

ETHNOMATHEMATICS AND THE LIMITS OF CULTURE

ALEXANDRE PAIS

When, in my first years as a mathematics teacher, I started to look into mathematics education research for studies that could help me understand the problems I was encountering in my school life, I found a desert of ideas. There is plenty of research available if you want to know more about cognitive strategies for teaching geometry proof, the learning of quadratic equations, or teacher's semiotic mediation of a classroom conversation. However, my problems were of a different nature, having to do with, among other things, the way mathematics is usually portrayed as being human-proof, as transcending all cultures, as well as the idea that it is "neutral" knowledge, completely disentangled from social and political reality. These were not, properly speaking, didactical questions, that could be solved through the development of better ways to teach and learn mathematics, but questions about the epistemology and social implications of mathematics.

When you start to raise questions about the way mathematics is presented in the curriculum, the kind of exercises that you are supposed to work on with your students, or the different sociopolitical pressures that force teachers to tailor their instructional practices to the format of the test, you have to step outside mainstream mathematics education research. In my case, I stepped into ethnomathematics, which, fifteen years ago, together with critical mathematics education, was starting to question the role of mathematics in the school curriculum and, above all, to question mathematics itself as a culturally bounded field of knowledge.

I never saw ethnomathematics as research about the mathematical knowledge of culturally distinct people, or people in their daily activities. Rather, what I found interesting in ethnomathematics research was the epistemological critique of the enduring belief in the universality and neutrality of mathematics knowledge. The importance of ethnomathematics was not so much related with the study and valorisation of "other" mathematics (something I criticize) but with its critique of academic mathematics itself, through a social, historical, political and economic analysis of how mathematics has become what it is today [1]. Ethnomathematics gave me tools to criticize the mathematics I was teaching to my students on a daily basis, and not so much an insight into the "non-formal" mathematics that my students may or not have.

Research in ethnomathematics in the last fifteen years, however, has become predominantly focused on "local cultures" and non-scholarized forms of mathematics (Horsthemke, 2006; Pais, 2011; Rowlands & Carson, 2002). The premise justifying this kind of research goes as follows: students already have some kind of pre-school proto-mathe-

matical knowledge; this knowledge should be considered by the teacher when organizing the learning of the school mathematics; this way, it is assured that cultural differences are valorised, and a better learning can occur (since students are not starting from scratch but from their own life experiences). In this perspective, as I have explored elsewhere (Pais, 2011), ethnomathematics becomes another of the many "didactical tools" that abound in research. That is, it stops being a critical reflection on the sociopolitical roots of academic mathematics and the place it occupies in the popular imaginary and in schooling, to become a learning device.

Such a development of ethnomathematics research is problematic and, in some instances, contradictory [2]. In what follows, I briefly point out some of the problems I see in the educational implications of ethnomathematics, and suggest a political reading of mathematics education that shows the limitations of culture when confronting the economic role of schooling.

Mathematics, mathematics everywhere!

Throughout the last four hundred years we have learned that mathematics is the most universal form of knowledge, the language in which the universe is written, as Galileo put it. This mathematics, however, is not the same as the mathematics that ethnomathematicians have been uncovering in the most diverse social practices. Ethnomathematics shifts mathematics from the places where it has been erected and glorified (university and schools) and spreads it to the world of people, in their diverse cultures and everyday activities. An ethnomathematical program sullies mathematics with the human factor; not an abstract human, as the subject of modern science, but a human situated in a space and time that implies different knowledge and different practices. For modern science, the universality of mathematics comes from its abstract properties that allow us to model every inch of reality (these properties being only available for a restricted group of enlightened people). In ethnomathematics, its universality comes from the assertion that every person, whether they recognize it or not, uses and explores mathematics in their mundane lives (Barton, 2004; D'Ambrosio, 1985).

Apparently, such a displacement results in a valorisation of people's activity. People that have never before been heard in mathematics are told that what they were doing all their lives when constructing their houses, playing their traditional games or operating some machine, was mathematics. Such recognition, so goes the mantra of ethnomathematics, allows them to become emancipated, even to feel proud for being good at something as inaccessible as mathematics.

What is the problem with this line of argument? Let us assume the following case. Usually, a typical ethnomathematical researcher will go to a local community (whether it is an indigenous, ethnic or professional one), observe people performing their daily practices, and try to identify mathematical motives in what they are doing [3]. She can, for instance, spend time observing indigenous people constructing a house, talk with them, make questions, and, sooner or later, the mathematically trained observer will start to see mathematical content in the communitarian task of constructing a house. Let us say that she clearly identifies what these people are using to construct their houses as being Pythagoras' theorem (notwithstanding the fact that these people have never before heard about such a thing). The researcher can, then, produce an entire catalogue of the mathematics behind the construction of a house, and write an academic article to be published in an international journal, showing how it is not just "us" who know mathematics. She can also use this knowledge for educational purposes, as is the case with the majority of ethnomathematics research, as a way to teach more formal mathematics to these people.

Now, let us imagine the opposite scenario. Imagine that a group of indigenous people is invited into a regular mathematics classroom where the topic of the day is Pythagoras' theorem. They sit quietly, at the end of the room, observing what students do: solving equations to determine the missing side of a rectangular triangle, defining the sine, cosine and tangent ratios, or exploring the triplets that satisfy the Pythagorean equation. They observe attentively, trying to recognize, from their own experience, what these students are doing. Suddenly, they start to see a house emerging from the work of the students. They realise that what the students are doing while seated at tables with pens in their hands solving exercises on a sheet of paper is actually the construction of a house. Why does this sound absurd? Even more importantly, why are these kinds of observations (or research) not made? Why does it make sense to see mathematics in the construction of a house, and no sense at all to see a house in what students do in a regular mathematics class? Why is the direction of research always one of going to the local communities to recognize as mathematics what these people are doing?

As noted by Knijnik (2002, 2012) when working with rural forms of life in the south of Brazil, there is an important issue of power at stake here, which goes unnoticed by most of the research in ethnomathematics. The knowledge that is allowed to be seen is the mathematical one. It is the trained (in academic mathematics) gaze of the ethnomathematician that makes her "see" mathematics in what people are doing (Horsthemke, 2006; Rowlands & Carson, 2002). It seems as if what these people are doing becomes more valuable because we can see mathematics in it. Ultimately, what this discourse conveys is the idea that a certain communitarian practice, like constructing a house, becomes more valuable if it is recognized as involving mathematics. It is mathematics that certifies the richness of what these people are doing and not the activity in itself.

We can thus raise the question of how we can say what certain people are doing is mathematics, if they do not recognize it as mathematics. As posed by Dowling (1998), research in ethnomathematics "succeeds in celebrating non-

European cultural practices only by describing them in European mathematical terms, that is, by depriving them of their social and cultural specificity" (p.14). Mathematics is everywhere from the moment we, people trained in mathematics, posit it to be everywhere. There is nothing in raw reality that can, in itself, be called mathematics. It is the act of declaring that mathematics is everywhere that creates the idea that mathematics is actually everywhere.

The problem of transference

Let us now address the educational implications of ethnomathematics. It is broadly assumed that high quality mathematics instruction will allow students to become more active participants in a highly mathematized world (*e.g.*, NCTM, 2000; Gutstein, 2012; Skovsmose, 1994). Conversely, it is also assumed that people already have some kind of ethnomathematical knowledge before they come to school, and this knowledge should be the basis for the learning of scholarized mathematics (*e.g.*, Abreu, Bishop & Presmeg, 2002; Borba, 1997). In short, it is assumed that people transfer knowledge from and into school. But is this really the case? If we think about our daily life, how much of the mathematics that we learned in school do we actually use? When driving a car, cooking, organizing a meeting, writing an article or making love, do we have in consideration the mathematics we learned in school? Are we always making calculations, solving equations or drawing a tangent when engaged in our mundane activities? Of course, we can "see" mathematics in all this if we take the time to disclose it, but is this the way we operate regularly? Research shows that people do not transfer what they learn in school to activities outside school. Rather, they learn in situ what they need to perform well, whether in their mundane or professional activities (*e.g.*, Jurdak, 2006; Lave, 1988). If we consider the research on the socio-cultural aspects of knowledge and learning, we can assert that all knowledge is eminently situated in the places where it is used, whether these places are a workplace or an indigenous community (Lave & Wenger, 1991). The meaning of some practice and knowledge is deeply involved in the community of practice where it is exercised and developed. There is no guarantee that people transfer knowledge from one practice to another without some kind of "misrecognition". School mathematics, although it can explore "real" situations, will always be school knowledge, learned in a specific place called school where students are not necessarily concerned with learning, but often with passing (as shown by Baldino & Cabral, 1998, 1999).

When we bring local knowledge to school, whether it is some practical knowledge or "ethnic" knowledge, what happens is a decontextualization of the conditions that justify the emergence and use of this knowledge (Knijnik, 2012; Pais, 2013). If knowledge and learning are not purely cognitive processes happening in the heads of individuals, but socially situated practices, deeply connected with context, then it is not without trouble that we can assert the advantages of linking local and school knowledge and practices. Particularly important was the eye-opening work done by Dowling (1998), who revealed some of the pitfalls of what Bernstein called recontextualization. For him, "the recon-

textualization of everyday life material into the curriculum ends up by being neither ‘real maths’ nor ‘real life’” (Evans, 1999, p. 27). Something is always already lost when we transpose some everyday activity into school, and vice-versa. What Dowling (1998) calls the myth of participation—the idea that mathematics is a necessary feature of everyday practices—ends up creating a school curriculum where mundane activities are mythologized in a way that “privileges” mathematical rather than everyday principles. That is to say, everyday activities, in order to be introduced in school, need to be amputated of all the complex vicissitudes that makes them what they are. This amputation, the result of casting the mathematical gaze on to public domains, privileges what Dowling (2001, p. 22) calls the “esoteric domain”, while, at the same time, concealing the purely fictional status of the importance attributed to mathematics. As such, the will to bring local knowledge to school can entail a prejudice, since it seems like we are avoiding one prejudice (the one that says that knowledge developed by people in their local practices is not knowledge) by fuelling another (the one according to which local knowledge is only considered to be true knowledge if it is taught and evaluated in school).

Creating the foreign Other

When I was starting my work as a teacher, I experienced a curious episode that illustrates the *desubstantialization* of the Other’s culture (Žižek, 1997). One of my students, let us call her Y, needed a pair of glasses. Unfortunately, her poor family could not afford to spend money on anything except basic survival: housing, food, hygiene. In order to solve this situation, a group of teachers collected money and gave it to Y, so that she could buy the glasses she needed so much. However, Y ended up not buying the glasses but a mobile phone; just like the ones her classmates so proudly exhibit. The teachers were amazed at Y’s lack of responsibility. How could a poor girl, in need of glasses, use the money collected by the teachers to buy such a superfluous object? She was seen as an ungrateful person, not worthy of the teachers’ kindness.

This episode illustrates the way the Other is constructed as a result of our own gaze. We are willing to love the Other (the poor, the indigenous) as long as he or she remains the Other we want to see. We love the foreign Other precisely because he is poor, oppressed, and utterly helpless, needing protective care. The problem arises at the moment when he comes near to us, when we start feeling his suffocating proximity. At this moment when the Other exposes himself to us too much, love can suddenly turn into hatred. This was precisely what happened in the way the teachers reacted to Y’s purchase of a mobile phone. Their love for her turned to hatred the moment they realised that Y is no different from themselves: she also wanted to consume all the superfluous things that we all like to have. What shocks us when we encounter the real Other is not their foreignness, but our own decrepit and disavowed reality.

The same logic is at work in many studies in ethnomathematics. When we claim that we must “give voice” [4] to the oppressed (poor students, ethnic students, minorities, and so on), we always take the risk, behind the appearance of a legitimate will for valorising the voices of oppressed people,

of stipulating how this voice should be, by positing the Other in our symbolic order, constructing him as innocent, in need of help, oppressed people who are seen as victims of our consumerist and racist society. They have voice as long as their voice is the voice of the oppressed, the voice asking for help, the voice we expect to hear. When the poor student admits that he just wants to be rich, or the “ethnic” student says that he only wants to learn the mathematics of the white people, we feel deceived, because we encounter the real Other. It is as if there was an underlying desire to keep someone in the status of a victim, so that we can enact in ourselves the desire for helping. As posed by Žižek (2008), “the saintly person uses the suffering of others to bring about his own narcissistic satisfaction in helping those in distress” (p. 101). This “saintly” spirit, similar to the one of charity and philanthropy, completely endorses the spirit of capitalism. It allows people to ease their consciousness, while at the same time assures that no fundamental change in schools or in the economical organization of society occurs.

Ethnomathematics and the limits of culture

This leads us to the limits of culture when thinking about a radical change in schooling. Although we live in a world of multiple social, cultural and political realities, we must ask what, in all these different sets, remains unchangeable. In cultural and social terms, there is no doubt that the world is diverse. European culture and sociability, despite all the similitude, is different from North American culture, as we can easily notice in literature, cinema or philosophy. Not to mention the perhaps even deeper differences between these and Asian and African cultures. In political terms, there are around the world all sorts of forms of political organization: neo-liberal North American ideologies, North European monarchies, South American socialism, European social-democracy, China’s (capitalized) communism, Arabic religious states, *etc.* However, when talking about economy, we get stuck. Can we say that we have a plurality of different economic systems around the world? No, *the* global economic system present in all this multiplicity of cultural and social formations is capitalism [5]. The Lacanian notion of the Real is that which remains the same in all symbolic universes. Here, then, is the Real [6] of today’s society: capitalist economics is the unchangeable core that remains the same in all the multiplicity of social, cultural and political spectrums.

When thinking about education, there is no doubt that schools are different, and that teachers and students experience a multiplicity of problems. Each school, each teacher and each student stand for a unique constellation of life experiences. However, we have to ask: what is unchangeable in all these different schooling realities? Although each school is different (are they that different?), what does remain the same in all these complexes universes? What is the Real of school? As I have been developing in my own work (*e.g.*, Pais, 2012), the Real of schools is the worldwide accreditation system that follows its path irrespective of the didactical, curricular and even cultural innovations perpetrated both by researchers, politicians and practitioners. The fact that teachers are asked, year after year, to mark students with a grade that will determine (sometimes in quite

severe ways) their future possibilities is what remains unchangeable in the entire educational system. In this sense, the limits of educational change are the limits of culture. Once a change in the economic role of schools is suggested, things become “impossible”: who will dare to suggest that teachers should stop putting numbers or letters on people?

Since the economic role of schools cannot be changed, researchers tend to concentrate on “superficial changes” (Freire, 1998, p. 508). Many of these changes are performed under the umbrella of ethnomathematics. The system satisfies the societal demands for the valorisation of other cultures, by importing local cultures into the curriculum, while assuring that such “insertion” will not actually change any of the core features of the system (Pais, 2011). Capitalism needs to promote constant reforms and innovations to conceal the crude reality that core choices (such as a radical change in school’s credit system) are not available. Without a doubt, we (fed, washed, and scented people) live in a world where the choices available are numerous, in virtually all dimensions of life. Regarding education and ethnomathematics, there is already a considerable array of didactical proposals designed to nurture a multicultural education. If we take the various texts listed on the website of the Ethnomathematics Digital Library (a program aimed to develop resources for education and learning) we could, without difficulty, prepare a full mathematics curriculum around the exploration of local uses of mathematics. In South Africa, a whole knowledge industry is developing around the idea of Indigenous Knowledge Systems [7], of which ethnomathematics is one component. The power of capitalism to produce variety is at work in the educational applications of ethnomathematics.

Here rests the danger of bringing powerful ideas into a school setting. What, at the level of official intentions, runs smoothly (practically nobody within ethnomathematics research contests the importance of cultural diversity) when actualized in a specific practice (in our case, school practice) often encounters a series of obstacles which end up perverting the core goal of ethnomathematics. This way, a potentially emancipatory enterprise such as ethnomathematics is transformed into what Žižek (2008, p. 76) calls an “inherent transgression”; *i.e.*, a change that is already predicted and even promoted (many curricula around the world already refer to the importance of bringing local cultures into the classroom) by the same system it tries to change.

Positing mathematics as a “weapon in the struggle” for a better world (Gutstein, 2012), or as a privileged route towards Peace (D’Ambrosio, 2007), reinforces the “faith” in the idea that better mathematics is the solution for problems that by their very nature are economic and political. Instead of positing itself as part of the problem, researchers end up creating ideological injunctions whose purpose is precisely to disavow the economic role of schools (Pais, 2013). In short, in the well-intentioned action of achieving a better world through mathematics education, ethnomathematicians often fail to acknowledge, in the corrupted reality they lament, the ultimate consequence of their own act. As shown by Lundin (2012), the very idea of a simultaneous formation of competence to read and change the world using mathematics and a perspective which shapes the world in a way

that makes this competence relevant, is peculiar to and characteristic of mathematics education research, particularly ethnomathematics. As a result, we are left at a threshold: if the purpose is the high ideals of peace, democracy, social justice and equality, the route via mathematical thinking, in which we currently invest so much, is a dead end. We are compelled to find other ways to move forward.

Acknowledgments

This article is part of a postdoctoral project, supported by the Foundation for Science and Technology of Portugal, grant SFRH/BPD/84789/2012. It is also part of the project URBAN BOUNDARIES, funded by the same foundation (contract PTDC/CPE-CED/119695/2010).

Notes

[1] This approach to ethnomathematics is particularly strong in the work of Knijnik (2002, 2012), and in the collection of philosophical investigations gathered by Powell and Frankenstein (1997). For a discussion of the political role of ethnomathematics research see Barton (1999). Yet the majority of ethnomathematics research portrays ethnomathematics as the mathematics of identifiable cultural groups with obvious pedagogical implications (*e.g.*, Barton, 2004; Borba, 1997; Shockey, 2006).

[2] As explored by Horsthemke (2006), the underlying idea of this development is that a political and philosophical inquiry regarding ethnomathematics is now dated and emphasis should be given to the empirical applications of ethnomathematical ideas in education. In contrast, I argue that ethnomathematics, as a research field, takes advantage by rejecting any dogmatic position and being willing to discuss the philosophical and political contradictions implicated in its pedagogical aims.

[3] There are plenty of examples of ethnomathematics research that follow this path. On the website www.ethnomath.org (Ethnomathematics Digital Library) the reader can find updated information on the international research on ethnomathematics concerned with identifying mathematical competences in specific cultural groups. For a recent article published in this journal consider Shockey (2006) who studied a group of thoracic cardiovascular surgeons and the way they use mathematics when working on left ventricle reduction.

[4] As if people did not have a voice ... The problem is not something that people “lack”, it is not a problem of “deficit”, which could be compensated by the work of well-intentioned researchers. Rather, the problem is that people’s voices are not heard. So our struggle should be directed not at “giving voice”, but to create the spaces in the academia where other voices can be heard.

[5] Not all societies are at the same level of capitalist development and, evidently, some are still indeed in pre-modern systems of production. However, with the advent of global, multinational capitalism, the way to get into the “market” is through capitalism. For instance, we can say that indigenous tribes in Amazonia do not live in a capitalist economy. However, when exchanges with the “outside world” are needed (and they are increasingly needed since the neo-colonization taken care of by capitalist expansion obliges these people to search for products that cannot be produced within the community) they are automatically inside the capitalist mode of production. So the choice is between accepting capitalism or perishing.

[6] www.ethnomath.org

[7] A program organized by the Department of Rural Development and Land Reform of South Africa, which aims, among other things, to patent and commercialize IKS products.

References

- Abreu, G. de, Bishop, A. J. & Presmeg, N. C. (2002) *Transitions Between Contexts of Mathematical Practices*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Baldino, R. R. & Cabral, T. C. B. (1998) Lacan and the school’s credit system. In Olivier, A. & Newstead, K. (Eds.) *Proceedings of 22nd Conference of the International Group for the Psychology of Mathematics Education*, vol. 2, pp. 56–63. Stellenbosch, South Africa: University of Stellenbosch.

- Baldino, R. R. & Cabral, T. C. B. (1999) Lacan's four discourses and mathematics education. In Zaslavsky, O. (Ed.) *Proceedings of the 23rd Conference of the International Group for the Psychology of Mathematics Education*, vol. 2, pp. 57-64. Haifa, Israel: Technion Israel Institute of Technology.
- Barton, B. (1999) Ethnomathematics: a political plaything. *For the Learning of Mathematics* **19**(1), 32-35.
- Barton, B. (2004) Mathematics and mathematical practices: where to draw the line? *For the Learning of Mathematics* **24**(1), 22-24.
- Borba, M. C. (1997) Ethnomathematics and education. *For the Learning of Mathematics* **10**(1), 39-43.
- D'Ambrosio, U. (1985) Ethnomathematics and its place in the history and pedagogy of mathematics. *For the Learning of Mathematics* **5**(1), 44-48.
- D'Ambrosio, U. (2007) Peace, social justice and ethnomathematics. In Sriraman, B. (Ed.) *International Perspectives on Social Justice in Mathematics Education*, pp. 25-34. Missoula, MT: The University of Montana Press.
- Dowling, P. (1998) *The Sociology of Mathematics Education: Mathematical Myths/ Pedagogic Texts*. London, UK: Falmer Press.
- Dowling, P. (2001) Mathematics education in late modernity: beyond myths and fragmentation. In Atweh, B., Forgasz, H. & Nebres, B. (Eds.) *Socio-Cultural Research on Mathematics Education: An International Perspective*, pp. 19-36. Mahwah, NJ: Lawrence Erlbaum.
- Evans, J. (1999) Building bridges: reflections on the problem of transfer of learning in mathematics. *Educational Studies in Mathematics* **39**(1-3), 23-44.
- Freire, P. (1998) Cultural action for freedom. *Harvard Educational Review* **68**(4), 476-521.
- Gutstein, R. (2012) Mathematics as a weapon in the struggle. In Skovsmose, O. & Greer, B. (Eds.) *Opening the Cage: Critique and Politics of Mathematics Education*, pp. 23-48. Rotterdam, The Netherlands: Sense Publishers.
- Horsthemke, K. (2006) Ethnomathematics and education: some thoughts. *For the Learning of Mathematics* **26**(3), 15-19.
- Jurdak, M. E. (2006) Contrasting perspectives and performance of high school students on problem solving in real world situated, and school contexts. *Educational Studies in Mathematics* **63**(3), 283-301.
- Knijnik, G. (2002) Ethnomathematics: culture and politics of knowledge in mathematics education. *For the Learning of Mathematics* **22**(1), 11-14.
- Knijnik, G. (2012) Differentially positioned language games: ethnomathematics from a philosophical perspective. *Educational Studies in Mathematics* **80**(1&2), 87-100.
- Lave, J. (1988) *Cognition in Practice: Mind, Mathematics and Culture in Everyday Life*. Cambridge, UK: Cambridge University Press.
- Lave, J. & Wenger, E. (1991) *Situated Learning: Legitimate Peripheral Participation*. Cambridge, UK: Cambridge University Press.
- Lundin, S. (2012) Hating school, loving mathematics: on the ideological function of critique and reform in mathematics education. *Educational Studies in Mathematics* **80**(1&2), 73-85.
- Pais, A. (2011) Criticisms and contradictions of ethnomathematics. *Educational Studies in Mathematics* **76**(2), 209-230.
- Pais, A. (2012) A critical approach to equity. In Skovsmose, O. & Greer, B. (Eds.) *Opening the Cage: Critique and Politics of Mathematics Education*, pp. 49-92. Rotterdam, The Netherlands: Sense Publishers.
- Pais, A. (2013) An ideology critique of the use-value of mathematics. *Educational Studies in Mathematics* **84**(1), 15-34.
- Powell, A. B. & Frankenstein, M. (1997) *Ethnomathematics: Challenging Eurocentrism in Mathematics Education*. Albany, NY: State University of New York Press.
- NCTM (2000) *Principles and Standards for School Mathematics*. Reston, VA: NCTM.
- Rowlands, S. & Carson, R. (2002) Where would formal, academic mathematics stand in a curriculum informed by ethnomathematics? A critical review of ethnomathematics. *Educational Studies in Mathematics* **50**(1), 79-102.
- Shockey, T. (2006) Left-ventricle reduction through an ethnomathematics lens. *For the Learning of Mathematics* **26**(1), 2-6.
- Skovsmose, O. (1994) *Towards a Philosophy of Critical Mathematics Education*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Žižek, S. (1997) Multiculturalism or the cultural logic of multinational capitalism? *New Left Review* **225**, 28-51.
- Žižek, S. (2008) *The Plague of Fantasies* (2nd edition). London, UK: Verso.

Education is up to its elbows in the struggle for distinctions. The very expressions *primary*, *secondary*, and *tertiary* are metaphors for it. It has even been argued recently that the “new” bourgeoisie in France after the Revolution used the schools as one of their principal tools for “turning around” the system of prestige and distinction previously dominated by the aristocracy and gentry of the *ancient régime*. Indeed, the very concept of a meritocracy is precisely an expression of the new power that schools are expected to exercise in fixing the distribution of distinctions in contemporary bureaucratic society.

Bruner, J. (1996) *The Culture of Education*, p. 31. Cambridge, MA: Harvard University Press.
