calculations, is wrong in the way the constituent parts are weighted, and has a simplistic methodology (see Ravallion 2010a, 2010b). Nevertheless, defenders say it is straightforward and easy to comprehend and that the even weights are in practice not too different from those generated by multivariate systems (Stanton 2007: 19; also Klugman 2011). In commenting on suggestions made to add to or expand the HDI, Haq acknowledged the limited range of behavior the HDI covers but reasserted the value of a single composite index rather than many separate ones, arguing that “busy policy-makers cannot absorb a host of separate social indicators pointing in all directions. For any useful policy index, some compromises must be made. But such compromises must not sacrifice the professional integrity of the broad picture that the composite index intends to convey (2003: 136).” The index, he claimed, is a useful measure for some policy purposes, but should be supplemented by other, more detailed socioeconomic indicators. The HDRO has continuously maintained this position (Klugman 2011).

The HDRO listed a staff of about 36 people who had primary responsibility for producing the 2010 Human Development Report (United Nations Development Programme 2010a: iii), plus an academic advisory board and suggestions and assistance from many others including the HD network of some 1400 development professionals. The HDRO has some editorial independence from the UNDP Administrator and from the UNDP Executive Board of member states, and avowedly does not necessarily reflect their views. The Human Development report is thus declared not to be an ‘official’ document of the United Nations; it is ‘an independent publication commissioned by UNDP’ (United Nations Development Programme 2010a: v).

2. Governance Effects and Other Effects

The HDI was originally designed primarily as, and still remains as, a means to reshape experts' thinking about development and to attract public and political support for development policies directed to enhancing human "capabilities". We have found only modest examples of the HDI being used as a formal element of global governance decision making. The UNDP does not tie its aid decisions systematically to HDI rankings. Only one major multilateral organization –the EU, under the auspices of the European Development Fund–appears to have explicitly taken components of countries' HDI scores into account for the purposes of allocating aid (IFAD 2008). The UNDP does not even urge governments to adopt policies that will maximize the state's performance on the HDI. It does however use the HDI to advocate capabilities-enhancing policies that promote education and health as well as income.

Thus, the HDI is an example of an indicator with broad public recognition yet largely indirect impact on policy formation and decision-making. It embodies a particular ideology of development and, as a product of the type of scientific processes that Latour analyzes (1987), it is influential partly because of the networks of prominent scientists and organizations who have worked together on it over many years. An analysis of media reports about the HDI focusing on English-language publications indicates that references to the HDI increased during the 2000s and that these references typically refer to the HDI as a factual description of a country. In contrast, media reports from the early 1990s focused on the nature of the index itself and its credibility. It appears that over two decades, journalists came to see the HDI as a convenient shorthand for describing a country. The settled indicator nonetheless continued to attract substantial media coverage and academic engagement. Moreover, its approach to development and to measurement have had mobilizing effects, including production by national entities of national Human Development Reports and related media and political attention (McNeill 2007: 10), and other initiatives such as calculation of human development index values for indigenous peoples in Canada, and slotting of these into the HDI rankings.

3. Contestation and Regulation

The HDI itself quickly attained sufficient political acceptability amongst government representatives that they did not seek its abolition or radical rethinking. As noted above, many criticisms were made by development professionals, variously arguing for refinements in the

methodology, caution against basing policy on the HDI or giving too much weight to it, and some fundamental debates about what development is and how it is best promoted.

At times, however, the HDI has provoked contestation analogous to the contestation surrounding the Doing Business project's EQI. Governmental objections began in 1991, the second year of the HDR, when the producers of the HDI included a ranking of countries on a "human freedom index", based on data in forty categories developed by US academic Charles Humana. The Group of 77 developing countries objected to a UN organization embracing one particular person's or society's concept of 'freedom', highlighting especially the inclusion of freedom of homosexual activity, and voiced their opposition strongly in both the UNDP Governing Council and the UN General Assembly (Barsh 1993). The UNDP staff developed a separate system of categorization and measurement not framed in terms of Humana's work, and in the 2002 Human Development Report launched this as the "political freedom index" ("PFI"). The PFI consisted of five measures: personal security, rule of law, freedom of expression, political participation, and equality of opportunity and included data on 102 countries. PFI did not rank countries but provided aggregates for high, medium and low countries by HDI, income, and industrialized as compared to developing countries. However, it was dropped the following year, having "generated a huge political backlash during which the continuity of the Report was perceived to be in jeopardy" (Klugman 2011: 17; see also Fukuda-Parr and Kumar 2003: xxvii). One of the creators of the HDI, Paul Streeten, later observed that a separate freedom index would have been very interesting, "Yet even Mahbub did not get away with it. We had to drop it." (quoted in McNeill 2007: 15-6). The HDRO continued however to include measures relating to political freedom in HDRs. This led to political debate in the UN General Assembly in 2002, and a related although more technical series of discussions in the UN Statistical Commission in 2000-02. In 2010 Cuba and the League of Arab States complained to the UN about the use of indicators of political freedom, civil liberties, accountability and agency in the 2010 HDR (Klugman 2011: 17).

Within the UN Statistical Commission, a body consisting of national representatives usually from national government statistics offices, contestation of the HDRO's work was renewed from 2008 onward. It was the subject of an extensive series of comments, many of which challenged the 2010 HDI report, made by over forty countries at the annual meeting of the UN Statistical Commission in 2011, observed by one of the authors. Objections were voiced to

the addition in 2010 of a ‘multi-dimensional poverty index’ produced by a team at Oxford University (Brazil, Morocco and South Africa 2010). With regard to this and to the HDI, many national statistical agencies objected to a lack of consultation in decisions by the HDRO not to use nationally-supplied data; some were concerned about disparagement of the quality or veracity of their own data and undermining of genuine national assessments of development, but many spoke more in the name of an ‘international statistical community’ which ought to have been consulted (Brazil, Morocco and South Africa 2010). In this debate, which overlapped with a similar debate about data in the Millennium Development Goals indicators (UN Secretary-General 2010), national government statisticians recognized that international agencies at times must impute or estimate data in order to achieve cross-country comparability, but they objected strongly to a lack of transparency as to how this was being done. They were also critical of reliance on cross-country data compiled by universities and other non-official entities, preferring data compiled by the inter-governmental agency with a mandate in the relevant field. Some country representatives complained that it undermined their credibility domestically when the HDI report labeled their national statistics inadequate.

The HDRO responded that on some issues, only non-official compilations existed; for example, UNESCO did not produce data on mean years of schooling, a component of the HDI, but this had been estimated from a UNESCO database by a university research team whose work was first published in 1993 and “has been validated by extensive academic discussion” (United Nations Development Programme 2010b: 6). The HDRO argued that its use of university purchasing power parity adjustments beginning in 1993 helped precipitate World Bank production of such data from 1996, and that in these and other ways the HDI “has helped to push the frontiers of data development” (United Nations Development Programme 2010b: 6).

Availability of data is a constraint both on the HDI and on other development indicators the HDRO has wished to produce. The HDI uses the country as the unit of analysis, ranking countries according to their HDI scores. Yet internal inequality within countries, particularly in incomes, negatively affects human capabilities. Efforts to disaggregate by income, gender, ethnicity, and geographical region in the Human Development Reports have generated controversy within states and sometimes have contributed to mobilization for policy reforms (Huq 2003: 133). However, some countries are reluctant to collect data that would expose such inequalities (Huq 2003: 133). Even without such reluctance, disaggregated HDI data may be

difficult to obtain at subnational and local levels for many indicators, including life expectancy at birth, as vital statistics are not collected with high reliability in many locations. National data bearing on inequality may be very unreliable, as for example with earlier over-statements of school enrollments in much of south Asia because of incentives and supervisory problems in local administrative practices concerning reporting (Fukuda-Parr, Raworth, and Kumar 2003: 180). A revised gender inequality index and a new inequality-adjusted version of the HDI were introduced in 2010, and were broadly welcomed by national statisticians (Bureau of the UN Statistical Commission 2010: 8), even while national government leaders may have more to lose than to gain from this further investigation of intra-state inequalities.

The various challenges to the 2010 HDI and other HDR indicators were considered by the UNDP Executive Board in 2011. It welcomed the HDRO's further efforts "to engage with the international statistical community on statistical matters" and its consultations with governments. It supported efforts to improve the quality and accuracy of the HDRs, but "while also preserving the Report's credibility and impartiality, and without compromising its editorial independence" (UNDP Executive Board 2011). The HDRO was thus protected from serious political interference, and left instead to take what guidance it wished from expert statisticians, who were themselves understood as persuasive through expertise and through embodying epistemic and statistical-institutional interests more than national political interests. Clearly, the HDI has survived for over three decades, despite these ongoing challenges, and has retained its underlying theoretical orientation, although with changes in procedure and consultation. The political freedom index fared less well, suggesting that contestation can be successful in eliminating an indicator, as it was for the Employing Workers indicator of Doing Business. Successful contestations appear to be relatively rare, however, with minor adjustments the more common response. These two case studies suggest that major changes occur only when the outraged parties include powerful actors.

V. Conclusion

We have argued that indicators are a technology of global governance, with distinct properties which we have sought to delineate and specify. We have defined governance, and global governance, and suggested schematically some kinds of effects indicators could have on global governance. These include effects on the topology of global governance (who are governors and governed, and in what ways), effects on processes of standard-setting and decision-making, and effects on ways in which contestation of governance occurs, with potential effects also on the demand for and the supply of regulation in particular modalities. Other possible effects on power and identities were also noted. Case studies of the Doing Business and HDI indicators show that these do function as technologies of global governance with effects on the relative power and the identities of those who govern and those who are governed, and that they have particular effects on patterns of contestation and forms of regulation of this power. Each of them gives to a particular view of development a combination of scientific authority and organizational strength. This work provides a foundation for further research on reasons for the growing use of indicators in global governance, their actual effects, and interactions between indicators and other technologies of governance, including law as well as different methods of governance by information.

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