

Chapter 18

Statistics Reasoning and Its “Acting” in Educational Policy



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In an important book about numbers and social affairs, Theodore Porter (1995) begins by asking: “How are we to account for the prestige and power of quantitative methods in the modern world? How is it that what was used for studying stars, molecules and cells would have attraction for human societies?” To consider these questions, Porter continues that only a small proportion of numbers or quantitative expressions have any pretence of describing laws of nature or “even of providing complete and accurate descriptions of the eternal world” (Porter 1995: viii–ix). Numbers, he argues, are parts of systems of communication whose technologies create distances from phenomena by appearing to summarize complex events and transactions. The objectivity of numbers appears as mechanical, following a priori rules that project fairness and impartiality, numbers are seen as excluding judgment and mitigating subjectivity.

The importance of numbers to contemporary societies is easy to demonstrate, ironically, by citing numbers. In the post World War Two years, American educational research iterated the hopes and fears of society through schools through statistics. The statistical narratives spoke of the breakdown and possibilities of “the demographic restructuring of the American metropolis, technological and commercial expansions” and the “economic agreements about how segregation wasted the potential utility of Black children” (Hartman 2008: 158). The nationally funded Wisconsin Center for Research & Development’s reports at that time, for example, expressed national commitments to equality through statistics that objectified

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particular populations as different. The research was to actualize future hopes, optimistically illustrated in the already increased high school graduates in which 75% of pupils entering the fifth grade in the fall of 1964 graduated from high school in 1972 and 23% of the high school graduates were expected to complete college (Klausmeier 1977: 3–4). With the hope was the fear that “one out of four students has a significant reading deficiency, half of our unemployed youth are functionally illiterate, and approximately 2.5% of our nation’s youth dropout.”¹

Contemporary policy research, as well, deploy statistics as particular rules and standards for ordering problems, and as criteria for making judgments based on the numbers in forming the possibilities of educational change. When national and international statistics are examined, certain indicators of “at-risk” children are used to recognize those populations to be included. United Kingdom’s statistics, for example, use the category “at-risk” to differentiate populational groups that are classified as ethnic minority children, a “high risk” category “since 16% of permanently excluded children belong to it, with nearly half of the high risk category being African-Caribbean, even though they make up only 1% of the population” (Alexiadou et al. 2001). Embodied in the statistics of “at-risk” children are different categories of numbers that overlap educational, cultural, social, economic, and gendered discourses: truancy, school exclusion and crime, and students with special educational needs defined through a populational discourse of African-Caribbean children and children in childcare.

The statistics that appear in the interrelation of science and policy are given plausibility and intelligibility through overlapping and multiple historical practices that are not merely about the logic of the numbers. In this chapter, we focus on the system of reason in which statistical grouping of people into populations as a field of intervention and social planning. Our argument is that the “thought” of populations in educational policy and change entails double gestures and a paradox: the practices to include populations and produce equity doubles back on itself as processes of abjection that produce exclusion (Popkewitz 2019; also, Lindblad et al. 2018).

We proceed in the following way. The first section considers modern statistical reporting as an element of governing modern social life. That governing is through numbers drawn into social affairs as “actors” for policy and change. The second section pursues this argument by examining the inscription of social and cultural principles in numbers that are not merely descriptive but affective in directing attention to change as a process of actualizing what people and society are to become. The third section focuses on the work of numbers to order action that entails making kinds of people.

Our approach is diagnostic and historical: to ask historically how numbers are given plausibility and considered “reasonable” as a way of thinking about policy and research, and the limits of such thought in questions about social inclusion and exclusion. Arguing in such a manner provides a mode of studying educational

¹This is discussed in its broader context in Popkewitz (2019).

questions other than those found in strategies of empiricism (what works!) and the dialectics of critical theories of education. Our argument about educational statistics is not about its “goodness/badness,” usefulness, bias; nor it is to censure or condemn numbers or statistics used in education. It is to place those practices within a broader cultural and political context of rules and standards inscribed in reforms as the political of education; and that political is how the reason of statistics enters into research and policy as practices of normalizing, dividing, and excluding.

18.1 Statistics as Cultural Practices: Political Arithmetic and the Taming Chance

Thinking of people through statistical reasoning is so much a part of our “reason” that we are often unaware of this “belonging” as a historical invention. Statistical reasoning about large groups of people is one of the important inventions of the nineteenth century. Statistics did previously exist, but it was about individual phenomena. It was not possible to “think” about populations or to observe large aggregates of people through numbers until different historical inventions came together from mathematics, statistics, physics, and state administration in the nineteenth century.

This section explores two qualities of modern statistics as a mode of thinking about populations. One is statistics as a particular way of reasoning in the governing of modern societies. Second, the manner in which numbers have affective qualities that is expressed in its grammar about how truth is to be told about people, societies, and change. In thinking in how differences are produced, Hacking (1995) directs our attention to differences between things of “nature,” such as quarks and tripeptides, and those of human kinds, such as teenage pregnancies and adolescence. When comparing “things” such as camels or microbes, what they do is not dependent on how the categories are used to describe them, but this is not so with human kinds. There is the looping that is possible as the classifications and distinctions enter into social life and create the abilities for people adjust themselves to categorization systems.

18.1.1 *Statistics as a Technology of Governing*

Statistics joins with the idea of the welfare state in the governing of the modern nation. Social histories of statistics locate it in the formation of the modern German, French, and British state. German theorists’ concerns with the science of police in the eighteenth century were about regulating and keeping order.² *Statistik*, the

²There are informative histories of the discipline of statistics for the interested reader. See, for

German term, was historically a method of policing. It was to calculate the administration of the population to secure the ends of wealth, public order, virtue, and happiness. Statistics, for example, ordered populations to control for epidemics and to regulate tax collections. By the nineteenth century, the French word *statistique* and the British statistics, words signifying the arithmetic of the state, were to coordinate the relation of human needs to state interventions. State administrators, for example, spoke of social welfare in terms of biological issues—such as reproduction, disease, and education (human “nature,” individual development, growth, and evolution).

Statistics as a tool of social intervention embodied a particular system of reason that is not merely that of the numbers themselves. It was linked with science where truth was tied to modes of conceptualizing and analyzing a rational order to daily life and the possibilities of human intervention and change (see, e.g., Shapin 1994; Bledstein 1976). By the nineteenth century, state planning for progress entailed intervention in social life to enable the action (agency) of the individual to plan one’s life for future happiness, the latter as a central political theme of the republic and democracy. Statistical knowledge made it possible to conceive of economy and society as modes of intervention.

When people spoke about police, Foucault (1979) argues, they spoke about the specific techniques by which a government in the framework of the state was able to govern so that individuals would be “productive” citizens. Statistics embodied probability theories about populations as a technology that composes people. The creating of populations was a way to think about and plan in order to rectify “harmful” social and economic conditions as well as to enable the individual to become a self-governing citizen capable of acting with freedom and liberty (Hacking 1990; Rose 1999).

Populational characteristics function as associations between statistical groups of people and the attributes of particular children, even though, strictly speaking, statistical predictions have no bearing (or predictive power) on individuals. The War on Poverty in post-War Two United States, for example, entailed the invention of the category of poverty as a schema for social administration and intervention. Poverty existed prior to that, but it was not classified and tabulated as a device of state policy and research to plan for intervention with specified populations for moral and economic purposes. Poverty was conceptualized in instrumental and empirical terms related to statistical aggregates from which specific characteristics could be ascribed to the person and according to which his or her growth and development could be monitored and supervised.

The construction of populations is a social technology for changing of social conditions and, while not often considered, changing people (Castel 1991; Hacking 1990, 1991; In education, Popkewitz 1991). Defining how people “fit into” a group is more than just a way to classify. Populational distinctions in which probability

example, Porter (1995); Desrosières (1998); Hacking (1990); Stigler (1986); and Alonso and Starr (1987). See also Bowker and Star (1999), Hanson (1993), and Gould (1981).

theories are assigned to categories about people overlap with the politics and culture of daily life. From the various characteristics of child development related to age and school grade to social characteristics of children (urban, at-risk, disadvantaged, gifted, adolescent, achievement), contemporary schooling is ordered through statistically derived categories of populations and is heightened, for example, through current American policy discussions of high stakes testing and of international comparisons of student academic performance in Swedish policy and research.

Populational reasoning is no longer deployed solely as state or administrative reasoning, but also as the policy makers “reason” about the quality of the nation, and teacher’s reason about how to identify instruction for children thought of through population categories, such as immigrants, ethnic or minority children (Popkewitz 2017a, b). The statistical categories have a materiality, giving direction to what constitutes the problem, the causes, and the solutions for rectifying social issues. The principles order and structure what matters in school planning, and for individual to think and act about what teachers are to recognize for organizing instruction and programs for remediation of targeted populations; books are written about groups classified as ethnic populations; re-search is organized through concepts and theories of cultural and social patterns of family child-rearing practices among those populations. Categories of school leaver or dropout, minority, or special education, important categories deployed to provide for social inclusion, are administrative categories that presuppose the qualities and characteristics of who the child is and also the potentialities that educational programs are to actualize.

In our own studies, the inscription of populational reasoning is prominent in international comparisons by means of large-scale assessments (see, e.g., Lindblad et al. 2018). During the last decades, this kind of research has expanded radically and it is often used in policy-making in order to identify and find solutions to educational crises; for example, the results on PISA studies in Germany and Sweden have played an important role in policy and research. Similarly, there is an expansion in research publications based on dealing with outcomes of such international comparisons. Lindblad et al. (2015) identified more than 11,000 publications on this topic during the period of 2003–2014. Populational reasoning has played a vital role in determining differences in achievement defined between taxonomic groups that serve to delineate a nation’s educational system—in terms of gender, social, or geographic origin. The differences are compared to social, institutional, and management qualities of school systems to analyze the reason for such gaps in education, culture, or society, as well as in relation to individual characteristics and career directions.

To think through populational reasoning is to engage in a particular consciousness that render domains as representable and applicable for calculation, deliberation, and administration. Statistical knowledge are inscription devices for governing conduct through processes of distancing and re-attach its knowledge to particular national spaces and cultural conditions as sets of rules and standards. The classifications and measurements that accompany the concepts like society and individuals in the nineteenth century, for example, embodied the logic for interpreting distant events that works back into everyday life and human experience. Statistics provided

new ways to think about changing conditions through the abstractions of society, economy, and culture. The new probability theories enabled the codification and standardization of dispersed phenomena under a singular umbrella of population's societal attributes and economics. People were classified within populations to identify or rectify "harmful" social and economic conditions as well as for policing and organizing the security of populations.

18.1.2 Faith in Numbers and Making an Actor of Change

Historically, the truth-telling capacity of numbers to establish values about social and personal life has not always been the case. Prior to the eighteenth century, truth was expressed through the manners and rhetorical qualities that told of the gentleman (Poovey 1998). At a different social arena, statistics was an official part of Swedish governance to register the reading ability of the population, but that register was individual and without the probability reasoning that appears in the nineteenth century. As a state function, considerable numerical information was collected by the British government in the first three-quarters of the eighteenth century. That data, however, was not collected in the context of coherent theory about statecraft (Poovey 1998: 214). Numbers as representative of observed particulars were devalued through the priority given to Newtonian universals and the invisible laws of nature.

Faith in the trust of numbers as a modern "fact" arose with the emergence of commerce in double accounting procedures (Poovey 1998). The innovation of double accounting entailed a ledger that recorded the money received and paid out, what is domesticated today as the check book's register. The double accounting procedures mutated in uneven ways into the sciences of political economy and moral philosophy from the 1790s. British theorists of wealth and society developed a mode of analysis that, at first, had no need for numerical data. Only in the political economic theory of Adam Smith, which we discuss later, did numbers appear as a strategy to actualize the philosophized fictions of markets as performative standards, instead of descriptions.

The trust in numbers for assessing and planning affairs provided a technology of consensus and harmony in a world that would appear, otherwise, as uncertain, ambiguous, and contentious. The use of numbers and social science were to reduce uncertainty in processes of change and continual assertions of crisis. Notions of decision-making, human interest, and problem-solving ordered and regularized the processes of action through numbers in a world where the future had no guarantees, only conditionalities.

The apparently quantitative precision and specific delineations of social and personal life lent authority to the new regimes of government. The uniformity given by numbers brings unlike orders in social life into a system of magnitudes that regularize relations among social and psychological components (Rose 1999: 206). The mapping of boundaries and the internal characteristics of the spaces appear to be

managed was a strategy to make judgments outside of the subjective. The faith in numbers in social affairs makes possible such notions as *transparency*³ through which the performances and outcomes of schools, businesses, and government become visible through graphs and flowcharts presented as statistical factors to measure change.

The invention of modern political polling, for example, was a response to mass government during the 1930s in the United States, where representative government replaced the town hall meeting and there was a need to symbolically reassert agency in the new contexts of governing (Merelman 1976; in relation to methods of science in education, Popkewitz 1981). Varela (2000) argues that the formation of individual personalities, individual subjects, and the idea of society emerge at the precise historical moment when the legitimacy of power was being based on the idea of a general “will.” The individual in the eighteenth-century French philosophé, for example, was bound to the “discovery of society” in a process of disengagement from the religious representations. While the word “society” is used prior to the enlightenment, it emerges to provide a way to think about collective human existence instituted as the essential domain of human practices. Prior to the eighteenth century, society was a notion about associations of people, and not about collective “homes” and belonging. Ideas about progress, civilization, and pluralism are possible only with ideas of society as their implied reference (Baker 1994).

Three further comments are necessary. First, numbers have historically become an actor in processes of change. Their mechanical objectivity enters into and becomes part of the action system of planning, assessing, and making of policy. Second, the inscription of numbers in the reason governing social life was not the logical outcome of disciplinary knowledge; nor was it the result of an evolutionary process from a single origin. Prior to the nineteenth century, as we stated earlier, statistics were concerned with individual phenomena. It was not until discoveries in physics and the needs of statecraft to monitor large groups for taxes and disease that statistical knowledge emerged through probability theories about large groups (Desrosières 1991).

Third, the inscription of statistics in research embodies utopic dreams. The models of change in OECD’s Programme for International Student Assessment (PISA), for example, hold a utopic promise of bringing into existence prosperity, happiness, and well-being to societies and people. But these utopian dreams of administration through numbers are continually fraught with multiple outcomes. For example, the system of household taxes in France that existed into the twentieth century counted the doors and windows in a dwelling. To counter this system, peasants redesigned their dwellings with as few openings as possible, which had a long-term effect on their health. Mono-cropped scientific forestry developed from about 1765 to 1800 to bring an administrative grid of straight rows of trees for more efficient growth; such growth was stunted, however, by the second planting because the nutrients produced with mixed growth were eliminated. And the rational planning of the city in the nineteenth century into grid-like streets created a particular spatial order that also produced abstract social relations produced by that order associated with

concepts such as anonymity, alienation, and feeling of loss of community (Scott 1998: 58).

18.2 Numbers as Affect: The Agency of Numbers as Testimonials of the Future

Numbers are affective. Affective is not merely the emotion evoked attachments that connect us to what is said as “truthful” and reasonable (see, e.g., Ideland 2019; Ahmed 2004). The numbers expressed in the ranking, charts, and comparisons that are found in research reports and international assessments embody affective dimensions. The complexities of the differences among nations and cultures disappear and reappear as standardized and comparable descriptions of numbers that represent singular, universal population of nations from which differences are calculated. The numbers and comparative listings of nations function as a GPS system for national school systems. People and governments can immediately locate themselves and identify differences that engender feelings about what is but also might be. Mosaics of numbers are assembled as truth bearing statements about the effective functioning of schools that appear as a unified abstraction of “nation” and its potentialities (see, e.g., Popkewitz 2018).

The affect of numbers entails a double quality. They appear to visualize social facts that are accessible to all citizens. In ranking of nations that organize the differences in OECD’s PISA, numbers seemed to make possible that even with differences, the pathways are possible to close the gaps and give all equal chance and representation. For a closer look at one of several examples from our research review on ILSA research (Lindblad et al. 2015), Liou (2014) states that international large-scale assessments are used to represent national progress by means of education formulated in terms of globalization and international competition.

Education not only plays an essential role in reducing people’s social and economic inequality, but is also the foundation of a country’s economic and social development... This fact has lead to the globalization of competition in almost every facet of a country’s existence. Developing highly qualified human power in the fields of science, technology, and mathematics (STEM), is one the requirements to satisfy the rapid development of the global economy... The results of such ILSA data are one of the most influential determinants in making educational policies in many countries (Liou 2014: p 2009f)

The affect of numbers as visualized facts brought to change social affairs introduced statistics and populations reasoning as necessary for equality and agency. The Philosophes prior to the French Revolution in the eighteenth century thought that unless there is equal system of measures, there could not be an equality in society. In the nineteenth century, the purpose of objectivizing and standardizing through numbers was to equalize processes and practices of new republican governments. Numbers become attached to the very ideas of the enlightenment cosmopolitanism to embody the hope of human reason and science finding perfectibility to the condition in which people live.

The hope of change, if we return to international assessments of student’s performances, become an affect quality of the numbers in models of changes. The ranking and charts become indicators for securing the future. The present and future have no historicity except within cycle of measurement and the changes documented through the ranking of nations, comparing one’s location during one cycle of measurement with the following one. The system’s modelling visualizes sequences and stages for nations to achieve efficiency, perfection, and equality in the arrow of time defined through cycles.

The descriptive quality of language of the international assessments is not descriptive at all. It is affective, tying the descriptions to design models of intervention. The authors of an OECD national report in Sweden, for example, assert, “We provide external and independent assessments of education policy and practice, from an international perspective, to raise education outcomes” (Pont et al. 2014). Its subtitle is “main issues and next steps” and offers highways for nations to increase performance. The design of processes that OECD declares is tailor-made for each nation context.

Future is told as truism through numbers that is not from any significant general laws that research identifies. Using advanced visualization technologies, truth is projected in the international charts whose images are taken as narratives about what is and also options the available for immediate operationalization (Hansen 2015: 213).

The future of success and well-being of the assessments, paradoxically, are not derived from any causal laws or empirical evidence. They cannot be as the benchmarks and criteria of “successful” performances in international reports, for example, are about the potentialities of the future that has not yet arrived. OECD asserts, for example, that it measures what children will need for their economic success and well-being. The future spoken through the tests that are “to assess to what extent students at the end of compulsory education can apply their knowledge to real-life situations and be equipped for full participation in society” (OECD 2015: 306; also see Gurria 2016: 3). Global competence is, as well, the potentialities of the world-to-be, “to prepare young people for an interconnected world where they will live and work with people from different backgrounds and cultures. ...a new test to be included in the 2018” (Press release, OECD, 15/05/2016a: <http://www.oecd.org/education/OECD-proposes-new-approach-to-assess-young-peoplesunderstanding-of-global-issues-and-attitudes-toward-cultural-diversity-and-tolerance.htm>).

The statistical knowledge provides the ground for precautionary or pre-emptive actions provided by the models of change (Anderson 2010: 777). Precautionary or pre-emptive actions are affective and of anticipated threats not fully articulated (Massumi 2007) but provide the grounds for finding solutions to the problems that imagined to arise if an action is not taken. The statistical ordering in PISA, for example, is placed in models of change that appear as calls for action in nations.

This precautionary and pre-emptive actions are evident in how some of the most successful economics are organized to respond to the PISA results that “tell” that

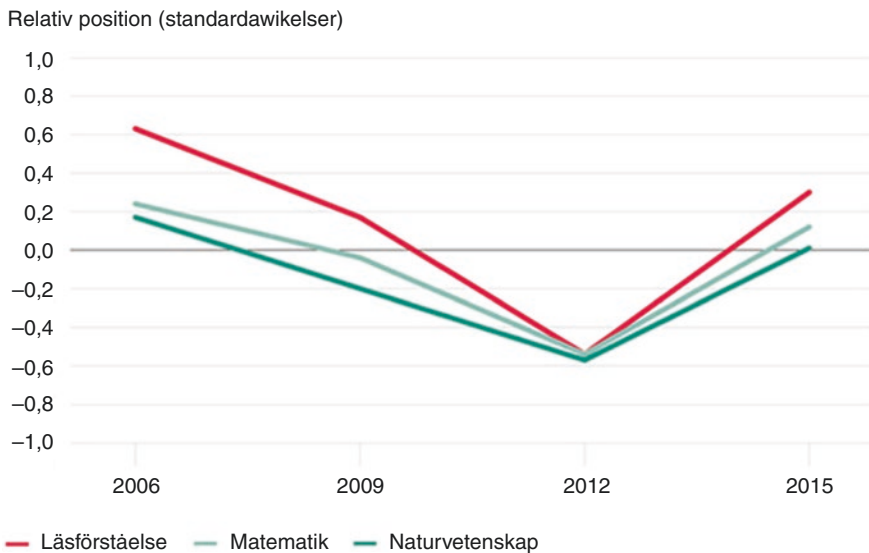
they are in danger. One such country is Sweden which is currently one of the best economies and educated populations in Europe; yet the OECD's PISA ranking continually is read by policy makers with fear that if actions are not taken in relation to PISA results, the nation is in danger.³ For example, based on the OECD identification of declining student performances and increasing school segregation in terms of PISA statistics, the Swedish government asked the OECD for recommendations on how to deal with these problems. This resulted in a number of measures implemented by the Swedish government.⁴

The precautionary and pre-emptive programs are engendered, on the one hand, as fears of the populations and, on the other hand, as to rescue and redeem as the desires of the potentialities of "humanity" to actualize.

The diagram below is presented by the Swedish Agency for Education. It is based on OECD PISA data from a sequence of data collections over time. The Swedish Agency comments it like this:

The figure shows Sweden's relative (standardized) position in relation to the 33 OECD countries that participated in all four of the PISA surveys since 2006 in reading comprehension, mathematics and science

The lines are based on Swedish students' performances ranked in relation the other OECD countries and are stated by the Agency for Education as well as the Swedish Government to show a decline of education in Sweden from 2006 followed by a progress based on the last measurement in 2015.



³This is not to say that Swedish schools do not face strong challenges in relation to social changes, such as the large populations brought into the country in the face of wars elsewhere, for example. But these changes are not addressed through the models of PISA, in fact they are erased.

⁴Parliamentary Bill 2017/18:182.

* Red line = Literacy Blue line = Mathematics Green line = Science.

** The standardized position (Z-score) for Sweden is calculated as: (Sweden’s average-the average of the averages 33 countries)/standard deviation for the 33 countries’ averages. The distance to the zero line is thus expressed in standard deviations.

The double qualities of affect produced through numbers are inscriptions of a knowledge that functions as particular principles for organizing human agency. Historically and using the language of political theory, agency entails the movement of the objective order of institutions into the realm of subjectivity that is administered in the name of freedom (Pocock 2003). Agency is, paradoxically, provoked acting on the “truthfulness” and reasonableness given to numbers. European reformation concepts of the person were revised as categories of the human mind whose moral and rational qualities made possible people intervening and changing one’s life (Mauss 1938/1979). The agency of the individual was made into the primordial category of progress as human interventions to bring perfection to the future.

The invention of statistics to order and differentiate large groups of people embodies this broader historical and political commitment to human agency. We discussed earlier, for example, the introduction of metrics as viewed as necessarily for an equal society. Statistics brought together large numbers of discrete attributes of the individual into a social whole that could be operated on in order to promote the general good and freedom of the individual. That was, at least in theory, what political arithmetic was to bring to civil society.⁵ Statistics was to enable constituted people as autonomous subjects of motives and perceptions to determine the actions that shape the future (Meyer 1986; also see, Wittrock 2000a, b).

18.2.1 *Taming Chance and Ordering Change*

The “reason” embedded in statistics is the taming of chance and change (see, e.g., Hacking 1990). Statistical reasoning can be historically thought about as related to the erosion of determinism in the nineteenth century. The history of modern statistics is “the measurement of uncertainty” (Stigler 1986). The particular historical virtue of statistical reporting is that diverse and social phenomena in flux are stabilized to order the phenomena amenable for observation, calculation, and administration.

The taming of chance is important to modern governing. The emergence of democracy, the rise of organized capitalism, as well as social and philosophical

⁵Staatenkunde, the systematic study of states, an early form of what was called comparative politics, appeared in municipal censuses in Nuremberg in 1449 (Alonso and Starr 1987, p. 13). The English tradition of political arithmetic was the application of rational calculation to the understanding, exercise, and enhancement of state power. In the eighteenth century, it was to reverse the growth of the state. Statistical societies in the nineteenth century were to gather objective facts, mostly numerical, but also data that is today called “qualitative.”

thought made change and uncertainty seems a precondition of life itself. The notion of incessant change, for example, is built into the very idea of progress and the idea of the republic. The future is built through the citizen whose participation is necessary for the government. The ideas of liberty, freedom, and the agency of the citizen are built on notions of the contingency of the present in the development of progress.

The contingency, however, continually embodies certainty that created boundaries about human agency. The child studies of G. Stanley Hall and the connectionist psychologies of Edward L. Thorndike at the turn of the twentieth century embodied images and narratives about the child that was a normalized vision about who the child should be. The universalizing of the child provided comparative principles to reason about differences in the growth, development, and modes of thinking of immigrant and racial populations (Popkewitz 2008). The probability theories allowed the statistical studies in a continuum of difference from what was “natural” for the child at any point in life.

Contemporary international measurements of student performance maintain the relation of certainty and uncertainty in projecting agency, but with a different assemblage of principles about nature and process than those of the turn of the twentieth century. We often do not think of the international assessments of student performances as carrying particular notions of human agency and the paradoxes imposed through the relation of certainty/uncertainty, but they do. That promise is related to the notion of agency students, that is, having the knowledge, skills and “well-being” for future participation, the competence as a global citizen (see, e.g., Popkewitz 2019).

As the international comparisons of student performance are examined more closely, the statistical measures of OECD generate principles of a notion of human agency bound with certainty that what is measured provide students with “knowledge to real-life situations and be equipped for full participation in society” (OECD 2016a; also see OECD 2016b, c). The certainty and uncertainty are embodied in the assessments ordered through the abstractions of the school as a system whose desired qualities are called “international benchmarks” that establish the norm of reference to the theory of effective schools. The benchmarks are what is to be achieved for the successful future of the student and society.

18.3 Making Up People and Biographies

We began the discussion by arguing that statistics embody cultural and social distinctions when deployed in policy-making and school research. In this section, we further pursue how numbers circulate and are connected to give intelligibility to policy and school reforms.

Statistics was important in turning populational categories embodied into biographies as kinds of people. Numbers were augmented with qualitative practices as a script or narrative form of a biography from which to gage the child’s development and growth. The representations in the US census after World War Two, for example, created new biographies of people as populations for policy management that

did not exist previously. The category of Latino emerged, for example, to classify people from, for example, Brazil, Haiti, Argentina, and Mexico as a single population. Today, this category of statistical reporting works into social movements and policy in education to define heterogeneous populations as homogeneous through the system of reason applied.

The profiles and inventories of the kind of children as kinds of people are codified and standardized in international assessments. The statistical data is organized to ask if students are ready for the technological-rich world (PISA, 2015) or the risks and outcomes of social exclusion as insights from longitudinal data (Bynner 2000). The reports identify students who fail; instructional programs were devised for remedial measures of children who fit these categories of “not passed subject” and foreign background. Summaries, charts, graphs, and tables identify the characteristics of youth to provide profiles of the child who did not fit the picture of the successful student.

The kind of child profiled in such reports was then used to invent a plan for intervention through curriculum designs and instructional processes to target groups excluded categorically while simultaneously normalizing and individualizing the categories and distinctions on particular children. In a study that we conducted on educational governance and social exclusion in nine European countries, the distinctions of national and international statistics overlapped with principles generated to interpret experience as different layers of education—among governmental ministry officials, educational system leaders, and teacher interviews. Swedish governmental reports describing categories of educational non-performance of students of “foreign background” or “newly arrived,” for example, circulated with “on-the-ground” planning of reforms and organizing instructional programs.⁶

Numbers and categories enter into the cultural and political spaces of policy, research, and programs to inscribe a comparative style of reasoning. More than we like to think, the fabricated of human kinds as populations are normalizing and dividing practices. We say not to suggest intent of policy or research, but to draw attention to the mode of reasoning whose epistemic rules are comparative.⁷ The classifications of people are the mapping of cultural spaces about kinds of people that form through distinctions and classification that differentiate individ-

⁶Foreign background is an example of the many concepts that form a comparative concept that establishes “deviancy” even when created as a moral/political obligation of a society to ensure equity and justice. In one sense, as we will talk about later with the concept of minority, it is only through certain assumptions about the normal “being” of the citizen/individual that the classification of foreign born is applied.

⁷This is not only a problem of educational theory. From Latour’s (1999) discussion of science to Wallerstein (1991) and Wagner’s (2001) discussion of modern social theory, there is a continual questioning of the ways in which modern social theory has divided phenomena—what Latour calls the modernist settlement which has sealed off into incommensurable problem questions that cannot be solved separately. Latour talks about the relation of human and nonhuman in science, Wagner about the relation of certainty and uncertainty. Also, see Popkewitz (1998) as it relates to the social epistemology of educational research.

ual qualities and characteristics. The numbers perform in educational spaces to normalize and pathologize differences.

The comparativeness is never merely about the numbers that relate purely to the statistical magnitudes and equivalences. The work of statistics entails cultural principles that are embedded in the categories and relations sought to describe how school functions and what are thought of as its outcomes and correlations. The style of reasoning about populations, for example, is not about numbers but formed through cultural principles that are inscribed in the questions asked and the phenomena of schooling and people made to appear under the gaze of statistical measures. The categorizations, associations between groups and norms that organize performances and differences among social and economic groups are to rectify inequities and inequalities on behalf of these groups by means of different education measures. This style of reasoning is translated into educational policy discourses about what to do in order to improve international ranking, to minimize educational deficits, or to address results to matters of increased global competition.⁸

The making of kinds of people generated differences that embodied double gestures. The fabrication of the youth as a particular kind of child, for example, connected discourses of medicine, psychology, and pedagogy to calculate what was normal and pathological for treating the problems that arose from calculable deviations. The discourses embodied the gesture of hope that the transitional stage of youth to being an adult can be managed to ensure the proper development in becoming an adult. Nevertheless, simultaneously with the gesture of hope there were fears of youth as a dangerous population that threatened the moral order through sexuality, criminality, among others (Lesko 1995, 2001). Parents, authors of child-rearing books, or teachers would argue about the need to pay attention to the adolescence of the child in order to produce a productive and self-responsible adult.

18.4 The Desires of Statistics and the Desires of Policy

While there is a disciplinary and political reflexivity about the uses and abuses of statistics, such reflexivity does not examine nor bring into question the rules and standards that are historically mobilized. Contemporary social and educational research rarely asks about the cultural principles that order the theories, concepts, and methods of curriculum research. This is particularly evident where curriculum research takes official categories and distinctions as its framework of investigation—such as the way that states categories of poverty, minority, and ethnicity formed the core conceptual assumptions and the origin of studies to correct inequities. Statistical reason is a site for the deployment of such categories to embody the hope of social planning that a better life can be produced for individuals, but this hope involves tensions and paradoxes. Statistics is never merely its numbers,

⁸For an analysis of ILSA research relevancing, see Lindblad and Pettersson (2019).

magnitudes, and equivalences. We argued that statistical reasoning connects social, cultural, scientific, and political discourses that form a single plane to make kinds of humans—people who are sites for state intervention and as biographies. We focus on populations as fabricating particular “kinds of people” and biographies that inscribe subjectivities through planning people. The differentiating qualities of the populational data have self-referential qualities that not only define the individualities, but also the trajectories that order the problem and solutions for the life that one should live.

We argued further that the making of kinds of people inscribes a continuum of values and double gestures that normalizes and differentiates the efforts toward inclusion. While seeking inclusion, the very principles that are generated for inclusion divide and render certain groups as different, dangerous, and in need of intervention. It is possible to examine the territories marked for the freedom of the child and parent as simultaneously internments and enclosures that divide and exclude.

The argument poses a dilemma when focusing on international assessments of student performance as addressing inequities. The very acts of social administration deployed by statistical reporting to address issues of progress require intervention through a practical causality that differentiates, distinguishes, and divides individual characteristics in a continuum of values about the normal and the deviant. By not questioning the kind of system of reason of statistics as it circulates in policy and research, the social and educational sciences lose their ability to diagnose the present critically.

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