Stäheli, U. (2016). Indexing—the politics of invisibility. *Environment and Planning D: Society and Space, 34*(1), 14–29.

Tax Justice Network. (2015). *Financial secrecy index 2015 methodology* (PDF Version dated 16.10.2015). Tax Justice Network. Retrieved from June 20, 2016, from www. financialsecrecyindex.com/PDF/FSI-Methodology.pdf

Wedlin, L. (2010). Going global: Rankings as rhetorical devices to construct an international field of management education. *Management Learning, 42*(2), 199–218.

4

TIME, DRAWING, TESTING

The Making Up of the Developmental Child and the Measuring of the Nation's Development

Catarina S. Martins

Introduction

Contemporary international research on student performance takes for granted the idea that both children and nations develop and grow, and that this development can be aided by careful planning and assessments on problem solving and global competencies. This chapter explores historically how the idea of the child's development becomes a stabilized part of thinking about children and the measurement and assessment of institutional performance.

I will look at different types of documents, more than a century apart, as '*facts*' that are made to make sense of the world. These facts began to be thought of as data that represented what we could know about the objects being inquired. First, I will focus on the ways the notion of development is attached to a specific form of conceiving childhood in which time plays a central role. The notion of development as a path to an end, when inscribed within the social conceptualization of the linearity of time, transforms the child's becoming into a field of government of the present. Then, I will observe the second half of the 19th century's study of children's drawings to analyze how the idea of development in childhood was conceived in terms of universal stages of growth defined by the child's performance. This was embedded within a culture of objectivity in which differences were thought as variations of degree among certain traits, being these variations both qualitative and quantitative. Numbers acquired a different status as representing knowledge about the world and as anticipating a desired future and, simultaneously, comparison became an instrument to position each one according to the others in relation to that fiction. From the 19th century, I will jump into the 21st century. I will make an incursion into the present OECD's Programme for International Student Assessment (PISA), looking into the technologies of comparison

in the making up of the creative problem solver and global competent child, the ways in which students are ordered and classified through the construction of equivalences and how that results in a picture of the nation's performance, potentiality and development. My aim is to make evident what these documents share in terms of their grids of thought and how they give intelligibility to, and assume, a certain kind of person (Hacking, 2002): the developmental child.

If it seems that I am mixing different things (Arts, Mathematics and Science), in fact what is at stake is not the specific curricular content within each school subject, but the ingredients that make specific contents possible as school subjects open to be taught, learned and assessed and how children and nations are made intelligible through these different layers that are forgotten when we see the final result. Popkewitz (2007) calls this the alchemy of school subjects. I will try to make evident that there is something more about contemporary national and international large-scale measurements, such as PISA, than just the child's capacities, at a certain age, to solve problems in mathematics or science.

Three movements are rehearsed in this chapter: (1) the notion of development is not a natural way of reasoning about the child or the adolescent; (2) the developmental child, or adolescent, inscribes the hopes and the fears of the future; and (3) the rationalization of development according to time and performance, which is part of the grammars of schooling and testing since the 19th century, provides ways of governing the present. It is not only an empirical problem open to quantification, but also political and epistemological goals that are at stake in this global space of policymaking through children's problem solving in tests and through anticipating the future. In this, I want to highlight that development and numbers are not only development and numbers; there are cultural thesis embodied in them that act in the making of the normal and the pathological, and the ways we relate to them.

Throughout the chapter, my intention is to make evident that, as any style of reasoning, the style of reasoning inscribed in contemporary large-scale assessments on children's development and problem solving, be it national or international, is a particular historical episteme that frames what is (im)possible to think, to see, to talk about and to act on in contemporary educational debates.

Making Time Matter: The 'Scientization' of the Child and the Government of Childhood Through Development

It might seem odd to think about international students' assessments through traveling to the 19th century, but it provides a way of framing how particular epistemic principles of the child as developing and time as a measure to assess how that governing is possible. During the 19th century, the child acquired a different status in terms of her existence as an object of inquiry by the pedagogical

sciences. The question itself of how pedagogy was being thought of is part of this interest in childhood as a specific stage of life that needed a conduction by the educator. This doesn't mean that the child was not, before, an object of thought. Jean-Jacques Rousseau invented Émile to talk about the education of childhood, Johann Heinrich Pestalozzi observed his son as an inspiration for his writings on childhood and education, even Charles Darwin constructed a *Biographical Sketch of an Infant* as the result of the observation of his son's expressions, gestures, emotions and language development. However, when the French pedagogue Gabriel Compayré (1897) asked if there were a science of education, his answer revealed a new grid to think about the child in a scientific way.

There was a science of education, a practical science, that was no more and no less than an applied psychology. This science was 'Pedagogy' and the rules of pedagogy were the laws of an applied psychology, according to Compayré: 'Just as the physician ought to know the organs and function of the body he treats, the farmer the nature of the soil which he cultivates, and the sculptor the qualities of the marble which he chisels', wrote Compayré, 'so the teacher cannot do without knowledge of the laws of the mental organization—that is, the study of psychology' (Compayré, 1889/1887, p. 7). It was not anymore a gaze, as the 18th-century philosophers developed, but rather a way of seeing through observation and description with the aim of attaining objectivity as part of a new rationality of government, intrinsic both to the new psychological sciences and to the modern state, in their individualizing and totalizing procedures.

The new gaze directed to childhood is both a cause and an effect of a perception that traverses different areas, from madness to criminality or genius. Exceptional manifestations of behavior in adulthood were due to certain events that could be understood going back to childhood. The child becomes then a nucleus to be known in detail in order to govern childhood and prevent future degeneracy. During the first half of the 19th century, from the French psychiatrist Jean-Étienne Esquirol to the French physician and educationist Édouard Séguin, abnormality started to be diagnosed not so much as an illness but rather as a state in which the intellectual functions did not develop in a proper way. Although the concept of development being used was very simplistic, it already involved a detection of a slowness in evolution that could be seen from a very early age. There were important differences between the types of abnormalities, the idiot being different from the retarded child, but these were regarded within an idea of a chronological development.

The ways in which the child's development was rationalized by science made childhood a spot to be explored, as it was a fiction governing the present in anticipation of what should be as the future. 'To an impartial observer', argued Compayré, 'it is evident that the mind is developed and formed with certain laws of growth which definitely constitute the psychology of the child' (1889/1887, p. 8). Chronological development was constructed as an objective and impartial way

of reasoning that instantiated a consensus over a group that otherwise would be uncertain. The indexation of the social construction of time to this development, and its inscription as the way to look, talk and act on childhood made the linearity of development an unquestionable thesis about life.

Change and growth started to be described over time. The descriptions being made embodied moral principles that ordered and organized what was made into the object 'seen' and the data given as facts available for governmental purposes. Scientific objectivity, as put by Porter, 'provides an answer to a moral demand for impartiality and fairness' (Porter, 1996, p. 8). One of the battles of the Enlightenment was the creation of a common space of measurement through claiming unified systems of weights and measures. The notion of development through a chronological line, allowing comparison, was one of the materializations of this idea. The periodization of life into phases, and the partition of the phases into different stages, fell into the rhetoric of equality and progress.

Development became equivalent with a positive feature of life, be it the inevitable and necessary development of an organic body through change or the development of social metaphors like 'growth', 'progress' and 'civilization'. The inscription of time into the idea of development gives rise to a 'competitive ethic' (Jenks, 1996). There are not only the 'mental and manual skills' that, being evaluated, hierarchically shape different biological strata that classify the 'natural' development of the child and ranks it, but also the 'social stratification within the culture' that appears 'to be a justified merit that stems from development' (Jenks, 1996, p. 39). However, neither the child's development, nor the change in time that it implies, are neutral concepts. Equivalences are made to make comparison possible as a way of reasoning and governing. These equivalences embody scientific knowledges that answer specific governmental purposes for the rationalization and control of the risks inherent in a random development of the social body (Foucault, 2002/1997).

Narratives of childhood as a stage of life provided not only a representation of the present, but also the possibility to control what was yet to come. This control embodied a particular comparative thought in which time played the role of regularizing all domains and stages of life portending the future as the hope of progress and, simultaneously, the fear of decay if the present were not properly governed. The hope and the fear were about not only the conditions of living but also the normalcy and pathologies of kinds of people placed in a continuum of development from the savage to the civilized and cosmopolitan. The abnormal child, be it the retarded, the idiot or simply the son of drunks, poor parents, prostitutes, criminals or imbeciles, was dangerous for society. A series of perversions of the instincts, which were perceived as being savage, could result in thieves, liars, masturbators, murderers or destroyers. It was the potentiality of these behaviors that had to be detected in order to be corrected within the family or the school or confined in the asylum. The biologization of development became a political and moral concern for the modern state and its institutional devices.

In Séguin's *Idiocy: And Its Treatment by the Physiological Method*, for example, the isolation of the abnormal childhood acted as a rationality of government. There were differences among children that had to be studied and signaled, and these differences were not only between a norm and abnormality, but also between kinds of tones and traits within each one. Séguin affirmed that since idiocy took place in such different periods of the formation of the child, it was not:

> to be expected that it should assume an identical appearance; in fact, on entering a school, the idea of similarity is soon dispelled by the heterogeneous features of the inmates; therefore the same drawing cannot represent them but as a type, after a practical study of the varieties.
>
> (Séguin, 1866, p. 43)

The study of a human type, and the variations that could be detected within the typology, is part of the construction of a knowledge that opens up the objects of inquiry for intervention, correction and administration. It was not so much the average, but rather the inter-individual differences that existed between persons that configured the device to manage several measurements and their statistical regularities and correlations. This use of categories translated into numbers (or quantitative variations) makes the categories 'actors' (Popkewitz, 2013) that construct things as facts, and was soon used on the government of education and childhood. Pettersson, Popkewitz, and Lindblad (2016) talk about the 'empirical turn' in education as the emergence of the new scientific branch of statistics, giving an appearance of neutrality to the depiction of reality. Ways of observing and registering the child's attitudes, behaviors and development became more systematic in their processes and methods, being first institutionalized in hospital registers (Turmel, 2008) and, by the end of the 19th century, within schools.

The notion of development as a normativity and pathology that is encoded in clinical, psychological or pedagogical stages made time matter as an instrument to regulate the progression of the child and its different stages. Making time matter made everything be a matter of time and, more importantly, the objectivity and unquestionability of this rhetoric of time and development is also part of a narrative of equality and fairness that is explained by nature. The quest for the origin that emerged in the natural sciences with Lamarck's evolutionary family tree, and that gave rise to Darwin's theories on the *Origin of Species*, is part of the movement of a normalized temporalization of Western experiences. The stages of development through childhood are part of this machinery of time and were not only generalizations made through the description of empirical data but also principles that ordered certain ways of being.

It was not only childhood that was being regulated but also most intensively what it meant to be a person. From the roman legacy of a person within a legal framework to the moral view of the person as an immortal soul, specific

psychological conceptions of personhood emerged by the end of the 19th century. The social construction of time as a linear narrative of past, present and future gave reasonability to early memories in life as the explanation of the development of some diseases in adulthood (Danziger, 1997). The developing child, as a specific kind of person, was a subject of government in the managing of life in all its regularities and irregularities.

In this section, I observed how the evolutionary child, embodying a movement in time—development—was discursively constructed as part of a production of knowledge and as a technology to govern childhood. Development was a conceptual tool to order who the child was and should be, but also who was the pathological child. I will now analyze how the idea of development in childhood was conceived in terms of universal stages of growth defined by the child's performance in drawing. My attention will be on the notion of drawing developmental stages in the fabrication of the child as an object of inquiry and research and as a new target for technologies of administration through statistics. I will also focus on how the stages of development (that cannot be seen apart from the naturalization of the notion of development and from the new techniques of government) created categories that make up the child who develops. The naturalization of development as part of childhood made comparison of each and all possible both to measure and to examine. This way of seeing and knowing became part of all pedagogical practices. From a micro scale in the development of each child's mind to a macro scale of the nation, such as the current PISA test assessments, what is at stake is always the governing of the conduct as a procedure which is based on a perpetual comparison through the construction of equivalences.

Statistical Reasoning and Drawing as a Tool for Conceptualizing the Child's Development

One cannot think about school without thinking in numbers, stages of development, partition of curricular knowledge according to those stages of development, children's ages, classes and grades. Numbers and development are part of an epistemology about the world that represents and acts in that world. By this, I mean not only that there are the lenses through which we see 'things' but also that they make those things as such, including the making of certain kinds of persons. The variable of slowness was identified according to a kind of childhood average that constituted the norm in relation to which the pathological child would be situated in school. The notion of a normal and pathological childhood was based on statistical technologies seeking large-scale regularities from which a child's growth and development acquired objectivity in terms of administration and intervention, such as the chronological timeline, along which a child's development would be normal, retarded or advanced. This rationality, which had been worked mainly by differential psychology, has acquired other dimensions and territories and, in the middle of the 20th century, the continuum of normality, pathology and exceptionality ties the theories of probability of the national populations.

The statistical technologies implied a style of reasoning (Hacking, 1992) that allowed, simultaneously, a picture of the individual and of the group. In the 19th century, statistic was called the moral science of the State, and it theorized, codified and empirically observed the world in order to contribute to the prosperity of the State and to the happiness of its citizens. Statistic was dependent from ways of representing what counted as '*empirical*' and as an object of government. The Child Study Movement in Europe and North America was one of the fields in which those techniques to depict and to provide portraits of the reality were explored relating to the investigation of child development. The American psychologist G. Stanley Hall was one of the first leaders of the Child Study Movement, initiating extensive surveys on childhood stages. His child studies provide an exemplar of new ways of registration and of visualizing and interpreting collected data about child growth and development or, in other words, of inventing empirical data to be seen and analyzed as a representation of that evolution. Under Hall's guidance, the Boston schools applied a study to know what children knew when they entered school. Hall underlined that it was important 'to make out a list of questions suitable for obtaining an inventory of the contents of the minds of children of average intelligence' (Hall, 1893, p. 13). Data were organized along an axis of time in which the child's development was inscribed. The conclusions outlined by Hall made evident the use of statistical technologies to frame the construction of reality. Hall was aware that the results of large-scale inquiries were 'in some degree the first opening of a field' asserting it needed to be, 'and in which single concept-groups should be subjected to more detailed study with large numbers of children' (Hall, 1893, p. 24).

A statistical reasoning, that Hall applied, was in the making as the way to frame and shape a reality of childhood. In Europe, James Sully also conducted large inquiries in order to enhance a theory of children's drawing through a stage approach and, in the beginning of the 20th century, to count, measure and find patterns and laws in the child's development through drawing was a demand for this scientification of the child (Martins, 2017). The impersonality and impartiality of statistical numbers were part of a culture of objectivity that allowed the descriptors of each stage of development. Within this culture of objectivity, drawing was used as an instrument to measure each child's performance through her evolution in time. The notion of the developmental child embodied specific power-knowledge relations that saw the design of the mind as having drawing stages of development in childhood.

G. Stanley Hall's previously mentioned study provided one of the first conceptualizations of the child's stages of development in drawing through this linearity of time and, in doing so, it also provided a 'map' that ordered, through psychological lenses, the well-developed child and her staircase progress. To G. Stanley Hall, the earliest and simplest representation made by the child was:

a round head, two eyes and legs. Later comes mouth, then nose, then hair, then ears. Arms like legs first grow directly from the head, rarely from the

legs, and are seldom fingerless, though sometimes it is doubtful whether several arms or fingers from head and legs without arms are meant. Of 44 human heads only 9 are in profile. This is one of the main analogies with the rock and cave drawings. [. . .] Last, as least mobile and thus attracting least attention, comes the body; first round like the head, then elongated, sometimes prodigiously, and sometimes articulated into several compartments, and in three cases divided, the upper part of the figure being in one place and the lower in another. The mind, and not the eye alone, is addressed, for the body is drawn and then the clothes are drawn on it (as the child dresses), diaphanous and only in outline. Most draw living objects except the kindergarten children, who draw their patterns. [. . .] The very earliest pencillings, commonly of three-year-old children, are mere marks to and fro, often nearly in the same line.

(Hall, 1893, pp. 44–45)

I used Hall's aforementioned example to illustrate how the stage theories on child's development, in and through drawing, informed and created certain images for the child that were assumed as reasonable about the child and her performance. The child that started in the simplicity and, through the course of childhood, arrived to a more representative and complex visual description of reality and, with that, acquiring a sense of Western perspective, was seen as normal. The child was being made up from her graphical marks. The notion of time within the idea of development inscribed the morality of a path from a primitive mode toward progress and civilization. A reenactment of human race was present in the ways of conceiving the developmental child through the evolutionary stages in drawing.

Several theories about the child's development through the analysis of stages in drawing emerged, ordering who the child should be but also its other. There was the most feared period of childhood: adolescence. Earl Barnes stated that 'at thirteen, or the period of puberty, the children experience a change of ideals, and it may be that after this they realize more fully their inability to execute what they see' (Barnes, 1892, p. 459). The principles used to divide created not only a norm, but also the abject places outside the norm. The study of the child made it possible to predict her behavior and to govern ways of being, anchoring it to the barometer of normality. Children were seen to draw in predictable ways, going through specific and step-by-step stages, with an increase in terms of graphic complexity and a decrease of imagination during adolescence. However, as noticed by the English psychologist James Sully:

One notices, too, curious divergences with respect to the mixture of incompatible features. Differences in the degree of intelligence show themselves here also. Thus in one case a child, throughout whose drawings a certain feeble-mindedness seems to betray itself, actually went so far as to introduce the double nose without having the excuse of the two eyes.

(Sully, 1900/1896, p. 360)

The statistical reasoning worked also with the theory of probabilities and, as Sully admitted, while it was probably true that children at a certain age would share common capacities, there were those outside the norm. Taking imagination as an example, the author of *Studies of Childhood* argued that some children were decidedly unimaginative. It was about these variations that more scientific knowledge was needed. Numbers were there as units of a system of knowledge to make certain kinds of persons, to trace equivalences and to allow differentiations. 'What will best help us', Sully affirmed, "is a number of careful records of infant progress, embracing examples not only of different sexes and temperaments, but also of different social conditions and nationalities" (Sully, 1900/1896, p. 23). At one level, differences and divisions in kinds of persons were being made through the naturalization of the notion of growth and time according to certain predefined stages; at another level, these differentiations were being inscribed through social issues and inequities as the cause of that child who was not the average child. These descriptions were based on the average behaviors, and they materialized gestures that differentiated and divided who was the well-developed child from the pathological child. The distinctions were not about drawing as an artistic practice but about the making of a moral and well-behaved citizen in which development meant progression. In terms of its effects, it is important to acknowledge that the child was not only made visible through the descriptors of her development, but also she was *made*.

Developing the Child as the Development of the Nation: The OECD's PISA Rationalities

The ways of classifying the child's developmental stages in drawing were ways of dividing and differentiating the normal and desirable universal child and its other, the pathological child. A certain way of seeing and relating to childhood was in the making. During the second half of the 19th century, development emerged as a normativity that played with stages along certain scales and speed in terms of how the child crossed a specific dimension in time.

I will now turn to the 21st century in order to observe how this particular episteme of objectivity and quantification of development are being expressed in the international large-scale assessments. The culture of objectivity and assessment of the child's development will be analyzed through the rationalities of PISA's testing about what a creative child as a problem solver is and has to be in the 21st century. Today's PISA has the goal of knowing to what extent 15-year-old students can apply their knowledge to real-life situations and be equipped for full participation in society. However, what is unproblematically seen is the idea of testing at a certain age and to read the results as a portrait of a certain development, and also, what is defined as 'practical knowledge' that is not about a particular kind of knowledge but about principles that order and classify certain kinds of persons, as in the 19th century's description of each drawing stage was not drawing itself that was being evaluated, but rather principles that ordered the government of childhood.

The Construction of Equivalences and Its Differences

Comparisons between people and nations are possible only through the construction of equivalences. The equivalences being constructed in PISA are the categories that are being mobilized not only as the evidence of a target group and a way of reasoning through the notion of development, but also the categories that define both those students who will be able to fully participate in society and the pathological others. The notion of objectivity guides the propositions of PISA tests and the reading of its results as a strategy that goes beyond the distances that separate the different nations. The equivalences are constructed as universals that surpass, capture and tame any singularity.

It is not by chance that PISA elects 15-year-old students as the group to be tested. Such as childhood was seen as the period in which abnormalities could be diagnosed and, if not corrected, at least could be controlled, adolescence is here seen as the period in which particular actions and behaviors can be dangerous to the normal course of life. The concept of adolescence became as natural as childhood, however, when G. Stanley Hall (1911/1904) coined this period of time in his book *Adolescence: Its Psychology and Its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education* and attached to it several domains including sex, crime and education. Adolescence was constructed as a turbulent time that was explained biologically and could be controlled through the organization and ordering of time in adolescence toward a civilized becoming. Developmentally speaking, adolescence precedes adulthood and the latter is the time of production. In fact, in the anticipation of the future, PISA is acting as a factory of citizens. Popkewitz, in his chapter of this book, argues that the future that is being told about the development of nations is about the hope of kinds of desired people and society. The categories and the distinctions being made act as the transcendent ordering of what the nations need for development, growth and equity. The narrative of development through time, as a path to an end, is part of today's large-scale assessments and is used as its legitimate goal.

In 2018, PISA will be assessing the global competencies of students. In OECD's saying, global competencies are divided into '*dimensions*' and '*components*' that can be measured. The OECD traces what the future should look like and what kinds of persons should live in that future landscape. The launching of the Educational Agenda for 2030 is just another example of how the '*edu-fiction*' is working. However, this futuristic educational science is making the present! Educational systems should then move and mobilize their actors around these imagined paths. The global competent person is the one that 'brings his/her knowledge, understanding, skills, attitudes and values together in order to work with others to solve globally-relevant problems and to improve the collective well-being of current and future generations' (OECD, 2016b, p. 4). What this seems to be describing is only, in fact, making up kinds of people! The images of the adolescent being played at PISA are as moral as Hall's images of the adolescent marking the

boundary between the civilized and the savage, regarding the ways they order and govern the well-behaved problem solver youth and his attachment to the future of society. In PISA testing, to do well in problem solving is defined as being a 'constructive' and 'reflective citizen', which means to be a certain kind of person. In classifying the good student of the present and the future as the one who needs 'to be open to novelty, tolerate doubt and uncertainty, and dare to use intuition to initiate a solution' (OECD, 2014, p. 3), there are specific conceptual spaces in the making to be inhabited by different kinds of persons. Simultaneously, the pathological inhabitant of the present is being signaled.

The style of reasoning of large-scale assessments departs from the possibility of measuring development according to certain indicators that are shared between those being the object of testing (the age, the test, problem solving), allowing for comparison between the young and the nations, and to the formulation of a truth speech. Indicators embody the notion of the right direction. However, the categories being fabricated as universal to measure differences, such as the creative person, are neither natural nor neutral ingredients. It defines a certain way of being a person and also creates its abject (the person who is not creative). The ways in which creativity is being used contains a psychological meaning in its currency as it is related to some expected and well-defined behavior. The idea of creativity applied to a person's attributes is recent, and it appears as a product of the Enlightenment and its new arrangement of knowledge in which man replaces God as a creator. In post-war American discourses, it acquires a new breath as a natural attribute of the child as a moral being (Ogata, 2013), and the values attached to creativity are today part of that moral agenda (Osborne, 2003). Creativity and its correlates, as '*problem solving*', is becoming a soft mode of being governed and a regime for governing ourselves. In today's educational discourses and large-scale assessments, creativity is being taken as a granted, desirable and wholly positive idea that governs the creative person of the present as the creative worker and citizen of tomorrow.

A recent OECD study states that 'low performers could also benefit from developing a "growth mindset", which assumes that intelligence, character and creativity are not given traits, but qualities that can be learned and trained' (OECD, 2016c, p. 6). The identification of low performers and the correction of their state through remedial support, tailored strategies or supportive learning environments creates a space in which the rationality of development is understood as a natural common space which allows for the distinction of the low performers from the high performers. The proficiency level of students in mathematics or science, for instance, are reported according to scales. From the lower to the higher level, the developmental style of reasoning is applied through the staircase biological notion of progress and growth. PISA-D, the recent strategy for development, breaks down the lowest levels of performance in mathematics into sublevels. These stages incorporate a more detailed spectrum to 'describe' the youth from the middle- and low-income countries. The commonality (the development) and

the difference (in performing into the scale) entail a double gesture. On one hand, there is the problem-solving youth who is the lifelong learner of the 21st century; on the other hand, there is the adolescent who threatens the future. Certain variables and categories are being mobilized in universalistic terms that is part of the statistical style of reasoning.

Numbers as Fictions and Development as a Way of Reasoning

PISA (OECD, 2016c) allowed worldwide nations to know that 13 million 15-year-old students in 64 countries were low performers in, at least, one disciplinary field. The numbers are used as truth facts that make proof and give evidence of an existing reality. However, numbers are not just numbers. Numbers create 'fictive spaces', as argued by Nikolas Rose, 'for the operation of government, and establish a "*plane of reality*", marked out by a grid of norms, on which government can operate' (Rose, 1991, p. 676). Numbers embody several cultural and moral theses on governing social life and establishing statistical realities organized across classifications by which people come to think about themselves and their actions, and, as such, they are important in the making up of citizens.

Numbers, under the flag of objectivity, provide terrains for comparison according to the marker of development. Development becomes then a way of reasoning about kinds of people and government. The hopes for a governable present and the fear of governmental failure makes comparison an instrument for the regulation of the nation's behavior and, at the same time, of educational actors and individuals within each nation. There is an interweaving between the micro scale of individuals and the macro scale of the nations, the space between both being justified by the principles of progress, failure and development.

The differences on results are not explained not because of specific contexts but rather because of a certain performance within a space constructed through equivalences. Thus, multiple dimensions are pointed out to save those demotivated students (the ones who do not perform well). The solutions embrace several zones of government that are about not only the youth's performance but also the embodiment of the hopes and the fears of government. The family, the community, the immigrant, the minority language and the rural students are there to explain why inequalities take place in comparing the performance of students within and among countries. As such, motivation, as a problem that is identified by PISA results, is easily seen as something that is not about the youth but about the order, administration and management of conduct and life.

The rationality embodied in PISA testing (measuring development through categories constructed as universal) is the same as the rationality embodied in knowing how the 19th-century child developed. It is clear that PISA is more about ranking nations than to position individuals. Nevertheless, these rankings

are produced through the individual's performance, and they are meant to conduct the life of the nation and its citizens through the displaying of the top performers and its others. In the words of OECD, one of the goals is to 'encourage a "*race to the top*" for better and more coherent policies that can help deliver the SDGs' (OECD, 2016a, p. 3). The results of PISA could not be read in ontological terms but through a certain epistemology of governing since modernity. Objectivity and transparency come hand-in-hand with the rhetoric of applicability, fairness and impersonality. On the one hand, objectivity relates to the numbers being generated through the tests' results; on the other hand, transparency gives a sense of democracy in the application of the test and to the composition of the final '*picture of the nation*'. Like a window glass that allows one to see the outside, the transparency of the results is assumed as describing what counts as reality. However, the outside is always a landscape, a cityscape or whatever multiple layered categories that give meaning and reasonability to that seeing. The construction of equivalences that are applied to all nations allow for the emergence of the quantitative differences that will categorize those that are above the norm and make the space of governance governable.

The threats of the future are incubating within the present. Large-scale assessments are an attempt to anticipate the future through a series of calculations. These techniques of measuring the world make present specific futures (Anderson, 2010). Such as the 19th-century child about whom I have been talking, PISA is also about development through the identification of slowness in a linear path with political and moral intentions. PISA provides an image that is also an act of imagination (a fiction) in which future landscapes 'act' in the present. It seems odd to have what is not yet governing the present but, as argued by Anderson, 'making the future present becomes a question of creating affectively imbued representations that move and mobilize' (2010, p. 785). These representations affect what is possible to see and to think about what it means to be a contemporary citizen prepared for the future.

The developmental way of reasoning about children informs the knowledge that is being produced about schooling and future reforms. Even if differentiations are being made among different kinds of children creating inclusionary and exclusionary spaces, this arena of testing, measuring and a plane of reality, is not being questioned. It is not the individuality of each child that is being examined but kinds of people that are on the making.

Final Words

Throughout the chapter, there is a link between testing and accountability in which numbers are not only the result of something that is given an ontological existence, as being the child's capacities to solve a specific problem, but also the possibility of a smooth space of equivalences of the categories that organize what is being tested and then compared.

I tried to depict the historical articulation between the practices of measurement and quantification of development through the linearity of time and the government of childhood. The growth of the child, before the 19th century, was recognized, but not for governmental purposes. I focused on the 19th-century notion of child's development through the analysis of drawing. There was a style of reasoning that was emerging that also impacted education and pedagogy. If one thinks about today's assessments in arts, mathematics or sciences, it is clear how this culture of objectivity as part of equality, in calculating through equivalences the development of students and nations, goes unquestioned. The arts, mathematics or sciences are only the label under which the developmental child is made able to emerge.

The empirical turn in education was embedded within a culture of objectivity in which large amounts of data would be analyzed in order to depict the world. From these observations, the child's mental development was formulated as being equivalent with the child's performance in drawing, giving rise to different stages that ordered and divided who was the well-developed child from who was the pathological child. What was at stake was not drawing but rather principles that ordered action and ways of being. Today's PISA seeks to assess the practical knowledge and the global competencies of the young, but again, this practical knowledge and global competencies are not about a specific disciplinary knowledge nor about the young's capacities, but about the government of the young's conduct and, at the same time, this 'edu-fictions', as I called it, provides road maps for the conduct of nations. The normal and the pathological find their places in these. The developmental child who was invented more than one century ago became naturalized and colonized the ways of relating to the times of childhood and to childhood in time. And the fiction goes on!

References

Anderson, B. (2010). Preemption, precaution, preparedness: Anticipatory action and future geographies. *Progress in Human Geography, 34*(6), 777–798.

Barnes, E. (1892). A study of children's drawings. *The Pedagogical Seminary, 2*(3), 455–463.

Compayré, G. (1889/1887). *Lectures on pedagogy: Theoretical and practical*. Boston, MA: D. C. Heath & Co.

Compayré, G. (1897). *Cours de pédagogie théorique et pratique*. Paris: Libraire Classique Paul Delaplane.

Danziger, K. (1997). *Naming the mind: How psychology found its language*. Thousand Oakes, CA & New Delhi: SAGE Publications.

Foucault, M. (2002/1997). *Em Defesa da Sociedade. Curso no Collège de France (1975–1976)*. São Paulo: Martins Fontes.

Hacking, I. (1992). Statistical language, statistical truth, and statistical reason: The self-authentification of a style of scientific reasoning. In E. McMullin (Ed.), *The social dimensions of science* (pp. 130–157). Notre Dame: University of Notre Dame Press.

Hacking, I. (2002). Inaugural lecture: Chair of philosophy and history of scientific concepts at the Collège de France, 16 January 2001. *Economy and Society, 31*(1), 1–14.

Hall, G. S. (1893). *The contents of children's minds on entering school*. New York & Chicago: E. L. Kellogg & Co.

Hall, G. S. (1911/1904). *Adolescence, its psychology, and its relations to physiology, anthropology, sociology, sex, crime, religion, and education*. New York & London: D. Appleton and Company.

Jenks, C. (1996). *Childhood*. London & New York: Routledge.

Martins, C. S. (2017). From scribbles to details: The invention of stages of development in drawing and the government of the child. In T. S. Popkewitz, J. Diaz, & C. Kirchgasler (Eds.), *A political sociology of educational knowledge. Studies of exclusions and difference* (pp. 105–118). New York & London: Routledge.

OECD. (2014). *PISA in Focus 38*. Paris: OECD Publishing.

OECD. (2016a). *Better policies for 2030: An OECD action plan on the sustainable development goals*. Paris: OECD Publishing.

OECD. (2016b). *Global competency for an inclusive world, PISA*. Paris: OECD Publishing.

OECD. (2016c). *Low performing students: Why they fall behind and how to help them succeed, PISA*. Paris: OECD Publishing.

Ogata, A. (2013). *Designing the creative child. Playthings and places in midcentury America*. Minneapolis & London: University of Minnesota Press.

Osborne, T. (2003). Against 'creativity': A philistine rant. *Economy and Society, 32*(4), 507–525.

Pettersson, D., Popkewitz, T. S., & Lindblad, S. (2016). On the use of educational numbers: Comparative constructions of hierarchies by means of large-scale assessments. *Espacio, Tiempo y Educación, 3*(1), 177–202.

Popkewitz, T. S. (2007). Alchemies and governing: Or, questions about the questions we ask. *Educational Philosophy and Theory, 39*(1), 64–83.

Popkewitz, T. S. (2013). The sociology of education as the history of the present: Fabrication, difference, and abjection. *Discourse: Studies in Cultural Politics of Education, 34*(3), 439–456.

Porter, T. (1996). *Trust in numbers. The pursuit of objectivity in science and public life*. Princeton, NJ: Princeton University Press.

Rose, N. (1991). Governing by numbers: Figuring out democracy. *Accounting Organizations and Societies, 16*(7), 673–692.

Seguin, E. (1866). *Idiocy: And its treatment by the physiological method*. New York: William Wood & Co.

Sully, J. (1900/1896). *Studies of childhood*. New York: D. Appleton and Company.

Turmel, A. (2008). *A historical sociology of childhood. Developmental thinking, categorization, and graphic visualization*. Cambridge: Cambridge University Press.