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Is Education a Fundamental Right? People's Lay Theories About Intellectual Potential Drive Their Positions on Education

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Abstract

Does every child have a fundamental right to receive a high-quality education? We propose that people's beliefs about whether "nearly everyone" or "only some people" have high intellectual potential drive their positions on education. Three studies found that the more people believed that nearly everyone has high potential, the more they viewed education as a fundamental human right. Furthermore, people who viewed education as a fundamental right, in turn (a) were more likely to support the institution of free public education, (b) were more concerned upon learning that students in the country were not performing well academically compared with students in peer nations, and (c) were more likely to support redistributing educational funds more equitably across wealthier and poorer school districts. The studies show that people's beliefs about intellectual potential can influence their positions on education, which can affect the future quality of life for countless students.

Keywords

education, right, intelligence, potential, lay theories, universal

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Without education, people all over the world may have little hope of improving their social position or life outcomes. Because people with more education have higher incomes (Bureau of Labor Statistics, 2013), are happier (Pinquart & Sörensen, 2011), have better physical health (Adler et al., 1994), and live longer (Lleras-Muney, 2005; Miech, Pampel, Kim, & Rogers, 2011), the question arises, "Do all people have a fundamental right to a high-quality education?" This question is all the more pressing given that to be successful in the increasingly global, high-technology economy, individuals need to be highly skilled and able to innovate (Hanushek & Woessmann, 2008; Trani & Holsworth, 2010), both of which are nearly impossible to achieve if people do not receive a high-quality education.

In this article, we argue that people's lay theories about intellectual potential drive their positions on education. Lay theories are people's naïve assumptions about the nature of different characteristics (Dweck, 2000). People's lay theories about intellectual potential refer to their beliefs about the distribution of intellectual potential (the capacity to exhibit high intelligence) across the population (Rattan, Savani, Naidu, & Dweck, 2012). Some believe that nearly everyone has high intellectual potential (the *universal belief*). Others believe that only some people have high intellectual potential (the *nonuniversal belief*).

Past research on this lay theory has demonstrated individual and cultural differences in people's beliefs about whether nearly everyone or only some people possess high intellectual potential (Rattan et al., 2012). For example, in both the United States and India, some people view intellectual potential as universal and others as nonuniversal. Furthermore, on average, U.S. Americans are more likely than South Asian Indians to believe that intellectual potential is *non*universal. After identifying these cross-national differences, past research explored a consequence of these lay theories within the United States: People who believed that only some individuals have high intellectual potential were less willing to address existing inequity in how educational funds are distributed across school districts (e.g., schools in richer districts receiving much more educational funding than schools in poorer districts). In contrast, people who believed that nearly everyone has high intellectual potential

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were more likely to support reallocating educational funding more evenly across schools in wealthier and poorer school districts (Rattan et al., 2012).

Although this past work identified a new dimension on which people's beliefs about intellectual potential vary, and identified how people's beliefs on this dimension influence their support for reducing inequity in the context of school funding, the research did not identify the underlying mechanism explaining this relationship. That is, researchers have not addressed the more basic question of *why* people who believe that nearly everyone has high intellectual potential support reallocating educational funding more equitably across wealthier and poorer school districts. Because of this, it is unclear in what other ways people's beliefs about intellectual potential might influence their attitudes about education. The current research seeks to address both of these questions. We propose that (a) people's beliefs about whether nearly everyone or only some people have high intellectual potential will influence whether they view education as a fundamental human right and (b) their policy attitudes will follow from this construal of education.

Construing Education as a Right

We propose that people's beliefs about intellectual potential would influence their positions on whether education is a basic right. We theorize that all people want individuals with high intellectual potential to actualize their potential, and educational opportunity is the means to achieve this end. For people who believe that nearly everyone has high intellectual potential, this line of reasoning applies to virtually everyone; thus, we predict that these people will tend to view education as a fundamental human right. For people who believe that only certain individuals have high intellectual potential, however, this line of reasoning only applies to a portion of the population; thus, we predict that these people will be less likely to view education as a fundamental right.

If people's beliefs about intellectual potential influence the extent to which they view education as a right, these beliefs might also (indirectly) influence people's attitudes about educational practices and policies more generally. We propose that if people view education as a fundamental human right, in turn (a) they would want to support the institution that can help deliver this right—free and compulsory, publicly supported education; (2) they would be more concerned if students in the country are not performing well academically, because it means that their right to education is not being realized; and (3) they would want to rectify inequity in education, because fundamental rights should be equally available to everyone. We discuss each of these education policies below.

Support for Public Investment in Education

The question of whether public investment in education ought to be maintained is a critical issue facing education today (Ravitch, 2014). If people who believe that nearly everyone has high intellectual potential view education as a fundamental right, they might see collectively funded public education as a means for allowing everyone to realize their right to education. In contrast, if people who believe that only some people have high intellectual potential do not view education as a right, they might be more open to reducing the public's investment in education. Thus, we hypothesize that through the construal of education as a right, a universal intellectual potential belief would increase people's support for public education. As long as free, publicly supported education remains as one of the defining institutions of modern civil society in the United States and many other countries, understanding people's mindsets that increase or decrease their support for this institution is of paramount theoretical and practical importance.

Concern With Poor Educational Outcomes

In addition to examining people's support for continued public investment in education, we investigated how concerned people are when they learn that students in the country, on average, are not performing very well academically. Recent statistics show that U.S. students' educational performance lags behind that of students in most other industrialized nations. For example, on the Program for International Student Assessment (PISA), the international standard for comparing students' educational outcomes across nations, U.S. students scored below average in math literacy (30th among 54 nations) and about average in science (23rd) and reading literacy (20th; Organisation for Economic Co-Operation and Development [OECD], 2013). We reasoned that if people believe that nearly all students have high intellectual potential, then they might infer that if students in the country are not doing well academically, it is likely because students are not receiving a good enough education, which means that their right to education is going unfulfilled. Therefore, we predicted that the more people believe that everyone has high intellectual potential, and therefore, the more they view education as a right, the more disturbed they would be upon learning that students in the United States are not performing well academically.

Support for Distributing Educational Resources More Evenly

Support for public investment in education and concern about students' poor academic outcomes are two aspects of people's broader support for public education that we investigate for the first time in this article. Yet, at the outset of this study, we theorized that people's construal of education as a right is the mechanism explaining why people's universal–nonuniversal beliefs relate to their attitudes about education policy, including people's attitudes about redistributing educational funds more equitably across wealthier and poorer school districts (Rattan et al., 2012). We reasoned that this

would be the case because if people who believe that nearly everyone has high intellectual potential view education as a fundamental right that is equally applicable to everyone, then they are likely to believe that each person deserves an equal investment in their education—only then would every person have the same opportunity to realize their right and their inherent intellectual potential. Therefore, we tested whether people's view of education as a right would mediate the relationship between their beliefs about intellectual potential and the extent to which they support redistributing educational funds.

Lay Theories About the Malleability of Intelligence

Although our focus in this work is on people's beliefs about whether everyone or only some people have high intellectual potential, extensive previous research has studied whether people believe that intelligence cannot be changed (a *fixed mindset*) or can be grown and developed over time (a *growth mindset*; Dweck, 1986; Dweck & Leggett, 1988). Theoretically, people's beliefs about whether intelligence is fixed or can be developed do not necessarily constrain their beliefs about whether nearly everyone or only some people have high intellectual potential. For example, some people might believe that people's intelligence is fixed, and that nearly everyone has a fixed high level of intelligence. It is simply the case, they may believe, that not everyone has had the chance to draw out or capitalize on their existing intellectual potential. We would say that these people hold a combination of the fixed mindset and the universal belief. Some people might believe that people's intelligence can increase over time, but that not everyone's intelligence can increase to the same extent. These people would hold a combination of the growth mindset and the nonuniversal belief. The other combinations are also possible: People may believe that intelligence is fixed and that only some people have high intelligence (the fixed mindset and the nonuniversal belief), or they may believe that everyone's intelligence can grow to the same high level, implying that everyone has high intellectual potential (the growth mindset and the universal belief).

Past research has provided empirical support for the above theoretical arguments (Rattan et al., 2012). Specifically, it found that the universal–nonuniversal belief and the fixed-growth mindsets are only moderately or weakly correlated. Furthermore, these two beliefs at times predicted different types of outcomes. The more people believed that intelligence can grow over time, and the more they viewed intellectual potential as universal, the more they supported providing greater educational resources to all students. However, the beliefs diverged in whether they predicted people's support for rectifying inequity. People who believed that intelligence can grow over time were not more likely to support reducing inequity in the distribution of educational funds by taking resources from more affluent schools and giving to poorer schools, presumably because they did not want to sacrifice one group's growth for another's. However, people who believed that nearly everyone has high intellectual potential supported redistributing educational resources more equitably across communities. Although past work has distinguished fixed-growth mindsets and universal–nonuniversal beliefs both theoretically and empirically, we also test the role of fixed-growth mindsets in the current work.

Overview of Studies

We present three studies testing our hypotheses. Study 1 tested whether the more people believe that nearly everyone has high intellectual potential (the *universal belief*), the more likely they are to construe education as a fundamental right. Study 2 assessed whether people who view education as a right, engendered by a more universal belief about intellectual potential, are more likely to support public education. Specifically, we tested three dimensions of people's support for public education: How opposed are they to reducing the public's investment in education, how concerned are they about U.S. students' poor education outcomes, and how much do they support redistributing resources more equitably across wealthier and poorer communities. Supplementing these correlational studies with an experimental design, Study 3 assessed whether, compared with people exposed to the idea that only some people have high intellectual potential, those exposed to the idea that nearly everyone has high intellectual potential would be more likely to view education as a right, which would predict increased support for continued public investment in education and greater concern about students' poor educational outcomes.

Study 1

Study 1 tested our core prediction that the more people believe that nearly everyone has high intellectual potential, the more they would view education as a fundamental right.

Method

Participants. As this was the first study measuring the right to education, we did not have any basis for conducting a power analysis. Therefore, we decided on a sample size of 200. A survey seeking 200 U.S. residents was posted on Amazon Mechanical Turk. In response, 201 participants (90 women, 111 men; mean age 37.43 years; all U.S. residents) completed the survey.

Measures. We assessed people's universal–nonuniversal lay belief and their fixed-growth mindset using Rattan et al.'s (2012, Study 2) measures. To ensure that all participants had a common understanding of intelligence, we first told them, "Think about intelligence, which means people's general ability to reason, plan, solve problems, think abstractly,

comprehend complex ideas, learn quickly, and learn from experience."

To measure the universal–nonuniversal belief, we asked participants, "Do you believe that almost all people have the potential to become highly intelligent at some point in their life, or that only some people have the potential to become highly intelligent?" Participants responded on a scale ranging from the universal belief, 1 = "almost all people have the potential to become highly intelligent," to the nonuniversal belief, 20 = "only some people have the potential to become highly intelligent."

To measure the fixed-growth mindset, we asked participants, "In general, how much do you think people can improve their intelligence over time? Do you believe that people can improve their intelligence a lot over time, or that people cannot improve their intelligence a lot over time?" Participants responded on a 20-point scale ranging from the fixed mindset, 1 = "intelligence cannot be changed much over time," to the growth mindset, 20 = "intelligence can be changed a lot over time."

To assess the extent to which participants viewed education as a right, we asked participants to indicate their level of agreement with five items (e.g., "All children have a right to have access to the highest quality of education possible"; "The right to the highest quality of education possible is as basic a human right as the right to free speech"). Participants responded on a 6-point scale ranging from "strongly disagree" to "strongly agree."

Participants then completed a demographic questionnaire, in which we assessed their political orientation on a 7-point scale ranging from "very conservative" to "very liberal." Participants were also asked, "Did you encounter any technical problems during the survey?" (see Savani & Rattan, 2012). Following a predetermined criterion applied consistently across all studies, 14 participants who selected "Yes" in response to this question were excluded prior to the analyses.

Results

To increase ease of interpretation, we reverse-coded the universal–nonuniversal belief measure such that higher numbers indicated a more universal belief. We then standardized both the universal–nonuniversal and the fixed-growth measures to range from 0 to 1. The five items measuring construal of education as a right were highly intercorrelated, $\alpha = .91$, and thus were averaged. Table S1 presents the means, standard deviations, and correlations among all study variables (see Supplementary Materials).

We first ran a regression with participants' construal of education as a right as the dependent variable, and their two beliefs about intelligence as predictors. As hypothesized, the more people believed that everyone has high intellectual potential, the more they construed education as a basic right, $B = .80$, 95% CI = [0.25, 1.35], $SE = .28$, $t(184) = 2.88$, $p = .004$. Participants' beliefs about whether intelligence is fixed or can grow did not predict the extent to which they viewed education as a right, $B = .34$, 95% CI = [−0.29, 0.97], $SE = .32$, $t(184) = 1.06$, $p = .29$.

Given that participants' political ideology may relate to their support for public investment in education, we ran another regression adding political orientation as a third predictor. As a number of participants did not respond to the political orientation question, the effective sample size dropped from 187 to 124. Participants' universal belief significantly predicted the extent to which they viewed education as a right, $B = .73$, 95% CI = [0.11, 1.34], $SE = .31$, $t(120) = 2.33$, $p = .02$. Participants' political orientation was also a significant predictor, with more liberal participants more likely to view education as a right, $B = .20$, 95% CI = [0.11, 0.29], $SE = .045$, $t(120) = 4.51$, $p < .001$. Controlling for political orientation and with the smaller sample, the fixed-growth mindsets became a significant predictor, such that the more participants believed that intelligence can grow, the more they viewed education as a right, $B = .81$, 95% CI = [0.16, 1.47], $SE = .33$, $t(120) = 2.47$, $p = .02$.

Discussion

Study 1 supported our key hypothesis that the more people believed that everyone has high intellectual potential, the more they viewed education as a basic right. To our knowledge, this study is the first to identify a general belief underlying people's views of education as a fundamental human right. Participants' beliefs about the universality of intellectual potential predicted whether they construed education as a right above and beyond both their beliefs about the malleability of intelligence and their political ideology. Participants' beliefs about the malleability of intelligence were associated with their construal of education as a right only after controlling for their political ideology. As this was not an expected pattern of results, we assessed participants' fixed-growth mindsets again in Study 2 to test whether this finding is robust.

Study 2

The goal of Study 2 was to replicate Study 1's finding that people who believe that everyone has high intellectual potential are more likely to view education as a right, as well as to test whether people who view education as a right are more likely to support public education. To operationalize support for public education, we investigated people's support for continuing the public's investment in education, and their concern when confronted with the finding that students in the nation are performing poorly academically compared with peer nations. In addition, we also tested whether people who view education as a right would be more likely to support redistributing educational funds equitably across wealthier and poorer school districts, which was studied in past

research (Rattan et al., 2012). Finally, we measured participants' other beliefs and motivations that might be potentially related to their view of education as a right and their support for public education, including protestant work ethic (Mirels & Garrett, 1971), belief in meritocracy (Davey, Bobocel, Hing, & Zanna, 1999), social dominance orientation (Ho et al., 2012; Sidanius, Levin, Liu, & Pratto, 2000), system justification (Kay & Jost, 2003), color blindness (Knowles, Lowery, Hogan, & Chow, 2009), belief in free will (Paulhus & Margesson, 1994), and distributive justice (Kluegel & Smith, 1986).

Method

Participants. A power analysis based on the correlation between participants' universal–nonuniversal beliefs about intellectual potential and their construal of education as a right in Study 1 ($r = -.273$), $\alpha = .05$, indicated that we need a sample size of 103 to have 80% power to detect a significant correlation. However, to ensure high power, we decided on a larger sample size of 400. A survey seeking 400 U.S. residents was posted on Amazon Mechanical Turk. In response, 412 participants completed the survey. Of these, we only included 408 participants who indicated that they were U.S. residents (222 women, 184 men, 2 unreported; mean age 35.54 years).

Measures. To assess whether Study 1's finding is robust, instead of using single items to measure participants' beliefs about intelligence, we measured participants' universal–nonuniversal beliefs using a four-item measure taken from Rattan et al. (2012, Study 6; sample item: "Everyone has the potential to become very intelligent if they really want to"). We measured their fixed-growth mindsets using a 4-item measure taken from Dweck (2000; sample item: "To be honest, people can't really change how intelligent they are"). We measured the extent to which participants viewed education as a right using the same 5-item measure as in Study 1. Participants responded to these three measures on a 6-point scale ranging from "strongly disagree" to "strongly agree."

To assess participants' support for continued public investment in education, we asked them to indicate their agreement or disagreement with four policies that reduce the public's financial contribution to public education (e.g., allowing parents who send their children to private schools to not pay property taxes that support local public schools; limiting property taxes to families with children rather than to the entire community). Participants responded on a 6-point scale ranging from "strongly disagree" to "strongly agree."

To assess participants' concern with students' relatively poor academic performance, we presented them with eight factually correct statistics comparing the United States to other OECD nations (taken from OECD, 2004, 2006, 2007a, 2007b). Sample items include the following: (a) "Recent statistics show that the United States ranks 21 out of the 30 richest countries in the world in terms of *the average number of years of education that citizens receive*. (Citizens of Australia and the United Kingdom have on average 4 more years of education than American citizens)" and (b) "Recent statistics show that the United States ranks 25 out of the 30 richest countries in the world in terms of *high school students' mathematics knowledge*. (In other words, high school students in 24 of the 30 richest countries have *more math knowledge* than American students.)" After each statistic, participants were asked, "How disturbed are you by this information?" and responded on a 7-point scale ranging from "not at all disturbed" to "extremely disturbed."

Finally, we measured participants' support for redistributing public education funds more equitably across wealthier and poorer school districts using the four-item measure from Rattan et al. (2012, Study 6). Participants responded on a 6-point scale ranging from "strongly oppose" to "strongly support."

We also measured other beliefs and motivations about people's tendency to legitimize inequality and to support the existing system, which could be related to their beliefs about intellectual potential, their view of education as a right, or their support for public education: protestant work ethic[1] (Mirels & Garrett, 1971), belief in meritocracy (Davey et al., 1999), social dominance orientation (Ho et al., 2012; Sidanius et al., 2000), system justification (Kay & Jost, 2003), color blindness (Knowles et al., 2009), belief in free will (Paulhus & Margesson, 1994), and distributive justice (Kluegel & Smith, 1986). Participants responded to these measures on a 6-point scale ranging from "strongly disagree" to "strongly agree."

Participants also completed a demographic questionnaire, in which we assessed their political orientation on three items with 7-point scales ranging from "very conservative" to "very liberal," "very right" to "very left," and "very Republican" to "very Democratic." As in Study 1, participants were also asked, "Did you encounter any technical problems during the survey?" Following a predetermined criterion applied consistently across all studies, eight participants who selected "Yes" in response to this question were dropped prior to the analyses.[2]

Results

Table S2 presents the internal reliabilities, means, standard deviations, and correlations for all study variables (see Supplementary Materials).

Confirmatory factor analyses (CFAs). We conducted a series of CFAs to test whether the six key variables of interest represent distinct constructs. The initial CFAs tested whether the key independent variable— universal–nonuniversal belief about intellectual potential—was distinct from the fixed-growth mindsets about intelligence and the putative mediator, construal of education as a right. Two nested CFAs

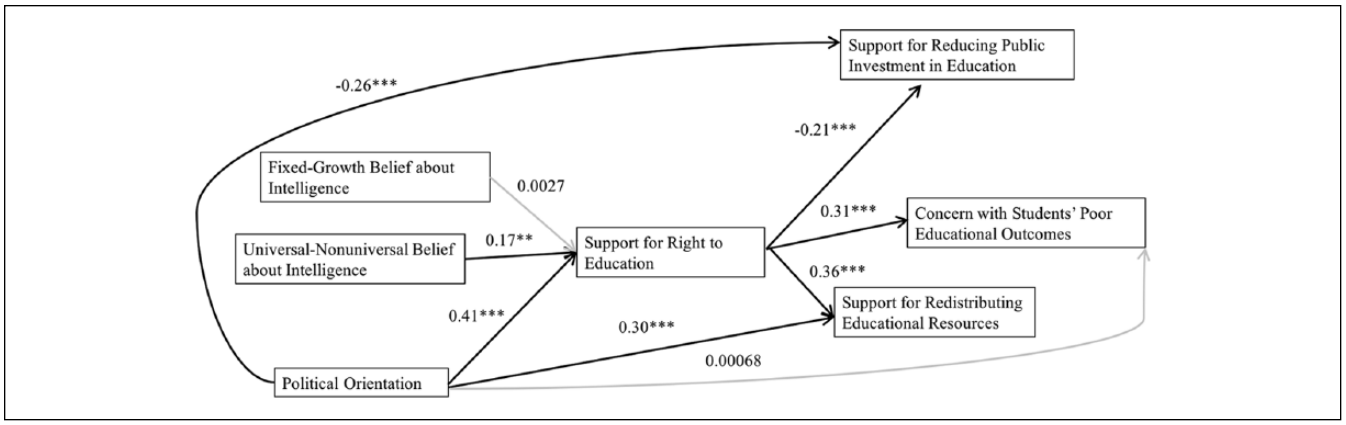

Figure 1. Results of structural equation modeling in Study 2.
*p < .05. **p < .01. ***p < .001 (two-tailed).

indicated that a two-factor model fits the universal–nonuniversal belief and fixed-growth mindsets measures, root mean square error of approximation (RMSEA) = .117, confirmatory fit index (CFI) = .964, $\chi^2(df = 19) = 121.09$, better than a one-factor model, RMSEA = .252, CFI = .826, $\chi^2(df = 20) = 517.05$, $\Delta\chi^2(df = 1) = 395.96$, $p < .0001$. Furthermore, a two-factor model fits the universal–nonuniversal belief and education as a right measures, RMSEA = .086, CFI = .962, $\chi^2(df = 26) = 102.18$, better than a one-factor model, RMSEA = .313, CFI = .474, $\chi^2(df = 27) = 1069.53$, $\Delta\chi^2(df = 1) = 967.35$, $p < .0001$.

We next tested whether the mediator was distinct from each of the three dependent measures. Nested CFAs found that a two-factor model fits the education as a right and support for continued public investment in education measures, RMSEA = .047, CFI = .983, $\chi^2(df = 26) = 48.$, better than a one-factor model, RMSEA = .154, CFI = .812, $\chi^2(df = 27) = 277.88$, $\Delta\chi^2(df = 1) = 229.43$, $p < .0001$. Similarly, a two-factor model fits the education as a right and concern with students' poor educational outcomes, RMSEA = .133, CFI = .888, $\chi^2(df = 64) = 496.05$, better than a one-factor model, RMSEA = .233, CFI = .641, $\chi^2(df = 65) = 1414.85$, $\Delta\chi^2(df = 1) = 918.80$, $p < .0001$. Furthermore, a two-factor model fits the education as a right and support for redistributing public education funds more equitably measures, RMSEA = .067, CFI = .968, $\chi^2(df = 26) = 72.35$, better than a one-factor model, RMSEA = .136, CFI = .866, $\chi^2(df = 27) = 222.65$, $\Delta\chi^2(df = 1) = 150.30$, $p < .0001$.

The final set of CFAs found that a three-factor model fits the three dependent measures—continued public investment in education, concern with students' poor educational outcomes, and redistributing public education funds, RMSEA = .111, CFI = .863, $\chi^2(df = 101) = 578.72$—better than a one-factor model, RMSEA = .158, CFI = .713, $\chi^2(df = 104) = 1102.02$, $\Delta\chi^2(df = 3) = 523.30$, $p < .0001$. Thus, the CFAs indicated that the constructs measured are distinct components of support for public education.

Structural equation modeling (SEM). We next ran a structural equation model with three independent variables (participants' universal–nonuniversal beliefs, fixed-growth mindsets, and political orientation), predicting the mediator (view of education as a right), and the mediator and political orientation predicting the three outcome variables (participants' support for reducing public investment in education, their concern with the poor educational outcomes, and their support for redistributing public education funds more equitably). Covariances among the three independent variables and among the three dependent variables were estimated. Figure 1 presents the results of the SEM. The model had good fit, RMSEA = .061, CFI = .975, standardised root mean square residual (SRMR) = .028, $\chi^2(df = 6) = 14.99$, $p = .02$.

As predicted, the more participants believed that everyone has high intellectual potential, the more they viewed education as a right, $\beta = .17$, 95% CI = [0.05, 0.30], $p = .006$. However, participants' beliefs about whether intelligence is fixed or can grow were unrelated to their view of education as right, $\beta = .0027$, 95% CI = [−0.12, 0.13], $p = .97$. As hypothesized, participants who viewed education as more of a right were more opposed to reducing public investment in education, $\beta = -.21$, 95% CI = [−0.31, −0.11], $p < .001$; were more concerned about students' poor academic performance, $\beta = .31$, 95% CI = [0.22, 0.41], $p < .001$; and more strongly supported redistributing public education funds equitably between wealthier and poorer school districts, $\beta = .36$, 95% CI = [0.28, 0.45], $p < .001$.

Alternate models. We next ran seven additional structural equation models in which we added one of the seven additional variables measured (protestant work ethic, belief in meritocracy, social dominance orientation, system justification, color blindness, belief in free will, and distributive justice) both as a predictor of education as a right and as a predictor of the three outcome variables. The primary effects of interest, that is, the effect of universal–nonuniversal

beliefs on education as a right, and the effects of education as a right on the three dependent variables, stayed significant in all seven models, p's < .05. Table S3 presents the results of the additional seven models (see Supplementary Materials).

Tests of indirect effects. We next used the bootstrapping approach outlined by Preacher and Hayes (2004) to test for indirect effects of universal–nonuniversal beliefs on each of the dependent measures through construal of education as a right. We controlled for participants' fixed-growth mindsets and political orientation in these analyses to be consistent with the SEM reported previously. With reference to support for reducing public investment in education, a bootstrap analysis with 5,000 iterations indicated that the 95% bias-corrected CI for the indirect effect (standardized indirect effect = −.04) excluded zero, 95% CI = [−0.08, −0.01]. Similarly, with reference to concern with students' poor academic outcomes, a bootstrap analysis (with 5,000 iterations) indicated that the 95% bias-corrected CI for the indirect effect (standardized indirect effect = .06) excluded zero, 95% CI = [0.02, 0.11]. Finally, with reference to support for redistributing public education funds equitably, a bootstrap analysis (with 5,000 iterations) indicated that the 95% bias-corrected CI for the indirect effect (standardized indirect effect = .05) excluded zero, 95% CI = [0.01, 0.09]. These results offer additional support for indirect effects of the universal–nonuniversal beliefs on the three outcome variables through participants' view of education as a right.

Discussion

Study 2 replicated the main finding of Study 1: The more people believed that everyone has high intellectual potential, the more likely they were to view education as a right. In turn, the more people viewed education as a right, the more they opposed reducing the public's investment in education and the more concerned they were about students' poor academic performance. Further, we found that the previously documented relationship between people's beliefs about the universality of intellectual potential and their support for redistributing public education funds more equitably was mediated through their construal of education as a right. These relationships held even after controlling for a number of beliefs and motivations related to people's tendency to legitimize inequality and to support the existing system: protestant work ethic, belief in meritocracy, social dominance orientation, system justification, color blindness, belief in free will, and distributive justice.

Notably, the hypothesized relationships were significant even after controlling for participants' beliefs about whether intelligence is fixed or can grow, and their political ideology. Unlike Study 1, we did not find any significant effects of participants' fixed-growth mindsets even after controlling for their political ideology, suggesting that the finding from Study 1 was not consistent across samples.

Study 3

Studies 1 and 2 provided correlational evidence for our core hypotheses. The goal of Study 3 was to provide experimental evidence for the idea that people's beliefs about whether everyone or not everyone has high intellectual potential exert a causal influence on the extent to which they view education as a right. In addition, we sought to address a potential limitation of the previous studies. In the earlier studies, our measure of education as a right could be perceived as leading, given that all items were framed as advocating the idea of a right to education, thus potentially conveying to participants that the researchers wanted them to indicate that they think of education as a right. To address this potential issue, we revised the measure of right to education in the current study to frame all items in the negative, such that all items stated that people do not have a right to education.

Method

Participants. We conducted a power analysis based on an effect size of Cohen's d = .56, taken from Rattan et al. (2012, Study 4), which manipulated participants' universal–nonuniversal beliefs and examined their support for redistributing public education funds. A sample size of 104 was needed to have 80% power to detect a significant effect with α = .05. However, to ensure high power, we decided on a larger sample size of 400. A survey seeking 400 U.S. residents was posted on Amazon Mechanical Turk. In response, 433 participants completed the survey. Of these, we only included 429 participants who indicated that they were U.S. residents (246 women, 183 men; mean age = 33.96 years).

Manipulation. To manipulate whether participants believed that nearly everyone or only some people have high intellectual potential, we used the "news article" methodology that has often been used to manipulate people's beliefs about the malleability of human characteristics (e.g., Chiu, Hong, & Dweck, 1997; Rattan & Dweck, 2010). Specifically, we asked participants to read articles (approximately 400 words long) that described "scientific research" arguing that either nearly everyone or only some people have high intellectual potential (see Supplementary Materials). To increase readability of the article to an online audience, we divided the article into seven paragraphs, and presented each paragraph on a separate screen. After participants read the article, we asked them to summarize the main point of the article in two to three sentences. In addition, after three filler questions, we also asked participants, "How much do you agree with the main point communicated by the article?" Participants responded on a 7-point scale ranging from "not at all" to "extremely."

External manipulation check. In an external manipulation check, we randomly assigned 99 participants recruited from Amazon Mechanical Turk to read either the universal article

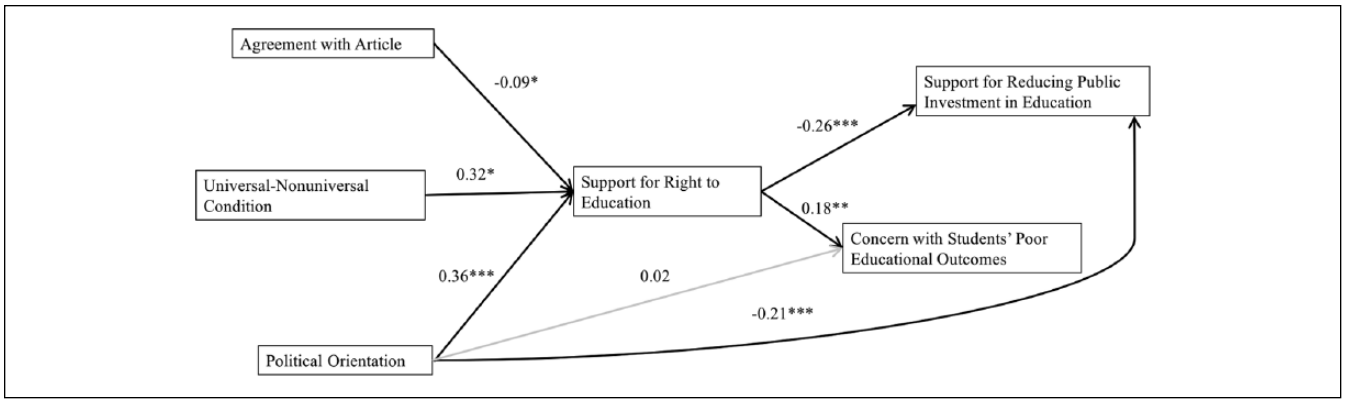

Figure 2. SEM model in Study 3.
Note. SEM = structural equation modeling.
*p < .05. **p < .01. ***p < .001 (two-tailed).

or the nonuniversal article. We then administered the single-item measure of the universal–nonuniversal belief and the single-item measure of the fixed-growth mindsets used in Study 1. We reverse-coded the universal–nonuniversal measure such that higher numbers indicated greater agreement with the universal belief. We found that participants in the universal article condition were more likely to agree with the universal belief, M = 11.50, SD = 6.19, than those in the nonuniversal article condition, M = 8.90, SD = 4.94, $t(97)$ = 2.31, p = .023. However, participants in the universal article condition, M = 13.63, SD = 5.47, and the nonuniversal article condition, M = 13.12, SD = 4.40, did not significantly differ in their fixed-growth mindsets, $t(97)$ = .51, p = .61. Therefore, our experimental manipulation influenced the targeted universal–nonuniversal belief but not the fixed-growth mindsets.

Measures. After participants read the article, we presented them with a new scale measuring education as a right (sample item: "The costs of providing the highest quality education to all students would be too prohibitive"). All items in this scale were reverse-scored so that higher numbers indicated greater agreement with the right to education. Participants then completed the measures of support for reducing public investment in education and concern with students' poor academic outcomes used in Study 2.

Participants also completed a demographic questionnaire, in which we assessed their political orientation on three 7-point scales ranging from "very conservative" to "very liberal," "very right" to "very left," and "very Republican" to "very Democratic." As in Study 1, participants were also asked, "Did you encounter any technical problems during the survey?" Following a predetermined criterion applied consistently across all studies, 14 participants who selected "Yes" in response to this question or did not answer this question were dropped prior to the analyses.

Results

Table S4 presents the means, standard deviations, scale alphas, and correlations among all study variables (see Supplementary Materials). The extent to which participants agreed with the main point communicated by the article used in the manipulation did not significantly differ across conditions, $M_{\text{Nonuniversal}}$ = 4.34, SD = 1.69, $M_{\text{Universal}}$ = 4.09, SD = 1.86, $t(412)$ = 1.43, p = .15. However, to control for common method bias (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003), and to be consistent with past research (Rattan et al., 2012), we controlled for participants' agreement with the article used in the manipulation in the following analyses.[3]

We analyzed the data using SEM. The model tested whether participants' experimental condition, their agreement with the article, and their political orientation predicted the extent to which they viewed education as a right, and whether participants' political orientation and the extent to which they construed education as a right predicted their support for reducing public investment in education and their concern for students' poor academic outcomes. Figure 2 presents the results of the SEM model, which had acceptable fit, RMSEA = .067, CFI = .959, SRMR = .032, $\chi^2(df = 5)$ = 14.42, p = .013. There was a significant effect of the experimental manipulation: Participants randomly assigned to read the article claiming that everyone has high intellectual potential were more likely to view education as a right than those randomly assigned to read the article claiming that only some people have high intellectual potential, β = .32, 95% CI = [0.067, 0.58], p = .013. Furthermore, the more participants viewed education as a right, the less they supported reducing public investment in education, β = −.26, 95% CI = [−0.33, −0.19], p < .001, and the more concerned they were about learning about students' poor educational outcomes, β = .18, 95% CI = [0.077, 0.28], p = .001.

We next compared this model against an alternate model in which view of education as a right was treated as an

outcome variable rather than a mediator. The resulting model had worse fit, RMSEA = .218, CFI = .742, SRMR = .064, $\chi^2(df = 3) = 61.77$, $p < .001$, $\Delta\chi^2(df = 2) = 47.35$, $p < .001$. Therefore, the mediation model was superior to the nonmediational model.

In a third model, we tested whether there are direct effects of people's beliefs about intellectual potential on the two outcome variables (support for reducing public investment in education and their concern for students' poor academic outcomes) but did not find these to be significant, p's > .60. This model had worse fit than the original model without direct effects, RMSEA = .094, CFI = .952, SRMR = .031, $\chi^2(df = 3) = 13.98$, $p = .003$, $\Delta\chi^2(df = 2) = .44$, $p = .20$.

We next used the bootstrapping approach outlined by Preacher and Hayes (2004) to test for indirect effects of the experimental manipulation on the two outcomes through viewing education as a right. We controlled for participants' political orientation and their agreement with the article presented in the manipulation to be consistent with the SEM model reported previously. With reference to support for reducing public investment in education, a bootstrap analysis with 5,000 iterations indicated that the 95% bias-corrected CI for the indirect effect (standardized indirect effect = −.09) excluded zero, 95% CI = [−0.17, −0.02]. Similarly, with reference to concern with students' poor academic outcomes, a bootstrap analysis (with 5,000 iterations) indicated that the 95% bias-corrected CI for the indirect effect (standardized indirect effect = .06) excluded zero, 95% CI = [0.01, 0.15]. These results offer support for indirect effects of the universal–nonuniversal manipulation on the two outcome variables through participants' view of education as a right.

Discussion

Study 3 provided experimental evidence for the key idea that compared with people exposed to the idea that only some individuals have high intellectual potential, those exposed to the idea that nearly everyone has high intellectual potential were more likely to construe education as a fundamental right. People who were more likely to view education as a right, in turn, were more opposed to reducing public investment in education and were more concerned about students' poor academic outcomes.

General Discussion

Three studies supported the hypothesis that people's beliefs about the universality of intellectual potential underlie their position on education. Study 1 found that the more people believed that nearly everyone has high intellectual potential (a universal belief) the more they viewed education as a basic right. Study 2 replicated this relationship and found that the more people viewed education as a right, the more they supported continued public investment in education, the more concerned they were upon learning that students in the United States were performing worse academically than students in peer nations, and the more they supported redistributing public education funding more equitably across wealthier and poorer school districts. Study 3 provided experimental evidence for the link between people's universal–nonuniversal beliefs and their view of education as a right, and found significant indirect effects of people's universal–nonuniversal beliefs on their continued public investment in education and their concern about students' poor academic outcomes through their view of education as a right.

Implications and Future Directions

Empirical research in psychology has examined factors that affect whether individuals and groups value education (DiPrete & Buchmann, 2006; Sue & Okazaki, 1990). Other research has attempted to explain nations' commitment to education based on ecological differences, such as the availability of natural resources (Gylfason, 2001). To our knowledge, no empirical social psychological research has previously examined the psychological factors underlying whether people view education as a right. Thus, the current studies provide the first investigation of what determines whether people view education as a basic right for all members of society.

Citizen's support for education as a fundamental right is particularly critical given the far-reaching consequences of education for both individuals and nations. For example, average academic achievement across a national population predicts the earnings of the average resident, the distribution of income within the nation, and the nation's subsequent economic growth (Hanushek & Woessmann, 2008, 2012) Therefore, to the degree that nations want to increase their competitiveness in the global marketplace, economic arguments alone would recommend increased support for residents' education. However, our findings suggest that the public might not support education as much if they hold a more nonuniversal belief about intellectual potential. Our findings also suggest that people's beliefs about whether nearly everyone or only some people have high intellectual potential can be shaped, and this raises the possibility that messages about intelligence as universal versus nonuniversal may be an important, but to date overlooked, component of representations and discourses about education.

We must note that the studies reported here were only conducted with participants from the United States. The dependent measures investigated were also U.S.-specific, such as concern with the U.S. students' poor educational outcomes compared with students from other industrialized countries. Given that past research already shows cross-cultural variance in people's universal–nonuniversal lay beliefs (Rattan et al., 2012), we suggest that future research can investigate whether the same pattern of findings holds with people in other countries, including countries that similarly have a long tradition of free and compulsory public education (e.g.,

Germany) and ones in which public education is a more recent phenomenon (e.g., South Korea). It may be that these lay beliefs serve as predictors of education policy only in nations in which the question of public education as a fundamental right is being debated, and not in nations where recent consensus has been achieved about education as a right.

All three studies found that people who believed that only some individuals have high intellectual potential were less likely to view education as a fundamental right. Does this mean that people with a nonuniversal belief simply do not care about education? We speculate that everyone, irrespective of their lay theories about intellectual potential, believes that individuals with intellectual potential should receive quality education. However, people with a nonuniversal perspective are more likely than those with a universal perspective to believe that only those individuals who possess high intellectual potential should receive a good quality education, not those who do not possess intellectual potential. Therefore, people with a nonuniversal belief might not view education as a fundamental right for everyone, but as a resource that needs to be provided first and foremost to individuals who possess intellectual potential. Future research can test these ideas explicitly.

Do universal–nonuniversal beliefs influence people's actual behavior? We found relationships between people's beliefs about intellectual potential and their attitudinal support for public education, such as continuing the public's investment in education and reducing inequity in the amount of public education funds that different school districts receive. Future research should bridge the attitude–behavior gap by investigating whether people's beliefs about intellectual potential influence their behavior, such as whether they vote for budget proposals to increase funding for public education or to redistribute educational funds across school districts.

Although the present research examined people's view of education as a right as the mechanism explaining the link between their universal–nonuniversal beliefs about intellectual potential and their support for public education, future research can also investigate complementary explanations that might be derived from a motivated cognition perspective. For example, perhaps people who believe that only some people have high intellectual potential are less concerned about students' poor educational outcomes because these facts support their lay theory (i.e., if not everyone has potential, then not everyone will succeed academically). In contrast, people who believe that nearly everyone has high intellectual potential might be more concerned because these facts contradict their universal beliefs (i.e., if everyone has high potential, then something must be wrong if students are not succeeding academically). Future research can examine the motivational dynamics accompanying people's universal versus nonuniversal beliefs about intellectual potential.

Researchers have often connected people's support for social policies with system justification (Jost & Banaji, 1994), the idea that people are motivated to defend the current sociopolitical system. One might ask whether the current findings can be explained from a system justification perspective. Taken together, the outcome variables that we examined in the present research suggest not. We find that people who view education as a right supported continuing public investment in education, which indicates support for the current system. However, we also find that these people were more concerned about students' poor academic outcomes and wanted to rectify existing inequity in how public education funds are allocated, which indicates a desire to address faults with the system. Thus, we find that the same view of education yielded system-justifying and system-critical outlooks simultaneously. Traditional approaches to the study of system justification focus on situational factors that lead people to support versus undermine the system and, therefore, we believe, cannot fully explain the current set of results. The intersection of system justification beliefs and lay beliefs about intellectual potential might be a fruitful area for future theory and research to explore.

The current research raises the question of whether nearly all students do, in fact, have high intellectual potential. To our knowledge, no scientific consensus yet exists. However, extensive research indicates that with sufficient and appropriate practice, a large proportion of people can become high achievers in a given domain. A landmark study identified intensive training and perseverance, not precocious signs of talent or intelligence, as a common characteristic of 120 elite performers in diverse fields, such as science, sports, and the arts (Bloom, 1985). In addition, evidence from high achievers in a number of domains, such as mental multiplication and chess, has led other researchers to conclude, "[C]ounter to the common belief that expert performance reflects innate abilities and capacities, . . . expert performance is predominantly mediated by acquired complex skills and physiological adaptations" that are gained through deliberate, sustained, challenging practice (Ericsson & Charness, 1994, p. 725; see also Ericsson, 2014; Ericsson, Krampe, & Tesch-Römer, 1993; but see Macnamara, Hambrick, & Oswald, 2014, for an alternate view). Scholars have also weighed in on the issue of who can benefit from high-quality schooling, an issue central to the current research, and some have concluded that in terms of intellectual ability, "most students, perhaps over 90 percent, can master what teachers have to teach them" (Bloom, 1968, p. 1; see also Bloom, 1974, 1984; Carroll, 1963, 1989) If a large proportion of individuals can acquire complex knowledge and skills based on effort, good strategies, and quality instruction, then intellectual potential may be relatively more universal than previously considered.

Conclusion

Fundamental rights are not defined only by history and tradition; they are also the subject of fierce debate in the here-and-now. This makes it essential for scientific research to

develop a deeper understanding of the factors that determine which rights people consider to be fundamental rights that should be guaranteed to all.

Authors' Note

Krishna Savani and Aneeta Rattan contributed equally.

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Supplemental Material

Supplementary material is available online with this article.

Notes

1. Three reverse-coded items from the original scale were not included in the study because reverse-coded items tend to load on a different factor than non-reverse-coded items (Swain, Weathers, & Niedrich, 2008).
2. This study contained an additional measure tapping construal of education as a scarce resource (see Supplementary Materials).
3. The effective sample size dropped from 415 to 414 when participants' agreement with the article was included in the regression analysis as one participant did not indicate the extent to which they agreed with the article.

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