# 1AC

## 1AC 2.0

#### Plan: A just government ought to recognize a right to strike over environmental conditions

### Contention 1: The heat is on

#### 1. Outcomes of COP26 prove that current climate “efforts” are a death sentence unless the people enact cascading regime shifts. The best way to do so is political change via climate strikes — they have the momentum and have been empirically successful

Monbiot 21

George Monbiot (Guardian columnist and the author of *Feral, The Age of Consent* and *Out of the Wreckage: a New Politics for an Age of Crisis*); “After the failure of Cop26, there’s only one last hope for our survival”; The Guardian; November 14, 2021; <https://www.theguardian.com/commentisfree/2021/nov/14/cop26-last-hope-survival-climate-civil-disobedience>; HW-EMJ

Now it’s a straight fight for survival. The Glasgow Climate Pact, for all its restrained and diplomatic language, looks like a ~~suicide pact~~[sic] death sentence. After so many squandered years of denial, distraction and delay, it’s too late for incremental change. A fair chance of preventing more than 1.5C of heating means cutting greenhouse gas emissions by about 7% every year: faster than they fell in 2020, at the height of the pandemic. What we needed at the Cop26 climate conference was a decision to burn no more fossil fuels after 2030. Instead, powerful governments sought a compromise between our prospects of survival and the interests of the fossil fuel industry. But there was no room for compromise. Without massive and immediate change, we face the possibility of cascading environmental collapse, as Earth systems pass critical thresholds and flip into new and hostile states. So does this mean we might as well give up? It does not. For just as the complex natural systems on which our lives depend can flip suddenly from one state to another, so can the systems that humans have created. Our social and economic structures share characteristics with the Earth systems on which we depend. They have self-reinforcing properties – that stabilise them within a particular range of stress, but destabilise them when external pressure becomes too great. Like natural systems, if they are driven past their tipping points, they can flip with astonishing speed. Our last, best hope is to use those dynamics to our advantage, triggering what scientists call “cascading regime shifts”. A fascinating paper published in January in the journal Climate Policy showed how we could harness the power of “domino dynamics”: non-linear change, proliferating from one part of the system to another. It points out that “cause and effect need not be proportionate”, a small disturbance, in the right place, can trigger a massive response from a system and flip it into a new state. This is how the global financial crisis of 2008-09 happened: a relatively minor shock (mortgage defaults in the US) was transmitted and amplified through the entire system, almost bringing it down. We could use this property to detonate positive change. Sudden shifts in energy systems have happened before. The paper points out that the transition in the US from horse-drawn carriages to cars running on fossil fuels took just over a decade. The diffusion of new technologies tends to be self-accelerating, as greater efficiencies, economies of scale and industrial synergies reinforce each other. The authors’ hope is that, when the penetration of clean machines approaches a critical threshold, and the infrastructure required to deploy them becomes dominant, positive feedbacks will rapidly drive fossil fuels to extinction. For example, as the performance of batteries, power components and charging points improves and their costs fall, the price of electric cars drops and their desirability soars. At this point (in other words, right now), small interventions by government could trigger cascading change. This has already happened in Norway, where a change in taxes made electric vehicles cheaper than fossil-fuel cars. This flipped the system almost overnight: now more than 50% of the nation’s new car sales are electric, and petrol models are heading for extinction. As electric cars become more popular, and more polluting vehicles become socially unacceptable, it becomes less risky for governments to impose the policies that will complete the transition. This then helps to scale the new technologies, causing their price to fall further, until they outcompete petrol cars without the need for tax or subsidy, locking in the transition. Driven by this new economic reality, the shift then cascades from one nation to another. The battery technologies pioneered in the transport sector can also spread into other energy systems, helping to catalyse regime shifts in, for example, the electricity grid. The plummeting prices of solar electricity and offshore wind – already cheaper than hydrocarbons in many countries – are making fossil fuel plants look like a filthy extravagance. This reduces the political costs of accelerating their closure through tax or other measures. Once the plants are demolished, the transition is locked in. Of course, we should never underestimate the power of incumbency, and the lobbying efforts that an antiquated industry will use to keep itself in business. The global infrastructure of fossil fuel extraction, processing and sales is worth somewhere between $25tn (£19tn) and $0, depending on which way the political wind is blowing. The fossil fuel companies will do everything in their power to preserve their investments. They have tied President Joe Biden’s climate plans in knots. It would be no surprise if they were talking urgently with Donald Trump’s team about how to help lever him back into office. And if they can thwart action for long enough, the eventual victory of low-carbon technologies might scarcely be relevant, as Earth’s systems could already have been pushed past their critical thresholds, beyond which much of the planet could become uninhabitable. But let’s assume for a moment that we can shove the dead weight of these legacy industries aside, and consign fossil fuels to history. Will that really have solved our existential crisis? One aspect of it, perhaps. Yet I’m dismayed by the narrowness of the focus on carbon, in the Glasgow pact and elsewhere, to the exclusion of our other assaults on the living world. Electric cars are a classic example of the problem. It’s true that within a few years, as the advocates argue, the entire stinking infrastructure of petrol and diesel could be overthrown. But what is locally clean is globally filthy. The mining of the materials required for this massive deployment of batteries and electronics is already destroying communities, ripping down forests, polluting rivers, trashing fragile deserts and, in some cases, forcing people into near-slavery. Our “clean, green” transport revolution is being built with the help of blood cobalt, blood lithium and blood copper. Though the emissions of both carbon dioxide and local pollutants will undoubtedly fall, we are still left with a stupid, dysfunctional transport system that clogs the streets with one-tonne metal boxes in which single people travel. New roads will still carve up rainforests and other threatened places, catalysing new waves of destruction. A genuinely green transport system would involve system change of a different kind. It would start by reducing the need to travel – as the mayor of Paris, Anne Hidalgo, is doing with her 15-minute city policy, which seeks to ensure that people’s needs can be met within a 15-minute walk from homes. It would encourage walking and cycling by all who are able to do so, helping to address our health crisis as well as our environmental crisis. For longer journeys, it would prioritise public transport. Private electric vehicles would be used to address only the residue of the problem: providing transport for those who could not travel by other means. But simply flipping the system from fossil to electric cars preserves everything that’s wrong with the way we now travel, except the power source. Then there’s the question of where the money goes. The fruits of the new, “clean” economy will, as before, be concentrated in the hands of a few: those who control the production of cars and the charging infrastructure; and the construction companies still building the great web of roads required to accommodate them. The beneficiaries will want to spend this money, as they do today, on private jets, yachts, extra homes and other planet-trashing extravagances. It is not hard to envisage a low-carbon economy in which everything else falls apart. The end of fossil fuels will not, by itself, prevent the extinction crisis, the deforestation crisis, the soils crisis, the freshwater crisis, the consumption crisis, the waste crisis; the crisis of smashing and grabbing, accumulating and discarding that will destroy our prospects and much of the rest of life on Earth. So we also need to use the properties of complex systems to trigger another shift: political change. There’s an aspect of human nature that is simultaneously terrible and hopeful: most people side with the status quo, whatever it may be. A critical threshold is reached when a certain proportion of the population change their views. Other people sense that the wind has changed, and tack around to catch it. There are plenty of tipping points in recent history: the remarkably swift reduction in smoking; the rapid shift, in nations such as the UK and Ireland, away from homophobia; the #MeToo movement, which, in a matter of weeks, greatly reduced the social tolerance of sexual abuse and everyday sexism. But where does the tipping point lie? Researchers whose work was published in Science in 2018 discovered that a critical threshold was passed when the size of a committed minority reached roughly 25% of the population. At this point, social conventions suddenly flip. Between 72% and 100% of the people in the experiments swung round, destroying apparently stable social norms. As the paper notes, a large body of work suggests that “the power of small groups comes not from their authority or wealth, but from their commitment to the cause”. Another paper explored the possibility that the Fridays for Future climate protests could trigger this kind of domino dynamics. It showed how, in 2019, Greta Thunberg’s school strike snowballed into a movement that led to unprecedented electoral results for Green parties in several European nations. Survey data revealed a sharp change of attitudes, as people began to prioritise the environmental crisis. Fridays for Future came close, the researchers suggest, to pushing the European political system into a “critical state”. It was interrupted by the pandemic, and the tipping has not yet happened. But witnessing the power, the organisation and the fury of the movements gathered in Glasgow, I suspect the momentum is building again. Social convention, which has for so long worked against us, can if flipped become our greatest source of power, normalising what now seems radical and weird. If we can simultaneously trigger a cascading regime shift in both technology and politics, we might stand a chance. It sounds like a wild hope. But we have no choice. Our survival depends on raising the scale of civil disobedience until we build the greatest mass movement in history, mobilising the 25% who can flip the system. We do not consent to the destruction of life on Earth.

#### 2. Negative defense and “warming good” are new forms of climate denial and should be rejected

Maslin 19

(Mark Maslin, PhD, Earth System Science @ University College London, https://skepticalscience.com/five-corrupt-pillars-climate-denial.html)

The fossil fuel industry, political lobbyists, media moguls and individuals have spent the past 30 years sowing doubt about the reality of climate change – where none exists. The latest estimate is that the world’s five largest publicly-owned oil and gas companies spend about US$200 million a year on lobbying to control, delay or block binding climate policy. Their hold on the public seems to be waning. Two recent polls suggested over 75% of Americans think humans are causing climate change. School climate strikes, Extinction Rebellion protests, national governments declaring a climate emergency, improved media coverage of climate change and an increasing number of extreme weather events have all contributed to this shift. There also seems to be a renewed optimism that we can deal with the crisis. But this means lobbying has changed, now employing more subtle and more vicious approaches – what has been termed as “climate sadism”. It is used to mock young people going on climate protests and to ridicule Greta Thunberg, a 16-year-old young woman with Asperger’s, who is simply telling the scientific truth. Anti-climate change lobbying spend by the five largest publicly-owned fossil fuel companies. Statista, CC BY-SA At such a crossroads, it is important to be able to identify the different types of denial. The below taxonomy will help you spot the different ways that are being used to convince you to delay action on climate change. 1. Science denial This is the type of denial we are all familiar with: that the science of climate change is not settled. Deniers suggest climate change is just part of the natural cycle. Or that climate models are unreliable and too sensitive to carbon dioxide. Some even suggest that CO₂ is such a small part of the atmosphere it cannot have a large heating affect. Or that climate scientists are fixing the data to show the climate is changing (a global conspiracy that would take thousands of scientists in more than a 100 countries to pull off). All these arguments are false and there is a clear consensus among scientists about the causes of climate change. The climate models that predict global temperature rises have remained very similar over the last 30 years despite the huge increase in complexity, showing it is a robust outcome of the science. Read more: Five climate change science misconceptions – debunked Model reconstruction of global temperature since 1970. Average of the models in black with model range in grey compared to observational temperature records from NASA, NOAA, HadCRUT, Cowtan and Way, and Berkeley Earth. Carbon Brief, CC BY The shift in public opinion means that undermining the science will increasingly have little or no effect. So climate change deniers are switching to new tactics. One of Britain’s leading deniers, Nigel Lawson, the former UK chancellor, now agrees that humans are causing climate change, despite having founded the sceptic Global Warming Policy Foundation in 2009. It says it is “open-minded on the contested science of global warming, [but] is deeply concerned about the costs and other implications of many of the policies currently being advocated”. In other words, climate change is now about the cost not the science. 2. Economic denial The idea that climate change is too expensive to fix is a more subtle form of climate denial. Economists, however, suggest we could fix climate change now by spending 1% of world GDP. Perhaps even less if the cost savings from improved human health and expansion of the global green economy are taken into account. But if we don’t act now, by 2050 it could cost over 20% of world GDP. We should also remember that in 2018 the world generated US$86,000,000,000,000 and every year this World GDP grows by 3.5%. So setting aside just 1% to deal with climate change would make little overall difference and would save the world a huge amount of money. What the climate change deniers also forget to tell you is that they are protecting a fossil fuel industry that receives US$5.2 trillion in annual subsidies – which includes subsidised supply costs, tax breaks and environmental costs. This amounts to 6% of world GDP. The International Monetary Fund estimates that efficient fossil fuel pricing would lower global carbon emissions by 28%, fossil fuel air pollution deaths by 46%, and increase government revenue by 3.8% of the country’s GDP. 3. Humanitarian denial Climate change deniers also argue that climate change is good for us. They suggest longer, warmer summers in the temperate zone will make farming more productive. These gains, however, are often offset by the drier summers and increased frequency of heatwaves in those same areas. For example, the 2010 “Moscow” heatwave killed 11,000 people, devastated the Russian wheat harvest and increased global food prices. Geographical zones of the world. The tropical zones span from the Tropic of Cancer in the North to the Tropic of Capricorn in the South (red shaded region) and contains 40% of the World population. Maulucioni/Wikipedia, CC BY-SA More than 40% of the world’s population also lives in the Tropics – where from both a human health prospective and an increase in desertification no one wants summer temperatures to rise. Deniers also point out that plants need atmospheric carbon dioxide to grow so having more of it acts like a fertiliser. This is indeed true and the land biosphere has been absorbing about a quarter of our carbon dioxide pollution every year. Another quarter of our emissions is absorbed by the oceans. But losing massive areas of natural vegetation through deforestation and changes in land use completely nullifies this minor fertilisation effect. Climate change deniers will tell you that more people die of the cold than heat, so warmer winters will be a good thing. This is deeply misleading. Vulnerable people die of the cold because of poor housing and not being able to afford to heat their homes. Society, not climate, kills them. This argument is also factually incorrect. In the US, for example, heat-related deaths are four times higher than cold-related ones. This may even be an underestimate as many heat-related deaths are recorded by cause of death such as heart failure, stroke, or respiratory failure, all of which are exacerbated by excessive heat. US weather fatalities for 2018 alongside the ten- and 30-year average. National Weather Service, CC BY 4. Political denial Climate change deniers argue we cannot take action because other countries are not taking action. But not all countries are equally guilty of causing current climate change. For example, 25% of the human-produced CO₂ in the atmosphere is generated by the US, another 22% is produced by the EU. Africa produces just under 5%. Given the historic legacy of greenhouse gas pollution, developed countries have an ethical responsibility to lead the way in cutting emissions. But ultimately, all countries need to act because if we want to minimise the effects of climate change then the world must go carbon zero by 2050. Per capita annual carbon dioxide emissions and cumulative country emissions. Data from the Global Carbon Project. Nature. Data from the Global Carbon Project Deniers will also tell you that there are problems to fix closer to home without bothering with global issues. But many of the solutions to climate change are win-win and will improve the lives of normal people. Switching to renewable energy and electric vehicles, for example, reduces air pollution, which improves people’s overall health. Developing a green economy provides economic benefits and creates jobs. Improving the environment and reforestation provides protection from extreme weather events and can in turn improve food and water security. 5. Crisis denial The final piece of climate change denial is the argument that we should not rush into changing things, especially given the uncertainty raised by the other four areas of denial above. Deniers argue that climate change is not as bad as scientists make out. We will be much richer in the future and better able to fix climate change. They also play on our emotions as many of us don’t like change and can feel we are living in the best of times – especially if we are richer or in power. But similarly hollow arguments were used in the past to delay ending slavery, granting the vote to women, ending colonial rule, ending segregation, decriminalising homosexuality, bolstering worker’s rights and environmental regulations, allowing same sex marriages and banning smoking. The fundamental question is why are we allowing the people with the most privilege and power to convince us to delay saving our planet from climate change?

#### 3. CO2-induced ocean acidification empirically causes mass extinction

Rosane 20

(Olivia, 10/21/20, https://www.ecowatch.com/co2-emissions-mass-extinction-study-2648427335.html?rebelltitem=1#rebelltitem1)

The excess carbon dioxide emitted by human activity since the start of the industrial revolution has already raised the Earth's temperature by more than one degree Celsius, increased the risk of extreme hurricanes and wildfires and killed off more than half of the corals in the Great Barrier Reef. But geologic history shows that the impacts of greenhouse gases could be much worse. In fact, scientists from Scotland's University of Saint Andrews and two major German research centers have for the first time determined a "conclusive picture" of the initial trigger and subsequent processes responsible for Earth's biggest mass extinction. The answer? Massive amounts of carbon dioxide spewed into the atmosphere from a volcanic eruption. "We are dealing with a cascading catastrophe in which the rise of CO2 in the atmosphere set off a chain of events that successively extinguished almost all life in the seas," study lead author Dr. Hana Jurikova told The Independent. The study, published in Nature Geoscience Monday, sought to understand the mechanisms behind an event known as the "Great Dying," the University of Saint Andrews explained in a press release. This was a period around 252 million years ago between the Permian and Triassic epochs in which 95 percent of marine species were wiped out within tens of thousands of years. It is the closest life on Earth has come to total extinction. Scientists have advanced many theories for what caused this turn of events, including a release of methane from the seafloor and volcanic activity, but this is the first time a group has determined the exact cause, the GEOMAR Helmholtz Centre for Ocean Research Kiel, one of the research centers involved in the new study, said. The extinction process went something like this, as Saint Andrews explained. A volcanic eruption in what is now Siberia sent 100,000 billion tonnes of carbon into the atmosphere. This release led to ocean acidification and warming, which was especially deadly to marine life that requires calcium carbonate for their shells and skeletons. The atmospheric warming increased the rates of chemical weathering on land. This caused more nutrients to run off into the ocean, depleting it of oxygen and perhaps also poisoning it with sulphide. "It took several hundreds of thousands to millions of years for the ecosystem to recover from the catastrophe, which profoundly altered the course of evolution of life on Earth," Jurikova said. The researchers, who also included members of the Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences, were able to reach their conclusions by examining the shells of fossil brachiopods. "These are clam-like organisms that have existed on Earth for more than 500 million years," Jurikova explained in the GEOMAR press release. The researchers were able to assess the pH levels in the ocean based on the different isotopes of boron in the fossilized shells. Because oceanic pH levels are tightly linked to atmospheric carbon dioxide, the team could then create a model of the atmosphere at the time.

#### 4. No defense — ocean CO2 rates are climbing faster than what killed the dinosaurs

Randall 20

(Ian, 9/14/20, https://www.dailymail.co.uk/sciencetech/article-8731667/Ocean-carbon-levels-rising-faster-deadly-event-55-million-years-ago.html)

A mass extinction in the deep oceans 55.6 million years ago was triggered by global warming brought about by large-scale volcanic activity, a study has found. Soaring carbon dioxide levels drove temperatures up by around 9–14.4° (5–8°C) at the so-called Paleocene-Eocene Thermal Maximum (PETM). The event — which saw the extra carbon taken down into the seas — triggered reactions that acidified the oceans, to the detriment of many marine species. In fact, such killed off 35–50 per cent of microscopic shelled sea creatures called foraminifera living on and just above the ocean floor. Yet carbon was added to the seas during this devastating episode at a rate eight times slower than occurs today due to fossil fuel emissions, US experts warned. 'If you add carbon slowly, living things can adapt. If you do it very fast, that's a really big problem,' said paper author and geochemist Bärbel Hönisch of New York's Columbia University. 'The past saw some really dire consequences, and that does not bode well for the future,' she added. 'We're outpacing the past, and the consequences are probably going to be very serious.' While scientists have known about the carbon surge at the PETM for decades, the reason that this event occurred had been unclear. In their study, Dr Hönisch and colleagues created highly acidic ocean conditions in the lab, in which they cultured their own foraminifera. They compared the geochemical information gathered from these lab-grown organisms with data from fossilised foraminifera from the PETM. This allowed the researchers to calculate the amount of carbon added to the ocean during the PETM — which, they concluded, was as much as 14.9 quadrillion metric tons over about 5,000 years. The team believe that volcanoes were the likely source of the carbon added to the oceans, possibly from massive eruptions centred around what is now Iceland. Carbon dioxide would have been emitted directly by the eruptions, by the combustion of surrounding sedimentary rocks and from methane upwellings. Atmospheric carbon levels have shot up from about 280 parts per million in the 1700s to about 415 today — and are on a path to keep rising rapidly, the team said. As the oceans continue to absorb excess carbon dioxide, the resulting and rapid acidification is starting to stress marine life. 'We want to understand how the Earth system is going to respond to rapid carbon dioxide emissions now,' said paper author and geochemist Laura Haynes of New York's Vassar College. 'The PETM is not the perfect analogue, but it's the closest thing we have. Today, things are moving much faster.' The full findings of the study were published in the journal Proceedings of the National Academy of Sciences.

#### 5. Human activity drives the *rate* of climate change by triggering natural feedbacks. Dramatic reductions beyond Paris are crucial to avoid “hothouse earth”

Steffen et al, PhDs, 18

(Will, Chemistry@Australian National, Johan Rockström, View ORCID ProfileKatherine Richardson, Timothy M. Lenton, Carl Folke, Diana Liverman, Colin P. Summerhayes, Anthony D. Barnosky, Sarah E. Cornell, View ORCID ProfileMichel Crucifix, Jonathan F. Donges, Ingo Fetzer, Steven J. Lade, Marten Scheffer, Ricarda Winkelmann, and Hans Joachim Schellnhuber Trajectories of the Earth System in the Anthropocene, PNAS August 14, 2018 115 (33) 8252-8259; https://www.pnas.org/content/115/33/8252)

Stability landscape showing the pathway of the Earth System out of the Holocene and thus, out of the glacial–interglacial limit cycle to its present position in the hotter Anthropocene. The fork in the road in Fig. 1 is shown here as the two divergent pathways of the Earth System in the future (broken arrows). Currently, the Earth System is on a Hothouse Earth pathway driven by human emissions of greenhouse gases and biosphere degradation toward a planetary threshold at ∼2 °C (horizontal broken line at 2 °C in Fig. 1), beyond which the system follows an essentially irreversible pathway driven by intrinsic biogeophysical feedbacks. The other pathway leads to Stabilized Earth, a pathway of Earth System stewardship guided by human-created feedbacks to a quasistable, human-maintained basin of attraction. “Stability” (vertical axis) is defined here as the inverse of the potential energy of the system. Systems in a highly stable state (deep valley) have low potential energy, and considerable energy is required to move them out of this stable state. Systems in an unstable state (top of a hill) have high potential energy, and they require only a little additional energy to push them off the hill and down toward a valley of lower potential energy. The Anthropocene represents the beginning of a very rapid human-driven trajectory of the Earth System away from the glacial–interglacial limit cycle toward new, hotter climatic conditions and a profoundly different biosphere (2, 8, 9) (SI Appendix). The current position, at over 1 °C above a preindustrial baseline (10), is nearing the upper envelope of interglacial conditions over the past 1.2 million years (SI Appendix, Table S1). More importantly, the rapid trajectory of the climate system over the past half-century along with technological lock in and socioeconomic inertia in human systems commit the climate system to conditions beyond the envelope of past interglacial conditions. We, therefore, suggest that the Earth System may already have passed one “fork in the road” of potential pathways, a bifurcation (near A in Fig. 1) taking the Earth System out of the next glaciation cycle (11). In the future, the Earth System could potentially follow many trajectories (12, 13), often represented by the large range of global temperature rises simulated by climate models (14). In most analyses, these trajectories are largely driven by the amount of greenhouse gases that human activities have already emitted and will continue to emit into the atmosphere over the rest of this century and beyond — with a presumed quasilinear relationship between cumulative carbon dioxide emissions and global temperature rise (14). However, here we suggest that biogeophysical feedback processes within the Earth System coupled with direct human degradation of the biosphere may play a more important role than normally assumed, limiting the range of potential future trajectories and potentially eliminating the possibility of the intermediate trajectories. We argue that there is a significant risk that these internal dynamics, especially strong nonlinearities in feedback processes, could become an important or perhaps, even dominant factor in steering the trajectory that the Earth System actually follows over coming centuries. This risk is represented in Figs. 1 and 2 by a planetary threshold (horizontal broken line in Fig. 1 on the Hothouse Earth pathway around 2 °C above preindustrial temperature). Beyond this threshold, intrinsic biogeophysical feedbacks in the Earth System (Biogeophysical Feedbacks) could become the dominant processes controlling the system’s trajectory. Precisely where a potential planetary threshold might be is uncertain (15, 16). We suggest 2 °C because of the risk that a 2 °C warming could activate important tipping elements (12, 17), raising the temperature further to activate other tipping elements in a domino-like cascade that could take the Earth System to even higher temperatures (Tipping Cascades). Such cascades comprise, in essence, the dynamical process that leads to thresholds in complex systems (section 4.2 in ref. 18). This analysis implies that, even if the Paris Accord target of a 1.5 °C to 2.0 °C rise in temperature is met, we cannot exclude the risk that a cascade of feedbacks could push the Earth System irreversibly onto a “Hothouse Earth” pathway. The challenge that humanity faces is to create a “Stabilized Earth” pathway that steers the Earth System away from its current trajectory toward the threshold beyond which is Hothouse Earth (Fig. 2). The human-created Stabilized Earth pathway leads to a basin of attraction that is not likely to exist in the Earth System’s stability landscape without human stewardship to create and maintain it. Creating such a pathway and basin of attraction requires a fundamental change in the role of humans on the planet. This stewardship role requires deliberate and sustained action to become an integral, adaptive part of Earth System dynamics, creating feedbacks that keep the system on a Stabilized Earth pathway (Alternative Stabilized Earth Pathway). We now explore this critical question in more detail by considering the relevant biogeophysical feedbacks (Biogeophysical Feedbacks) and the risk of tipping cascades (Tipping Cascades). The trajectory of the Earth System is influenced by biogeophysical feedbacks within the system that can maintain it in a given state (negative feedbacks) and those that can amplify a perturbation and drive a transition to a different state (positive feedbacks). Some of the key negative feedbacks that could maintain the Earth System in Holocene-like conditions — notably, carbon uptake by land and ocean systems — are weakening relative to human forcing (19), increasing the risk that positive feedbacks could play an important role in determining the Earth System’s trajectory. Table 1 summarizes carbon cycle feedbacks that could accelerate warming, while SI Appendix, Table S2 describes in detail a more complete set of biogeophysical feedbacks that can be triggered by forcing levels likely to be reached within the rest of the century. Most of the feedbacks can show both continuous responses and tipping point behavior in which the feedback process becomes self-perpetuating after a critical threshold is crossed; subsystems exhibiting this behavior are often called “tipping elements” (17). The type of behavior — continuous response or tipping point/abrupt change — can depend on the magnitude or the rate of forcing, or both. Many feedbacks will show some gradual change before the tipping point is reached. A few of the changes associated with the feedbacks are reversible on short timeframes of 50–100 years (e.g., change in Arctic sea ice extent with a warming or cooling of the climate; Antarctic sea ice may be less reversible because of heat accumulation in the Southern Ocean), but most changes are largely irreversible on timeframes that matter to contemporary societies (e.g., loss of permafrost carbon). A few of the feedbacks do not have apparent thresholds (e.g., change in the land and ocean physiological carbon sinks, such as increasing carbon uptake due to the CO2 fertilization effect or decreasing uptake due to a decrease in rainfall). For some of the tipping elements, crossing the tipping point could trigger an abrupt, nonlinear response (e.g., conversion of large areas of the Amazon rainforest to a savanna or seasonally dry forest), while for others, crossing the tipping point would lead to a more gradual but self-perpetuating response (large-scale loss of permafrost). There could also be considerable lags after the crossing of a threshold, particularly for those tipping elements that involve the melting of large masses of ice. However, in some cases, ice loss can be very rapid when occurring as massive iceberg outbreaks (e.g., Heinrich Events). For some feedback processes, the magnitude — and even the direction — depend on the rate of climate change. If the rate of climate change is small, the shift in biomes can track the change in temperature/moisture, and the biomes may shift gradually, potentially taking up carbon from the atmosphere as the climate warms and atmospheric CO2 concentration increases. However, if the rate of climate change is too large or too fast, a tipping point can be crossed, and a rapid biome shift may occur via extensive disturbances (e.g., wildfires, insect attacks, droughts) that can abruptly remove an existing biome. In some terrestrial cases, such as widespread wildfires, there could be a pulse of carbon to the atmosphere, which if large enough, could influence the trajectory of the Earth System (29). Varying response rates to a changing climate could lead to complex biosphere dynamics with implications for feedback processes. For example, delays in permafrost thawing would most likely delay the projected northward migration of boreal forests (30), while warming of the southern areas of these forests could result in their conversion to steppe grasslands of significantly lower carbon storage capacity. The overall result would be a positive feedback to the climate system. The so-called “greening” of the planet, caused by enhanced plant growth due to increasing atmospheric CO2 concentration (31), has increased the land carbon sink in recent decades (32). However, increasing atmospheric CO2 raises temperature, and hotter leaves photosynthesize less well. Other feedbacks are also involved — for instance, warming the soil increases microbial respiration, releasing CO2 back into the atmosphere. Our analysis focuses on the strength of the feedback between now and 2100. However, several of the feedbacks that show negligible or very small magnitude by 2100 could nevertheless be triggered well before then, and they could eventually generate significant feedback strength over longer timeframes — centuries and even millennia — and thus, influence the long-term trajectory of the Earth System. These feedback processes include permafrost thawing, decomposition of ocean methane hydrates, increased marine bacterial respiration, and loss of polar ice sheets accompanied by a rise in sea levels and potential amplification of temperature rise through changes in ocean circulation (33). Tipping Cascades. Fig. 3 shows a global map of some potential tipping cascades. The tipping elements fall into three clusters based on their estimated threshold temperature (12, 17, 39). Cascades could be formed when a rise in global temperature reaches the level of the lower-temperature cluster, activating tipping elements, such as loss of the Greenland Ice Sheet or Arctic sea ice. These tipping elements, along with some of the nontipping element feedbacks (e.g., gradual weakening of land and ocean physiological carbon sinks), could push the global average temperature even higher, inducing tipping in mid- and higher-temperature clusters. For example, tipping (loss) of the Greenland Ice Sheet could trigger a critical transition in the Atlantic Meridional Ocean Circulation (AMOC), which could together, by causing sea-level rise and Southern Ocean heat accumulation, accelerate ice loss from the East Antarctic Ice Sheet (32, 40) on timescales of centuries (41). Fig. 3. Download figure Open in new tab Download powerpoint Fig. 3. Global map of potential tipping cascades. The individual tipping elements are color- coded according to estimated thresholds in global average surface temperature (tipping points) (12, 34). Arrows show the potential interactions among the tipping elements based on expert elicitation that could generate cascades. Note that, although the risk for tipping (loss of) the East Antarctic Ice Sheet is proposed at >5 °C, some marine-based sectors in East Antarctica may be vulnerable at lower temperatures (35⇓⇓–38). Observations of past behavior support an important contribution of changes in ocean circulation to such feedback cascades. During previous glaciations, the climate system flickered between two states that seem to reflect changes in convective activity in the Nordic seas and changes in the activity of the AMOC. These variations caused typical temperature response patterns called the “bipolar seesaw” (42⇓–44). During extremely cold conditions in the north, heat accumulated in the Southern Ocean, and Antarctica warmed. Eventually, the heat made its way north and generated subsurface warming that may have been instrumental in destabilizing the edges of the Northern Hemisphere ice sheets (45). If Greenland and the West Antarctic Ice Sheet melt in the future, the freshening and cooling of nearby surface waters will have significant effects on the ocean circulation. While the probability of significant circulation changes is difficult to quantify, climate model simulations suggest that freshwater inputs compatible with current rates of Greenland melting are sufficient to have measurable effects on ocean temperature and circulation (46, 47). Sustained warming of the northern high latitudes as a result of this process could accelerate feedbacks or activate tipping elements in that region, such as permafrost degradation, loss of Arctic sea ice, and boreal forest dieback. While this may seem to be an extreme scenario, it illustrates that a warming into the range of even the lower-temperature cluster (i.e., the Paris targets) could lead to tipping in the mid- and higher-temperature clusters via cascade effects. Based on this analysis of tipping cascades and taking a risk-averse approach, we suggest that a potential planetary threshold could occur at a temperature rise as low as ∼2.0 °C above preindustrial (Fig. 1).

#### 6. Hothouse earth scenario causes extinction

Steffen et al, PhDs, 18

(Will, Chemistry@Australian National, Johan Rockström, View ORCID ProfileKatherine Richardson, Timothy M. Lenton, Carl Folke, Diana Liverman, Colin P. Summerhayes, Anthony D. Barnosky, Sarah E. Cornell, View ORCID ProfileMichel Crucifix, Jonathan F. Donges, Ingo Fetzer, Steven J. Lade, Marten Scheffer, Ricarda Winkelmann, and Hans Joachim Schellnhuber Trajectories of the Earth System in the Anthropocene, PNAS August 14, 2018 115 (33) 8252-8259; https://www.pnas.org/content/115/33/8252)

What Is at Stake? Hothouse Earth is likely to be uncontrollable and dangerous to many, particularly if we transition into it in only a century or two, and it poses severe risks for health, economies, political stability (12, 39, 49, 50) (especially for the most climate vulnerable), and ultimately, the habitability of the planet for humans. Insights into the risks posed by the rapid climatic changes emerging in the Anthropocene can be obtained not only from contemporary observations (51⇓⇓⇓–55) but also, from interactions in the past between human societies and regional and seasonal hydroclimate variability. This variability was often much more pronounced than global, longer-term Holocene variability (SI Appendix). Agricultural production and water supplies are especially vulnerable to changes in the hydroclimate, leading to hot/dry or cool/wet extremes. Societal declines, collapses, migrations/resettlements, reorganizations, and cultural changes were often associated with severe regional droughts and with the global megadrought at 4.2–3.9 thousand years before present, all occurring within the relative stability of the narrow global Holocene temperature range of approximately ±1 °C (56). SI Appendix, Table S4 summarizes biomes and regional biosphere–physical climate subsystems critical for human wellbeing and the resultant risks if the Earth System follows a Hothouse Earth pathway. While most of these biomes or regional systems may be retained in a Stabilized Earth pathway, most or all of them would likely be substantially changed or degraded in a Hothouse Earth pathway, with serious challenges for the viability of human societies. For example, agricultural systems are particularly vulnerable, because they are spatially organized around the relatively stable Holocene patterns of terrestrial primary productivity, which depend on a well-established and predictable spatial distribution of temperature and precipitation in relation to the location of fertile soils as well as on a particular atmospheric CO2 concentration. Current understanding suggests that, while a Stabilized Earth pathway could result in an approximate balance between increases and decreases in regional production as human systems adapt, a Hothouse Earth trajectory will likely exceed the limits of adaptation and result in a substantial overall decrease in agricultural production, increased prices, and even more disparity between wealthy and poor countries (57). The world’s coastal zones, especially low-lying deltas and the adjacent coastal seas and ecosystems, are particularly important for human wellbeing. These areas are home to much of the world’s population, most of the emerging megacities, and a significant amount of infrastructure vital for both national economies and international trade. A Hothouse Earth trajectory would almost certainly flood deltaic environments, increase the risk of damage from coastal storms, and eliminate coral reefs (and all of the benefits that they provide for societies) by the end of this century or earlier (58).

#### 7. Climate change may be inevitable, but carbon reductions can limit the scope and rate avoiding the most severe impacts

Science Daily 19

9-25-19, https://www.sciencedaily.com/releases/2019/09/190925100415.htm

A study estimates global-scale, multi-sectoral economic impacts of climate change, and suggests that a plausible range of decisions and actions by humans can determine the scale of the economic impacts, even if the uncertainty in the climate response to increased greenhouse gas concentration is considered. These actions include reductions of greenhouse gas emissions and improvement of socioeconomic conditions. This study highlights the importance of societal changes and the current generation's responsibility for the future. People are less motivated to take actions if its outcome is uncertain, and this could be true for climate-related issues. The uncertainty in climate response to the increase in greenhouse gas concentration, which is often believed to be substantially large, makes it difficult to believe the benefit of reducing emissions or the effectiveness of making society more resilient to climate-related hazards. This could be one of the reasons for inaction even though urgent action is called for. A new study published in Nature Climate Change, conducted by a Japanese research team (consisting of researchers at Ibaraki University, Kyoto University, National Agriculture and Food Research Organization, National Institute for Environmental Studies, Ritsumeikan University, Shibaura Institute of Technology, The University of Tokyo, and University of Tsukuba), might change such views. The study estimates economic impacts of climate change and suggests that humankind's decisions and actions can overwhelm the uncertainty in climate response in terms of reducing the impact of climate change. Estimation of the economic impacts of climate change is itself extremely challenging because it can affect society in many ways. Collaboration between researchers in a diverse range of fields enabled the research team to conduct a global-scale assessment covering the economic impacts associated with climate change for nine impact sectors: the economic impacts arising from changes in agricultural productivity, undernourishment, heat-related excess mortality, cooling/heating demand, occupational health costs, capacity of hydroelectric power generation, capacity of thermal power generation, fluvial flooding, and coastal inundation. Describing the novelty and significance of the study, Dr. Hijioka, the research managing director of Center for Climate Change Adaptation, National Institute for Environmental Studies states, "This is very special research, with no equivalent in the world." The estimated value of the aggregated economic impacts had a large divergence depending on three assumptions: socioeconomic conditions, amount of greenhouse gas emissions, and climate responses to the increased greenhouse gas concentration. Under the most pessimistic combination of assumptions, the estimated economic impact will be equivalent to 8.6% of the global total GDP at the end of the 21st century, while it will be limited to around or less than 1% if the 2-degree target, which was adopted in the Paris Agreement, is achieved and societal resilience to climate-related hazards improves. More importantly, the results also indicated that the contribution of the uncertainty in the climate response to the divergence -- or variance -- of the estimates was minor compared to the contribution of the differences in the anthropogenically directed societal pathways (i.e., greenhouse gas emissions and socioeconomic developments). "This means that humankind has the potential to determine the scale of the economic impacts of climate change," explains Dr. Takakura, a researcher at National Institute for Environmental Studies.

### Contention 2: Climate Strikes

#### 1. SQ strikes fail because workers lack protection, a right to strike for environmental redress is crucial to massive emission reductions and a sustainable and just transition

Subasinghe and Vogt 19

(Ruwan, Legal Advisor to the International Transport Workers’ Federation (ITF). Jeff Vogt is the director for the Solidarity Center’s Rule of Law department and was previously the legal director of the International Trade Union Confederation (ITUC). https://www.equaltimes.org/unions-must-join-the-global#.YYHKPxrMLiO)

Over the past twelve months, groups like the youth-led #FridaysforFuture movement and the civil disobedience network Extinction Rebellion have woken up the world to the climate and ecological emergency we are facing. Earlier this year, over a million students walked out of classes as part of two hugely successful global school strikes against inaction on the climate crisis. Now young people around the world are calling on workers to join them on 20 and 27 September for the third wave of global climate strikes. While some trade unions have been responding to the call with plans for lunch break actions and workplace climate assemblies, most are constrained by legal restrictions on the right to strike at the national level. Since taking unprotected action can lead to unions and their leaders being held liable for damages and individual members being disciplined or dismissed, defying legal requirements in pursuit of climate action may not be a viable option for many beleaguered unions across the globe. A strike is generally framed in national law as either a positive right or a freedom from liability which an employer would otherwise be able to assert in, for example, tort or contract. However, in many jurisdictions the right can only be exercised in the context of collective bargaining and/or a trade dispute. Unions operating in such jurisdictions will find it difficult to formally join the Global Climate Strike as the purpose of the action ostensibly falls outside the strict scope of collective bargaining or a trade dispute. While unions are increasingly bringing environmental issues to the bargaining table with demands for greening or just transition clauses, these efforts are still limited to workplace mitigation and adaptation strategies and do not cover wider commitments on climate change. In countries where strikes in furtherance of socio-economic aims are permitted, unions will nevertheless need to win the argument that climate change is a socio-economic issue and not just an environmental or a political one. Here we can, and should, rely on international law. Committee on Freedom of Association The International Labour Organization’s (ILO) tripartite Committee on Freedom of Association (CFA) has for nearly 70 years defined the scope of the right to freedom of association, including the right to strike. The CFA has consistently held that workers may engage in collective action, including protests and strikes, outside of the collective bargaining process and over matters beyond the traditional ambit of wages and conditions of work. So long as the strike is not ‘purely political’ in nature, such as an insurrection, the CFA has stated that, “organizations responsible for defending workers’ socio-economic and occupational interests should be able to use strike action to support their position in the search for solutions to problems posed by major social and economic policy trends which have a direct impact on their members and all workers in general, in particular as regards employment, social protection and standards of living.” In the past, the CFA has given its imprimatur to protests and strikes concerning a range of issues including trade agreements, labour law reform, pensions, tax policy, social protection and similar demands. While it has not yet had occasion to consider a climate strike, it should find such a strike to be protected. Indeed, there is no issue today that has a more direct, immediate and serious impact on the world of work than the climate emergency. Already, the ILO has explained that climate change, if not addressed, will have a serious impact on employment in all sectors and in all regions. These impacts include significant climate-driven migration for work, dangerous working conditions from extreme heat, job loss in rural areas due to crop failure and job loss in urban areas due to extreme weather events. Also, the actions we will need to take to mitigate climate change may be deeply disruptive, as the ILO Commission on the Future of Work has underscored. Conflict over how this is carried out and who benefits is certain to happen. Indeed, this is why Sustainable Development Goal 16 calls for broad social engagement in order to attain economic, social and environmental sustainability. The Global Climate Strike, for trade unions, would necessarily mean a call for immediate and significant reductions in emissions while respecting the need for a just transition to protect workers and their communities. The concept of a just transition of the workforce is firmly embedded in the legally binding Paris Agreement. Furthermore, in 2015 the ILO’s tripartite constituents unanimously endorsed guidelines for a just transition towards environmentally sustainable economies and societies. The promotion and realisation of fundamental principles and rights at work, which includes the principle of freedom of association, lies at the heart of the guidelines. It is evident that without the right to strike workers will not be able to effectively demand investment in new green jobs, training, income protection and other necessary measures for a fair and just transition. Strengthening the green-red alliance After the climate strike, we will urgently need to think about how to deepen policy coherence between the labour and environmental justice fields. While they have some different objectives, both share a common history of resistance to dominant economic and political structures which have subordinated the interests of individuals and communities. Indeed, a new field of ‘just transition’ law may be a way to bridge the fields of labour and environmental law and transform these into a coherent legal discourse. We would also propose as an important step the recognition of the right to strike in cases where an employer engages in activity which is demonstrably harmful to the environment. This is in a sense the extension of the long-standing principle that workers can remove themselves immediately from dangerous work without fear of retaliation. What can be more dangerous than activity that threatens our workplace, our communities and indeed life on Earth as we know it. With only 11 years left to avert climate catastrophe, trade unions must be given the means to help prevent irreversible damage from climate change. The right to strike is a human right protected under international law. Strikes have been, and can continue to be, a tool for major societal transformations, such as the democratisation of countries, from Poland to South Africa to Tunisia, and a just transition to a low carbon economy is just as significant. Without the industrial muscle of unions, we will not be able to effectively achieve the profound transformation of our economy, including the investment needed to create millions of new sustainable jobs. A determined labour movement can face up to the ultimate challenge of climate change.

#### 2. Right to strike strengthens the climate movement and gives them crucial leverage with corporations

Clark 19

(Benjamin Clark - Melbourne-based writer whose work has appeared in multiple current events publications, especially for social justice and democratic rights, member of the MEAA; 9/24/19; <https://www.crikey.com.au/2019/09/24/first-post-industrial-strike/>)

Friday’s climate strike was a brief but exhilarating dash of hope amid the dispiriting intransigence of Australian environmental politics. Standing among the 100,000-plus crowd in Melbourne, with hippies, suits and tradies embracing in raucous chants, one could briefly fantasise that we were winning; that the political climate, if not the physical one, might be changing for the better. Significantly, the third global climate strike was the first in Australia to include mass participation of workers alongside students. Indeed, the protest rivalled the largest worker-dominated rallies in Australian history, despite the teenage organisers lacking the resources and networks of the Australian Council of Trade Unions. The youth-led movement did face difficulties in encouraging workers into the fold, though not for lack of adult enthusiasm. The problem is that workers are subject to myriad restrictions on their right to peaceful civic engagement. You can’t sack students When organising students, Greta Thunberg’s disciples had a clear theory of change — young activists could pressure powerful adults to act on climate change by making inaction costly. They did what workers once could, absent legislative barriers — disrupt the daily operations of important institutions and cause headaches for those in power. Conservatives whined but were powerless to stop it, as disciplining students remains the purview of teachers who often encourage their students to be civically engaged. The power of workers to similarly disrupt “business as usual” has been systemically stymied by draconian legislation that severely limits their right to strike. The Fair Work Act affords no legal protection for striking except in limited circumstances, such as during EBA negotiations. Striking for non EBA-related matters, particularly political issues, can see your pay docked or your contract terminated. On Thursday, the Fair Work Commission reminded workers that if they wanted to attend the climate strike, they would require permission from their employer and/or may need to use their annual leave (if they had any). Unions agreed these were the only options for many workers. The only workers known to have taken industrial action to attend the climate strike were some Sydney wharfies whose EBA negotiations fell at a coincidental time. So for most workers it wasn’t really a “strike” at all. It was a protest, lacking the central element of industrial action: the collective withdrawal of labour to coerce institutions to alter their actions. Many workers missed out on attending the protest, unable to forego the income or defy the boss for fear of retaliation. Solidarity forever™ Some employers granted their workers time off and a select few actually paid their staff to attend. Such supportive corporate interventions rightly place the burden back on institutions to make the necessary sacrifices. However, they still disempower workers and reinforce that these are decisions for boardrooms, not breakrooms. Hostile companies were answerable principally to consumers and competitors, coerced only by the threat of a socially irresponsible image. Yet many employers simply don’t care, opportunistically “greenwashing” for brand exposure while doing little else to affect change. While institutions are far more responsible than individuals for the environmental crisis we face, corporations still largely insulate themselves from adverse consequences and outsource the moral burden to resist. The workers united need legislative support The protected right to strike, enshrined in global standards, must surely be extended beyond its current limited remit. Firstly, workers should be afforded legal protection for strike action on any matter that directly relates to their workplace pay and conditions, whether during a negotiating period or not. Secondly, legal protection should be afforded to a specified number of non-workplace-specific strikes per year for workers in large companies (the use of which must be negotiated in good faith between unions and employers). This would allow workers and their representatives to prioritise and pursue pressing political goals, including issues that affect all workers, such as a just transition to a low-carbon economy. I doubt Scott Morrison has any intention of facilitating the positive freedoms required to foster a vibrant civic culture. After all, a truly liberal framework would allow even more protesters to highlight his government’s callous disregard for our planet’s future. But the union movement, currently mulling its next move after the “Change the Rules” campaign, should take heed of society’s growing appetite for civil demonstration and imagine the possibilities that could arise if workers’ passion was less shackled.

#### 3. Right to strike is crucial to enable transnational solidarity in climate movements

UK Student Climate Network 19

(<https://freeourunions.org/2020/02/18/workers-need-the-right-to-strike-for-climate-justice/>, 9-19)

Workers need the right to strike for climate justice – repeal the anti-union laws In 2019, school students’ strikes internationally have shifted the debate about the climate crisis. Now more and more school student activists recognise that they alone cannot tackle the crisis and win a fundamental transformation of society. A just transition to a new economic system run in the interests of people and planet, not profit, must have workers at its core. For more than thirty years, workers in the UK have been fenced in by laws which make quick and effective strike action difficult, and action over political issues like climate change more difficult still. Workers do take radical action despite the law; but over the years the anti-union laws have helped weaken the culture of workplace organisation and workers’ direct action. The urgency of the climate crisis demands both bending and defiance of these laws – as groups of workers will undertake on 20 September – and a renewed campaign for them to be scrapped completely. In the context of climate chaos, workers urgently need freedom to take quick and effective industrial action to defend themselves against dangerous and unstable working conditions. They urgently need freedom to take solidarity action to support other workers in their communities, across the UK and – crucially in an interconnected world where the global poor are on the frontline – in other countries. And they urgently need freedom to take industrial action for political issues, most importantly a just solution to the climate crisis. We therefore call on all organisations who seriously want to fight climate change to call for the abolition of all anti-union laws and their replacement with strong legal rights for workers and unions, including the right to strike quickly and effectively, in solidarity with others and for political demands. We congratulate the Greens for taking a strong stand on these issues. We call on Labour to carry out the policy passed by its conference in 2017 and 2015. We welcome the motion to the TUC Congress submitted by the Fire Brigades Union.

#### 4. Strikes are crucial to combat climate change- they counter feelings of powerlessness, spread ideas, and put pressure on politicians and corporations to reduce emissions

Neves 20

(Felipe Schaeffer Neves - political and environmental analyst, University of Westminster social sciences, humanities and language; November 9, 2020; <https://lfca.earth/strikes/>)

How strikes work At its most basic level, a strike occurs when workers refuse to come to work as a form of protest in response to some sort of employee grievances. They gather outside the factory or company (or at another strategic location) and make their demands heard. These demands could be for labor rights or policy change, as the embodiment of class struggle. Without workers, the company can not function and therefore faces losses, with bosses being forced to engage in dialog with the strikers. Climate strikes are a little different. So far students have been the protagonists driving this movement forward. In this case, they protest by not going to school and, united, demand action against climate change and its consequences for their future. Their demands are objective, ambitious, and carry an enormous sense of urgency. Broadly speaking, they are calling for: a global divestment from fossil fuels; governments and local institutions to declare a climate emergency and prioritize sustainability policies; ecocide to be considered a crime before the International Criminal Court; and more transparency and accountability in regards to greenhouse emissions. Additionally, these young activists seem to recognize that the climate movement is part of a wider struggle for social, gender, and racial equality and justice; and that it is important to demand climate policies that include the protection of workers and the most vulnerable, and the reduction of all forms of inequality. Contributions of climate strikes This holistic approach to climate striking realizes how interconnected all social issues are and, as a form of nonviolent civil disobedience, is proving to be very effective in turning the spotlight to the climate crisis. Furthermore, striking, as a way of collective action, makes people feel empowered and more hopeful. This promotes awareness at the micro level and greater media attention at the macro level. In addition, it increases public pressure on elected officials and creates a fertile ground for discussing new strategies for halting global warming. Psychologically A 2019 study published in the Journal of Environmental Psychology suggests that striking can promote the most important psychological factors for fighting climate change. This is because of the sense of empowerment that collective action can create on people. Whilst you may not feel like your voice is being heard by carrying a sign alone (though this is precisely what Greta Thunberg did), this very action becomes much more powerful when carried out together with tens of thousands of people pressing for the same demands. Socially Striking implies collective action, which is all the more encouraging than isolated efforts, inasmuch as humans are social animals. The feeling of hopelessness and despair that inevitably emerges as we face the facts can be overpowered by a sense of community and solidarity. Obviously, this is not to dismiss individual environmental efforts, such as recycling, ethical consumerism, and veganism; these actions go hand in hand with striking. In fact, these two spheres – individualism and collectivism – are intertwined in the ever-evolving understanding of self and one’s place within the natural and social worlds. The socially constructed notion of individualism is simply not enough of a force to face the biggest crisis of our times. With this in mind, strikes are places where ideas emerge, disinformation is demystified and strategies can be discussed. It is the moment when people see their concerns being shared by many and their hopes being multiplied. A typical practice for displaying one’s active involvement in the strikes and the general climate movement is the use of hashtags on social media. It is a simple yet clever way to share with one’s circle of friends and family their concerns and participation, and to call attention to which actions are being planned. Some of the most popular hashtags circulating on social media are (in order of popularity): #climatestrike, #climatechange, #fridaysforfuture, #climate, #climatecrisis, #globalwarming, #gretathunberg, #climateaction, #savetheplanet and #climatejustice. Media The uproar caused by the press is also a major contribution brought about by the strikes. The more people participate, the louder the “buzz” and, consequently, the bigger the interest of the media in the cause. The dissemination of the ideals of the movement is important to raise awareness amongst the population, and having allies in the media is extremely important for this. Major news outlets, such as the Guardian in the UK and the New York Times in the US, regularly publish articles and op-eds about the climate strikes. For instance, during the last climate week of action, in September of this year, the Guardian reported extensively on the protests, covering in detail what was taking place around the globe, the numbers, their demands, and rationale. Politically Striking can have a great effect on policy-making. That is, politicians tend to listen to what is being demanded from the masses, after all, they are the electorate. The bigger the strike, the more of a chance of gaining space in political agendas. Eventually, there will be an election right down the road, which is why politicians take these actions seriously. An example of this is England, where campaigners managed to pressure their government into banning various single-use plastic items, like straws, stirrers, and cotton buds, earlier this year. In Europe, the European Parliament passed a law banning disposable plastic, which will take effect next year, and in the US eight states have already banned it, with the prospect of more states following suit. Moreover, an increasing number of countries are pledging to become carbon neutral in the next few years, ranging from 2030 to 2050. This is much owed to the efforts of climate activists, who use collective action as their weapon for policy-change. As this recent empirical research concluded, climate activism indeed leads to a legislation change in favor of the environment.