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# Redefining Ability, Saving Educational Meritocracy

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**Abstract**
The meritocratic principle of educational justice maintains that it is unfair that individuals with similar ability who invest equal effort, have unequal educational prospects. In this paper I argue that the conception of ability that meritocracy assumes, namely as an innate trait, is critically flawed. Absent a coherent conception of ability, meritocracy loses its ability to morally evaluate educational practices and policies, rendering it an unworkable principle of educational justice. Replacing innate ability with an alternative conception of ability is, therefore, crucial for meritocratic educational justice. I propose incorporating an alternative conception of ability into meritocracy—as the ″current limits of student ability″. The account of meritocracy that follows entails that unequal educational prospects are fair only when they result from the constraints of individual potential (or from differential effort). I argue that this potential-based account of meritocracy, though demanding, is a plausible and attractive account of educational justice.

**Keywords** Educational justice · Meritocracy · Inequality · Ability · Potential · Theories of justice

## 1 Introduction

Meritocracy has been subject to fierce attack in recent years. While the discussion of its shortcomings is clearly not new, the reinvigorated debates offer new perspectives on it, demonstrating how it fails to secure meaningful opportunity, obfuscates structural injustice, and undermines solidarity, among other harms (Markovits 2019; Mcnamee and Miller 2013; Mijs 2021; Sandel 2020; Taussig 2021; Wooldridge 2021). And while many critics focus on the failure of modern societies to live up to the meritocratic ideal, some address the shortcomings of the ideal itself (Mijs 2021; Sandel 2020).

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In this paper I join the critics of meritocracy, and put forward another, original, criticism of meritocracy, directed specifically to the application of meritocracy in the educational domain. The critique focuses on the conception of 'ability' incorporated in traditional accounts of meritocracy, a conception which, I argue, is critically flawed. If meritocracy is to remain a workable principle of justice in the educational domain, therefore, an alternative conception of ability must be put forward. A conception of ability understood in terms of the current limits to student potential does not encounter the problems that will be detailed and could, I argue, constitute an attractive alternative for educational meritocracy.

According to the principle of merit, rewards should follow ability and effort. In a fair society economic inequality can be just, when it is not the product of advantageous upbringing, favoritism, discrimination, etc., but the result of one's hard work and ability.

In the educational domain, meritocracy is an extremely influential theory of justice—it dominates the philosophical literature and affects public debate and policy making. The principle entails that it is unfair for equally able children who have invested equal effort, to have unequal educational prospects. Unequal educational outcomes among children with equal abilities who invest equal effort, implies that background conditions are responsible for the gap. Meritocratic justice requires neutralizing these conditions, grounding a moral claim for allocation of resources or other measures aimed at realigning students' achievement with their ability (Brighouse 2011; Jencks 1988; Swift 2003). Conversely, unequal educational outcomes are morally acceptable when caused by differences in students' cognitive abilities (Swift 2003: 25, 132).[1]

Given the inevitable causal relations between ability and achievement, relying on ability to determine fairness in the educational sphere seems reasonable. Therefore, regardless of one's position toward meritocracy in general, its application to education seems especially persuasive. Theories of educational justice that do not accept inequalities caused by differences in students' talents (such as luck egalitarianism that requires neutralizing brute luck, or sufficientarianism, that requires bringing all students, regardless of their ability, to an adequate level of education) must contend with the obvious fact that people's abilities are unequal (Brighouse and Swift 2014).

Despite its centrality in debates surrounding educational justice, and its special importance for the discussion of merit, the concept of ability suffers from "chronic ambiguity" (Harel Ben Shahar 2023a, p. 401; Marley-Payne 2020; Robb 2021: 8086; Sardoč and Deželan 2021). It is understood in different ways in different contexts, and used interchangeably with other terms including skill, IQ, potential, aptitude, talent, and more. Another cause of confusion is that there is significant debate among scientists concerning the very nature of human abilities, so facts concerning ability are not easily determined. The untenable use of ability

[1] Various justifications have been offered for the position that inequality caused by disparity in people's inborn talents is not unfair. David Miller (1999), for example, argues that the justification is based on desert. Others argue that this is based on respect for persons (e.g., Mason 2006).

in meritocratic theories of educational justice (which will now be explained) demonstrates, I think, the results of this conceptual confusion.

To evaluate educational outcomes, meritocracy compares educational outcomes to students' ability and effort. Since ability is affected by both nature and the environment, and only the former is a morally acceptable cause for educational inequality, meritocracy entails neutralizing the environmental components of student ability, singling out students' innate ability (and effort), and then comparing it to her educational outcome. There are however, two objections to the conception of ability that arise. The first is that nature and nurture not only conjointly affect ability (a fact that is often acknowledged by philosophers), they also iteratively shape one another, therefore it is not only difficult in practical terms to discern their relative influence on ability, but rather logically impossible. I call this *the indiscernibility objection*. The second objection to traditional meritocracy's conception of ability is *the malleability objection*, which rests on the fact that human ability is not a fixed trait, and it changes and develops (or stagnates) throughout life. The plasticity of ability entails that no specific level of ability (at any specific point in time) can be said to represent a students' "real" or "core" ability. Meritocracy, recall, requires comparing educational outcome with 'student ability', but given the plasticity of human ability, it is unclear when this should be measured. This is not merely a practical difficulty; the challenge runs deeper: it suggests that there is no moment in which comparing measured ability with students' educational outcomes is morally relevant. And although most philosophers will readily admit that ability is malleable, the implications of this fact for educational justice have been largely overlooked.

Combined together, I argue, these objections create a severe problem for meritocracy, leaving it without the yardstick for moral evaluation of education. In order to ensure that meritocracy is a workable principle of educational justice, I argue that ability should be understood, instead, as the "current limits of students' potential". The potential-based meritocratic principle that follows from understanding ability as limits permits unequal educational outcomes only when they result from the current limitations of students' potential (or from differential effort).

The potential-based account of meritocracy proposed here is a more demanding principle of justice than 'traditional' meritocracy; the latter allows all inequalities that can be attributed to students' abilities, whereas according to potential based meritocracy only inequalities that are an inescapable result of limited potential would be deemed fair.

Potential-based meritocracy, I argue, avoids the objections levelled at the concept of innate ability: it does not require discerning the relative role of genes and the environment on students' abilities, since the only thing that matters is that students are, as a matter of fact, currently unable to perform better. And since potential is evaluated in hindsight, it accommodates the elasticity of human ability. Potential is able, therefore, to offer a satisfactory yardstick for moral appraisal of educational practices and outcomes. Last but not least, potential- based meritocracy is an attractive account of meritocracy also in terms of its substantive requirements because its treatment of students with low ability is better attuned to moral intuitions and common education practices.

The paper proceeds as follows. In part II I discuss the concept of student ability, and focus on the meaning of ability used within the framework of educational meritocracy. Then, in part III, I raise two objections to the way ability is conceptionalized in the traditional formulation of meritocracy in the educational domain. Part IV presents potential-based meritocracy, namely the account of meritocracy that is based on understanding ability as limits. This part also addresses possible challenges to this understanding of ability. Part V offers directions for future thought about the concept of student ability and its role in educational justice.

Before proceeding, a comment is in place. This paper focuses on student ability and does not address effort, the remaining legitimate cause for inequality, according to a meritocratic theory of educational justice. But making an effort, especially in education, can also be understood as an ability. For example, when we say that a student made an effort, we often mean that they sat for many hours, concentrated, revised the material over and over again, etc. These actions rely on more than students' motivation; they are to a large extent dependent on abilities, that are the joint result of genes and environmental influences. If effort is also, to a large extent, based on ability, it would seem that there is no tenable distinction between ability and effort, and therefore the arguments put forward in this paper against ability should apply also to effort. But while there are similarities between effort and ability, effort requires, I contend, a separate discussion, because of the different role it plays within the meritocratic theory. *Cognitive* abilities, which this paper focuses on, have a double role within the theory: they are what constitute the outcome of education, and they are also the benchmark for morally evaluating that outcome. This double role is key to the challenge presented in the paper. On the other hand, the kinds of ability that make up effort do not play that double role—they do not count as educational outcome. Therefore, the moral challenges that might be directed at inequality caused by effort may be different than those directed at inequalities that stem from ability. This is not to say that some of the arguments raised here do not have import for a discussion of effort, but a comprehensive analysis of it requires a separate study.

## 2 Student Ability and Meritocracy

The concept of 'student ability' is a crucial building block for any theory of justice in education. Theories of justice for the educational domain are tasked with questions such as how to allocate scarce resources for competing educational needs; when are unequal educational outcomes fair; when is differential treatment of students fair; and whether specific educational practices are fair. Practically all the core questions that theories of educational justice aim to answer hang on what student ability is and what role it should play in the relevant moral debates. The concept of ability is especially important for the principle of educational meritocracy, because it is one of the two morally permissible causes for inequality in educational prospects (alongside effort).

After years in which the concept of ability received relatively little attention, the philosophical scholarship has recently begun addressing the conceptual and moral questions concerning ability (Marley-Payne 2020; Meyer 2021; Mijs 2021; Robb

2021; Sardoč and Deželan 2021; Terzi 2020; Thompson 2020). As a part of this burgeoning body of work, this paper focuses on what I argue is a flawed conception of ability used in meritocratic educational justice. The centrality of meritocratic principles in the educational justice debate (as well as its centrality among educators, decision makers and in the public more generally) makes clarifying the concept of ability especially important in this context.

"Traditional" meritocratic theory of educational justice maintains the following:

> An educational practice, policy, or system is just when students' prospects are a function of that student's ability and effort, rather than her other traits such as social background (Brighouse 2011: 28).

Educational meritocracy aims to equalize educational opportunities, by checking outcomes: when educational outcomes reflect children's ability (and effort), this means that social background had no effect on their opportunities, entailing that education fairness has been obtained. Discrepancy between outcomes and students' abilities (and effort) implies that other factors, that are not morally permissible, such as background, race, or unequal resources, must have intervened. As Meyer describes:

> "If two children are equally talented at t1, they will foreseeably perform equally well at t2 if they receive the same educational resources and invest the same amount of time into their learning process…" (Meyer 2021)

Defining educational outcomes, for the sake of meritocracy, involves identifying the things that make education important for individuals. Meritocracy is motivated by education's role as a gatekeeper of socially produced rewards such as wealth and status. Therefore, educational outcome, for meritocracy, consists in the skills and knowledge that students acquire in school that are essential for gaining access to certain positions in society.

Educational outcomes should, therefore, be understood in terms of developed abilities, which I call, following Winston Thompson (2020) 'performative abilities'. Performative ability is the current possibility of an agent to perform a specified action.[2] In the educational domain, performative ability refers to students' current possibility of performing concrete actions such as reading and writing, or solving an equation. It can also apply to more abstract abilities such as the ability to critically appraise arguments, to integrate information from several sources, and more. If students with similar 'ability' (we will discuss what this means later on; for the moment treat this as a placeholder signifying what is not affected by social circumstances) finish school with an unequal level of performative abilities (except when caused by the effort they invested) meritocracy labels this outcome as unjust.

[2] There are various possible accounts of the nature of this possibility. For example, ability could be understood as the lack of constraint on performing the action, or as the propensity to perform it, and more (Scheffler 1985).

Evaluating educational justice, according to meritocracy, occurs at the end of K-12 education. Yet this is not the only point in time in which we might be interested in questions of justice; intermediate outcomes can be subject to the same kind of ethical evaluation. For example, when pondering whether computerizing mathematical education improves educational opportunity, the outcomes of these classes should be examined to see if they improve the performance of girls or members of racial minorities, thereby creating a better correlation between girls' (or members of racial minorities') 'ability' and their 'performative ability' narrowly understood—namely, the achievements in the math course.[3]

What is the nature of 'ability' that should align performative abilities for justice to obtain? Scientists fiercely dispute every aspect of cognitive abilities—how they develop and what influences them; whether different abilities are interrelated aspects of 'general intelligence' (referred to as 'g') or are derived from separate mechanisms; how ability should be measured; and how educational practices should respond to students' abilities. Yet, there is overwhelming agreement among experts that human ability is a creation of both genes and the environment (Carroll 1993; Patrick 2000; Plomin and Petrill 1997). I am unaware of any scientist who argues that genes have no role in determining ability, nor of any who posit that genes are *exclusively* responsible for cognitive ability. Environmental factors such as nutrition, cognitive stimuli, and stress have proven effect on human ability (see e.g., Beilharz et al. 2015; Farah et al. 2008; Martin et al. 2019; Osendarp et al. 2004; Sandi 2013; Yehuda et al. 2006).

Since social disadvantage is not a legitimate source of inequality in educational outcome, meritocracy requires that we distinguish between the natural and social components of ability. When comparing educational outcome to a students' ability, only inequality that can be attributed to genetic characteristics would be deemed fair. But, as I now move on to argue, taking into consideration that ability is comprised of both genetic and environmental components is not enough, and the relation between the genetic and environmental elements of ability creates further problems for meritocracy.

## 3 Ability Misunderstood

The yardstick for examining the fairness of educational outcomes therefore, is student ability (and effort), after disregarding the component of student ability that is attributable to her social circumstances and upbringing. In other words, controlling for any environmental influence on the students' abilities, leaves us with students'

[3] In addition to performative abilities, schools also inculcate in students other traits such as confidence, social skills and social and cultural capital, that are also often unevenly distributed along social class. Inequality in these skills is impossible to defend on the basis of cognitive ability. On the other hand, they may also be the complicated result of social and native ability, so the analysis performed could apply to them too. Exploring this in detail, however, exceeds the scope of this paper.

"innate" or "natural" or genetic ability which is what meritocrats seek to compare with 'performative abilities' in the process of evaluating education justice.

Yet this conception of ability, I argue, is critically flawed and cannot be used for moral evaluation of education. To show why, I present two objections to this notion of ability: the indiscernibility objection, and the malleability objection. And while they represent facts about ability that have been recognized by philosophers,[4] their meaning for meritocratic approaches to education have not yet been explicated. I argue that these two objections, taken together, make the concept of innate ability untenable, and as a result meritocracy is left without a workable moral standard for evaluating education systems and practices.

### 3.1 The Indiscernibility Objection

As mentioned above, any careful philosophical account of educational justice acknowledges the complicated origins of human ability. Meritocratic thinkers suggest that just education systems are those in which inequality is caused only by natural causes and not by social circumstances, and therefore propose to tease apart the social and natural factors affecting cognitive ability. The problem is, however, that our physical traits and the environment we live in are not merely two independent contributors to our ability, they also iteratively affect one another. Environmental factors shape physical dimensions of our ability such as the development of neural networks, and the epigenetic alteration of gene functions (the process through which environmental circumstances affect the activation or deactivation of genes) (Bueno 2019; Marley-Payne 2020; Meyer 2021; Perry 2002; Sweatt 2013). In turn, the physical dimensions of an individual's ability shape the environment she is exposed to through personal preferences and feedback loops (Jensen 1997). Calculating the relative roles of genes and environmental factors in people's ability requires controlling for an endless set of variables, which is practically impossible in terms of methodology, and might also raise ethical difficulties (Marley-Payne 2020; Patrick 2000).[5]

Moreover, the repeated causal iterations of nature and nurture are irrepreavably interwoven thus defying such quantification, even if we could overcome the methodological challenges. For example, think of an attribute that is an expression of a gene activated by an environmental cause. The environmental factor is fully responsible for the attribute, in the causal sense that it is what activated the gene responsible for it. But at the same time, the attribute is embedded in the genetic code, therefore

[4] Among others, see: Brighouse and Swift (2014), Calvert (2014), Fishkin (2014), Gosepath (2014), Howe (2014), Jencks (1988), Marley-Payne (2020), Meyer (2016), Meyer (2021), Schouten (2012) and Walton (2013).

[5] Studies would create ethical challenges since controlling for different factors that affect ability would require "selectively breeding humans and placing them in controlled environments for experimental purposes" (Marley-Payne 2020: 151). Alternatives to such designed experiments typically involve twin studies, however these too can be criticized, questioning whether they can indeed teach us much from twins to the population as a whole (id), as well as whether these studies are able to control for all possible factors that might have affected the development of ability. For problems with twin studies, see also Feldman et al. (2000).

the genetic profile too is fully responsible for it (Fishkin 2014: 95). Isolating natural ability from environmental circumstances therefore, is not only impractical, it is, as Joseph Fishkin puts it, "fundamentally incoherent" (Fishkin 2014: 8).[6] If so, meritocracy cannot compare educational outcomes to students' natural abilities, since they cannot be isolated from the environmental factors that are intertwined with them.

### 3.2 The Malleability Objection

The second challenge to the concept of innate ability concerns the fact that human abilities are extremely flexible. Abilities develop rapidly in childhood and continue to change (developing or stagnating) over the course of one's lifetime through interactions with the surrounding environment (Scheffler 1985), but also through the natural course of maturing and aging. The plasticity of human ability, is also widely agreed upon by scientists and philosophers alike.

What has not been noted by philosophers, however, is that plasticity of human ability creates a significant challenge for meritocracy. The challenge, in essence, is that this instability makes innate ability an unsuitable benchmark for morally evaluating educational outcomes.

Recall, to morally evaluate education, performative abilities are measured (at the end of education or at some intermediate point), and compared to students' ability (from which the effects of social circumstances have been deducted, to leave only the 'natural' component of student ability).

In light of the flexibility of people's abilities, however, it is unclear *when* one's ability should be considered their 'real' ability, namely the ability that has not been "contaminated" by environmental effects. The plasticity of human ability challenges meritocracy because it raises doubt whether people possess any 'core', or 'real' innate talent. If all levels of ability are temporary and do not epitomize anything essential about the person, what is the stable property that we purport to compare with students' educational outcomes?

The problem for meritocracy cannot be solved by setting birth (Mason 2006: 73–6), or conception (Clayton 2018, but see Kollar and Loi 2015) as the time to measure innate ability and comparing further ability with it. Besides the apparent practical problems (how do we measure a fetus's ability?), this move simply does not help. Assuming that ability changes constantly, ability at the moment of birth is not more important, morally speaking, than her ability a month or a year later.

An example can help explain why: assume that newborns could be tested for cognitive ability. Now assume that tests performed on a specific newborn child (at t1) find she has below average cognitive ability, perhaps because she was less genetically endowed, or because she was born prematurely (so caused by environmental circumstances). Happily, at six years of age (t2), the child's demonstrated ability significantly improves, thanks to her nurturing family, or because a gene responsible

[6] This is one of the objections that lead Fishkin to argue in favor of abandoning the idea of equal opportunity altogether and adopting opportunity pluralism instead.

for cognitive ability has been activated (also caused by either nature/nurture). Now, at t2, her educational prospects seem promising. Unfortunately, a few years later, her ability level drops again, due to social disadvantage (for example, she has been allocated inadequate resources in school). When her achievements drop at t3, we might say that no injustice was involved in her schooling because the achievements at t3 are compatible with the ability demonstrated at birth. But this doesn't seem right. Given her abilities at t2, measured ability at birth seems an arbitrary standard, and her ability at t2 seems the morally relevant benchmark for examining the fairness of her schooling.

The devastating challenge for meritocracy does not lie in the difficulty to determine one's ability at a certain point (though this is undoubtedly a problem in itself), nor that it is hard to determine when the relevant ability presents itself. The problem runs much deeper, namely that there is no relevant point to measure 'real' ability, and innate ability, understood as a stable property that remains constant throughout one's life, and all changes somehow relate to it, simply does not exist.[7]

A possible response is to examine a person's *comparative* ability rather than their absolute ability. Think, for example, how we evaluate the cognitive abilities of young children. Young children, generally speaking, demonstrate lower levels of cognitive aptitude than adults, but it still makes sense to think of some as extraordinarily bright. When we make such a judgement what we typically mean is that they demonstrate high abilities relative to other children their age. Therefore relative ability might be the stable property we need.

This, however, is not a satisfactory response. First, there are genetic conditions that may cause deterioration in cognitive abilities over time, so relative ability is also not a sufficiently stable natural condition. Additionally, as the hypothetical example demonstrates, children are only likely to maintain their relative ability when their environments are stable too. Sudden trauma, family crisis, or deterioration in educational services, or conversely, removing children from abusive environments and offering them educational reinforcement greatly influence children's ability (Perry 2002). Admittedly, children's environments often remain stable in reality, but this is a mere contingency. Even relative ability is flexible, thereby making it an inadequate standard for evaluating the fairness of educational outcomes. Since the move to relative ability fails too, the malleability objection remains problematic for meritocracy. Abilities measured at t1, t2, and t3 all express people's 'real' ability, and therefore none of them is an appropriate milestone for morally assessing educational outcomes.

The two objections described leave meritocracy without a satisfactory criterion for measuring educational outcomes, meaning we must either abandon meritocratic theories of justice (as Fishkin (2014) urges us to do), or reformulate the conception of ability incorporated into the theory.

[7] For a similar discussion concerning giftedness, and whether it is a fixed and identifiable trait, that can be identified at a certain age, see Grant (2002) and Merry (2008).

## 4 Ability as Limits

Instead of giving up on educational meritocracy altogether, we could rethink the way we define ability within the theory. Specifically, my proposal involves conceptualizing ability in terms of limits.

As a species, humans' abilities are limited. Humans cannot outrun an antelope, cannot fly without the aid of machines, and similarly, there are limits to the cognitive powers that humans can obtain (Meyer 2021). More controversially, the abilities of specific individuals are limited, and these limitations vary among people.[8] People vary also in how effective they are in translating resources into abilities, so different people need different resources to acquire certain abilities (Clayton 2018). It is, of course, hard to tell what people's limitations are, and people very often perform at a higher level than was expected of them. It is also important to remember that assumptions concerning children's limitations, especially when made by educators, can have a detrimental effect on their abilities, a point I return to later. But ultimately, what matters for now is that there are limits to the cognitive abilities that every individual can develop.

The limitations of people's ability can be expressed using the term 'potential'. Potential is an ability that it is currently manifestly *absent* but may come about given certain conditions. Andrew Mason defines potential as 'the maximum extent to which he or she could feasibly acquire … talent or skill' (Mason 2016: 301). Others (including Robb 2021; Scheffler 1985; Vetter 2014, for example) similarly understand potential as possibility, namely as abilities that are currently absent but can be acquired.[9]

When we say that a certain student possesses educational potential, we mean that if sufficient resources are invested in her (and assuming she invests sufficient effort) she will acquire the ability being taught. Potential also signifies the *confines* of one's ability. Student potential determines the abilities that she may obtain through investment of resources, but also, importantly, which abilities are beyond her reach (Meyer 2021).

The confines of people's potential affect the duties of (educational) justice we owe them (Anderson 2007: 615, Howe 2011: 76, Meyer 2016: 342). This aspect of ability, namely as a limit on the duties we owe individuals, is indispensable for theories of educational justice, since all theories of justice in education must contend with the challenge whereby some students, despite efforts and resources, are unable to attain certain educational achievements. Limitations of potential helps explain cases in which although a requirement of justice has not been met, no injustice has

[8] Mara Sapon-Shevin (1994: 184–185) argues that potential is unlimited. However I understand her argument as an objection to the use of people's limitations as a basis for treating them in a specific way, which is a position I endorse, as will be described in detail below. The discourse of limitations of potential has been criticized by others too. See for example, Books 1998.

[9] Scheffler (1985: 46–47) offers three possible ways to characterize this possibility: potential as capacity to become; potential as propensity to become; and potential as capability to become. Robb (2021) proposes an approach she calls talent dispositionalism according to which talent entails the disposition to develop an excellent ability.

transpired. For instance, sufficientarian theories must address cases in which certain children fail to reach the adequacy threshold, despite ongoing efforts and investment of resources. Since continuing to invest resources when they are unable to improve performance is futile, principles of educational adequacy must acknowledge that there are exceptions to the adequacy threshold. The concept of potential can be useful in thinking about this, suggesting that when an individual's maximal potential falls below the adequacy threshold, the duty to achieve adequate education does not apply (although other duties may).

Philosophers have noted that potential can play a role within theories of educational justice. Thus, Debra Satz (2007) mentions, in passing, a possible principle of educational justice that requires promoting "the equal development of children's potentials" but quickly dismisses it, saying that it is "not plausible as a guiding principle for educational policy" (2007: 631). Andrew Mason (2016: 301) also discusses potential in the context of educational justice, however limits the discussion to admission policy. And as we mentioned already, Kirsten Meyer (2021) also distinguishes between different meanings of ability, including ability as limits, but does not suggest that it should be the working definition for ability in a meritocratic principle of justice.

I suggest that understanding ability in terms of limits can solve the quandary that meritocracy faces concerning the definition of ability. A potential-based account of meritocracy maintains the following:

> Potential-based Meritocracy: An individual's prospects for educational achievement may be a function of that individual's effort and of the current limits of her ability, but it should not be influenced by her social class background.

In other words, unequal educational outcome is only fair if it is the unavoidable result of limitations of student potential (or the result of her effort).

An immediate concern arises according to which by evaluating students' limits, teachers' expectations of students may in fact be creating them (or at least reinforcing them) (Hart 1998). If this is so, acknowledging students' limited potential might result in investing *less resources* in low-ability students, rather than more. This concern is compounded by the risk that teachers' evaluations are prone to racial and class-based biases.

I agree that accepting the idea of ability as limits and acting according to evaluations of student potential can have negative effects, and that this constitutes a good reason to reject educational practices that rely on such predictions. Ability grouping, for example, has been objected to on these grounds, among others (Harel Ben Shahar 2023a, b). This concern, however, should not lead to rejecting potential-based meritocracy, as I now explain.

The safest way to avoid self-fulfilling predictions of limited potential is by evaluating such limits ex-post. In other words, despite the fact that limitations determine the scope of our duties toward children, teachers are not allowed to direct their teaching and behavior toward students on the basis of their professional assessment of student potential. Instead, teachers are under a precautionary duty of justice to try

to teach every student, regardless of their ability. When a student fails to develop a performative ability, teachers (either themselves or with the aid of support systems in schools) should continue trying, repeatedly, using various methods (of reasonable quality), investing more resources in that student than in others. Only after repeatedly failing (and after trying different methods) may teachers legitimately maintain that a specific ability is, currently, beyond the child's ability. In terms of educational justice, any inequality remaining after teachers have performed as described above, is not morally objectionable. Conversely, when teachers' performance falls short of the practice just described, inequality cannot be attributed to limited student potential and is deemed unfair.[10]

The description thus far focuses on individual teachers, but the duty applies also to schools and education systems more generally. Education systems must allocate the required resources to enable students to best improve their abilities. Sufficient teaching of good quality is the primary resource for doing so, but by no means the only one. Other possible means include conducting research that can improve teaching, dispersing sex and race stereotypes concerning learning, making early childhood education universally accessible, and more.

Importantly, since people's abilities (and potentials) develop, the statement regarding the limits of potential is only valid at the time in which the educational practice takes place. Students might be unable to acquire a certain ability at t1, but then develop the capacity to do so at t2. The practical upshot is that concluding that a certain skill is beyond a student's ability is only temporarily permissible, and as time passes educators may be under a duty to renew their efforts.

What is the scope of this duty? in other words how much effort should educators extend before they may legitimately conclude that the child has reached the limits of her potential? Teachers, and education systems more generally, are clearly not required to invest endless resources ineffectively, and the exact scope of the duty depends on the details of specific cases. For example, if a student is having difficulty performing very simple tasks, we can reasonably assume that she is unlikely to master very difficult ones. On the other hand, significant efforts and resources would have to be invested before saying that inequality is inescapable when the child is only slightly lagging behind.

Indeed, under potential based educational meritocracy, teachers are under an extraordinary moral duty—the duty to act in discord with their professional judgement of students' abilities. They are required to continue trying even when they

[10] Given the difficulty to discern a student's ability, and to disentangle the natural and environmental factors that influence it, traditional meritocracy might also adopt the precautionary duty. If so, teachers might be under a duty to keep trying to improve student abilities even when they think that the student has reached their highest ability. While adopting the precautionary principle would be a step in the right direction for traditional meritocracy, it cannot redeem it completely. In addition to the fact that student ability, as conceptualized by traditional meritocracy, is simply incoherent (as argued above), the practical implication of adding a precautionary duty to traditional meritocracy still falls short of the duties that potential-based meritocracy requires. Traditional meritocracy, recall, does not require realizing potential, as long as inequality is caused by ability, therefore there would likely still remain a significant gap between students' abilities as demonstrated in school, and their potential. As a result, traditional meritocracy still falls short of potential-based meritocracy.

believe that the student will likely fail. This precautionary duty, unusual as it may be, is crucial in preventing the negative effects of low (and mistaken) teacher expectations. Meritocracy thus outlines a helpful way for teachers and institutions to respond to limitations of students' abilities, as well as to their (unavoidable) inclination to evaluate them.

Another possible objection to potential-based meritocracy is that focusing on the limits of specific students' abilities might obscure and legitimize structural injustices.[11] Take, for example, a case in which negative stereotypes concerning women's ability in mathematics have a disabling effect on them, making their achievements drop. Although different teachers may try repeatedly to improve a specific student's performance, including various means of strengthening their self-confidence, to the point that they fully discharge their duties of justice toward them, but if the aggregate results are that girls underachieve in math, it would seem strange to argue that no injustice ensued. The same objection might apply to racial disparities in educational outcome that stem from prejudice or from social inequality.

Indeed, as stressed above, the environment—conditions of poverty, neglect, and prejudice—interact with students' genetic traits, and together account for students' abilities. Schools are required, according to potential-based meritocracy (and other theories of justice too), to overcome environmental deprivation. Sometimes, however, the environment causes irreparable harm, such that the education system, with its best available practices, is unable to improve student ability. These cases are, no doubt, cases of injustice, but they are not, I argue, cases of *educational* injustice. Instead, these cases are better described as cases of social injustice, and the duty to address them does not lie with the education system that is unable to rectify them, but rather with other social institutions that might be better situated to make a difference. Therefore, if schools, teachers, and the education system at large have done everything in their power to improve student ability (and continue to do so, as the conditions above entail), then the education system is not unjust. Of course, most cases of unequal outcomes of the sort described, can be attributed (also) to educational injustice; there is so much more that can be done by schools and teachers for students—girls, racial minorities, and for underachievers generally—therefore, practically speaking, most cases of unequal outcomes strongly indicate that educational injustice has occurred.

Clearly, potential-based meritocracy is more demanding than "traditional" meritocracy. Inequalities that would be justified under the traditional account because they can be attributed to a child's perceived ability, would be regarded as unjust under the potential-based account, unless they are the *inescapable result of the student's limited ability*.

Alongside its demandingness, conceptualizing ability as limits makes for a more attractive account of meritocracy. It also avoids the two objections stated above and offers a response to other criticisms directed against meritocracy in the literature, that are not related to the concept of ability, as I will now explain.

[11] I thank an anonymous referee for presenting this objection.

The characteristics of potential (or ability as limits) and innate ability's characteristics, described above, are quite similar. Like innate ability, people's limitations are a function of the intertwined relations of nature and nurture. Ability and potential also share the characteristic of plasticity—they can both develop or stagnate throughout one's life, as a response to stimuli, but also without environmental cause (Meyer 2021). Because of these factual similarities, one might think that the proposed definition of ability (and its consequent account of meritocracy) is also susceptible to the two objections made above. This, however, is not the case.

Recall, the indiscernibility objection is based on the fact that natural and environmental causes are hoplelessly intertwined; it is impossible to attribute one's ability (or shares of ability) to one or the other, and therefore also impossible to isolate an individual's innate, "natural" ability from the social circumstances that influenced it.

Conceptualizing ability as a limit bypasses this challenge altogether since there is no need to determine the causes of one's limited potential. Inequality is fair, according to potential-based meritocracy, if it is the inescapable result of limited ability—whatever the causes—natural or environmental. If, on the other hand, achieving the relevant performative ability was possible with suitable help, inequality is unjust. So while traditional meritocracy had to grapple with the respective effects of nature and nurture on people's abilities, potential-based meritocracy is indifferent to this question, and is therefore better equipped to accommodate the complicated nature of human ability.

The malleability objection, which proved fatal for the traditional account of meritocracy, also does not apply to potential-based meritocracy. People's ability is not a stable natural property; it changes throughout their lives, and consequently, traditional meritocracy relies on a benchmark, namely innate ability, that simply doesn't exist. Limits on abilities, on the other hand, clearly do exist. Every human's talents are limited one way or the other. A theory that relies on limits to determine which inequalities are fair has a solid benchmark for evaluating educational outcomes: when inferior educational outcomes are the inescapable result of limited potential, the ensuing inequality is not unfair.

To be sure, diagnosing the limitations of potential can be a difficult task, and there can also be disagreement as to the extent of effort we should extend before recognizing that we have reached one's full potential. Still, limits on abilities cannot be denied categorically like innate ability can. That any confines on potential exist suffices to defend ability as potential from the criticism I directed at ability as innate talent: potential-based meritocracy provides a morally relevant standard for evaluation, namely whether inequality was inevitable given the individual's limited ability.

Further, as opposed to the traditional account, potential based meritocracy dictates a specific relevant time for evaluating potential. Since potential is evaluated ex-post, the time of measurement is derived from the educational practice being evaluated. In other words, when examining whether the outcome of a specific educational practice is fair, we examine whether a student had the potential (given suitable resources) to gain equal achievement, *when the practice took place*. To do so, we need to examine whether the education system and its teachers invested sufficient resources and made enough efforts according to the guidelines described above. When sufficient efforts were made and the outcome remains unequal, this entails

that the student lacked potential at that specific point in time. Thus, potential-based meritocracy accommodates the plasticity of human potential. It does not assume that human ability at one point is an essential property of people, and it provides a rational justification for determining students' potential at the specific point in time we do so. And, as stated above, even if unequal educational outcome is deemed fair (because it is an inescapable result of limited potential), such a determination is only temporary. Later on, educators may be required to examine whether students' abilities have developed so that the limitation no longer exists. Conceptualizing ability as limits, therefore, avoids the two objections raised above. It allows meritocracy to be appropriately responsive to the scientific knowledge about human ability, namely the iterative relations between nature and nurture and the plasticity of human ability.

Understanding ability as limits also provides a strong response to two further objections that have been made against meritocracy in the literature: first, that meritocracy abandons individuals with low academic abilities and second, that meritocracy, even perfectly realized, is unjust.

Writers have criticized meritocracy (both in the educational domain and meritocracy as a general ideal for wealth distribution) for abandoning individuals with inferior natural talent (Brighouse 2011; Roemer 1998; Segall 2013, Harel Ben Shahar 2016). Often, the same educational practices can effectively promote students' performance, regardless of whether the deficit was caused by social background or by natural disadvantage, therefore sanctioning neutralizing one but not the other, as meritocracy does, seems unjust. Imagine three students with similarly low educational achievements: one belongs to a racial minority group, one is from modest financial background, and one has lower cognitive ability. All three would benefit from a certain resource, say tutoring, and receiving them would prevent unequal educational outcome. The traditional meritocratic account warrants investing resources in the first two students but not in the third (Jencks 1988, Harel Ben Shahar 2016). This seems arbitrary and unjust. The fact that all education systems, as a matter of fact, invest efforts and resources in promoting the abilities of children with low abilities, and view it as their duty, rather than merely a voluntary practice, lends support to this intuition. Yet traditional meritocracy cannot explain this outcome. To create justice-based duties toward children with low-abilities, meritocracy needs to endorse complementary principles of justice that do address natural inequalities, such as sufficiency or priority (Brighouse and Swift 2014; Schouten 2012).

While endorsing additional principles of justice provides a solution for some of the practical worries, it does not address the more fundamental critique against meritocracy according to which the distinction between natural and social inequalities is both conceptually problematic and morally arbitrary. Moreover, the fact that one of the most important target groups for a theory of educational justice, namely students with lower abilities, is not addressed within the theory may decrease the appeal of a meritocratic principle of justice compared to a principle that can accommodate all relevantly similar cases of inequality.

A meritocratic principle of justice that understands ability in terms of limits does not run into this problem. Educational inequality resulting from any cause—natural and social—is unjust, as long as equality is obtainable in light of students' potential (and taking into consideration the effort they invested). Potential-based meritocracy

would require investing resources in all three students in the hypothetical example presented above, and therefore fares better than traditional meritocracy as a principle of educational justice.

The second general challenge concerns meritocracy as a general paradigm justifying social inequality. Sandel (2020), for example, attacks the meritocratic ethic, arguing that it offers no convincing justification for the unprecedented inequality it allows, and that it gives the mistaken impression that inequality is deserved. Meritocracy inculcates the belief that winners' success is their own doing, and that the losers have no one but themselves to blame for their misfortune. In addition to being unfair (because talent is unearned), and to allowing unprecedented economic inequality, the attitudes that meritocracy creates (hubris among winners, humiliation and resentment among losers) leave little room for solidarity, and thwarts the development of an equal political community. Education, and especially elite institutions of higher education, play a cardinal role within the general framework of meritocracy, conferring massive advantage on those deemed meritorious, and endowing them with a deep sense of entitlement to this advantage.

Could adopting a potential-based meritocracy in the educational domain improve the social ethic of meritocracy, or does the fundamental critique of meritocracy apply to all versions of the theory? Despite the fact that potential-based meritocracy developed in this paper applies particularly to the educational domain (and to K-12 at that), adopting it, I suggest, has three main implications that transcend education. The first involves undermining the myth of meritocracy; the second involves how a just education system would undermine the meritocracy at large; and finally, potential-based meritocracy could possibly be applied to further domains alongside education.

The first way in which potential-based educational meritocracy may affect the meritocratic society more broadly would be through challenging its foundational myth. Education is the primary sorting mechanism of the meritocracy, and elite universities that are the gateway into wealth and social status, serve also to legitimize significant social inequality. Introducing the idea of potential can undermine the legitimacy of selection to elite universities and the inequality that ensues, since it highlights the fact that students who are excluded from these social rewards could have been equally qualified but for educational injustice inflicted upon them. Subverting the myth of meritocracy in public discourse, even without any practical changes, is itself, important. This move is especially relevant to Sandel and others' criticism of meritocracy, that highlights the attitudes that meritocracy fosters among both winners and losers that undermine relations of equality and solidarity (Sandel 2020: 25–30; Taussig 2021).

The second possible influence of adopting potential-based meritocracy (influence that transcends K-12 education, that is) concerns university admissions. If school achievements are the primary criterion for university admission, a more equal education system would enlarge the pool of excellent candidates for higher education. Infusing the higher education system with large amounts of equally capable students could potentially decrease stratification among universities, since additional institutions would be able to admit students with roughly the same qualifications. Decreasing the exclusivity of elite institutions could potentially challenge the meritocracy

more broadly, since these institutions, with the exorbitant benefits that accrue to attending them, are a crucial building block in its "tyranny" (Sandel 2020). Admittedly, higher education institutions could attempt to maintain (and signal) their exclusivity, even if educational qualifications were equalized, by introducing alternative criteria into their selection processes. Such attempts, however, might have unexpected effects regarding the profile of students admitted, and depending on the criteria, might even change the social perception of merit. And while I concede that this possibility remains largely speculative (and I do not purport to offer a more concrete prediction), the point is that the principal of justice adopted in K-12 education could affect social meritocracy more generally.

The third and final way in which I think potential-based meritocracy might have broader effect, is through application to other domains of human activity. Learning is an activity initiated and directed by teachers who are morally responsible for the learner's development and realization of her potential. Other domains of human activity, such as the market, on the other hand, involve a plethora of different activities that are, typically, not directed from above, and in which we typically do not hold people responsible for the development of others. Therefore, the duty to "keep trying", as a way to determine the limits of ability, which is required according to the proposed meritocratic account does not seem to be adaptable to other domains apart from education.

There are contexts, however, in which this duty may apply, even to the market. For example, there may be cases in which people's low ability may prevent them from participating as equals in the workforce. Under meritocracy, jobs and opportunities in the market should be distributed according to merit—namely ability and effort. Accommodations for people with disabilities requires investing resources in people who have the potential to perform a certain job, but who cannot do so without accommodation. A potential-based version of meritocracy may place a heightened duty on employers, changing what constitutes 'reasonable accommodations', and forming an institutionalized duty to "keep trying". Employers, like teachers, would be required to assume, contra their initial assessment, that an employee is capable of performing the job, and making that extra effort to accommodate their disability. Clearly, applying potential-based meritocracy to the market requires attention to some important details. For example, while we assume that education is the state's role, employers are a mixed lot—some are public, and some private; only some of them are powerful players, while others may be unable to shoulder the significant financial burdens that this duty might entail. Therefore, the exact scope of what potential-based meritocracy would look like in the market requires further work, but we can think of cases in which (large, public) employers might be required to adopt a cautionary duty concerning the ability of workers, in order to discharge their duties of justice. Inequality in the workplace, according to this demanding account, would only be justified if it is the inescapable result of limited ability.

Before concluding, I address a final possible objection to potential-based meritocracy. One could argue that by replacing innate ability with ability as limits, meritocracy collapses into a luck egalitarian principle of justice, albeit one with a (very reasonable) proviso against wastefull investment of resources on "lost

causes". Luck Egalitarianism demands the neutralization of inequality caused by factors that individuals have no control over, including social background and also natural talent. Educational luck egalitarianism (called "the radical conception" by Harry Brighouse (2011: 29)) states the following:

> "An individual's prospects for educational achievement should be a function neither of that individual's level of natural talent or social class background but only of the effort she applies to education".

In other words, students' ability should be neutralized, along with other things that people have no control over, like class. A reasonable luck egalitarian would not, however, continue investing resources when improvement is impossible, for example, when a student has limited potential. Therefore, it might seem, at first brush, that the practical, action-guiding, implications of potential-based meritocracy are indistinguishable from luck egalitarianism, albeit one with a proviso against wasteful spending of resources: both aim to neutralize the effects of social class and ability (brute luck), except when inequality is the inescapable result of limited potential.

However, potential-based meritocracy and luck egalitarianism are, in fact, quite distinct. First, while a luck egalitarian might not require investing resources when resources are ineffective, an unequal outcome is still unjust. Conversely, according to my approach, there is no injustice in inequality resulting from limitations of potential. This also has implications in terms of what we might be required to do in order to promote equality, because investing resources is not the only possible way to promote justice. Egalitarian conceptions of educational justice such as the radical conception, are committed, at least *prima facie*, to neutralizing inequality even when investing resources is impossible or ineffective, by leveling down. In other words, when limitations of potential preclude improving the achievements of low ability students, equality can be obtained by leveling down the abilities of the higher achievers. Since egalitarians are pluralists, the requirement to level down is often offset by other values, but there is, nonetheless, at least *something* good about leveling down of educational achievement, according to a luck egalitarian theory (a commitment that has been pointed out as a major drawback for egalitarian theories of justice). As opposed to these theories, potential-based meritocracy does not call for leveling down when inequality is the result of limitations on ability, because unequal educational outcomes caused by limited potential is not unfair, even *prima facie*. This makes potential-based meritocracy analytically distinct from a luck egalitarian approach to educational justice. Further, while egalitarians think that leveling down in education is not justified most of the time, they may well think that it is justified sometimes. For example, when the intrinsic value of the educational practice that will create inequality is relatively small and the instrumental and positional aspect of the practice is dominant, leveling down might be justified, even all things considered (Harel Ben Shahar 2016). As a result, the distinction between egalitarian theories and potential based meritocracy may also have practical implications.

## 5 Conclusion

There is still important work to be done concerning student ability and its role in educational justice. Ability features in some way or another in almost all the central debates concerning educational justice, and therefore the field has a lot to gain from exploring it further. In these closing comments I suggest three possible directions for further philosophical inquiry concerning educational ability.

The first possible direction concerns the moral ramifications of widening the definition of ability beyond traditional academic ability. Following the dominant literature in the field, this paper utilizes a narrow conception of student ability that involves the kinds of skills that are typically measured by schools. There are, however, innumerable human talents, that can and perhaps should be developed in and rewarded by education systems. Assuming that different children have different talents, thinking more thoroughly about different abilities and how they may be nurtured in schools may promote more pluralistic, inclusive and egalitarian educational practices.

Another promising avenue for investigation involves characterizing the value of developing human ability. Developing human ability is indisputedly valuable, however the exact nature of that value is unclear. Is it only instrumentally valuable or is it also valuable for its own sake? And are the abilities of the gifted especially valuable or is developing ability equally valuable at all levels of ability? The answers to these questions have moral implications for issues such as justifying gifted education, determining the scope of duties toward children with disabilities, and educational priority-setting more generally.

Finally, although ability and disability are points along a continuum and share many factual and normative similarities, the discussions concerning educational justice rarely apply to the full range of ability. Often, the philosophical literature concerning principles of educational justice does not address children with intellectual disabilities at all or treats them as an exception to the rule; likewise, discussions of disability tend to focus exclusively on children with disabilities rather than linking the issues to the full scale of ability, including the gifted and the disabled. The connection between these discussions, despite its obvious relevance to both, is rarely contemplated. Thinking about these issues through the unifying concept of ability can yield helpful insights.

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