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### Advantage

#### Current quality of education is sharply decreasing through teacher shortages

**Boyce 19** Paul Boyce, 9-17-2019, "The Teacher Shortage Is Real and about to Get Much Worse. Here's Why," No Publication, https://fee.org/articles/the-teacher-shortage-is-real-and-about-to-get-much-worse-heres-why/

Teacher Shortage According to research by the Economic Policy Institute (EPI), the teacher shortage could reach 200,000 by 2025, up from 110,000 in 2018. This shortage of workers is due to a number of factors. Among them are pay, working conditions, lack of support, lack of autonomy, and the changing curriculum. The shortage of teachers will inevitably cause a decline in educational standards. The shortage is crucially important to educational outcomes. Class sizes are rising, causing a detrimental effect on these outcomes. As the number of available teachers declines, class sizes have to increase to compensate. Having more kids in a class can also affect teacher performance—more books to mark, more children to monitor, more children's behavior that needs managing. The pressure on teachers to obtain high test scores amps up stress further. It creates a vicious cycle, and it is starting to snowball. The shortage is only set to increase unless something changes. Impact on Quality The shortage of teachers will inevitably cause a decline in educational standards. Principals face a shortage of highly qualified teachers. The natural response for them is to hire less qualified teachers, hire teachers trained in another field or grade, or make use of unqualified substitute teachers. This means students are being taught by teachers who lack sufficient skills and knowledge. According to the National Commission on Teaching and America's Future: Studies discover again and again that teacher expertise is one of the most important factors in determining student achievement, followed by the smaller but generally positive influences of small schools and small class sizes. That is, teachers who know a lot about teaching and learning who work in environments that allow them to know students well are the critical elements of successful learning. Teachers matter more to student achievement than any other factor. In fact, research by Chlotfelter, Ladd, & Vigdor states that teacher qualifications predict more of the difference in educational gains than race and parent education combined.

#### Status Quo policies make the opportunity cost for teacher strikes too high

**Casey 20** Leo Casey, 12-2-2020, "The Teacher Strike: Conditions for Success," Dissent Magazine, <https://www.dissentmagazine.org/online_articles/the-teacher-strike-conditions-for-success>

The most essential organizational task is winning and keeping the allegiance of teachers to the strike. Teachers are knowledgeable and discerning political actors. They understand full well that strikes are a high-intensity and high-risk tactic, with the potential both to deliver advances and victories that could not be otherwise obtained and to end in major setbacks and defeats. The risk side of this equation is particularly acute in the three-quarters of all states where teacher strikes are illegal; in these states, striking becomes an act of civil disobedience and can result in severe penalties to teachers and their unions. To be willing to go on strike and stay out until a settlement is won, therefore, teachers need to be convinced on a number of different counts: first, that they are fighting for important, worthwhile objectives; second, that those objectives cannot be achieved through other means that are not as high-intensity and high-risk as a strike; third, that the strike has reasonable prospects of success; fourth, that the strike objectives have strong support in the community; and fifth, that the solidarity among teachers, which is essential to a strike’s success, is strong and will hold. In significant measure, the last of these points is dependent not simply on the organization and mobilization of the strike, but also on the four antecedent conditions. If teachers become doubtful on any of these points, it will become difficult to mount or sustain a successful strike.

#### That causes teachers uproot and quitting through unsatisfaction

**Carpenter 21** Jennifer Carpenter., 05-17-21, "Opinion: Protect local control for schools," Burlington Free Press, https://www.burlingtonfreepress.com/story/opinion/my-turn/2017/05/17/opinion-protect-local-control-schools/101726614/

The most crucial part of the proposal put forward by House Speaker Mitzi Johnson and President Pro Tem Tim Ashe is that it protects local control of schools. Statewide health insurance negotiations for teachers is the first step towards a statewide teachers’ contract, kneecapping school boards and paving the way towards a single, statewide school district. That is unacceptable, but it is the hill Gov. Scott and his Republican allies have decided to make their stand on. It is telling that Sen. Degree, one of Gov. Scott’s strongest supporters, included in his proposed amendment a clause that would have removed teachers’ right to strike. That shows their true intentions. When teachers’ needs are not met, students’ needs will not be met, and we will be unable to retain and attract a workforce of young families which is critical to the revitalization of our state’s economy. There will be no incentive for the teaching profession to attract and retain new teachers to the field if our state government teaches our community that teachers have no say over their working conditions and therefore are not valued. Schools need teachers and we need enrollment of students. Teachers and families of school age children will simply uproot and go elsewhere to have their needs met, jeopardizing our educational system, our school-age population and workforce. A “one-size-fits-all” approach from our state government cannot possibly work across the board for every school. Having worked in four different school districts in the state, I have been exposed to potential consequences of centralized control. I recall an emergency meeting at one of those districts in 2016 between administration and teachers where there were very tense discussions on what the initial proposal of Act 46 per-pupil spending cap would have meant for the school. Had the administration and teachers not pulled together to discuss and demand more for their programs and allowed a reckless centralized decision to go forth, to paraphrase one of the teachers present at this meeting, the initial Act 46 proposal would have destroyed the institution, as it would have meant dismantling most aspects of the curriculum that would render the students to be competitive for college and in the workforce, as the cuts were too severe of an impact on the school programs to justify sending anyone there. As a result, several teachers said they would have been prepared to pull their own children from the school and move out of the area. This is only one example of how allowing the state to have centralized control, which has proved to be an approach lacking in carefully frontloaded research and detailed examination of impact on programs and teachers, would have devastating consequences on local communities.

#### Strikes empower unions and are successful achieving bargaining power, which keeps them in education.

**LawInfo 20** [Peter Serdyukov, National University, La Jolla, California. 05/18/20, Teachers Unions & Collective Bargaining. <https://www.lawinfo.com/resources/labor-law/teachers-unions-collective-bargaining.html>] // SC SD

A **teachers' union** is a special type of labor union designed to fight for the rights of educators. With roots dating back more than 150 years in the U.S., these organizations **play critical roles not only in securing benefits for teachers but also shaping the way education works. For instance, thanks to lobbying by the National Education Association, or NEA, in the late 1860s, Congress created the Department of Education.**

What Teachers' Unions Bargain For

**Like other types of**[**trade unions**](https://www.lawinfo.com/resources/employment-law-employee/unions/)**, teachers' unions use collective bargaining agreements, or CBAs, to protect their members. Over the years, collective bargaining has helped educators gain many rights, such as:**

**Fair working conditions, compensation, and pay equality**

**Tenure mechanisms that prevented qualified educators from being punished for their personal biases, political beliefs, or other unfair reasons**

**Access to various benefits**

When it comes to education policy, teachers' unions also work to ensure that educators can fulfill their job duties in the face of tough odds. For instance, the NEA played a critical role in shifting the focus from federal policies like the Elementary and Secondary Education Act, which included 2001's No Child Left Behind Act, towards alternatives like the Every Student Succeeds Act of 2015. At the same time, education policy is a very politicized issue, and not every lawmaker is onboard with the kinds of changes that teachers seek. These differences of opinion mean that individual educators may be subject to a variety of laws depending on where they are in their careers.

State Laws and the NLRA

**Some states prohibit certain types of collective bargaining for certain workers. For teachers, such restrictions usually come into effect in public schools, where educators are classified as public employees.**

**In Texas, Georgia, North Carolina, Virginia, and South Carolina, collective bargaining was entirely prohibited for public employees as of 2014. Only 11 states explicitly give teachers the right to do things like going on strike, and many states make it completely illegal for public employees to strike. In some right-to-work states, these employees may be allowed to strike, but the power of unions to compel them to join is often significantly limited**. As major walkouts and strikes over low pay have shown, these rules aren't always successful at stopping collective action, and public opinion may be evolving about educators' rights as employees.

How are states allowed to prohibit teachers from doing something that many workers view as a fundamental freedom? **The right to form unions, strike, bargain collectively, and take other actions are laid out in the National Labor Relations Act of 1935, or NLRA. This federal legislation also prohibits actions like unions trying to force people to join and stops employers from retaliating against workers who exercise their union rights. Although the NLRA can take precedence over many state laws, its protections exclude employees in the public sector, such as teachers.**

Teachers' Unions and the U.S. Constitution

Labor unions aren't mentioned anywhere in the U.S. Constitution. At the same time, however, **Article I of the Constitution grants Congress the power to regulate various forms of commerce among the states. The Constitution also protects people's right to assemble and speak freely, both of which are critical to common union activities, such as meeting, discussing employment conditions, promoting union membership, and collective bargaining.**

Bargaining Units

Bargaining units are groups of workers who are represented by a common labor union when it comes to collective bargaining and negotiation. Employers or official bodies, such as the Indiana Education Employment Relations Board, recognize bargaining unit groups as being represented by labor unions. **States that allow teachers to participate in collective bargaining may also mandate that schools clearly specify to which bargaining units they belong so that employees can take advantage of their rights.**

**Bargaining unit positions are jobs that receive labor union representation. Although all employees can hold these jobs regardless of their union membership status, only those who hold bargaining unit jobs gain the full benefits of being in unions.**

Being in a bargaining unit position generally makes it easier to file complaints and appeals because unions outline specific grievance procedures. At the same time, all teachers can exercise non-union complaint rights and appeals. For example, the Equal Employment Opportunity Commission protects current employees and would-be workers from discrimination based on certain protected classes, such as race, sexual orientation, gender identity, age, national origin, or religion.

Teachers' Unions and Charter Schools

As in many other labor fields, unions sometimes clash with employers, such as schools. Notably, these disputes have come into the public eye as certain states move towards voucher and charter school education models.

One key distinction in such battles is the fact that although charter schools receive funds from the government, they're often treated and operated as independent entities. According to the Emory Law Journal, charter school efforts to secure funding while retaining their independence has led to significant uncertainty. For instance, almost half of all states exempt charter schools from the collective bargaining agreements that public schools in the same districts must follow, and only around an eighth of charter schools have labor unions. Some charter schools have even argued that as “political subdivisions,” they don't count as employers under the NLRA.

Other Teachers’ Union Benefits

**Joining a union might give certain teachers more control over their futures. Since the benefits they receive go above and beyond what many school districts would provide of their own accord, these teachers may enjoy heightened access to vital resources that make it easier to focus on their career development**. Union members may receive:

Prescription medication benefits

Consumer discounts

Dental and vision health benefits

Pension plans

For teachers, the decision whether to join a union is a personal matter. Those who want to keep their options open, however, may benefit from learning about what kinds of allowances they enjoy in different states and distinct employment positions.

#### Only strikes have proven successful in raising wages.

**Richards 19**, [[Erin Richards](https://www.usatoday.com/staff/2647805001/erin-richards/), 6-18-19, “Strikes, pay raises & charter protests: America's teachers' exhausting, exhilarating year” <https://www.usatoday.com/story/news/education/2019/06/18/teacher-pay-raises-strike-last-day-of-school-summer/1437210001/>] // SC SD

"Oh, the places you'll go!" the popular Dr. Seuss book promises to new graduates.

And, this past year, to their teachers.

America's educators have survived a rollicking year in the public spotlight — and no slowdown is in sight.

In the last 18 months, we've seen **teachers striking for higher pay**, teachers running for political office, teachers protesting charter schools, teachers organizing insurgent groups within their unions and teachers broadcasting the state of their under-resourced classrooms.

USA TODAY tracked the pressures on America's teachers with a school-year-long series of stories, capped by a [nationwide analysis of teacher pay and housing costs](https://www.usatoday.com/in-depth/news/education/2019/06/05/teachers-pay-cost-of-living-teaching-jobs/3449428002/).

Here's what happened.

**It's working: Teachers are pushing policy changes**

Starting last summer, it was front-line teachers rather than policymakers driving the national discussion over how best to educate children and compensate educators.

**How the movement started:** [‘Any talks of striking?’ A West Virginia teacher’s Facebook post started a national wave](https://www.usatoday.com/story/news/education/2019/02/20/teacher-strike-west-virginia-school-closings-education-bill/2848476002/)

Their actions are helping to change the narrative. Red-state governors who cracked down on teachers unions a decade ago and trimmed education budgets are now adding money to education efforts. In Texas, state Gov. Greg Abbott, a Republican, just signed into law [a $5 billion school finance package](https://bit.ly/2Y3pFuk), with much of the money slated for teacher raises.

In Oklahoma, home to [one of the first statewide teacher strikes](https://www.usatoday.com/story/news/nation/2018/04/02/teacher-strikes-shut-down-schools-across-oklahoma-kentucky/478102002/) in 2018, Republicans passed a budget that offers about $200 million in new education spending, partly to fund teacher raises.

On the Democratic side, presidential candidates Kamala Harris, a senator from California, and Joe Biden, former vice president, have both made pay raises for teachers part of their platforms.

In general, the public has backed the idea.

In a national poll from USA TODAY and Ipsos Public Affairs, a majority of people said teachers [had the right to strike](https://www.usatoday.com/story/news/2018/09/12/teachers-union-strike-pay/1227089002/), a view held even by the parents whose lives were most disrupted when teachers walked off the job.

#### Teacher strikes affect politics at the national level - increases educational focus.

Will 10/27 (Madeline, citing working study by two Brown professors, 10-27-2021, "When Teachers Strike, Education Becomes More Prevalent in Political Campaigns, Study Finds," Education Week, https://www.edweek.org/teaching-learning/when-teachers-strike-education-becomes-more-prevalent-in-political-campaigns-study-finds/2021/10)

Teacher strikes have a profound and often unrecognized role in national politics, a new working paper suggests: They put education front and center in Congressional campaigns and advertisements. Holding a strike more than doubles the likelihood that a Congressional candidate will air an education ad in the area where the labor action occurred, write the authors of the paper, which has not yet been peer reviewed. The upshot is that despite the risky nature of shutting down schools, strikes may elevate the importance of education issues, and ultimately could give teachers’ unions more power in the national arena. “We were really interested in some of these broader political effects of teacher strikes,” said Melissa Arnold Lyon, a co-author of the study and a postdoctoral research associate at the Annenberg Institute at Brown University. “Teachers’ unions have increasing prominence as national actors in education politics.” Teacher strikes are generally rare, but in 2018, a surge of activism—deemed the #RedforEd movement—led to teachers across entire states walking out of their classrooms to call for higher wages and more school funding. There were statewide strikes or walkouts that year in West Virginia, Oklahoma, and Arizona, as well as large-scale protests that shut down schools in North Carolina, Kentucky, and Colorado. That level of activism helped boost support for raising teacher salaries and triggered sympathetic media attention to the plight of teachers. Still, the working paper found that the statewide strikes were not necessarily driving the overall findings—even individual strikes increase the probability of education-focused advertisements being aired. Lyon and Brown professor Matthew Kraft created a dataset of all U.S. teacher strikes between July 2007 and November 2018—totaling 540 district strikes, many of which were part of coordinated efforts in a single state—and analyzed that alongside databases of TV political ads for U.S. House of Representatives elections. The researchers compared election ads in media markets where strikes occurred and in markets that didn’t experience strikes. The researchers focused on ads from House of Representatives campaigns to show how the effects of teacher strikes reverberate beyond local or state politics. Also, campaign ads are expensive and represent a significant investment from a candidate—and past research has shown that political ads can affect voter preferences, election turnout, and future legislative agendas. The researchers found that most of the ads were positive: They promoted a candidate (instead of attacking them) and had uplifting music. Although teacher strikes have negative consequences on parents and students in the form of lost instruction time and child care, few ads disparaged teachers’ unions or called for stricter laws against striking, Lyon said. That effect holds true for both political parties. “Republicans just as much as Democrats are talking about education more as a result of teacher strikes, and they’re doing so in largely positive ways,” she said. The study also found that the effects of strikes on political ads are strongest in political battleground areas, where candidates are appealing to swing voters. “These findings highlight how candidates with the greatest concern for their election prospects are the most reactive to strikes,” the researchers wrote. “This implies that strikes lead political elites to believe that they have something to gain from discussing education issues.” Teacher strikes often have the public’s support The statewide strikes and those that happened in big cities in 2018 and 2019 were notable for going beyond the bread-and-butter issues typical in labor disputes. While teachers were fighting for salary increases, they framed the strikes as efforts to do what’s best for their students. They pointed to sparsely resourced classrooms, shoddy school infrastructure, and gaps in available student supports. That framing—that teachers were on the picket lines, sometimes risking their jobs, in order to provide what’s best for their students—helped galvanize public support.

#### The teacher activism movement is a nation-wide force for social change. It’s successfully deconstructing privatization, inequality, and charter schools.

Will 19 (Madeline, 3-5-2019, "How Teacher Strikes Are Changing," Education Week, <https://www.edweek.org/teaching-learning/how-teacher-strikes-are-changing/2019/03>) AG

But this time, teachers’ demands were different, a reflection of the changing flavor of strikes nationwide. While last year’s teacher walkouts were focused primarily on stagnant wages and crumbling classrooms, the strike demands now are more far-reaching. Teachers are pushing back against education reform policies such as charter schools and performance-based pay. They’re also fighting for social-justice initiatives like sanctuary protections for undocumented students. Although some experts say there’s a risk of losing public support as teachers become more political in their demands, the strikes so far have retained community involvement and have all been relatively successful. Even as the protests move from red states to blue cities, there is still a coherent narrative in place: Teachers are underpaid, asked to do more with less, and fed up. These strikes are not independent and isolated efforts, said Rebecca Tarlau, an assistant professor of education and labor and employment relations at Pennsylvania State University’s College of Education. “It’s a wave of different activists who are in conversation and connection and trying to transform their unions in really interesting and important ways,” she said. So far this year, teachers in Los Angeles went on a six-day strike that ended with a host of union victories, including smaller class sizes, more support staff, and other socially minded initiatives, like legal support for immigrant students. Teachers in Denver went on a three-day strike last month over the district’s performance-based compensation model. Then, West Virginia teachers walked out in protest of a bill that would have established charter schools in the state, along with up to 1,000 education savings accounts that allow certain parents to use public money to pay for private school. Teachers in Oakland, Calif., went on strike for two weeks in February over pay, class sizes, and the cash-strapped district’s proposal to close schools. As the teacher-activism movement spreads, it emphasizes the “point that teachers’ concerns are national and not simply a product of big-city unions,” said Jeffrey Henig, the director of the politics and education program at Teachers College, Columbia University. Now, he said, “we’re seeing that played back in places like West Virginia, where the local actors without the strong historical unions ... are now breathing the fumes of national issues like privatization and school choice and are broadening their scope as a result.” In some ways, the strike in Oakland embodied what the movement has become, experts say. At the center of the contract dispute was the union’s demand for a 12 percent pay raise. But Oakland Education Association President Keith Brown framed the strike as a “fight for the soul of public education” in the city. In addition to pushing for student supports, teachers are fighting against the proposed closures of up to 24 regular public schools and the growth of charter schools. “No one thinks of the Oakland strike as a strike that’s about salary,” Tarlau said. “It is part of the big picture: What is the future of our schools? What is the future of public education?”

#### Quality of education is key for innovation to stop climate change

Kwauk et al 3/26’ [Christina Kwauk and Rebecca Winthrop, 3-26-2021, "Unleashing the creativity of teachers and students to combat climate change: An opportunity for global leadership," Brookings, <https://www.brookings.edu/research/unleashing-the-creativity-of-teachers-and-students-to-combat-climate-change-an-opportunity-for-global-leadership/>]

Recent research shows that if only 16 percent of high school students in high- and middle-income countries were to receive climate change education, we could see a nearly 19 gigaton reduction of carbon dioxide by 2050. When education helps students develop a strong personal connection to climate solutions, as well as a sense of personal agency and empowerment, it can have consequential impact on students’ daily behaviors and decisionmaking that reduces their overall lifetime carbon footprint. Imagine if 100 percent of students in the world received such an education. New evidence also shows that the combination of women’s empowerment and education that includes everyone—especially the 132 million out-of-school girls across the developing world—could result in an 85 gigaton reduction of carbon dioxide by 2050. By these estimates, leveraging the power of education is potentially more powerful than solely increasing investments in onshore wind turbines (47 gigaton reduction) or concentrated solar power (19 gigaton reduction) alone. When we say that all climate solutions are needed to draw down greenhouse gases, we must also mean education solutions, too. When we say that all climate solutions are needed to draw down greenhouse gases, we must also mean education solutions, too. But beyond education’s potential impact on reducing carbon emissions, education—especially for girls—can save lives in the context of natural disasters exacerbated by climate change by reducing climate risk vulnerability. In a study of 125 countries, researchers found that the death toll caused by floods, droughts, wildfires, extreme temperature events, and extreme weather events could be 60 percent lower by 2050 if 70 percent of women were able to achieve a lower-secondary-school education. Imagine if 100 percent of women were to achieve a full 12 years of education. An equally important outcome of education is its potential to increase young people’s capacity to adapt to the harsh impacts of climate change by building important knowledge and a breadth of “green skills.” For example, young people need both a strong knowledge base around the causes of a warming climate but also a strong set of skills that will allow them to apply their knowledge in the real world, including problem-solving, critical thinking, teamwork, coping with uncertainty, empathy, and negotiation. Indeed these very “transferable skills” are needed equally to thrive in the world of work and to be constructive citizens. Today it is those communities that have historically contributed the least to present-day carbon emissions—such as minority and indigenous communities in the U.S. and many low- and middle-income countries and small island developing states✎ EditSign—that are often the most vulnerable to its risks and impacts. In the U.S. for example, 6,000 schools are located in flood zones and 1 million children had their learning disrupted during California’s 2018-2019 wildfire season, hitting students in low-income communities the hardest. Across the globe, schools and entire communities in the poorest countries in the world are regularly upended due to severe floods and hurricanes, all expected to worsen in intensity and frequency due to climate change. For example, in 2013 Super Typhoon Haiyan✎ EditSign killed more than 6,000 people in the Philippines, damaged or destroyed more than 3,200 schools and day care centers, disrupted the education of more than a million children, and placed 49,000 young girls and women✎ EditSign at risk of sex trafficking due to their displacement in crowded and unsafe shelters. For these communities, climate change is an unchecked threat multiplier. Combating climate change is a move toward climate justice and gender justice. And education has a role to play. High quality climate-change education can also help empower girls and youth to become powerful change agents for sustainability in their communities, charting new paths forward for what life can and should be like.

#### Climate change destroys the world.

Specktor 19 [Brandon; writes about the science of everyday life for Live Science, and previously for Reader's Digest magazine, where he served as an editor for five years; "Human Civilization Will Crumble by 2050 If We Don't Stop Climate Change Now, New Paper Claims," livescience, 6/4/19; <https://www.livescience.com/65633-climate-change-dooms-humans-by-2050.html>] Justin

The current climate crisis, they say, is larger and more complex than any humans have ever dealt with before. General climate models — like the one that the [United Nations' Panel on Climate Change](https://www.ipcc.ch/sr15/) (IPCC) used in 2018 to predict that a global temperature increase of 3.6 degrees Fahrenheit (2 degrees Celsius) could put hundreds of millions of people at risk — fail to account for the **sheer complexity of Earth's many interlinked geological processes**; as such, they fail to adequately predict the scale of the potential consequences. The truth, the authors wrote, is probably far worse than any models can fathom. How the world ends What might an accurate worst-case picture of the planet's climate-addled future actually look like, then? The authors provide one particularly grim scenario that begins with world governments "politely ignoring" the advice of scientists and the will of the public to decarbonize the economy (finding alternative energy sources), resulting in a global temperature increase 5.4 F (3 C) by the year 2050. At this point, the world's ice sheets vanish; brutal droughts kill many of the trees in the [Amazon rainforest](https://www.livescience.com/57266-amazon-river.html) (removing one of the world's largest carbon offsets); and the planet plunges into a feedback loop of ever-hotter, ever-deadlier conditions. "Thirty-five percent of the global land area, and **55 percent of the global population, are subject to more than 20 days a year of** [lethal heat conditions](https://www.livescience.com/55129-how-heat-waves-kill-so-quickly.html), beyond the threshold of human survivability," the authors hypothesized. Meanwhile, droughts, floods and wildfires regularly ravage the land. Nearly **one-third of the world's land surface turns to desert**. Entire **ecosystems collapse**, beginning with the **planet's coral reefs**, the **rainforest and the Arctic ice sheets.** The world's tropics are hit hardest by these new climate extremes, destroying the region's agriculture and turning more than 1 billion people into refugees. This mass movement of refugees — coupled with [shrinking coastlines](https://www.livescience.com/51990-sea-level-rise-unknowns.html) and severe drops in food and water availability — begin to **stress the fabric of the world's largest nations**, including the United States. Armed conflicts over resources, perhaps culminating in **nuclear war, are likely**. The result, according to the new paper, is "outright chaos" and perhaps "the end of human global civilization as we know it."

#### Educational innovation solves extinction.

**Serdyukov 17** Peter Serdyukov, National University, La Jolla, California. 03/27/2017. “Innovation in Education: What Works, What Doesn’t, and What to Do about It?” Journal of Research in Innovative Teaching & Learning, vol. 10, no. 1, pp. 4–33.

Introduction Education, being a social institution serving the needs of society, is indispensable for society to survive and thrive. It should be not only comprehensive, sustainable, and superb, but must continuously evolve to meet the challenges of the fast-changing and unpredictable globalized world. This evolution must be systemic, consistent, and scalable; therefore, school teachers, college professors, administrators, researchers, and policy makers are expected to innovate the theory and practice of teaching and learning, as well as all other aspects of this complex organization to ensure quality preparation of all students to life and work. Here we present a systemic discussion of educational innovations, identify the barriers to innovation, and outline potential directions for effective innovations. We discuss the current status of innovations in US education, what educational innovation is, how innovations are being integrated in schools and colleges, why innovations do not always produce the desired effect, and what should be done to increase the scale and rate of innovation-based transformations in our education system. We then offer recommendations for the growth of educational innovations. As examples of innovations in education, we will highlight online learning and time efficiency of learning using accelerated and intensive approaches. Innovations in US education For an individual, a nation, and humankind to survive and progress, innovation and evolution are essential. Innovations in education are of particular importance because education plays a crucial role in creating a sustainable future. “Innovation resembles mutation, the biological process that keeps species evolving so they can better compete for survival” (Hoffman and Holzhuter, 2012, p. 3). Innovation, therefore, is to be regarded as an instrument of necessary and positive change. Any human activity (e.g. industrial, business, or educational) needs constant innovation to remain sustainable. The need for educational innovations has become acute. “It is widely believed that countries’ social and economic well-being will depend to an ever greater extent on the quality of their citizens’ education: the emergence of the so-called ‘knowledge society’, the transformation of information and the media, and increasing specialization on the part of organizations all call for high skill profiles and levels of knowledge. Today’s education systems are required to be both effective and efficient, or in other words, to reach the goals set for them while making the best use of available resources” (Cornali, 2012, p. 255). According to an Organization for Economic Cooperation and Development (OECD) report, “the pressure to increase equity and improve educational outcomes for students is growing around the world” (Vieluf et al., 2012, p. 3). In the USA, underlying pressure to innovate comes from political, economic, demographic, and technological forces from both inside and outside the nation. Many in the USA seem to recognize that education at all levels critically needs renewal: “Higher education has to change. It needs more innovation” (Wildavsky et al., 2012, p. 1). This message, however, is not new – in the foreword to the 1964 book entitled Innovation in Education, Arthur Foshay, Executive Officer of The Horace Mann-Lincoln Institute of School Experimentation, wrote, “It has become platitudinous to speak of the winds of change in education, to remind those interested in the educational enterprise that a revolution is in progress. Trite or not, however, it is true to say that changes appear wherever one turns in education” (Matthew, 1964, p.

### Solvency

#### Plan text: A just government ought to recognize an unconditional right of teachers to strike.

#### Definition of unconditional right to strike:

NLRB 85 [National Labor Relations Board; “Legislative History of the Labor Management Relations Act, 1947: Volume 1,” Jan 1985; <https://play.google.com/store/books/details?id=7o1tA__v4xwC&rdid=book-7o1tA__v4xwC&rdot=1>] Justin

\*\*Edited for gendered language

As for the so-called absolute or unconditional right to strike—there are no absolute rights that do not have their corresponding responsibilities. Under our American Anglo-Saxon system, each individual is entitled to the maximum of freedom, provided however (and this provision is of first importance), his [their] freedom has due regard for the rights and freedoms of others. The very safeguard of our freedoms is the recognition of this fundamental principle. I take issue very definitely with the suggestion that there is an absolute and unconditional right to concerted action (which after all is what the strike is) which endangers the health and welfare of our people in order to attain a selfish end.

#### Amendment is normal means

Brudney 20 Brudney, J. J. (2020). The Right to Strike is Recognised as Customary International Law. *Yale Law*, 10–11. https://doi.org/10.5040/9781509933587.ch-011/SJKS

Recognition of the right to strike as fundamental by two key ILO supervisory bodies is reinforced by affirmation of the right within a broad framework of international covenants, transnational conventions and judicial decisions, and national constitutions. The right to strike is recognized in the International Covenant on Economic, Social and Cultural Rights of the United Nations (ICESCR).47 It has been incorporated into the International Covenant on Civil and Political Rights (ICCPR) by that Covenant’s Human Rights Committee, which supervises the Covenant’s implementation.48 Although these two treaties are more familiar starting points for international human rights analysis than the ILO Conventions, the Article focuses primarily on the Convention 87 applications because of their extensive in-depth nature. In this regard, it is notable that the two U.N. Covenants declare a specific commitment to Convention 87, which is the only other international convention they even mention, and the two treaty bodies regularly apply their relevant articles in terms that are consistent with ILO application of that convention.49

### Framing

#### The standard is maximizing expected well-being, or hedonistic act utilitarianism.

#### 1] Neuroscience- pleasure and pain *are* intrinsic value and disvalue – everything else regresses.

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**Pleasure** is not only one of the three primary reward functions but it also **defines reward.** As homeostasis explains the functions of only a limited number of rewards, the principal reason why particular stimuli, objects, events, situations, and activities are rewarding may be due to pleasure. This applies first of all to sex and to the primary homeostatic rewards of food and liquid and extends to money, taste, beauty, social encounters and nonmaterial, internally set, and intrinsic rewards. Pleasure, as the primary effect of rewards, drives the prime reward functions of learning, approach behavior, and decision making and provides the **basis for hedonic theories** of reward function. We are attracted by most rewards and exert intense efforts to obtain them, just because they are enjoyable [10].

Pleasure is a passive reaction that derives from the experience or prediction of reward and may lead to a long-lasting state of happiness. The word happiness is difficult to define. In fact, just obtaining physical pleasure may not be enough. One key to happiness involves a network of good friends. However, it is not obvious how the higher forms of satisfaction and pleasure are related to an ice cream cone, or to your team winning a sporting event. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure [14].

Pleasure as a hallmark of reward is sufficient for defining a reward, but it may not be necessary. A reward may generate positive learning and approach behavior simply because it contains substances that are essential for body function. When we are hungry, we may eat bad and unpleasant meals. A monkey who receives hundreds of small drops of water every morning in the laboratory is unlikely to feel a rush of pleasure every time it gets the 0.1 ml. Nevertheless, with these precautions in mind, we may define any stimulus, object, event, activity, or situation that has the potential to produce pleasure as a reward. In the context of reward deficiency or for disorders of addiction, homeostasis pursues pharmacological treatments: drugs to treat drug addiction, obesity, and other compulsive behaviors. The theory of allostasis suggests broader approaches - such as re-expanding the range of possible pleasures and providing opportunities to expend effort in their pursuit. [15]. It is noteworthy, the first animal studies eliciting approach behavior by electrical brain stimulation interpreted their findings as a discovery of the brain’s pleasure centers [16] which were later partly associated with midbrain dopamine neurons [17–19] despite the notorious difficulties of identifying emotions in animals.

Evolutionary theories of pleasure: The love connection BO:D

Charles Darwin and other biological scientists that have examined the biological evolution and its basic principles found various mechanisms that steer behavior and biological development. Besides their theory on natural selection, it was particularly the sexual selection process that gained significance in the latter context over the last century, especially when it comes to the question of what makes us “what we are,” i.e., human. However, the capacity to sexually select and evolve is not at all a human accomplishment alone or a sign of our uniqueness; yet, we humans, as it seems, are ingenious in fooling ourselves and others–when we are in love or desperately search for it.

It is well established that modern biological theory conjectures that **organisms are** the **result of evolutionary competition.** In fact, Richard Dawkins stresses gene survival and propagation as the basic mechanism of life [20]. Only genes that lead to the fittest phenotype will make it. It is noteworthy that the phenotype is selected based on behavior that maximizes gene propagation. To do so, the phenotype must survive and generate offspring, and be better at it than its competitors. Thus, the ultimate, distal function of rewards is to increase evolutionary fitness by ensuring the survival of the organism and reproduction. It is agreed that learning, approach, economic decisions, and positive emotions are the proximal functions through which phenotypes obtain other necessary nutrients for survival, mating, and care for offspring.

Behavioral reward functions have evolved to help individuals to survive and propagate their genes. Apparently, people need to live well and long enough to reproduce. Most would agree that homo-sapiens do so by ingesting the substances that make their bodies function properly. For this reason, foods and drinks are rewards. Additional rewards, including those used for economic exchanges, ensure sufficient palatable food and drink supply. Mating and gene propagation is supported by powerful sexual attraction. Additional properties, like body form, augment the chance to mate and nourish and defend offspring and are therefore also rewards. Care for offspring until they can reproduce themselves helps gene propagation and is rewarding; otherwise, many believe mating is useless. According to David E Comings, as any small edge will ultimately result in evolutionary advantage [21], additional reward mechanisms like novelty seeking and exploration widen the spectrum of available rewards and thus enhance the chance for survival, reproduction, and ultimate gene propagation. These functions may help us to obtain the benefits of distant rewards that are determined by our own interests and not immediately available in the environment. Thus the distal reward function in gene propagation and evolutionary fitness defines the proximal reward functions that we see in everyday behavior. That is why foods, drinks, mates, and offspring are rewarding.

There have been theories linking pleasure as a required component of health benefits salutogenesis, (salugenesis). In essence, under these terms, pleasure is described as a state or feeling of happiness and satisfaction resulting from an experience that one enjoys. Regarding pleasure, it is a double-edged sword, on the one hand, it promotes positive feelings (like mindfulness) and even better cognition, possibly through the release of dopamine [22]. But on the other hand, pleasure simultaneously encourages addiction and other negative behaviors, i.e., motivational toxicity. It is a complex neurobiological phenomenon, relying on reward circuitry or limbic activity. It is important to realize that through the “Brain Reward Cascade” (BRC) endorphin and endogenous morphinergic mechanisms may play a role [23]. While natural rewards are essential for survival and appetitive motivation leading to beneficial biological behaviors like eating, sex, and reproduction, crucial social interactions seem to further facilitate the positive effects exerted by pleasurable experiences. Indeed, experimentation with addictive drugs is capable of directly acting on reward pathways and causing deterioration of these systems promoting hypodopaminergia [24]. Most would agree that pleasurable activities can stimulate personal growth and may help to induce healthy behavioral changes, including stress management [25]. The work of Esch and Stefano [26] concerning the link between compassion and love implicate the brain reward system, and pleasure induction suggests that social contact in general, i.e., love, attachment, and compassion, can be highly effective in stress reduction, survival, and overall health.

Understanding the role of neurotransmission and pleasurable states both positive and negative have been adequately studied over many decades [26–37], but comparative anatomical and neurobiological function between animals and homo sapiens appear to be required and seem to be in an infancy stage.

Finding happiness is different between apes and humans

As stated earlier in this expert opinion one key to happiness involves a network of good friends [38]. However, it is not entirely clear exactly how the higher forms of satisfaction and pleasure are related to a sugar rush, winning a sports event or even sky diving, all of which augment dopamine release at the reward brain site. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure.

Remarkably, there are pathways for ordinary liking and pleasure, which are limited in scope as described above in this commentary. However, there are **many brain regions**, often termed hot and cold spots, that significantly **modulate** (increase or decrease) our **pleasure or** even produce **the opposite** of pleasure— that is disgust and fear [39]. One specific region of the nucleus accumbens is organized like a computer keyboard, with particular stimulus triggers in rows— producing an increase and decrease of pleasure and disgust. Moreover, the cortex has unique roles in the cognitive evaluation of our feelings of pleasure [40]. Importantly, the interplay of these multiple triggers and the higher brain centers in the prefrontal cortex are very intricate and are just being uncovered.

Desire and reward centers

It is surprising that many different sources of pleasure activate the same circuits between the mesocorticolimbic regions (Figure 1). Reward and desire are two aspects pleasure induction and have a very widespread, large circuit. Some part of this circuit distinguishes between desire and dread. The so-called pleasure circuitry called “REWARD” involves a well-known dopamine pathway in the mesolimbic system that can influence both pleasure and motivation.

In simplest terms, the well-established mesolimbic system is a dopamine circuit for reward. It starts in the ventral tegmental area (VTA) of the midbrain and travels to the nucleus accumbens (Figure 2). It is the cornerstone target to all addictions. The VTA is encompassed with neurons using glutamate, GABA, and dopamine. The nucleus accumbens (NAc) is located within the ventral striatum and is divided into two sub-regions—the motor and limbic regions associated with its core and shell, respectively. The NAc has spiny neurons that receive dopamine from the VTA and glutamate (a dopamine driver) from the hippocampus, amygdala and medial prefrontal cortex. Subsequently, the NAc projects GABA signals to an area termed the ventral pallidum (VP). The region is a relay station in the limbic loop of the basal ganglia, critical for motivation, behavior, emotions and the “Feel Good” response. This defined system of the brain is involved in all addictions –substance, and non –substance related. In 1995, our laboratory coined the term “Reward Deficiency Syndrome” (RDS) to describe genetic and epigenetic induced hypodopaminergia in the “Brain Reward Cascade” that contribute to addiction and compulsive behaviors [3,6,41].

Furthermore, ordinary “liking” of something, or pure pleasure, is represented by small regions mainly in the limbic system (old reptilian part of the brain). These may be part of larger neural circuits. In Latin, hedus is the term for “sweet”; and in Greek, hodone is the term for “pleasure.” Thus, the word Hedonic is now referring to various subcomponents of pleasure: some associated with purely sensory and others with more complex emotions involving morals, aesthetics, and social interactions. The capacity to have pleasure is part of being healthy and may even extend life, especially if linked to optimism as a dopaminergic response [42].

Psychiatric illness often includes symptoms of an abnormal inability to experience pleasure, referred to as anhedonia. A negative feeling state is called dysphoria, which can consist of many emotions such as pain, depression, anxiety, fear, and disgust. Previously many scientists used animal research to uncover the complex mechanisms of pleasure, liking, motivation and even emotions like panic and fear, as discussed above [43]. However, as a significant amount of related research about the specific brain regions of pleasure/reward circuitry has been derived from invasive studies of animals, these cannot be directly compared with subjective states experienced by humans.

In an attempt to resolve the controversy regarding the causal contributions of mesolimbic dopamine systems to reward, we have previously evaluated the three-main competing explanatory categories: “liking,” “learning,” and “wanting” [3]. That is, dopamine may mediate (a) liking: the hedonic impact of reward, (b) learning: learned predictions about rewarding effects, or (c) wanting: the pursuit of rewards by attributing incentive salience to reward-related stimuli [44]. We have evaluated these hypotheses, especially as they relate to the RDS, and we find that the incentive salience or “wanting” hypothesis of dopaminergic functioning is supported by a majority of the scientific evidence. Various neuroimaging studies have shown that anticipated behaviors such as sex and gaming, delicious foods and drugs of abuse all affect brain regions associated with reward networks, and may not be unidirectional. Drugs of abuse enhance dopamine signaling which sensitizes mesolimbic brain mechanisms that apparently evolved explicitly to attribute incentive salience to various rewards [45].

Addictive substances are voluntarily self-administered, and they enhance (directly or indirectly) dopaminergic synaptic function in the NAc. This activation of the brain reward networks (producing the ecstatic “high” that users seek). Although these circuits were initially thought to encode a set point of hedonic tone, it is now being considered to be far more complicated in function, also encoding attention, reward expectancy, disconfirmation of reward expectancy, and incentive motivation [46]. The argument about addiction as a disease may be confused with a predisposition to substance and nonsubstance rewards relative to the extreme effect of drugs of abuse on brain neurochemistry. The former sets up an individual to be at high risk through both genetic polymorphisms in reward genes as well as harmful epigenetic insult. Some Psychologists, even with all the data, still infer that addiction is not a disease [47]. Elevated stress levels, together with polymorphisms (genetic variations) of various dopaminergic genes and the genes related to other neurotransmitters (and their genetic variants), and may have an additive effect on vulnerability to various addictions [48]. In this regard, Vanyukov, et al. [48] suggested based on review that whereas the gateway hypothesis does not specify mechanistic connections between “stages,” and does not extend to the risks for addictions the concept of common liability to addictions may be more parsimonious. The latter theory is grounded in genetic theory and supported by data identifying common sources of variation in the risk for specific addictions (e.g., RDS). This commonality has identifiable neurobiological substrate and plausible evolutionary explanations.

Over many years the controversy of dopamine involvement in especially “pleasure” has led to confusion concerning separating motivation from actual pleasure (wanting versus liking) [49]. We take the position that animal studies cannot provide real clinical information as described by self-reports in humans. As mentioned earlier and in the abstract, on November 23rd, 2017, evidence for our concerns was discovered [50]

In essence, although nonhuman primate brains are similar to our own, the disparity between other primates and those of human cognitive abilities tells us that surface similarity is not the whole story. Sousa et al. [50] small case found various differentially expressed genes, to associate with pleasure related systems. Furthermore, the dopaminergic interneurons located in the human neocortex were absent from the neocortex of nonhuman African apes. Such differences in neuronal transcriptional programs may underlie a variety of neurodevelopmental disorders.

In simpler terms, the system controls the production of dopamine, a chemical messenger that plays a significant role in pleasure and rewards. The senior author, Dr. Nenad Sestan from Yale, stated: “Humans have evolved a dopamine system that is different than the one in chimpanzees.” This may explain why the behavior of humans is so unique from that of non-human primates, even though our brains are so surprisingly similar, Sestan said: “It might also shed light on why people are vulnerable to mental disorders such as autism (possibly even addiction).” Remarkably, this research finding emerged from an extensive, multicenter collaboration to compare the brains across several species. These researchers examined 247 specimens of neural tissue from six humans, five chimpanzees, and five macaque monkeys. Moreover, these investigators analyzed which genes were turned on or off in 16 regions of the brain. While the differences among species were subtle, **there was** a **remarkable contrast in** the **neocortices**, specifically in an area of the brain that is much more developed in humans than in chimpanzees. In fact, these researchers found that a gene called tyrosine hydroxylase (TH) for the enzyme, responsible for the production of dopamine, was expressed in the neocortex of humans, but not chimpanzees. As discussed earlier, dopamine is best known for its essential role within the brain’s reward system; the very system that responds to everything from sex, to gambling, to food, and to addictive drugs. However, dopamine also assists in regulating emotional responses, memory, and movement. Notably, abnormal dopamine levels have been linked to disorders including Parkinson’s, schizophrenia and spectrum disorders such as autism and addiction or RDS.

Nora Volkow, the director of NIDA, pointed out that one alluring possibility is that the neurotransmitter dopamine plays a substantial role in humans’ ability to pursue various rewards that are perhaps months or even years away in the future. This same idea has been suggested by Dr. Robert Sapolsky, a professor of biology and neurology at Stanford University. Dr. Sapolsky cited evidence that dopamine levels rise dramatically in humans when we anticipate potential rewards that are uncertain and even far off in our futures, such as retirement or even the possible alterlife. This may explain what often motivates people to work for things that have no apparent short-term benefit [51]. In similar work, Volkow and Bale [52] proposed a model in which dopamine can favor NOW processes through phasic signaling in reward circuits or LATER processes through tonic signaling in control circuits. Specifically, they suggest that through its modulation of the orbitofrontal cortex, which processes salience attribution, dopamine also enables shilting from NOW to LATER, while its modulation of the insula, which processes interoceptive information, influences the probability of selecting NOW versus LATER actions based on an individual’s physiological state. This hypothesis further supports the concept that disruptions along these circuits contribute to diverse pathologies, including obesity and addiction or RDS.

#### 2] Actor spec—governments must use util because they don’t have intentions and are constantly dealing with tradeoffs—outweighs since different agents have different obligations—takes out calc indicts since they are empirically denied.

#### 3] No intent-foresight distinction for states.

Enoch 07 Enoch, D [The Faculty of Law, The Hebrew Unviersity, Mount Scopus Campus, Jersusalem]. (2007). INTENDING, FORESEEING, AND THE STATE. Legal Theory, 13(02). doi:10.1017/s1352325207070048 https://www.cambridge.org/core/journals/legal-theory/article/intending-foreseeing-and-the-state/76B18896B94D5490ED0512D8E8DC54B2

The general difficulty of the intending-foreseeing distinction here stemmed, you will recall, from the feeling that attempting to pick and choose among the foreseen consequences of one’s actions those one is more and those one is less responsible for looks more like the preparation of a defense than like a genuine attempt to determine what is to be done. Hiding behind the intending-foreseeing distinction seems like an attempt to evade responsibility, and so thinking about the distinction in terms of responsibility serves 39. Anderson & Pildes, supra note 38. I will use this text as my example of an expressive theory here. 40. See id. at 1554, 1564. 41. For a general critique, see Mathew D. Adler, Expressive Theories of Law: A Skeptical Overview, 148 U. PA. L. REV. 1363 (1999–2000). 42. As Adler repeatedly notes, the understanding of expression Anderson & Pildes work with is amazingly broad, so that “To express an attitude through action is to act on the reasons the attitude gives us”; Anderson & Pildes, supra note 38, at 1510. If this is so, it seems that expression drops out of the picture and everything done with it can be done directly in terms of reasons. 43. This may be true of what Anderson and Pildes have in mind when they say that “expressive norms regulate actions by regulating the acceptable justifications for doing them”; id. at 1511. http://journals.cambridge.org Downloaded: 03 Aug 2014 IP address: 134.153.184.170 Intending, Foreseeing, and the State 91 to reduce even further the plausibility of attributing to it intrinsic moral significance. This consideration—however weighty in general—seems to me very weighty when applied to state action and to the decisions of state officials. For perhaps it may be argued that individuals are not required to undertake a global perspective, one that equally takes into account all foreseen consequences of their actions. Perhaps, in other words, individuals are entitled to (roughly) settle for having a good will, and beyond that let chips fall where they may. But this is precisely what stateswomen and statesmen—and certainly states—are not entitled to settle for.44 In making policy decisions, it is precisely the global (or at least statewide, or nationwide, or something of this sort) perspective that must be undertaken. Perhaps, for instance, an individual doctor is entitled to give her patient a scarce drug without thinking about tomorrow’s patients (I say “perhaps” because I am genuinely not sure about this), but surely when a state committee tries to formulate rules for the allocation of scarce medical drugs and treatments, it cannot hide behind the intending-foreseeing distinction, arguing that if it allows45 the doctor to give the drug to today’s patient, the death of tomorrow’s patient is merely foreseen and not intended. When making a policy-decision, this is clearly unacceptable. Or think about it this way (I follow Daryl Levinson here):46 perhaps restrictions on the responsibility of individuals are justified because individuals are autonomous, because much of the value in their lives comes from personal pursuits and relationships that are possible only if their responsibility for what goes on in the (more impersonal) world is restricted. But none of this is true of states and governments. They have no special relationships and pursuits, no personal interests, no autonomous lives to lead in anything like the sense in which these ideas are plausible when applied to individuals persons. So there is no reason to restrict the responsibility of states in anything like the way the responsibility of individuals is arguably restricted.47 States and state officials have much more comprehensive responsibilities than individuals do. Hiding behind the intending-foreseeing distinction thus more clearly constitutes an evasion of responsibility in the case of the former. So the evading-responsibility worry has much more force against the intending-foreseeing distinction when applied to state action than elsewhere.

#### 4] Extinction outweighs---it’s the upmost moral evil and disavowal of the risk makes it more likely.

Burns 2017 (Elizabeth Finneron-Burns is a Teaching Fellow at the University of Warwick and an Affiliated Researcher at the Institute for Futures Studies in Stockholm, What’s wrong with human extinction?, <http://www.tandfonline.com/doi/pdf/10.1080/00455091.2016.1278150?needAccess=true>, Canadian Journal of Philosophy, 2017)

Many, though certainly not all, people might believe that it would be wrong to bring about the end of the human species, and the reasons given for this belief are various. I begin by considering four reasons that could be given against the moral permissibility of human extinction. I will argue that only those reasons that impact the people who exist at the time that the extinction or the knowledge of the upcoming extinction occurs, can explain its wrongness. I use this conclusion to then consider in which cases human extinction would be morally permissible or impermissible, arguing that there is only a small class of cases in which it would not be wrong to cause the extinction of the human race or allow it to happen. 2.1. It would prevent the existence of very many happy people One reason of human extinction might be considered to be wrong lies in the value of human life itself. The thought here might be that it is a good thing for people to exist and enjoy happy lives and extinction would deprive more people of enjoying this good. The ‘good’ in this case could be understood in at least two ways. According to the first, one might believe that you benefit a person by bringing them into existence, or at least, that it is good for that person that they come to exist. The second view might hold that if humans were to go extinct, the utility foregone by the billions (or more) of people who could have lived but will now never get that opportunity, renders allowing human extinction to take place an incidence of wrongdoing. An example of this view can be found in two quotes from an Effective Altruism blog post by Peter Singer, Nick Beckstead and Matt Wage: One very bad thing about human extinction would be that billions of people would likely die painful deaths. But in our view, this is by far not the worst thing about human extinction. The worst thing about human extinction is that there would be no future generations. Since there could be so many generations in our future, the value of all those generations together greatly exceeds the value of the current generation. (Beckstead, Singer, and Wage 2013) The authors are making two claims. The first is that there is value in human life and also something valuable about creating future people which gives us a reason to do so; furthermore, it would be a very bad thing if we did not do so. The second is that, not only would it be a bad thing for there to be no future people, but it would actually be the worst thing about extinction. Since happy human lives have value, and the number of potential people who could ever exist is far greater than the number of people who exist at any one time, even if the extinction were brought about through the painful deaths of currently existing people, the former’s loss would be greater than the latter’s. Both claims are assuming that there is an intrinsic value in the existence of potential human life. The second claim makes the further assumption that the forgone value of the potential lives that could be lived is greater than the disvalue that would be accrued by people existing at the time of the extinction through suffering from painful and/or premature deaths. The best-known author of the post, Peter Singer is a prominent utilitarian, so it is not surprising that he would lament the potential lack of future human lives per se. However, it is not just utilitarians who share this view, even if implicitly. Indeed, other philosophers also seem to imply that they share the intuition that there is just something wrong with causing or failing to prevent the extinction of the human species such that we prevent more ‘people’ from having the ‘opportunity to exist’. Stephen Gardiner (2009) and Martin O’Neill (personal correspondence), both sympathetic to contract theory, for example, also find it intuitive that we should want more generations to have the opportunity to exist, assuming that they have worth-living lives, and I find it plausible to think that many other people (philosophers and non-philosophers alike) probably share this intuition. When we talk about future lives being ‘prevented’, we are saying that a possible person or a set of possible people who could potentially have existed will now never actually come to exist. To say that it is wrong to prevent people from existing could either mean that a possible person could reasonably reject a principle that permitted us not to create them, or that the foregone value of their lives provides a reason for rejecting any principle that permits extinction. To make the first claim we would have to argue that a possible person could reasonably reject any principle that prevented their existence on the grounds that it prevented them in particular from existing. However, this is implausible for two reasons. First, we can only wrong someone who did, does or will actually exist because wronging involves failing to take a person’s interests into account. When considering the permissibility of a principle allowing us not to create Person X, we cannot take X’s interest in being created into account because X will not exist if we follow the principle. By considering the standpoint of a person in our deliberations we consider the burdens they will have to bear as a result of the principle. In this case, there is no one who will bear any burdens since if the principle is followed (that is, if we do not create X), X will not exist to bear any burdens. So, only people who do/will actually exist can bear the brunt of a principle, and therefore occupy a standpoint that is owed justification. Second, existence is not an interest at all and a possible person is not disadvantaged by not being caused to exist. Rather than being an interest, it is a necessary requirement in order to have interests. Rivka Weinberg describes it as ‘neutral’ because causing a person to exist is to create a subject who can have interests; existence is not an interest itself.3 In order to be disadvantaged, there must be some detrimental effect on your interests. However, without existence, a person does not have any interests so they cannot be disadvantaged by being kept out of existence. But, as Weinberg points out, ‘never having interests itself could not be contrary to people’s interests since without interest bearers, there can be no ‘they’ for it to be bad for’ (Weinberg 2008, 13). So, a principle that results in some possible people never becoming actual does not impose any costs on those ‘people’ because nobody is disadvantaged by not coming into existence.4 It therefore seems that it cannot be wrong to fail to bring particular people into existence. This would mean that no one acts wrongly when they fail to create another person. Writ large, it would also not be wrong if everybody decided to exercise their prerogative not to create new people and potentially, by consequence, allow human extinction. One might respond here by saying that although it may be permissible for one person to fail to create a new person, it is not permissible if everyone chooses to do so because human lives have value and allowing human extinction would be to forgo a huge amount of value in the world. This takes us to the second way of understanding the potential wrongness of preventing people from existing — the foregone value of a life provides a reason for rejecting any principle that prevents it. One possible reply to this claim turns on the fact that many philosophers acknowledge that the only, or at least the best, way to think about the value of (individual or groups of) possible people’s lives is in impersonal terms (Parfit 1984; Reiman 2007; McMahan 2009). Jeff McMahan, for example, writes ‘at the time of one’s choice there is no one who exists or will exist independently of that choice for whose sake one could be acting in causing him or her to exist … it seems therefore that any reason to cause or not to cause an individual to exist … is best considered an impersonal rather than individual-affecting reason’ (McMahan 2009, 52). Another reply along similar lines would be to appeal to the value that is lost or at least foregone when we fail to bring into existence a next (or several next) generations of people with worth-living lives. Since ex hypothesi worth-living lives have positive value, it is better to create more such lives and worse to create fewer. Human extinction by definition is the creation of no future lives and would ‘deprive’ billions of ‘people’ of the opportunity to live worth-living lives. This might reduce the amount of value in the world at the time of the extinction (by killing already existing people), but it would also prevent a much vaster amount of value in the future (by failing to create more people). Both replies depend on the impersonal value of human life. However, recall that in contractualism impersonal values are not on their own grounds for reasonably rejecting principles. Scanlon himself says that although we have a strong reason not to destroy existing human lives, this reason ‘does not flow from the thought that it is a good thing for there to be more human life rather than less’ (104). In contractualism, something cannot be wrong unless there is an impact on a person. Thus, neither the impersonal value of creating a particular person nor the impersonal value of human life writ large could on its own provide a reason for rejecting a principle permitting human extinction. It seems therefore that the fact that extinction would deprive future people of the opportunity to live worth-living lives (either by failing to create either particular future people or future people in general) cannot provide us with a reason to consider human extinction to be wrong. Although the lost value of these ‘lives’ itself cannot be the reason explaining the wrongness of extinction, it is possible the knowledge of this loss might create a personal reason for some existing people. I will consider this possibility later on in section (d). But first I move to the second reason human extinction might be wrong per se. 2.2. It would mean the loss of the only known form of intelligent life and all civilization and intellectual progress would be lost A second reason we might think it would be wrong to cause human extinction is the loss that would occur of the only (known) form of rational life and the knowledge and civilization that that form of life has created. One thought here could be that just as some might consider it wrong to destroy an individual human heritage monument like the Sphinx, it would also be wrong if the advances made by humans over the past few millennia were lost or prevented from progressing. A related argument is made by those who feel that there is something special about humans’ capacity for rationality which is valuable in itself. Since humans are the only intelligent life that we know of, it would be a loss, in itself, to the world for that to end. I admit that I struggle to fully appreciate this thought. It seems to me that Henry Sidgwick was correct in thinking that these things are only important insofar as they are important to humans (Sidgwick 1874, I.IX.4).5 If there is no form of intelligent life in the future, who would there be to lament its loss since intelligent life is the only form of life capable of appreciating intelligence? Similarly, if there is no one with the rational capacity to appreciate historic monuments and civil progress, who would there be to be negatively affected or even notice the loss?6 However, even if there is nothing special about human rationality, just as some people try to prevent the extinction of nonhuman animal species, we might think that we ought also to prevent human extinction for the sake of biodiversity. The thought in this, as well as the earlier examples, must be that it would somehow be bad for the world if there were no more humans even though there would be no one for whom it is bad. This may be so but the only way to understand this reason is impersonally. Since we are concerned with wrongness rather than badness, we must ask whether something that impacts no one’s well-being, status or claims can be wrong. As we saw earlier, in the contractualist framework reasons must be personal rather than impersonal in order to provide grounds for reasonable rejection (Scanlon 1998, 218–223). Since the loss of civilization, intelligent life or biodiversity are per se impersonal reasons, there is no standpoint from which these reasons could be used to reasonably reject a principle that permitted extinction. Therefore, causing human extinction on the grounds of the loss of civilization, rational life or biodiversity would not be wrong. 2.3. Existing people would endure physical pain and/or painful and/or premature deaths Thinking about the ways in which human extinction might come about brings to the fore two more reasons it might be wrong. It could, for example, occur if all humans (or at least the critical number needed to be unable to replenish the population, leading to eventual extinction) underwent a sterilization procedure. Or perhaps it could come about due to anthropogenic climate change or a massive asteroid hitting the Earth and wiping out the species in the same way it did the dinosaurs millions of years ago. Each of these scenarios would involve significant physical and/or non-physical harms to existing people and their interests. Physically, people might suffer premature and possibly also painful deaths, for example. It is not hard to imagine examples in which the process of extinction could cause premature death. A nuclear winter that killed everyone or even just every woman under the age of 50 is a clear example of such a case. Obviously, some types of premature death themselves cannot be reasons to reject a principle. Every person dies eventually, sometimes earlier than the standard expected lifespan due to accidents or causes like spontaneously occurring incurable cancers. A cause such as disease is not a moral agent and therefore it cannot be wrong if it unavoidably kills a person prematurely. Scanlon says that the fact that a principle would reduce a person’s well-being gives that person a reason to reject the principle: ‘components of well-being figure prominently as grounds for reasonable rejection’ (Scanlon 1998, 214). However, it is not settled yet whether premature death is a setback to well-being. Some philosophers hold that death is a harm to the person who dies, whilst others argue that it is not.7 I will argue, however, that regardless of who is correct in that debate, being caused to die prematurely can be reason to reject a principle when it fails to show respect to the person as a rational agent. Scanlon says that recognizing others as rational beings with interests involves seeing reason to preserve life and prevent death: ‘appreciating the value of human life is primarily a matter of seeing human lives as something to be respected, where this involves seeing reasons not to destroy them, reasons to protect them, and reasons to want them to go well’ (Scanlon 1998, 104). The ‘respect for life’ in this case is a respect for the person living, not respect for human life in the abstract. This means that we can sometimes fail to protect human life without acting wrongfully if we still respect the person living. Scanlon gives the example of a person who faces a life of unending and extreme pain such that she wishes to end it by committing suicide. Scanlon does not think that the suicidal person shows a lack of respect for her own life by seeking to end it because the person whose life it is has no reason to want it to go on. This is important to note because it emphasizes the fact that the respect for human life is person-affecting. It is not wrong to murder because of the impersonal disvalue of death in general, but because taking someone’s life without their permission shows disrespect to that person. This supports its inclusion as a reason in the contractualist formula, regardless of what side ends up winning the ‘is death a harm?’ debate because even if death turns out not to harm the person who died, ending their life without their consent shows disrespect to that person. A person who could reject a principle permitting another to cause his or her premature death presumably does not wish to die at that time, or in that manner. Thus, if they are killed without their consent, their interests have not been taken into account, and they have a reason to reject the principle that allowed their premature death.8 This is as true in the case of death due to extinction as it is for death due to murder. However, physical pain may also be caused to existing people without killing them, but still resulting in human extinction. Imagine, for example, surgically removing everyone’s reproductive organs in order to prevent the creation of any future people. Another example could be a nuclear bomb that did not kill anyone, but did painfully render them infertile through illness or injury. These would be cases in which physical pain (through surgery or bombs) was inflicted on existing people and the extinction came about as a result of the painful incident rather than through death. Furthermore, one could imagine a situation in which a bomb (for example) killed enough people to cause extinction, but some people remained alive, but in terrible pain from injuries. It seems uncontroversial that the infliction of physical pain could be a reason to reject a principle. Although Scanlon says that an impact on well-being is not the only reason to reject principles, it plays a significant role, and indeed, most principles are likely to be rejected due to a negative impact on a person’s well-being, physical or otherwise. It may be queried here whether it is actually the involuntariness of the pain that is grounds for reasonable rejection rather than the physical pain itself because not all pain that a person suffers is involuntary. One can imagine acts that can cause physical pain that are not rejectable — base jumping or life-saving or improving surgery, for example. On the other hand, pushing someone off a cliff or cutting him with a scalpel against his will are clearly rejectable acts. The difference between the two cases is that in the former, the person having the pain inflicted has consented to that pain or risk of pain. My view is that they cannot be separated in these cases and it is involuntary physical pain that is the grounds for reasonable rejection. Thus, the fact that a principle would allow unwanted physical harm gives a person who would be subjected to that harm a reason to reject the principle. Of course the mere fact that a principle causes involuntary physical harm or premature death is not sufficient to declare that the principle is rejectable — there might be countervailing reasons. In the case of extinction, what countervailing reasons might be offered in favour of the involuntary physical pain/ death-inducing harm? One such reason that might be offered is that humans are a harm to the natural environment and that the world might be a better place if there were no humans in it. It could be that humans might rightfully be considered an all-things-considered hindrance to the world rather than a benefit to it given the fact that we have been largely responsible for the extinction of many species, pollution and, most recently, climate change which have all negatively affected the natural environment in ways we are only just beginning to understand. Thus, the fact that human extinction would improve the natural environment (or at least prevent it from degrading further), is a countervailing reason in favour of extinction to be weighed against the reasons held by humans who would experience physical pain or premature death. However, the good of the environment as described above is by definition not a personal reason. Just like the loss of rational life and civilization, therefore, it cannot be a reason on its own when determining what is wrong and countervail the strong personal reasons to avoid pain/death that is held by the people who would suffer from it.9 Every person existing at the time of the extinction would have a reason to reject that principle on the grounds of the physical pain they are being forced to endure against their will that could not be countervailed by impersonal considerations such as the negative impact humans may have on the earth. Therefore, a principle that permitted extinction to be accomplished in a way that caused involuntary physical pain or premature death could quite clearly be rejectable by existing people with no relevant countervailing reasons. This means that human extinction that came about in this way would be wrong. There are of course also additional reasons they could reject a similar principle which I now turn to address in the next section. 2.4. Existing people could endure non-physical harms I said earlier than the fact in itself that there would not be any future people is an impersonal reason and can therefore not be a reason to reject a principle permitting extinction. However, this impersonal reason could give rise to a personal reason that is admissible. So, the final important reason people might think that human extinction would be wrong is that there could be various deleterious psychological effects that would be endured by existing people having the knowledge that there would be no future generations. There are two main sources of this trauma, both arising from the knowledge that there will be no more people. The first relates to individual people and the undesired negative effect on well-being that would be experienced by those who would have wanted to have children. Whilst this is by no means universal, it is fair to say that a good proportion of people feel a strong pull towards reproduction and having their lineage continue in some way. Samuel Scheffler describes the pull towards reproduction as a ‘desire for a personalized relationship with the future’ (Scheffler 2012, 31). Reproducing is a widely held desire and the joys of parenthood are ones that many people wish to experience. For these people knowing that they would not have descendants (or that their descendants will endure painful and/or premature deaths) could create a sense of despair and pointlessness of life. Furthermore, the inability to reproduce and have your own children because of a principle/policy that prevents you (either through bans or physical interventions) would be a significant infringement of what we consider to be a basic right to control what happens to your body. For these reasons, knowing that you will have no descendants could cause significant psychological traumas or harms even if there were no associated physical harm. The second is a more general, higher level sense of hopelessness or despair that there will be no more humans and that your projects will end with you. Even those who did not feel a strong desire to procreate themselves might feel a sense of hopelessness that any projects or goals they have for the future would not be fulfilled. Many of the projects and goals we work towards during our lifetime are also at least partly future-oriented. Why bother continuing the search for a cure for cancer if either it will not be found within humans’ lifetime, and/or there will be no future people to benefit from it once it is found? Similar projects and goals that might lose their meaning when confronted with extinction include politics, artistic pursuits and even the type of philosophical work with which this paper is concerned. Even more extreme, through the words of the character Theo Faron, P.D. James says in his novel The Children of Men that ‘without the hope of posterity for our race if not for ourselves, without the assurance that we being dead yet live, all pleasures of the mind and senses sometimes seem to me no more than pathetic and crumbling defences shored up against our ruins’ (James 2006, 9). Even if James’ claim is a bit hyperbolic and all pleasures would not actually be lost, I agree with Scheffler in finding it not implausible that the knowledge that extinction was coming and that there would be no more people would have at least a general depressive effect on people’s motivation and confidence in the value of and joy in their activities (Scheffler 2012, 43). Both sources of psychological harm are personal reasons to reject a principle that permitted human extinction. Existing people could therefore reasonably reject the principle for either of these reasons. Psychological pain and the inability to pursue your personal projects, goals, and aims, are all acceptable reasons for rejecting principles in the contractualist framework. So too are infringements of rights and entitlements that we accept as important for people’s lives. These psychological reasons, then, are also valid reasons to reject principles that permitted or required human extinction.

#### 5] That is the only egalitarian metric---anything else collapses cooperation on collective action crises and makes extinction inevitable

Khan 18 (Risalat, activist and entrepreneur from Bangladesh passionate about addressing climate change, biodiversity loss, and other existential challenges. He was featured by The Guardian as one of the “young climate campaigners to watch” (2015). As a campaigner with the global civic movement Avaaz (2014-17), Risalat was part of a small core team that spearheaded the largest climate marches in history with a turnout of over 800,000 across 2,000 cities. After fighting for the Paris Agreement, Risalat led a campaign joined by over a million people to stop the Rampal coal plant in Bangladesh to protect the Sundarbans World Heritage forest, and elicited criticism of the plant from Crédit Agricolé through targeted advocacy. Currently, Risalat is pursuing an MPA in Environmental Science and Policy at Columbia University as a SIPA Environmental Fellow, “5 reasons why we need to start talking about existential risks,” https://www.weforum.org/agenda/2018/01/5-reasons-start-talking-existential-risks-extinction-moriori/)

Infinite future possibilities I find the story of the Moriori profound. It teaches me two lessons. Firstly, that human culture is far from immutable. That we can struggle against our baser instincts. That we can master them and rise to unprecedented challenges. Secondly, that even this does not make us masters of our own destiny. We can make visionary choices, but the future can still surprise us. This is a humbling realization. Because faced with an uncertain future, the only wise thing we can do is prepare for possibilities. Standing at the launch pad of the Fourth Industrial Revolution, the possibilities seem endless. They range from an era of abundance to the end of humanity, and everything in between. How do we navigate such a wide and divergent spectrum? I am an optimist. From my bubble of privilege, life feels like a rollercoaster ride full of ever more impressive wonders, even as I try to fight the many social injustices that still blight us. However, the accelerating pace of change amid uncertainty elicits one fundamental observation. Among the infinite future possibilities, only one outcome is truly irreversible: extinction. Concerns about extinction are often dismissed as apocalyptic alarmism. Sometimes, they are. But repeating that mankind is still here after 70 years of existential warning about nuclear warfare is a straw man argument. The fact that a 1000-year flood has not happened does not negate its possibility. And there have been far too many nuclear near-misses to rest easy. As the World Economic Forum’s Annual Meeting in Davos discusses how to create a shared future in a fractured world, here are five reasons why the possibility of existential risks should raise the stakes of conversation: 1. Extinction is the rule, not the exception More than 99.9% of all the species that ever existed are gone. Deep time is unfathomable to the human brain. But if one cares to take a tour of the billions of years of life’s history, we find a litany of forgotten species. And we have only discovered a mere fraction of the extinct species that once roamed the planet. In the speck of time since the first humans evolved, more than 99.9% of all the distinct human cultures that have ever existed are extinct. Each hunter-gatherer tribe had its own mythologies, traditions and norms. They wiped each other out, or coalesced into larger formations following the agricultural revolution. However, as major civilizations emerged, even those that reached incredible heights, such as the Egyptians and the Romans, eventually collapsed. It is only in the very recent past that we became a truly global civilization. Our interconnectedness continues to grow rapidly. “Stand or fall, we are the last civilization”, as Ricken Patel, the founder of the global civic movement Avaaz, put it. 2. Environmental pressures can drive extinction More than 15,000 scientists just issued a ‘warning to humanity’. They called on us to reduce our impact on the biosphere, 25 years after their first such appeal. The warning notes that we are far outstripping the capacity of our planet in all but one measure of ozone depletion, including emissions, biodiversity, freshwater availability and more. The scientists, not a crowd known to overstate facts, conclude: “soon it will be too late to shift course away from our failing trajectory, and time is running out”. In his 2005 book Collapse, Jared Diamond charts the history of past societies. He makes the case that overpopulation and resource use beyond the carrying capacity have often been important, if not the only, drivers of collapse. Even though we are making important incremental progress in battles such as climate change, we must still achieve tremendous step changes in our response to several major environmental crises. We must do this even while the world’s population continues to grow. These pressures are bound to exert great stress on our global civilization. 3. Superintelligence: unplanned obsolescence? Imagine a monkey society that foresaw the ascendance of humans. Fearing a loss of status and power, it decided to kill the proverbial Adam and Eve. It crafted the most ingenious plan it could: starve the humans by taking away all their bananas. Foolproof plan, right? This story describes the fundamental difficulty with superintelligence. A superintelligent being may always do something entirely different from what we, with our mere mortal intelligence, can foresee. In his 2014 book Superintelligence, Swedish philosopher Nick Bostrom presents the challenge in thought-provoking detail, and advises caution. Bostrom cites a survey of industry experts that projected a 50% chance of the development of artificial superintelligence by 2050, and a 90% chance by 2075. The latter date is within the life expectancy of many alive today. Visionaries like Stephen Hawking and Elon Musk have warned of the existential risks from artificial superintelligence. Their opposite camp includes Larry Page and Mark Zuckerberg. But on an issue that concerns the future of humanity, is it really wise to ignore the guy who explained the nature of space to us and another guy who just put a reusable rocket in it? 4. Technology: known knowns and unknown unknowns Many fundamentally disruptive technologies are coming of age, from bioengineering to quantum computing, 3-D printing, robotics, nanotechnology and more. Lord Martin Rees describes potential existential challenges from some of these technologies, such as a bioengineered pandemic, in his book Our Final Century. Imagine if North Korea, feeling secure in its isolation, could release a virulent strain of Ebola, engineered to be airborne. Would it do it? Would ISIS? Projecting decades forward, we will likely develop capabilities that are unthinkable even now. The unknown unknowns of our technological path are profoundly humbling. 5. 'The Trump Factor' Despite our scientific ingenuity, we are still a confused and confusing species. Think back to two years ago, and how you thought the world worked then. Has that not been upended by the election of Donald Trump as US President, and everything that has happened since? The mix of billions of messy humans will forever be unpredictable. When the combustible forces described above are added to this melee, we find ourselves on a tightrope. What choices must we now make now to create a shared future, in which we are not at perpetual risk of destroying ourselves? Common enemy to common cause Throughout history, we have rallied against the ‘other’. Tribes have overpowered tribes, empires have conquered rivals. Even today, our fiercest displays of unity typically happen at wartime. We give our lives for our motherland and defend nationalistic pride like a wounded lion. But like the early Morioris, we 21st-century citizens find ourselves on an increasingly unstable island. We may have a violent past, but we have no more dangerous enemy than ourselves. Our task is to find our own Nunuku’s Law. Our own shared contract, based on equity, would help us navigate safely. It would ensure a future that unleashes the full potential of our still-budding human civilization, in all its diversity. We cannot do this unless we are humbly grounded in the possibility of our own destruction. Survival is life’s primal instinct. In the absence of a common enemy, we must find common cause in survival. Our future may depend on whether we realize this.

#### 6] Err affirmative, because of innate cognitive biases

GPP 17 (Global Priorities Project, Future of Humanity Institute at the University of Oxford, Ministry for Foreign Affairs of Finland, “Existential Risk: Diplomacy and Governance,” Global Priorities Project, 2017, <https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf>,

1.3.1. Why existential risks are likely to be underinvested in There are several reasons why existential risk reduction is likely to be underinvested in. Firstly, it is a global public good. Economic theory predicts that such goods tend to be underprovided. The benefits of existential risk reduction are widely and indivisibly dispersed around the globe from the countries responsible for taking action. Consequently, a country which reduces existential risk gains only a small portion of the benefits but bears the full brunt of the costs. Countries thus have strong incentives to free ride, receiving the benefits of risk reduction without contributing. As a result, too few do what is in the common interest. Secondly, as already suggested above, existential risk reduction is an intergenerational public good: most of the benefits are enjoyed by future generations who have no say in the political process. For these goods, the problem is temporal free riding: the current generation enjoys the benefits of inaction while future generations bear the costs. Thirdly, many existential risks, such as machine superintelligence, engineered pandemics, and solar geoengineering, pose an unprecedented and uncertain future threat. Consequently, it is hard to develop a satisfactory governance regime for them: there are few existing governance instruments which can be applied to these risks, and it is unclear what shape new instruments should take. In this way, our position with regard to these emerging risks is comparable to the one we faced when nuclear weapons first became available. Cognitive biases also lead people to underestimate existential risks. Since there have not been any catastrophes of this magnitude, these risks are not salient to politicians and the public.72 This is an example of the misapplication of the availability heuristic, a mental shortcut which assumes that something is important only if it can be readily recalled. Another cognitive bias affecting perceptions of existential risk is scope neglect. In a seminal 1992 study, three groups were asked how much they would be willing to pay to save 2,000, 20,000 or 200,000 birds from drowning in uncovered oil ponds. The groups answered $80, $78, and $88, respectively.73 In this case, the size of the benefits had little effect on the scale of the preferred response. People become numbed to the effect of saving lives when the numbers get too large. 74 Scope neglect is a particularly acute problem for existential risk because the numbers at stake are so large. Due to scope neglect, decision-makers are prone to treat existential risks in a similar way to problems which are less severe by many orders of magnitude. A wide range of other cognitive biases are likely to affect the evaluation of existential risks.75