Alternative Essay Prompts

Please select and respond to one of the essay questions below. Your essay should be in Times New Roman font, 12 point, and double-spaced. The length of the essay can be anywhere from 2 to 5 pages. Please upload the completed essay directly to your application.

1. In his work *The Social Contract*, Jean-Jacques Rousseau identifies and categorizes three primary modes of governance: Democracy, Aristocracy, and Monarchy. Yet he writes: "If there were a nation of gods, it would be governed democratically. So perfect a government is unsuited to men" (68). Do you agree with this statement? Is it possible to have democracy in any given nation, no matter its size? Develop an argument in response to this question, drawing directly from the text.

2. Read chapter 6 from the book *Good Economics for Hard Times* and reflect on the tensions between growth, equality, and global warming. What are your thoughts on the growth-sustainability trade-off arguments? Should developing and developed countries carry the burden of carbon tax equally? Can free markets effectively avert a climate crisis and deliver the 'free lunch'? In answering the prompt, please draw on the text and any other relevant sources.

3. Wim Wenders' 1987 film *Wings of Desire* [*Der Himmel über Berlin*] portrays an expansive view of the city of Berlin before the fall of the Berlin Wall in 1989. Archival shots of the war-torn city are interweaved with views of a changed and divided Berlin. At the same time, the urban landscape is punctuated by cinematic portraits of various people carrying on with life, seeking and creating meaning in a city that bears traces of its turbulent past, yet also promises a new beginning. How is Berlin's history mirrored in the characters' memories of the past and their present experience of the urban space? In what ways does the dichotomy between angels and humans sustain the film's reflection on the interplay between memory and lived experience? Please watch the film in its entirety, and focus on one or two scenes or characters for your essay.

Jean-Jacques Rousseau

The Social Contract

or Principles of Political Right

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Translation by H. J. Tozer

Introduction by Derek Matravers

WORDSWORTH CLASSICS
OF WORLD LITERATURE

CHAPTER 6

The Social Pact

I assume that men have reached a point at which the obstacles that endanger their preservation in the state of nature overcome, by their resistance, the forces which each individual can exert with a view to maintaining himself in that state. Then this primitive condition can no longer subsist, and the human race would perish unless it changed its mode of existence.

Now, as men cannot create any new forces, but only combine and direct those that exist, they have no other means of self-preservation than to form by aggregation a sum of forces which may overcome the resistance, to put them in action by a single motive power, and to make them work in concert.

This sum of forces can be produced only by the combination of many; but the strength and freedom of each man being the chief instruments of his preservation, how can he pledge them without injuring himself, and without neglecting the cares which he owes to himself? This difficulty, applied to my subject, may be expressed in these terms:

'To find a form of association which may defend and protect with the whole force of the community the person and property of every associate, and by means of which each, coalescing with all, may nevertheless obey only himself, and remain as free as before.' Such is the fundamental problem of which the social contract furnishes the solution.

The clauses of this contract are so determined by the nature of the act that the slightest modification would render them vain and ineffectual; so that, although they have never perhaps been formally enunciated, they are everywhere the same, everywhere tacitly admitted and recognised, until, the social pact being violated, each man regains his original rights and recovers his natural liberty,

whilst losing the conventional liberty for which he renounced it.

These clauses, rightly understood, are reducible to one only, *viz.* the total alienation to the whole community of each associate with all his rights; for, in the first place, since each gives himself up entirely, the conditions are equal for all; and, the conditions being equal for all, no one has any interest in making them burdensome to others.

Further, the alienation being made without reserve, the union is as perfect as it can be, and an individual associate can no longer claim anything; for, if any rights were left to individuals, since there would be no common superior who could judge between them and the public, each, being on some point his own judge, would soon claim to be so on all; the state of nature would still subsist, and the association would necessarily become tyrannical or useless.

In short, each giving himself to all, gives himself to nobody; and as there is not one associate over whom we do not acquire the same rights which we concede to him over ourselves, we gain the equivalent of all that we lose, and more power to preserve what we have.

If, then, we set aside what is not of the essence of the social contract, we shall find that it is reducible to the following terms: 'Each of us puts in common his person and his whole power under the supreme direction of the general will; and in return we receive every member as an indivisible part of the whole.'

Forthwith, instead of the individual personalities of all the contracting parties, this act of association produces a moral and collective body, which is composed of as many members as the assembly has voices, and which receives from this same act its unity, its common self (*moi*), its life, and its will. This public person, which is thus formed by the union of all the individual members, formerly took the name of *city*,* and now takes that of

* The real meaning of this word has been almost completely effaced among the moderns; the majority take a town for a city, and a burgess for a citizen. They do not know that houses make the town, and that citizens make the city. This very mistake cost the Carthaginians dear. I have never read of the title citizens (*cives*) being given to the subjects of a prince, not even in ancient times to the Macedonians, nor, in our days, to the English, although nearer liberty than all the rest. The French alone employ familiarly this name *citizen*,

impossible to injure one of the members without attacking the body, still less to injure the body without the members feeling the effects. Thus duty and interest alike oblige the two contracting parties to give mutual assistance; and the men themselves should seek to combine in this twofold relationship all the advantages which are attendant on it.

Now, the sovereign, being formed only of the individuals that compose it, neither has nor can have any interest contrary to theirs; consequently the sovereign power needs no guarantee towards its subjects, because it is impossible that the body should wish to injure all its members; and we shall see hereafter that it can injure no one as an individual. The sovereign, for the simple reason that it is so, is always everything that it ought to be.

But this is not the case as regards the relation of subjects to the sovereign, which, notwithstanding the common interest, would have no security for the performance of their engagements, unless it found means to ensure their fidelity.

Indeed, every individual may, as a man, have a particular will contrary to, or divergent from, the general will which he has as a citizen; his private interest may prompt him quite differently from the common interest; his absolute and naturally independent existence may make him regard what he owes to the common cause as a gratuitous contribution, the loss of which will be less harmful to others than the payment of it will be burdensome to him; and, regarding the moral person that constitutes the state as an imaginary being because it is not a man, he would be willing to enjoy the rights of a citizen without being willing to fulfil the duties of a subject. The progress of such injustice would bring about the ruin of the body politic.

In order, then, that the social pact may not be a vain formulary, it tacitly includes this engagement, which can alone give force to the others, – that whoever refuses to obey the general will shall be constrained to do so by the whole body; which means nothing else than that he shall be forced to be free; for such is the condition which, uniting every citizen to his native land, guarantees him from all personal dependence, a condition that ensures the control and working of the political machine, and alone renders legitimate civil engagements, which, without it, would be absurd and tyrannical, and subject to the most enormous abuses.

CHAPTER 8

The Civil State

The passage from the state of nature to the civil state produces in man a very remarkable change, by substituting in his conduct justice for instinct, and by giving his actions the moral quality that they previously lacked. It is only when the voice of duty succeeds physical impulse, and law succeeds appetite, that man, who till then had regarded only himself, sees that he is obliged to act on other principles, and to consult his reason before listening to his inclinations. Although, in this state, he is deprived of many advantages that he derives from nature, he acquires equally great ones in return; his faculties are exercised and developed; his ideas are expanded; his feelings are ennobled; his whole soul is exalted to such a degree that, if the abuses of this new condition did not often degrade him below that from which he has emerged, he ought to bless without ceasing the happy moment that released him from it for ever, and transformed him from a stupid and ignorant animal into an intelligent being and a man.

Let us reduce this whole balance to terms easy to compare. What man loses by the social contract is his natural liberty and an unlimited right to anything which tempts him and which he is able to attain; what he gains is civil liberty and property in all that he possesses. In order that we may not be mistaken about these compensations, we must clearly distinguish natural liberty, which is limited only by the powers of the individual, from civil liberty, which is limited by the general will; and possession, which is nothing but the result of force or the right of first occupancy, from property, which can be based only on a positive title.

Besides the preceding, we might add to the acquisitions of the civil state moral freedom, which alone renders man truly master of himself; for the impulse of mere appetite is slavery, while obedience

to a self-prescribed law is liberty. But I have already said too much on this head, and the philosophical meaning of the term *liberty* does not belong to my present subject.

CHAPTER 9

Real Property

Every member of the community at the moment of its formation gives himself up to it, just as he actually is, himself and all his powers, of which the property that he possesses forms part. By this act, possession does not change its nature when it changes hands, and become property in those of the sovereign; but, as the powers of the state (*cité*) are incomparably greater than those of an individual, public possession is also, in fact, more secure and more irrevocable, without being more legitimate, at least in respect of foreigners; for the state, with regard to its members, is owner of all their property by the social contract, which, in the state, serves as the basis of all rights; but with regard to other powers, it is owner only by the right of first occupancy which it derives from individuals.

The right of first occupancy, although more real than that of the strongest, becomes a true right only after the establishment of that of property. Every man has by nature a right to all that is necessary to him; but the positive act which makes him proprietor of certain property excludes him from all the residue. His portion having been allotted, he ought to confine himself to it, and he has no further right to the undivided property. That is why the right of first occupancy, so weak in the state of nature, is respected by every member of a state. In this right men regard not so much what belongs to others as what does not belong to themselves.

In order to legalise the right of first occupancy over any domain whatsoever, the following conditions are, in general, necessary: first, the land must not yet be inhabited by anyone; secondly, a man must occupy only the area required for his subsistence; thirdly, he must take possession of it, not by an empty ceremony, but by labour and cultivation, the only mark of ownership which, in default of legal title, ought to be respected by others.

Indeed, if we accord the right of first occupancy to necessity and labour, do we not extend it as far as it can go? Is it impossible to assign limits to this light? Will the mere setting foot on common ground be sufficient to give an immediate claim to the ownership of it? Will the power of driving away other men from it for a moment suffice to deprive them for ever of the right of returning to it? How can a man or a people take possession of an immense territory and rob the whole human race of it except by a punishable usurpation, since other men are deprived of the place of residence and the sustenance which nature gives to them in common? When Nuñez Balbao on the sea-shore took possession of the Pacific Ocean and of the whole of South America in the name of the crown of Castille, was this sufficient to dispossess all the inhabitants, and exclude from it all the princes in the world? On this supposition, such ceremonies might have been multiplied vainly enough; and the Catholic king in his cabinet might, by a single stroke, have taken possession of the whole world, only cutting off afterwards from his empire what was previously occupied by other princes.

We perceive how the lands of individuals, united and contiguous, become public territory, and how the right of sovereignty, extending itself from the subjects to the land which they occupy, becomes at once real and personal; which places the possessors in greater dependence, and makes their own powers a guarantee for their fidelity – an advantage which ancient monarchs do not appear to have clearly perceived, for, calling themselves only kings of the Persians or Scythians or Macedonians, they seem to have regarded themselves as chiefs of men rather than as owners of countries. Monarchs of today call themselves more cleverly kings of France, Spain, England, etc.; in thus holding the land they are quite sure of holding its inhabitants.

The peculiarity of this alienation is that the community, in receiving the property of individuals, so far from robbing them of it, only assures them lawful possession, and changes usurpation into true right, enjoyment into ownership. Also, the possessors being considered as depositaries of the public property, and their rights being respected by all the members of the state, as well as maintained by all its power against foreigners, they have, as it were, by a transfer advantageous to the public and still more to themselves,

acquired all that they have given up – a paradox which is easily explained by distinguishing between the rights which the sovereign and the proprietor have over the same property, as we shall see hereafter.

It may also happen that men begin to unite before they possess anything, and that afterwards occupying territory sufficient for all, they enjoy it in common, or share it among themselves, either equally or in proportions fixed by the sovereign. In whatever way this acquisition is made, the right which every individual has over his own property is always subordinate to the right which the community has over all; otherwise there would be no stability in the social union, and no real force in the exercise of sovereignty.

I shall close this chapter and this book with a remark which ought to serve as a basis for the whole social system; it is that instead of destroying natural equality, the fundamental pact, on the contrary, substitutes a moral and lawful equality for the physical inequality which nature imposed upon men, so that, although unequal in strength or intellect, they all become equal by convention and legal right.*

* Under bad governments this equality is only apparent and illusory; it serves only to keep the poor in their misery and the rich in their usurpations. In fact, laws are always useful to those who possess and injurious to those that have nothing; whence it follows that the social state is advantageous to men only so far as they all have something, and none of them has too much.

CHAPTER 11

The Different Systems of Legislation

If we ask precisely wherein consists the greatest good of all, which ought to be the aim of every system of legislation, we shall find that it is summed up in two principal objects, *liberty* and *equality* – liberty, because any individual dependence is so much force withdrawn from the body of the state; equality, because liberty cannot subsist without it.

I have already said what civil liberty is. With regard to equality, we must not understand by this word that the degrees of power and wealth should be absolutely the same; but that, as to power, it should fall short of all violence, and never be exercised except by virtue of station and of the laws; while, as to wealth, no citizen should be rich enough to be able to buy another, and none poor enough to be forced to sell himself,* which supposes, on the part of the great, moderation in property and influence, and, on the part of ordinary citizens, repression of avarice and covetousness.

It is said that this equality is a chimera of speculation which cannot exist in practical affairs. But if the abuse is inevitable, does it follow that it is unnecessary even to regulate it? It is precisely because the force of circumstances is ever tending to destroy equality that the force of legislation should always tend to maintain it.

But these general objects of every good institution ought to be modified in each country by the relations which arise both from the local situation and from the character of the inhabitants; and it is with reference to these relations that we must assign to each nation a

* If, then, you wish to give stability to the state, bring the two extremes as near together as possible; tolerate neither rich people nor beggars. These two conditions, naturally inseparable, are equally fatal to the general welfare; from the one class spring tyrants, from the other, the supporters of tyranny; it is always between these that the traffic in public liberty is carried on; the one buys and the other sells.

particular system of institutions, which shall be the best, not perhaps in itself, but for the state for which it is designed. For instance, if the soil is unfruitful and barren, or the country too confined for its inhabitants, turn your attention to arts and manufactures, and exchange their products for the provisions that you require. On the other hand, if you occupy rich plains and fertile slopes, if, in a productive region, you are in need of inhabitants, bestow all your cares on agriculture, which multiplies men, and drive out the arts, which would only end in depopulating the country by gathering together in a few spots the few inhabitants that the land possesses.* If you occupy extensive and convenient coasts, cover the sea with vessels and foster commerce and navigation; you will have a short and brilliant existence. If the sea on your coasts bathes only rocks that are almost inaccessible, remain fish-eating barbarians; you will lead more peaceful, perhaps better, and certainly happier lives. In a word, besides the maxims common to all, each nation contains within itself some cause which influences it in a particular way, and renders its legislation suitable for it alone. Thus the Hebrews in ancient times, and the Arabs more recently, had religion as their chief object, the Athenians literature, Carthage and Tyre commerce, Rhodes navigation, Sparta war, Rome valour. The author of the *Spirit of the Laws* has shown in a multitude of instances by what arts the legislator directs his institutions towards each of these objects.

What renders the constitution of a state really solid and durable is the observance of expediency in such a way that natural relations and the laws always coincide, the latter only serving, as it were, to secure, support, and rectify the former. But if the legislator, mistaken in his object, takes a principle different from that which springs from the nature of things; if the one tends to servitude, the other to liberty, the one to riches, the other to population, the one to peace, the other to conquests, we shall see the laws imperceptibly weakened and the constitution impaired; and the state will be ceaselessly agitated until it is destroyed or changed, and invincible nature has resumed her sway.

* Any branch of foreign commerce, says the Marquis d'Argenson, diffuses merely a deceptive utility through the kingdom generally; it may enrich a few individuals, even a few towns, but the nation as a whole gains nothing, and the people are none the better for it.

CHAPTER 2

The Principle which Constitutes the Different Forms of Government

To explain the general cause of these differences, I must here distinguish the Prince from the government, as I before distinguished the state from the sovereign.

The body of the magistracy may be composed of a greater or less number of members. We said that the ratio of the sovereign to the subjects was so much greater as the people were more numerous; and, by an evident analogy, we can say the same of the government with regard to the magistrates.

Now, the total force of the government, being always that of the state, does not vary: whence it follows that the more it employs this force on its own members, the less remains for operating upon the whole people.

Consequently, the more numerous the magistrates are, the weaker is the government. As this maxim is fundamental, let us endeavour to explain it more clearly.

We can distinguish in the person of the magistrate three wills essentially different: first, the will peculiar to the individual, which tends only to his personal advantage; secondly, the common will of the magistrates, which has reference solely to the advantage of the Prince, and which may be called the corporate will, being general in relation to the government, and particular in relation to the state of which the government forms part; in the third place, the will of the people, or the sovereign will, which is general both in relation to the state considered as the whole, and in relation to the government considered as part of the whole.

In a perfect system of legislation the particular or individual will should be inoperative; the corporate will proper to the government quite subordinate; and consequently the general or

sovereign will always dominant, and the sole rule of all the rest.

On the other hand, according to the natural order, these different wills become more active in proportion as they are concentrated. Thus the general will is always the weakest, the corporate will has the second rank, and the particular will the first of all; so that in the government each member is, firstly, himself, next a magistrate, and then a citizen – a gradation directly opposed to that which the social order requires.

But suppose that the whole government is in the hands of a single man, then the particular will and the corporate will are perfectly united, and consequently the latter is in the highest possible degree of intensity. Now, as it is on the degree of will that the exertion of force depends, and as the absolute power of the government does not vary, it follows that the most active government is that of a single person.

On the other hand, let us unite the government with the legislative authority; let us make the sovereign the Prince, and all the citizens magistrates; then the corporate will, confounded with the general will, will have no more activity than the latter, and will leave the particular will in all its force. Thus the government, always with the same absolute force, will be at its minimum of relative force or activity.

These relations are incontestable, and other considerations serve still further to confirm them. We see, for example, that each magistrate is more active in his body than each citizen is in his, and that consequently the particular will has much more influence in the acts of government than in those of the sovereign; for every magistrate is almost always charged with some function of government, whereas each citizen, taken by himself, has no function of sovereignty. Besides, the more a state extends, the more is its real force increased, although it does not increase in proportion to its extent; but, while the state remains the same, it is useless to multiply magistrates, for the government acquires no greater real force, inasmuch as this force is that of the state, the quantity of which is always uniform. Thus the relative force or activity of the government diminishes without its absolute or real force being able to increase.

It is certain, moreover, that the despatch of business is retarded in proportion as more people are charged with it; that, in laying too

much stress on prudence, we leave too little to fortune; that opportunities are allowed to pass by, and that owing to excessive deliberation the fruits of deliberation are often lost.

I have just shown that the government is weakened in proportion to the multiplication of magistrates, and I have before demonstrated that the more numerous the people is, the more ought the repressive force to be increased. Whence it follows that the ratio between the magistrates and the government ought to be inversely as the ratio between the subjects and the sovereign; that is, the more the state is enlarged, the more should the government contract; so that the number of chiefs should diminish in proportion as the number of the people is increased.

But I speak here only of the relative force of the government, and not of its rectitude; for, on the other hand, the more numerous the magistracy is, the more does the corporate will approach the general will; whereas, under a single magistrate, this same corporate will is, as I have said, only a particular will. Thus, what is lost on one side can be gained on the other, and the art of the legislator consists in knowing how to fix the point where the force and will of the government, always in reciprocal proportion, are combined in the ratio most advantageous to the state.

CHAPTER 3

Classification of Governments

We have seen in the previous chapter why the different kinds or forms of government are distinguished by the number of members that compose them; it remains to be seen in the present chapter how this division is made.

The sovereign may, in the first place, commit the charge of the government to the whole people, or to the greater part of the people, in such a way that there may be more citizens who are magistrates than simple individual citizens. We call this form of government a *democracy*.

Or it may confine the government to a small number, so that there may be more ordinary citizens than magistrates; and this form bears the name of *aristocracy*.

Lastly, it may concentrate the whole government in the hands of a single magistrate from whom all the rest derive their power. This third form is the most common, and is called *monarchy*, or royal government.

We should remark that all these forms, or at least the first two, admit of degrees, and may indeed have a considerable range; for democracy may embrace the whole people, or be limited to a half. Aristocracy, in its turn, may restrict itself from a half of the people to the smallest number indeterminately. Royalty even is susceptible of some division. Sparta by its constitution always had two kings; and in the Roman Empire there were as many as eight Emperors at once without its being possible to say that the Empire was divided. Thus there is a point at which each form of government blends with the next; and we see that, under three denominations only, the government is really susceptible of as many different forms as the state has citizens.

What is more, this same government being in certain respects

capable of subdivision into other parts, one administered in one way, another in another, there may result from combinations of these three forms a multitude of mixed forms, each of which can be multiplied by all the simple forms.

In all ages there has been much discussion about the best form of government, without consideration of the fact that each of them is the best in certain cases, and the worst in others.

If, in the different states, the number of the supreme magistrates should be in inverse ratio to that of the citizens, it follows that, in general, democratic government is suitable to small states, aristocracy to those of moderate size, and monarchy to large ones. This rule follows immediately from the principle. But how is it possible to estimate the multitude of circumstances which may furnish exceptions?

CHAPTER 4

Democracy

He that makes the law knows better than anyone how it should be executed and interpreted. It would seem, then, that there could be no better constitution than one in which the executive power is united with the legislative; but it is that very circumstance which makes a democratic government inadequate in certain respects, because things which ought to be distinguished are not, and because the Prince and the sovereign, being the same person, only form as it were a government without government.

It is not expedient that he who makes the laws should execute them, nor that the body of the people should divert its attention from general considerations in order to bestow it on particular objects. Nothing is more dangerous than the influence of his private interests on public affairs; and the abuse of the laws by the government is a less evil than the corruption of the legislator, which is the infallible result of the pursuit of private interests. For when the state is changed in its substance all reform becomes impossible. A people which would never abuse the government would likewise never abuse its independence; a people which always governed well would not need to be governed.

Taking the term in its strict sense, there never has existed, and never will exist, any true democracy. It is contrary to the natural order that the majority should govern and that the minority should be governed. It is impossible to imagine that the people should remain in perpetual assembly to attend to public affairs, and it is easily apparent that commissions could not be established for that purpose without the form of administration being changed.

In fact, I think I can lay down as a principle that when the functions of government are shared among several magistracies, the least numerous acquire, sooner or later, the greatest authority,

if only on account of the facility in transacting business which naturally leads them on to that.

Moreover, how many things difficult to combine does not this government presuppose! First, a very small state, in which the people may be readily assembled, and in which every citizen can easily know all the rest; secondly, great simplicity of manners, which prevents a multiplicity of affairs and thorny discussions; next, considerable equality in rank and fortune, without which equality in rights and authority could not long subsist; lastly, little or no luxury, for luxury is either the effect of wealth or renders it necessary; it corrupts both the rich and the poor, the former by possession, the latter by covetousness; it betrays the country to effeminacy and vanity; it deprives the state of all its citizens in order to subject them one to another, and all to opinion.

That is why a famous author has assigned virtue as the principle of a republic, for all these conditions could not subsist without virtue; but, through not making the necessary distinctions, this brilliant genius has often lacked precision and sometimes clearness, and has not seen that the sovereign authority being everywhere the same, the same principle ought to have a place in every well-constituted state, in a greater or less degree, it is true, according to the form of government.

Let us add that there is no government so subject to civil wars and internal agitations as the democratic or popular, because there is none which tends so strongly and so constantly to change its form, none which demands more vigilance and courage to be maintained in its own form. It is especially in this constitution that the citizen should arm himself with strength and steadfastness, and say every day of his life from the bottom of his heart what a virtuous Palatine* said in the Diet of Poland: *Malo periculosam libertatem quam quietum servitium.*[1]

If there were a nation of gods, it would be governed democratically. So perfect a government is unsuited to men.

* The Palatine of Posnania, father of the King of Poland, Duke of Lorraine.

[1] ['I prefer a perilous freedom to a peaceful slavery.']

CHAPTER 5

Aristocracy

We have here two moral persons quite distinct, *viz.* the government and the sovereign; and consequently two general wills, the one having reference to all the citizens, the other only to the members of the administration. Thus, although the government can regulate its internal policy as it pleases, it can never speak to the people except in the name of the sovereign, that is, in the name of the people themselves. This must never be forgotten.

The earliest societies were aristocratically governed. The heads of families deliberated among themselves about public affairs. The young men yielded readily to the authority of experience. Hence the names *priests*, *elders*, *senate*, *gerontes*. The savages of North America are still governed in this way at the present time, and are very well governed.

But in proportion as the inequality due to institutions prevailed over natural inequality, wealth or power* was preferred to age, and aristocracy became elective. Finally, the power transmitted with the father's property to the children, rendering the families patrician, made the government hereditary, and there were senators only twenty years old.

There are, then, three kinds of aristocracy – natural, elective and hereditary. The first is only suitable for simple nations; the third is the worst of all governments. The second is the best; it is aristocracy properly so-called.

Besides the advantage of the distinction between the two powers, aristocracy has that of the choice of its members; for in a popular government all the citizens are born magistrates; but this

* It is clear that the word *optimates* among the ancients did not mean the best, but the most powerful.

one limits them to a small number, and they become magistrates by election only;* a method by which probity, intelligence, experience, and all other grounds of preference and public esteem are so many fresh guarantees that men will be wisely governed.

Further, assemblies are more easily convoked; affairs are better discussed and are despatched with greater order and diligence; while the credit of the state is better maintained abroad by venerable senators, than by an unknown or despised multitude.

In a word, it is the best and most natural order of things that the wisest should govern the multitude, when we are sure that they will govern it for its advantage and not for their own. We should not uselessly multiply means, nor do with twenty thousand men what a hundred chosen men can do still better. But we must observe that the corporate interest begins here to direct the public force in a less degree according to the rule of the general will, and that another inevitable propensity deprives the laws of a part of the executive power.

With regard to special expediencies, a state must not be so small, nor a people so simple and upright, that the execution of the laws should follow immediately upon the public will, as in a good democracy. Nor again must a nation be so large that the chief men, who are dispersed in order to govern it, can set up as sovereigns, each in his own province, and begin by making themselves independent so as at last to become masters.

But if aristocracy requires a few virtues less than popular government, it requires also others that are peculiarly its own, such as moderation among the rich and contentment among the poor; for a rigorous equality would seem to be out of place in it, and was not even observed in Sparta.

Besides, if this form of government comports with a certain inequality of fortune, it is expedient in general that the administration of public affairs should be entrusted to those that are best

* It is very important to regulate by law the form of election of magistrates; for, in leaving it to the will of the Prince, it is impossible to avoid falling into hereditary aristocracy, as happened in the republics of Venice and Berne. In consequence, the first has long been a decaying state, but the second is maintained by the extreme wisdom of its Senate; it is a very honourable and a very dangerous exception.

able to devote their whole time to it, but not, as Aristotle maintains, that the rich should always be preferred. On the contrary, it is important that an opposite choice should sometimes teach the people that there are, in men's personal merits, reasons for preference more important than wealth.

CHAPTER 6

Monarchy

We have hitherto considered the Prince as a moral and collective person united by the force of the laws, and as the depositary of the executive power in the state. We have now to consider this power concentrated in the hands of a natural person, of a real man, who alone has a right to dispose of it according to the laws. He is what is called a monarch or a king.

Quite the reverse of the other forms of administration, in which a collective being represents an individual, in this one an individual represents a collective being: so that the moral unity that constitutes it is at the same time a physical unity, in which all the powers that the law combines in the other with so much effort are combined naturally.

Thus the will of the people, the will of the Prince, the public force of the state, and the particular force of the government, all obey the same motive power; all the springs of the machine are in the same hand, everything works for the same end; there are no opposite movements that counteract one another, and no kind of constitution can be imagined in which a more considerable action is produced with less effort. Archimedes, quietly seated on the shore, and launching without difficulty a large vessel, represents to me a skilful monarch, governing from his cabinet his vast states, and, while he appears motionless, setting everything in motion.

But if there is no government which has more vigour, there is none in which the particular will has more sway and more easily governs others. Everything works for the same end, it is true; but this end is not the public welfare, and the very power of the administration turns continually to the prejudice of the state.

Kings wish to be absolute, and from afar men cry to them that the best way to become so is to make themselves beloved by their

people. This maxim is very fine, and also very true in certain respects; unfortunately it will always be ridiculed in courts. Power which springs from the affections of the people is doubtless the greatest, but it is precarious and conditional; princes will never be satisfied with it. The best kings wish to have the power of being wicked if they please, without ceasing to be masters. A political preacher will tell them in vain that, the strength of the people being their own, it is their greatest interest that the people should be flourishing, numerous, and formidable; they know very well that that is not true. Their personal interest is, in the first place, that the people should be weak and miserable, and should never be able to resist them. Supposing all the subjects always perfectly submissive, I admit that it would then be the prince's interest that the people should be powerful, in order that this power, being his own, might render him formidable to his neighbours; but as this interest is only secondary and subordinate, and as the two suppositions are incompatible, it is natural that princes should always give preference to the maxim which is most immediately useful to them. It is this that Samuel strongly represented to the Hebrews; it is this that Machiavelli clearly demonstrated. While pretending to give lessons to kings, he gave great ones to peoples. The *Prince* of Machiavelli is the book of republicans.*

We have found, by general considerations, that monarchy is suited only to large states; and we shall find this again by examining monarchy itself. The more numerous the public administrative body is, the more does the ratio of the Prince to the subjects diminish and approach equality, so that this ratio is unity or equality, even in a democracy. This same ratio increases in proportion as the government contracts, and is at its maximum when the government is in the hands of a single person. Then the distance between the Prince and the people is too great, and the state lacks cohesion. In

* Machiavelli was an honourable man and a good citizen; but, attached to the house of the Medici, he was forced, during the oppression of his country, to conceal his love for liberty. The mere choice of his execrable hero sufficiently manifests his secret intention; and the opposition between the maxims of his book the *Prince* and those of his *Discourses on Titus Livius* and his *History of Florence* shows that this profound politician has had hitherto only superficial or corrupt readers. The court of Rome has strictly prohibited his book; I certainly believe it, for it is that court which he most clearly depicts.

order to unify it, then, intermediate orders, princes, grandees, and nobles, are required to fill them. Now, nothing at all of this kind is proper for a small state, which would be ruined by all these orders.

But if it is difficult for a great state to be well governed, it is much more so for it to be well governed by a single man; and everyone knows what happens when the king appoints deputies.

One essential and inevitable defect, which will always render a monarchical government inferior to a republican one, is that in the latter the public voice hardly ever raises to the highest posts any but enlightened and capable men, who fill them honourably; whereas those who succeed in monarchies are most frequently only petty mischief-makers, petty knaves, petty intriguers, whose petty talents, which enable them to attain high posts in courts, only serve to show the public their ineptitude as soon as they have attained them. The people are much less mistaken about their choice than the prince is; and a man of real merit is almost as rare in a royal ministry as a fool at the head of a republican government. Therefore, when by some fortunate chance one of these born rulers takes the helm of affairs in a monarchy almost wrecked by such a fine set of ministers, it is quite astonishing what resources he finds, and his accession to power forms an epoch in a country.

In order that a monarchical state might be well governed, it would be necessary that its greatness or extent should be proportioned to the abilities of him that governs. It is easier to conquer than to rule. With a sufficient lever, the world may be moved by a finger; but to support it the shoulders of Hercules are required. However small a state may be, the prince is almost always too small for it. When, on the contrary, it happens that the state is too small for its chief, which is very rare, it is still badly governed, because the chief, always pursuing his own great designs, forgets the interests of the people, and renders them no less unhappy by the abuse of his transcendent abilities, than an inferior chief by his lack of talent. It would be necessary, so to speak, that a kingdom should be enlarged or contracted in every reign, according to the capacity of the prince; whereas, the talents of a senate having more definite limits, the state may have permanent boundaries, and the administration prosper equally well.

The most obvious inconvenience of the government of a single person is the lack of that uninterrupted succession which forms in

the two others a continuous connection. One king being dead, another is necessary; elections leave dangerous intervals; they are stormy; and unless the citizens are of a disinterestedness, an integrity, which this government hardly admits of, intrigue and corruption intermingle with it. It would be hard for a man to whom the state has been sold not to sell it in his turn, and indemnify himself out of the helpless for the money which the powerful have extorted from him. Sooner or later everything becomes venal under such an administration, and the peace which is then enjoyed under a king is worse than the disorder of an interregnum.

What has been done to prevent these evils? Crowns have been made hereditary in certain families; and an order of succession has been established which prevents any dispute on the demise of kings; that is to say, the inconvenience of regencies being substituted for that of elections, an appearance of tranquillity has been preferred to a wise administration, and men have preferred to risk having as their chiefs children, monsters, and imbeciles, rather than have a dispute about the choice of good kings. They have not considered that in thus exposing themselves to the risk of this alternative, they put almost all the chances against themselves. That was a very sensible answer of Dionysius the younger, to whom his father, in reproaching him with a dishonourable action, said: 'Have I set you the example in this?' 'Ah!' replied the son, 'your father was not a king.'

All things conspire to deprive of justice and reason a man brought up to govern others. Much trouble is taken, so it is said, to teach young princes the art of reigning; this education does not appear to profit them. It would be better to begin by teaching them the art of obeying. The greatest kings that history has celebrated were not trained to rule; that is a science which men are never less masters of than after excessive study of it, and it is better acquired by obeying than by ruling. *Nam utilissimus idem ac brevissimus bonarum malarumque rerum delectus, cogitare quid aut nolueris sub alio principe, aut volueris.*[1]

A result of this want of cohesion is the instability of royal government, which, being regulated sometimes on one plan, sometimes on another, according to the character of the reigning

[1] ['For the quickest and most useful way of choosing between things that are good and evil is to consider what, under another emperor, you would have approved or disapproved.' Tacitus, *Histories* I, 16]

prince or that of the persons who reign for him, cannot long pursue a fixed aim or a consistent course of conduct, a variableness which always makes the state fluctuate between maxim and maxim, project and project, and which does not exist in other governments, where the Prince is always the same. So we see that, in general, if there is more cunning in a court, there is more wisdom in a senate, and that republics pursue their ends by more steadfast and regular methods; whereas every revolution in a royal ministry produces one in the state, the maxim common to all ministers, and to almost all kings, being to reverse in every respect the acts of their predecessors.

From this same want of cohesion is obtained the solution of a sophism very familiar to royal politicians; this is not only to compare civil government with domestic government, and the prince with the father of a family, an error already refuted, but, further, to ascribe freely to this magistrate all the virtues which he might have occasion for, and always to suppose that the prince is what he ought to be – on which supposition royal government is manifestly preferable to every other, because it is incontestably the strongest, and because it only lacks a corporate will more conformable to the general will to be also the best.

But if, according to Plato, a king by nature is so rare a personage, how many times will nature and fortune conspire to crown him? And if the royal education necessarily corrupts those who receive it, what should be expected from a succession of men trained to rule? It is, then, voluntary self-deception to confuse royal government with that of a good king. To see what this government is in itself; we must consider it under incapable or wicked princes; for such will come to the throne, or the throne will make them such.

These difficulties have not escaped our authors, but they have not been embarrassed by them. The remedy, they say, is to obey without murmuring; God gives bad kings in his wrath, and we must endure them as chastisements of heaven. Such talk is doubtless edifying, but I am inclined to think it would be more appropriate in a pulpit than in a book on politics. What should we say of a physician who promises miracles, and whose whole art consists in exhorting the sick man to be patient? We know well that when we have a bad government it must be endured; the question is to find a good one.

CHAPTER 7

Mixed Governments

Properly speaking, there is no simple government. A single chief must have subordinate magistrates; a popular government must have a head. Thus, in the partition of the executive power there is always a gradation from the greater number to the less, with this difference, that sometimes the majority depends on the minority, and sometimes the minority on the majority.

Sometimes there is an equal division, either when the constituent parts are in mutual dependence, as in the government of England; or when the authority of each part is independent, but imperfect, as in Poland. This latter form is bad, because there is no unity in the government, and the state lacks cohesion.

Is a simple or a mixed government the better? A question much debated among publicists, and one to which the same answer must be made that I have before made about every form of government.

The simple government is the better in itself, for the reason that it is simple. But when the executive power is not sufficiently dependent on the legislative, that is, when there is a greater proportion between the Prince and the sovereign than between the people and the Prince, this want of proportion must be remedied by dividing the government; for then all its parts have no less authority over the subjects, and their division renders them all together less strong against the sovereign.

The same inconvenience is also provided against by the establishment of intermediate magistrates, who, leaving the government in its entirety, only serve to balance the two powers and maintain their respective rights. Then the government is not mixed, but temperate.

The opposite inconvenience can be remedied by similar means, and, when the government is too lax, tribunals may be erected to

CHAPTER 6

IN HOT WATER

In 2019, it is impossible to think about economic growth without confronting its most immediate implication.

We already know that over the next hundred years the earth will become warmer; the question is by just how much. The costs of climate change would be quite different if the planet got warmer by 1.5°C, or 2°C, or more. According to the Intergovernmental Panel on Climate Change (IPCC) October 2018 report, at 1.5°C, 70 percent of coral reefs would vanish. At 2°C, 99 percent.[1] The number of people directly impacted by the rise in sea levels and the transformation of cultivable land into desert would also be quite different under the two scenarios.

The overwhelming scientific consensus is that human activity is responsible for climate change, and the only way to stay on a course to avoid catastrophe is to reduce carbon emissions.[2] Under the 2015 Paris Agreement, nations set a target to limit warming to a limit of 2°C, with a more ambitious target of 1.5°C. Based on the scientific evidence, the IPCC report concludes that in order to limit warming to 2°C, CO_2 equivalent (CO_2e) emissions[3] would need to be reduced by 25 percent by 2030 (compared to the 2010 level) and go to zero by 2070. To reach 1.5°C, CO_2e emissions would need to go down by 45 percent by 2030 and to zero by 2050.

Climate change is massively inequitable. The lion's share of CO_2e emissions are being generated either in rich countries or to produce what people consume in rich countries. But the greatest share of the cost is, and will be, experienced in poor countries. Does it make it an intractable problem, given that those who must solve it have no strong impetus to do so? Or is there some hope?

THE 50-10 RULE

The IPCC report details everything that would have to be done to cut emissions and limit warming to 1.5°C. Some steps could already be taken; switching to electric cars, constructing zero-emissions buildings, building more trains would all help. But the bottom line is that, even with technological improvements, and even if we could wean ourselves off coal entirely, without any movement toward more sustainable consumption, any future economic growth will have a large direct impact on climate change. This is because as consumption rises we need energy to produce all the things that are consumed. We generate CO_2 emissions not only when we drive our cars, but also when we leave them in our garages, since energy was used in producing the car and the garage. That is true even for electric cars. There are many studies that attempt to look at the relationship between income and carbon emissions. The answer varies with climate, family size, and so on, but the two always track each other closely. The average estimate implies that when your income increases by 10 percent, your CO_2 emissions increase by 9 percent.[4]

This implies that, although Europe and the United States are responsible for a large share of global emissions to date, today's emerging economies (particularly China) are generating an ever-growing share of current emissions. In fact, China is the single largest emitter of carbon. This is, however, largely due to goods produced in China but consumed elsewhere in the world. If we attribute the emissions to where the consumption takes place, North Americans consume 22.5 tons of CO_2e per year per person, Western Europeans 13.1, Chinese 6, and South Asians just 2.2.

Within developing countries, richer people also consume a lot more CO_2 than the poor. The richest people in India and China belong to the select group of the top 10 percent of the most polluting people in the world (and contribute respectively 1 percent and 10 percent to the emissions of this group, or 0.45 percent and 4.5 percent of world emissions). In contrast, the poorest 7 percent of the population in India emit just 0.15 tons of CO_2 per year per person. Overall, we get the 50-10 rule: 10 percent of the world's population (the highest polluters)

contribute roughly 50 percent of CO_2 emissions, while the 50 percent who pollute the least contribute just over 10 percent.

The citizens of rich countries and, more generally, the rich worldwide bear an overwhelming responsibility for any future climate change.

BATHING IN THE BALTIC

On a June day sometime in the early 1990s, encouraged by his friend and fellow economist Jörgen Weibull, Abhijit went swimming in the Baltic. He leaped in and instantly jumped out—he claims that his teeth continued to chatter for the next three days. In 2018, also in June, we went to the Baltic in Stockholm, several hundred miles farther north than the previous encounter. This time it was literally child's play; our children frolicked in the water.

Wherever we went in Sweden, the unusually warm weather was a topic of conversation. It was probably a portent of something everyone felt, but for the moment it was hard not to be quite delighted with the new opportunities for outdoor life it offered.

It is in the poor countries that there is no such ambivalence. If the earth warms a degree centigrade or two, residents of North Dakota will mostly feel perfectly happy about it. Residents of Dallas, perhaps a bit less. Residents of Delhi and Dhaka will experience more days that are unbearably hot. As just one example, between 1957 and 2000, India experienced on average five days per year with an average daily temperature above 35°C.[5] Without a global climate policy, it is projected to have seventy-five such days by the end of the century. The typical US resident will experience just twenty-six. The problem is that poorer countries tend to be closer to the equator and that is where the real pain will be felt.

To make matters worse, the residents of poor countries are less equipped to protect themselves against the potential bad effects of hot temperatures. They lack air conditioning (because they are poor) and they work in agriculture, on construction sites, or on brick kilns where air conditioning is not really an option.

What are the likely impacts of the temperature increases that are going to come with climate change on life in these countries? We can-

not just compare warmer and colder places to answer this, since these places are also different in a hundred other ways. What allows us to say something about the potential impact of temperature change is that the temperature at a particular location fluctuates, on a given calendar day, from year to year. There are years with especially hot summers, years with particularly cold winters, and nice years when both winters and summers are temperate. The environmental economist Michael Greenstone pioneered the idea of using these year-to-year weather fluctuations to get some understanding of the impact of future climate change. For example, if it was especially hot in one district in India in a particular year, was agricultural production lower in that year compared to the same district in other years, or to other districts where it was not so hot?

There are various reasons to not trust this particular approach blindly. Permanent climate differences will surely spur innovations to limit their impact. We won't pick these up in the effects of year-to-year changes, because innovation takes time. On the other hand, permanent changes may have other costs that don't occur when the change is temporary, such as the draining of the water table. In other words, those estimates could be too small or too large. But as long as the bias in the estimate is the same for rich and poor countries, it is still useful to compare the predictions we get. The general conclusion is that the damage from climate change will be much more serious in poor countries. There will be losses in US agriculture, but the losses in India, Mexico, and Africa will be much larger. In some parts of Europe, such as in the vineyards of the Moselle Valley, there will be more sun warming the vines, and both the quality and quantity of Moselle wine are predicted to increase.[6]

The effect of hot weather on productivity is not limited to agriculture. People are less productive when it is hot, particularly if they have to work outside. For example, evidence from the United States suggests that at temperatures over 38°C, labor supply in outdoor jobs drops by as much as one hour per day, compared to temperatures in the 24°C–26°C range.[7] There are no statistically detectable effects in industries that are not exposed to climate (for example, nonmanufacturing indoor activities). Children have lower test scores at the end of particularly hot school years. These effects are absent where schools have air conditioning, so they affect poorer children the most.[8]

In India, few factories have air conditioning. In a garment factory in India, a study looked at how labor productivity varied with temperature.[9] For temperatures below 27°C–28°C, temperature had a very small impact on efficiency. But for mean daily temperatures above this cut-off (about one quarter of production days), efficiency went down by 2 percent for every one degree Celsius increase in temperature.

Putting everything together, across the entire world, a study finds that it being 1°C warmer in a given year reduces per capita income by 1.4 percent, but only in poor countries.[10]

And, of course, the consequences of a warmer climate are not limited to income. Numerous studies emphasize the danger of hot temperatures for health. In the United States, an additional day of extreme heat (exceeding 32°C) relative to a moderately cool day (10°C–15°C) raises the annual age-adjusted mortality rate by about 0.11 percent.[11] In India, the effect is twenty-five times larger.[12]

LIFE SAVER

The United States experience also illustrates how being richer and more technologically advanced can help mitigate temperature risks. In the United States, the estimates of the mortality impacts of high temperatures in the 1920s and 1930s were six times larger than the estimates for the current period.The difference may be entirely due to the much greater access to air conditioning, a key mechanism through which residents of rich countries adapt to higher temperatures.[13] This explains why in hot years energy demand goes up massively in rich countries. In poor countries, where air conditioning is still rare (in 2011, 87 percent of households in the United States had air conditioning, but only 5 percent of Indians did[14]), we see larger reductions in productivity, and increases in mortality when temperatures go up. In these places, air conditioning could be a critical adaptation tool. It should not be a luxury, but it is.

As poor countries become richer, they will be able to afford more air conditioning. Between 1995 and 2009, the ratio of air-conditioning units to homes in urban China went from 8 percent to over 100 percent (meaning there was more than one AC unit per urban household).[15]

But air conditioning itself aggravates global warming. The hydrofluorocarbon (HFC) gases used in standard air-conditioning appliances have particularly deleterious impacts on the climate; they are much more dangerous than CO_2. This puts us in a rather difficult situation. The very technology that can help to protect people from climate change also accelerates the rate of climate change. Newly available air conditioners that do not use HFC pollute less, but at the moment they are much more expensive. A country like India, which is on the cusp of being able to afford the cheaper air-conditioning appliances, thus faces a particularly ghastly trade-off: saving lives today, or moderating climate change to save lives in the future.

An agreement reached in Kigali, Rwanda, in October 2016, after years of negotiation, illustrates how the world navigates this trade-off (when it does manage to navigate it). The Kigali agreement created three tracks: rich countries, including the United States, Japan, and Europe, will start phasing out synthetic HFCs in 2019; China and a hundred other developing countries in 2024; and a small group of countries, including India, Pakistan, and some Gulf States, will postpone the start date until 2028. While realizing its citizens are both the victims and the cause of global warming, the Indian government took the stance that they prefer to save lives today rather than tackle the problem right now. They are probably banking on the fact that economic growth in the intervening years will put them in a position to afford the more expensive devices (which may also have become cheaper in the meantime) by 2028. But during those ten years, there could be a very rapid spread of old-style appliances in India, especially since the makers of the HFC-based machines will want an outlet for their products, and these will stay operational and continue to pollute for years after 2028. This delay could turn out to be quite costly for the planet.

ACT NOW?

The air-conditioning conundrum is a particularly heart-wrenching illustration of the trade-off India feels it is facing, between the present and the future. More generally, until the Paris Agreement in 2015,

India had simply refused to contemplate limits on its own emissions, arguing that it could not afford to hinder its own economic growth and rich countries should bear the brunt of the adjustment. The position evolved when India ratified the Paris Agreement and came up with a concrete commitment, asking in exchange for some serious financial aid to afford the energy transition, to be financed from an international fund paid for by the rich countries. Although Indian emissions are not a large fraction of world emissions today, India will be a key player moving forward, as its growing middle class consumes more and more. And unlike the United States, a large part of its population will also be directly and severely affected by climate change, so it should be in a good place to understand the costs of today's choices. Its reluctance to act is thus deeply concerning, not only because it has direct impacts, but because it illustrates the dominance of short-term thinking among politicians.

The key question is whether the trade-off is as stark as the Indians (or the Americans, for that matter) seem to believe it is. Do we really have to give up something today? Perhaps we can have our cake and eat it too, if we develop and switch to better technologies that will allow us to curb warming without giving up much by way of our lifestyles. After all, just a few years ago energy experts were sternly telling us that renewable energy sources (solar and wind) were simply too expensive, and it was foolish to invest in them as an alternative to fossil fuel. They are considerably cheaper today, notably due to technological progress in those sectors. Energy efficiency has also considerably improved and could improve more. In 2006, the UK government commissioned the former chief economist of the World Bank, Lord Nicholas Stern, to prepare a report on the economic implications of climate change. The *Stern Review*[16] optimistically concludes:

> Yet despite the historical pattern and the business as usual projections, the world does not need to choose between averting climate change and promoting growth and development. Changes in energy technologies and the structure of economies have reduced the responsiveness of emissions to income growth, particularly in some of the richest countries. With strong, deliberate policy choices, it is possible to "decarbonize" both developed and developing economies on the scale required for climate stabilization, while maintaining economic growth in both.

Amen to this. Still, it would not quite be free. The Stern report concludes that, assuming a rate of technological progress in the "green sector" based on extrapolating from recent history, it would cost about 1 percent of world GDP annually to stabilize emissions at the level necessary to stave off global warming. But that seems a modest cost to avoid endangering the future of the world as we know it.

One hope is that research and development efforts might respond to incentives.[17] R&D expenditures are strongly influenced by the size of the market for the new innovations they are seeking to finance.[18] So a temporary inducement to research clean alternatives to dirty technologies (in the form of a carbon tax that would make it more expensive to use the old technologies and/or direct subsidies to research clean technologies) could have a snowball effect by creating a demand. The clean technology would become cheaper and therefore more attractive, which would increase the demand for it and hence the returns to research. Eventually, the clean sector would be attractive enough to root out the dirty sector and we would be home free. Our little economic engine could be back on its balanced path with the same growth as before, fueled by wind, water, and the sun. We could even stop all taxes and subsidies to encourage clean energy after a while.

It is easy to see how it could work. It is also frighteningly easy to see how it could *not* work. After all, the dirty technology would still be there. If fewer people used coal and oil, the prices of these inputs would plummet. This would make it very tempting to go back to using them. It is true that because coal and oil are not renewable means their prices will tend to go up over time (as the supplies run down), but there is probably enough coal and oil under the ground to take us to Armageddon. It is hard to be entirely sanguine.

FREE LUNCH?

What the optimists are hoping for is that ultimately there will be a free lunch. Firms and people will save money by adopting the cleaner

technologies because research will have made them so much cheaper. Adopting clean technologies would be a win for individuals and a win for the planet. The prospect of a free lunch is always enticing. In fact, it is so enticing that it tends to dominate the climate change conversation. Detailed engineering estimates routinely predict investments that enhance energy efficiency, and pay for themselves in the form of a smaller energy bill. A 2009 McKinsey report, "Unlocking Energy Efficiency in the U.S. Economy," attracted a lot of attention.[19] The report estimated that a "holistic approach" of investment in energy efficiency would "yield gross energy savings worth more than $1.2 trillion, well above the $520 billion needed through 2020 for upfront investment in efficiency measures." In 2013, the International Energy Administration calculated that energy efficiency measures alone could give us 49 percent of the reduction in CO2e emissions we need, without any other change.[20]

If that is the case, then perhaps we have a relatively easy problem to solve; all we need to do is to bridge this "energy efficiency gap." We need to identify the barriers preventing consumers (and corporations) from undertaking these investments. Perhaps they don't know, perhaps they cannot get a loan to finance the upfront costs, perhaps they are myopic, or perhaps they suffer from inertia.

Unfortunately, when one looks at the on-the-ground performance of those supposedly low hanging fruits rather than predictions of engineering models, there is less good news. The federal Weatherization Assistance Program (WAP) is the largest energy-efficiency program for home users in the United States; it has covered 7 million households in the US since its inception in 1976. Michael Greenstone and a team of economists got a chance to allocate an offer to participate in the program to about seventy-five hundred households, randomly chosen out of thirty thousand in Michigan.[21] The winners were offered over $5,000 in weatherization investments (insulation, window replacements, etc.) at no out-of-pocket cost. The researchers then collected data on winners and losers. The RCT produced three main findings. First, the demand for the program was really low. Despite an aggressive and costly encouragement campaign, only 6 percent of households in the treatment group eventually took up the offer. Second, the energy-use gains were real (the energy bill went down by 10–20 percent for those who took the program up), but were only a third of what

was predicted by the engineering estimates, and much lower than the upfront costs. Third, this is not because households reacted to the prospect of a lower energy bill by heating their houses more (the so-called rebound effect); they found no increase in home temperatures. The engineering estimates apparently did not fully apply to real houses in real places; they were much too optimistic.

The gap between the rosy engineering estimates and the truth does not just apply to households. A researcher teamed up with the department of climate change in the government of Gujarat (one of the most industrialized and most polluted states in India) to provide small and medium firms with high-quality energy-efficiency consulting.[22] A random sample of firms received a free energy audit, which gave each firm a list of approved energy-efficiency-enhancing investments the state could heavily subsidize (under a preexisting program). Then a random subset of the firms that got the audits received regular visits from energy consultants to facilitate the adoption. The audits on their own had a limited impact on the adoption of the new technologies. The consulting led to more adoption, but it also changed what firms were doing: they started producing more, which increased their energy demand. Overall, there was no effect on energy consumption, this time because of the rebound effect. Again, the engineers who calculated the potential emission gains from technologies that saved energy were too optimistic in their predictions.

Our sense is that there may not be that many free lunches. Mitigation through better technologies may not do the trick; people's consumption will need to fall. We may have to be content not only with cleaner cars but also with smaller cars, or no cars at all.

THE GREENPEACE ANSWER

This is not what our colleagues in economics like to hear. First, because of economists' ongoing love affair with material consumption as a marker of well-being, and second because they are suspicious of attempts to change behavior, especially when changing preferences is involved. Many economists have a philosophical objection to manipulating preferences.

The reason for this reluctance is the economists' long-standing belief that there is something "true" about people's preferences, and that their actions reflect deep-seated desires. Any attempt to convince people to do something different (such as consume less or consume differently) would then encroach on those preferences. But as we saw in chapter 4, there are really no such things as true well-defined preferences. If people don't know how they feel about something as quotidian as a box of chocolates or a bottle of wine, why do we expect them to have clear preferences about climate change? Or what kind of world their grandchildren should live in? Or whether the people of the Maldives deserve to have their islands washed away by a rising sea? And to know how much are they willing to alter their own lifestyles to prevent those disasters?

Economists typically assume most people would not voluntarily sacrifice anything to affect the lives of unborn people or those who live very far away. But this is probably not true, for example, of you, the reader (or you would have shut this book a long time ago). Or for that matter of most economists themselves. Many of us probably do care about a whole range of outcomes that don't affect us directly, even if we have a hard time assigning money values to them.

The reason this is important is that it changes the way we should think about policy interventions. If everyone has well-defined preferences and acts on them (for example, they don't care at all about the damage to other people), the ideal environmental policy is one that sets a price for damaging the environment but otherwise lets the market do its job. This is the idea behind the carbon tax, which is something most economists, including us, have now embraced. It was key to the work of William Nordhaus, who was rewarded with the Nobel Prize in 2018. Having to pay an explicit price for polluting is certainly something firms take seriously. Allowing firms to buy the right to pollute from other firms that are actually actively reducing pollution, the idea of tradable carbon credits, may also be a good idea because it creates incentives for nonpolluting firms to find ways to actively "unpollute," say, by planting trees. And the revenues from taxes on polluters is useful because we need to pay for new environment-friendly technologies.

But there is a strong case for going beyond carbon credits. Take someone who thinks of themselves as having a strong commitment

to fighting climate change but ends up never buying energy-efficient LED lightbulbs. The reason could be that he does not know about LEDs, or that he forgets to buy them when he goes to the shop, or that he cannot make up his mind about just how much a premium he is willing to pay for the LEDs because he has a hard time putting a number on how much he really cares about preventing climate change. Would such a person be better or worse off if the government banned non-LED bulbs?

Or if bans seem too extreme, the government could "nudge" people gently toward choices that are better for the environment. For example, smart meters now afford the possibility of charging higher prices for electricity during peak hours, compensated by lower prices the rest of the time; this would be better for the environment. A recent study in Sacramento, California, found that only 20 percent of users actively chose such plans when they were made available.[23] And yet when a plan like this was made the default for (randomly chosen) users who then had the option of switching back to the traditional plan, 90 percent of them stayed on it, and those who stayed indeed used less energy. What did they truly prefer then, the option they actively chose or the one they did not choose but were willing to stick to? A government may decide that since there is no clear answer to this question, it may as well go with the one better for the environment.

A larger open question is the extent to which energy consumption is a matter of habit. A particular way of consuming could become almost like an addiction simply because this is what people are used to. At the Paris School of Economics, the new "green" building provides very little heating. When we worked there, we were always cold in the winter and spring, and complained regularly about it. But somehow the simple tactic of leaving a thick sweater in the office eluded us for many months. Yet it was really not so difficult. We just were suffering from many years of overheated American offices. And once we had managed to transport the sweater, we did not feel worse off than we would have had the building been warmer. The moral brownie points from doing our bit to save the planet was enough compensation.

Many of the behaviors that influence energy consumption are repeated and habitual: taking the train rather than the car, turning off the lights when leaving a room, and so on. For such behaviors, doing

what we have always done in the past is easiest. Changes are costly, but once we switch it is easy to keep going. Even more mechanically, if we buy a thermostat we can set it up once and for all to heat more in the morning and at night and less when we are away. This means today's energy choices also affect future energy consumption. Indeed, there is direct evidence that energy choices are persistent. In an RCT, some randomly chosen households received regular energy reports telling them how much energy they were using relative to their neighbors. The report recipients began to consume less energy than the households that never got them, *even after the reports stopped*. And this seems largely a result of changes in their habits.[24]

If energy consumption is a bit like an addiction, in that using a lot of energy today makes us use a lot in the future, then the appropriate response is high taxes, like those on cigarettes. High taxes would discourage the behavior initially, and then once the proper behavior was learned the taxes could continue to be high without really hurting anyone, since everyone had changed their habits in order to avoid them.

Of course, our energy consumption is not only caused by how we heat, cool, or transport ourselves. Everything we purchase contributes to it. There again, tastes probably do not fall from the sky. Economists have begun to recognize the role of "habits" in our preferences: what we grew up consuming forms our tastes today. Migrants continue to eat what they grew up eating, even when the food that was cheap in their home country is expensive in their new country.[25] Habits mean it is painful, in the short run, to change your behavior. But they can be changed. People even seem willing to modify their behavior in order to get ready for some future change.[26] Thus announcing a *future* tax hike on goods gobbling up energy could be an easier way for people to get used to the idea.

POLLUTION KILLS

Rich countries have the enormous advantage in that much of the energy consumption they need to sacrifice is inessential (driving to the supermarket when you could walk, sticking to your old bulbs instead

of switching to LEDs, etc.). Where the rubber really hits the road is in the developing world. In the last two decades, coal consumption has trebled in India and quadrupled in China while declining slightly in the United States and other developed countries. In the decades to come, growth in energy consumption is forecast to be four times higher outside the OECD than within.

But for most Indians, additional consumption and additional energy consumption in particular is not a luxury. The very low energy consumption in rural India today is due to a mode of existence that is often unpleasant and dangerous. They cannot possibly use less, and ought to have a right to use more. In that case, is there a rationale for poor countries to stay completely outside of the climate conversation? Or, at a minimum, to limit any sacrifice to their richest citizens, who have the lifestyles and the emissions of rich Americans?

It is hard to say no. There is certainly something deeply unfair about the world's poor paying for the past and present indulgence of the world's rich. Unfortunately, there are two problems with taking this position. The first, which we already discussed, is that the consequences of a temporary let-off for the developing world may encourage many years of life for the world's most polluting technologies. The temporary let-off may not be that temporary. Most victims will be in the developing world, so people in the developed world may be all too happy to go along with that.

But, second, the real crux of the issue is whether the developing world can afford to continue at its current pollution levels (or grow them), even without the threat of global warming. CO_2e emissions are strongly correlated with something else that directly affects their citizens *today*: air pollution. The environment in China and India has degraded so fast that pollution has become a massive and urgent public health hazard, and it is also becoming worse in other emerging economies.

This pollution kills. In China, coal-fired indoor heating is subsidized on the north side of the river Huai but not on the south, on the grounds that it is colder in the north. One can see a precipitous drop in the quality of the air when crossing the river from south to north. Correspondingly, there is a similar drop in life expectancy.[27] Estimates

imply that moving China to the worldwide standard for the concentration of particulate matter in the air would save the equivalent of 3.7 billion years of life.

China's skies are, however, positively pristine compared to those of many big Indian cities. Several Indian cities, including the capital New Delhi, top the list of most air polluted cities on earth.[28] In November 2017, the chief minister of Delhi compared the city to a gas chamber. According to the US embassy's measurements, at that time the air in New Delhi reached pollution levels forty-eight times the guideline value established by the World Health Organization. As in China, this level of pollution is undoubtedly deadly.[29] Admissions to hospitals surge every November when pollution skyrockets. Globally, the Lancet Commission on pollution and health estimates that 9 million premature deaths were caused by air pollution in 2015.[30] More than 2.5 million of those deaths were in India, the most in any single country.[31]

Pollution in Delhi in the winter is due to a combination of several factors (including pure geographical bad luck), but some of it is due to behaviors that could be changed. One important pollutant comes from burning the stubble left after crop-cutting in states neighboring Delhi. The smoke from the burning outside the city is then mixed with various pollutants produced inside the city: dust from construction, exhaust from vehicles, residue from the burning of trash and the open fires the poor use to cook and keep warm in winter.

The smog in Delhi is so bad there is a clear impetus to act immediately. There is no trade-off between the quality of life today and in the future, since people are dying now. The only trade-off is between consuming less or choking. And even this trade-off may be mostly illusory. Two different studies, one involving workers in a textile manufacturing firm in India[32] and one on travel agents in China have shown that on days when ambient pollution is high, productivity is low. So more pollution may mean less consumption.[33]

Delhi is a relatively rich city. City dwellers can easily afford to pay the farmers not to burn their crops, and to instead use machines to bury them and ready the soil for the next planting. The government could ban open fires in the city and create heated rooms where the poor could gather on cold nights. It could replace trash-burning with a more modern trash collection and treatment system. It could ban old

cars (or in fact ban diesel-fueled cars altogether) and introduce congestion pricing or another form of congestion management.[34] It could enforce more vigorously the tough industrial pollution standards on the books but not typically respected. It could improve the public transportation system. It could shut down or upgrade the large thermal plants operating within the city. Perhaps none of these would be sufficient individually, but combined they would surely improve the situation.

None of this is out of reach. For example, a "friends of the court" brief submitted to India's supreme court suggested that a subsidy of Rs 20 billion (about $300 million) would be enough for the farmers of Punjab and Haryana to purchase the equipment needed to prepare their fields. This is only approximately Rs 1,000 ($14 at the current exchange rate, a little over $70 at PPP) per inhabitant of greater Delhi. Surprisingly (and frustratingly), despite the urgency of the bad air, the political demand for such a response is not overwhelming. Part of the problem may be that curbing pollution would require a lot of people to cooperate. But there is also a lack of awareness that air pollution is a health issue. A recent *Lancet* study found that a large part of the deaths due to outdoor air pollution can be attributed to the burning of biomass (leaves, wood, etc.).[35] But a significant part of this biomass is burnt on indoor stoves, which also generate a tremendous amount of *indoor* air pollution. It would therefore seem there would be a strong private demand for better cooking devices, which would improve both indoor and outdoor air. But there appears to be no such demand. Study after study finds that the demand for cleaner stoves is very low.[36] Even when an NGO distributed cleaner stoves for free, people were not interested enough to get them fixed when they broke.[37] Low demand for clean air may come from a failure of many of the poorest households to connect clean air to a healthy, happy, and productive life.

This may change. Slum dwellers asked to compare the conditions of life in the city to what they had experienced in their villages mostly reported they preferred Delhi.[38] The only thing they really complained about was the environment and, in particular, the air. In the winter of 2017–2018, there was finally some outrage in Delhi. Schoolchildren took to the streets when their schools were shut down due to the dangerously high pollution levels. Even in China, which is not a democracy, the pressure of public opinion is said to have contributed

to the government's desire to do something about pollution. In India, it may soon become enough of a public issue to lead to some change. The priority should then be to enact policies that will lead to cleaner consumption patterns, even if they come at some cost. The costs may not be very large. In many cases, India would be able to leapfrog to the cleaner technology (e.g., when the poor finally get electricity, they get LED bulbs). In some cases, the new technology may be more expensive than the old (e.g., clean cars may be more expensive than dirty cars). This means the poor will need to be compensated. But the total cost of this is small, and could easily be borne by the elite if the political will was there.

A GREEN NEW DEAL?

With the Green New Deal, the talk of the town in the winter of 2018–2019, Democratic politicians in the United States were trying to link the fight against climate change with an agenda for economic justice and redistribution. They had an uphill political battle in front of them. From Paris to West Virginia and Delhi, fighting climate change is often presented as a luxury for the elites, funded by taxes on the less privileged.

To take an example we encountered firsthand, at the end of 2018 the agitation of the "Yellow Vests" protesting a planned increase in the tax on gasoline closed down the streets of Paris every Saturday, putting the French government under severe strain. Eventually, the tax increase had to be postponed. The argument the Yellow Vest protesters were making was that the increase in the gasoline tax was a way for rich Parisians (who can take the subway to work) to buy themselves a conscience at the cost of people from the suburbs and countryside who had no choice but to drive their cars. They did have a point, given that the same government had removed the wealth tax. In the United States, the specter of a "war on coal" became the rallying cry against the liberal elite, a symbol of their lack of empathy for the poor. And, of course, politicians in the developing world routinely (and rightly) rail against having to pay for previous choices made by rich countries.

The Green New Deal is an attempt to bridge precisely this divide, by emphasizing the fact that building new green infrastructure (solar panels, high-speed railroads, etc.) will both create jobs and help in the fight against climate change. It de-emphasizes the idea of a carbon tax, viewed by many on the left as being too reliant on market mechanisms and, as in France, just another way to make the poor pay.

We understand that a carbon tax is not an easy sell (taxes that hit most people never are), but our view is that it should be possible to make it politically acceptable by making it absolutely explicit that the carbon tax is not a way to raise revenues. The government should structure the carbon tax in a revenue-neutral way, such that tax revenues would be handed back as a compensation: a lump sum to all those at the lower end of the income scale, who would therefore come out ahead. This would preserve the incentive to conserve energy, drive less or drive electric cars, but make it very clear that the less wealthy would not pay for it. Given that energy consumption is a matter of habit, the tax should also be announced well in advance to give people time to get ready for it.

More generally, we are quite aware that it will cost money to prevent climate change and to adapt to the part already on its way. There will have to be investments in infrastructure, and meaningful redistribution to those whose livelihoods are affected. In poor countries, money could help the average citizen achieve a higher quality of life in a way less threatening to the future of the world. (Think of the air-conditioning debate, for example; why doesn't the world simply pay India to leapfrog to the better technology?) Given that the poor do not consume very much, it would not take a lot to help the world's poor consume a bit more, but also get better air and produce less emissions. The richest countries in the world are so rich they can easily pay for it.

The question is to frame the debate in a way that does not pitch the poor in poor countries against the poor in rich countries. A combination of taxes and regulations to curb emissions in rich countries and pay for a clean transition in poor countries may well reduce economic growth in the rich country, though of course we don't know for sure, since we don't know what causes growth. But if much of the cost is

borne by the richest in the rich countries and the planet benefits, we see no reason to shy away.

In Delhi and Washington and Beijing, it is in the name of growth that policy makers drag their feet when called upon to enact or enforce pollution regulations. Who benefits from this GDP growth remains an afterthought.

Economists deserve their fair share of the blame for stoking this rhetoric. Nothing in either our theory or the data proves the highest GDP per capita is generally desirable. Yet because we fundamentally believe resources can and will be redistributed, we fall into the trap of always trying to make the overall pie as big as possible. This flies directly in the face of what we have learned over the past decades. The evidence is clear—inequality has risen dramatically in recent years, with searing consequences for societies across the world.

CHAPTER 7

PLAYER PIANO

Player Piano was the very first novel published by the great American fabulist Kurt Vonnegut.[1] It is a dystopia about a world where most jobs have disappeared. Written in 1952 in the wake of the great postwar expansion of jobs, it was either extremely farsighted or astoundingly misguided, but, either way, it's a perfect novel for our times.

A player piano is a piano that plays itself. In Vonnegut's world, machines run themselves and people are no longer needed. They are provided for, and get to do various forms of make-work, but there is nothing meaningful or useful they can do. As Mr. Rosewater, a character in a later (1965) novel by Vonnegut puts it: "The problem is this: How to love people who have no use?"[2] Or even have them not hate themselves?

The increasing sophistication of robots and the progress of artificial intelligence has generated considerable anxiety about what would happen to our societies if only a few people had interesting jobs and everyone else had either no work or had a horrible job, and inequality ballooned as a result. Especially if this happened because of forces largely out of their control. Tech moguls are getting desperate to find ideas to solve the problems their technologies might cause. But we don't need to contemplate the future in order to get a sense of what happens when economic growth leaves behind the majority of a country's citizens. This has already happened—in the United States since 1980.

ONE FOR THE LUDDITES

An increasing number of economists (and of those who comment on economics) worry that new technologies, such as AI, robots, and