Diminishing Returns in Modern Life

James Truslow Adams

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Through increasing knowledge of natural laws man has enormously increased his control over his environment. This is so obvious as to make any amplification of the simple statement unnecessary. Our type of culture to-day is based solely on power, the power hidden in coal, steam, electricity, or the chemical combination of atoms, and is due to our having discovered and utilized natural laws. Because of the enormous increase in our control over the environment due to such knowledge, we have come instinctively to think of the discovery of each additional law as enlarging the possible scope of human life and activities. We never think of them as indicating limits. The changes realized have been so overwhelming that the possibilities have come to appear illimitable, and scant attention is paid to those laws which put definite limits to our advance in any desired direction. They are brushed aside, and any discussion of them is as unpopular as was conservative economic reasoning at the top of the recent bull market. Unfortunately, the unpopular laws as well as the popular ones are ceaselessly at work, as the enthusiastic speculators found, and disregard of them is bound to end in trouble. Laws are merely formulations of the ways in which things invariably and inevitably happen or act; and to get in the way of a law of nature which does not work the way we should like, and to insist on having our own way is about as futile as for a cow on the track to dispute the right of way with the Chicago Flyer at sixty miles an hour. The laws of nature do not work for us. All we can do is to find out how they work, to make use of some of those going in our direction, and to get out of the way of others as fast as we can.

So far, most of the laws discovered belong to the physical sciences. Psychology, economics, politics, sociology, and the others are grievously behind. Any astronomer can predict with absolute accuracy just where every star in the heavens will be at half-past eleven to-night. He can make no such

prediction about his young daughter. From this fact – that one group of sciences has got entirely out of step with another – our civilization is becoming warped out of shape. For a good many centuries, in spite of defects, the social and political life of peoples fitted on the material base almost as neatly as the top layer of a chocolate cake fits on the bottom. To-day the top layer has altered little, but the bottom one, the material base of our life, has gone spinning, with grave danger of ruining the cake and losing the chocolate. The cake is, in fact, acting like a thing bewitched, and if we are to make it stick together again we have got to do something with the upper layer, for the under one has clearly gone too far to get it back in its old place if we would.

It is clear that we have got to know a great deal more about psychology and sociology than we do now, keeping them "ologies" and not making them "isms." Our chemists and engineers will look after our T.N.T.'s and dynamos, but we must learn how to use them, and come to some new terms with our ethics, politics, and social life in the largest sense. A chemist who tried to make T.N.T. according to his emotions and not his science might bring it off but, a million to one, would more likely be brought off himself. It is the same with our social and institutional life. If, on the scale of modern nations, we try to adjust them only to our vague emotions and callow aspirations, something very violent and unpleasant can be rather certainly predicted. We must hunt for laws to guide us – Nature's, not lobbyists'. It is also essential to find the unpopular as well as the popular ones, those which tell us what we cannot do as well as those which tell us what we can. The Garden of Eden and the flaming sword were myths – excellent ones, by the way; but a definite limit here and there to self-expression and undirected aspirations is not. I do not pretend to be a scientist, but when one observes the cow on the track and the Chicago Flyer coming one does not have to be one to predict that something is going to happen immediately to the cow. I wish, in a word, to call attention to what is an apparent law, and about as unpopular a one as could exist.

Economists, observing the way things happen, have established what they call "the Law of Diminishing Returns." I shall not try to give it in scientific terms or bother with graphs. Briefly it is that working in a given direction there is a point up to which profit increases and beyond which it inevitably declines. Let us illustrate this with a few examples comprehensible to every practical man. I once lived in a farming community. The farmers would figure very carefully how much to spend per acre in fertilizer. Twenty-five dollars per acre would increase the value of the crop so much, less cost of fertilizer. Fifty dollars would do so to a greater extent, as would a hundred dollars; but two hundred would not. There was a point at which the cost of fertilizing, profitable up to then, overtook the increased value of the crop, and became unprofitable. The wise farmer, who knew his land, his fertilizer, and his crop, knew just how far to go and where to stop to get the last dollar out of all three – perhaps I should say cent.

Let us turn to another great industry, mining. Gold is found in rock, a very small amount of gold to a fearsome amount of rock. To extract it requires costly machinery and labor. Up to a certain point an increase in outlay on the best machinery will pay, but beyond that it will not. There is a relation between the percentage of gold in the rock and the cost of getting at it, as I once found out.

Let us consider our pet toy, the skyscraper. I used to have an office at 2 Wall Street. Across the street there was a lot with a four-story building on it, forty feet square. It has been called the most valuable piece of real estate in the world. Indeed, I was told as a boy many years ago that the then owner was asked what he would take for it, and answered that his price was the sixteen hundred square feet covered with gold dollars. This was figured out, and the offer made, whereupon he smiled and answered, "I meant, stood on edge." However that may be, it did change hands, and a high building was put on it which became known as "the chimney." I have forgotten how high it was, but here is the point: its height was limited by the fact that it could have only one elevator; and architects tell us that although up to a certain point every floor you add to a building increases the rental, there is a point, given a certain ground space, at which the space required for elevators to

carry people to the added floors will offset the increased rental space gained by adding such floors, which sounds reasonable. Of course, you can buy the adjoining lots, tear down the old buildings, and build a higher, but the limit is the city block, and there is a point at which the increased rental space will be offset by the increased lost elevator space.

Let us take one more illustration. Everyone who builds a house for himself has the same problems I had. There was the question, for example, of the cost of the copper sheathing I was to put around my windows and the copper gutters under my piazza floor. Knowing I wished to cut cost as much as might be, the architect suggested copper of a certain thickness and cost. The builder suggested that it would last only so many years, whereas the shingling and piazza floors would last longer. If I spent more on the copper I should save in the long run. I, therefore, added to the weight, but it was quite obvious that there was a point beyond which to add to the weight and cost would cease to be profitable and prove merely loss. It was our job to determine that point.

Perhaps these illustrations have made my basic point clear. Let us now work toward somewhat broader problems.

I suppose it will make me seem antediluvian to the young generation but I well remember when taxis were introduced into New York. As a matter of fact, it was not so long ago in spite of the fact that most young people to-day cannot imagine Peter Stuyvesant getting about in any other way. At first they were a great help in saving time. When one was in a great hurry one took a taxi and swept along Fifth Avenue at what seemed a terrific rate. But taxis multiplied like rabbits in Australia with the result that to-day when I am really in a hurry I now have to walk to get from Thirty-Third Street to Forty-Second. It once took me twenty-five minutes in a taxi. In other words, as a time-saver, when there were few taxis and few of us used them, they served their purpose admirably. Now that there are, apparently, millions of them and the millions use them, they are of no use, for that purpose, to anybody. It is not that the mob has got what a few used to have, but that nobody has got anything, in this particular aspect.

In 1913 I built a house at the east end of Long Island. Cars, of course, were coming into use by then but there were still comparatively few of them. Ten years before that the only way to get to that beautiful bit of wild scenery, Montauk Point, had been to take a train to Amagansett, and then get a "rig" to drive one across the mosquito-infested Napeague Beach and about ten miles or more on to Montauk, a slow nag plowing through heavy sand. The road was improved, and I had my modest little car. It was delightful to make Montauk in an hour, without mosquitoes, and enjoy the beauty and solitude without all the old discomfort. But what has happened? The last holiday I was at home before I sold my place there were said to be two thousand cars at the Point. I admit that according to the Declaration of Independence and the New Testament there was no reason why only a privileged few should enjoy the solitude and beauty of the Point. Theoretically there is no reason why the whole million cars of New York State should not have been there instead of the half dozen of the earlier days.

Theory, however, has nothing to do with it. The plain fact is that those eight thousand people, allowing only four to a car, were not sharing what I had enjoyed before. There were no longer the empty spaces, the moorland hanging over-cliff to the sea. Instead of solitude, there were eight thousand people; instead of bare rolling downs, there was a landscape littered with lunch boxes, papers, and ginger ale bottles by the thousand. I have not the slightest objection to people enjoying themselves as they will. *De gustibus non est disputandum.* The point is that by the mere fact that eight thousand people tried to enjoy the solitude and beauty of Montauk at once, the solitude and beauty evaporated. They did not get what I had had. It was simply that none of us got it. I am not discussing whether it is better for eight thousand people to have what our English cousins call "ginger-pop" and sandwiches in a mob and the fresh air than that a few should enjoy the stillness of what used to be one of the few unspoiled spots in New York, or not. The point is that "the many" did not get what "the few" had had. Up to a certain number they might have done so. Beyond that the law began to work; and to turn eight thousand people loose on a quiet beauty spot of nature and expect returns was as absurd as for a farmer to put a thousand

dollars' worth of fertilizer on every acre, or for the owner of 1 Wall Street to have built fifty stories on forty square feet only to find that all his floor space was taken up with elevator shafts instead of offices to rent. What the many got was something entirely different from what the few had got. Which of these, for the whole human race for generations to come, might be the better would baffle the mathematics of even an Einstein to figure out.

Let us take the old English inn, one of the most delightful places, when it is good, in which a wayfarer can find rest and simple comfort at a reasonable cost. It is clear that an increasing number of guests, up to a certain point, adds to the value of the inn for the guests themselves. One which had only a stray guest every few weeks, and did not pay, could not offer the facilities and ready service of one that was daily prepared for the few guests who could be relied upon to turn up from somewhere. If, however, there are too many, the place ceases to be one of comfort. If we succeed in getting a room only once in a dozen times; if every chair in the lounge is occupied; if we have to wait an hour for a meal until the mob ahead of us has eaten, not only is our comfort destroyed but that of everyone else. If, as would inevitably happen in America, the owner should add to the building, and then again, until, as I have seen so often in the last thirty years, a comfortable inn has grown into a huge caravansary housing hundreds of guests, the inn has really ceased to exist. The old Mitre at Oxford, for example, could conceivably have added a couple of hundred rooms and changed the small coffee room with its dozen chairs by the fire into a lounge that would seat a hundred. But by doing so it would have subtly ceased to exist, and the three hundred tourists who would put up at it to get the flavor of the old Mitre would seek in vain for something which their own numbers had destroyed. They would get shelter and meals but they would not get the Mitre.

In the rise of a city there is a point up to which the gain in comfort and interest is steady. We get paved streets, sewers, lights, better schools and shops, a few good theaters, perhaps, as in most European cities, an opera, a museum, and so on. Traffic is easy, people are not too crowded in their housing, can live comparatively near their work, and the advantages have not been counter-weighted with serious disadvantages. But as the city

growth continues, as in the greatest of modern cities, the disadvantages begin to weigh more and more heavily. It becomes more and more difficult to secure decent living space at any price that most can pay. Land becomes so valuable that houses give way to apartments, and large apartments are subdivided into small ones, in the process we have come to know so well. People have to live farther and farther from their work, while, owing to traffic congestion, it becomes harder and harder to reach office or home. Owing to increasing costs of all sorts, the expense of doing business mounts. For many, the point has been reached at which the law has worked and the return for living in a city has begun to diminish. Individuals move into the suburbs. Factories, in many cases, move to smaller towns.

Let us look at labor-saving devices in the home. In order to avoid complicating the case with any question as to man's and woman's work, let us suppose a woman is earning her own income and running her home herself. The labor-saving devices she can install are already innumerable, and almost every month brings a new one. She can put in an electric washing machine, a dishwasher, vacuum cleaners, electric refrigerator, and so on indefinitely. Every one of these things is admirable in itself and undeniably saves her trouble in connection with its specific function. But there is another point. A vacuum cleaner is infinitely preferable to a broom, but it costs about sixty times as much; old-fashioned dishwashing was boring and hard on the hands but cost nothing, whereas a dish-washer is expensive; the new refrigerators are much handier than the older type, but whereas they used to cost, say, about thirty dollars, the new cost about three hundred. Garbage incinerators and various delightful and tricky contrivances in the newer apartments save trouble but mean higher rents to be paid. Now somewhere along the line there is a point up to which it will save this woman labor to work so that she can pay for all these labor-saving devices; but somewhere the law we are discussing will begin to work, and she will begin to expend so much energy and anxiety in trying to make the extra money needed to save labor in one department of her life that she is expending more than her nature permits in another. The devices, although still saving labor in one sphere,

have so added to it in another that, taking life as a whole, they have ceased to function profitably.

The law works in the same way with a lot of our modern contrivances to give pleasure. Up to a certain point the possession of our modern toys, radios, cars, and so on adds to our pleasure, as do increasing numbers of bathrooms, increased luxury in hotels for those who like it, more gorgeous theaters, more costly scenery, and magnificent offices and shops; but there comes a point at which the increasing and in many cases intolerable burden of cost necessitated by these advances in number and quality of things used becomes so great as to destroy the pleasure or offset it by a still greater anxiety. In some cases the result will be to deprive the person of the pleasure entirely. For example, the opera of to-day in New York is far better than that of fifty years ago. For the ordinary music lover, who is apt not to be a hardheaded successful maker of money, there was a point somewhere where the increase in quality was not neutralized by the increase in cost; but there was also the fatal point at which the law began to work and at which the cost became so great that for him the opera, as a regularly recurring pleasure in his life, ceased to exist as completely as though there had been none at all.

Let us consider another type of case, that of the birth and up-bringing of children. The medical care surrounding childbirth is infinitely better than a generation ago, and about fifteen times as costly. The opportunities for the child in school, summer camp, mental and physical activities of all sorts are also far greater and more costly. Somewhere along the line there was a point up to which these new advantages were clear gain, like the fertilizing by the farmer, but a point was reached at which the added cost has resulted not in better and happier children but in many a family not being able to afford one. By trying to make the child, like the opera, too fine and luxurious, it has in all too many cases ceased to exist at all.

Take the involved problem of woman in business. For a while it seemed all clear gain that the unmarried woman not financially independent, the widow who had to support children and herself – all, in a word, who had to earn money – should have the whole business field open to them. But it was impossible to draw a line at which money-making ceased to be necessary

and was merely desirable. As business opportunity for those who needed it became wider, more and more flocked to offices. The competition for jobs with men became keener, and as married women added their earnings to those of their husbands, the standard of living in such households was raised. The burden on the man who was trying to support a home single-handed in competition with the "two-worker" homes became greater. It may be asked, for the women themselves, whether the point is not being reached at which the law is beginning to work. On the one hand, the lower type that used to do household work is not only competing with the cheaper-paid type of man in factory or office but has thrown the manual labor of the household, which she used to do, on the higher-type woman who is capable, given time and strength, of doing something more worthwhile for social life as a whole than cooking and cleaning. On the other hand, the steadily increasing strain to maintain the single-worker home is forcing more and more women who would much rather be in the home than out of it to go to work; and the vicious tendencies are strengthened while the competition becomes fiercer and fiercer. There would seem to be already clearly indicated the working of the law and the fact that there is a point somewhere at which the gain to woman of having business open to her will be offset by the loss.

Let us finally consider briefly the problem of democratic government, simplifying it as much as possible. If we have government solely by an oligarchy, an aristocracy, or an upper class, there will be evils. With the best intentions, it will be to some extent a class government. It is obvious that there will be gain if other classes or interests have representation. In all modern democratic countries this representation has been given and steadily increased until we have practically universal suffrage, tempered by influences wielded by certain groups, influences losing power as democracy increases. With universal suffrage, however, the control of votes lies with the laboring class, which is the most numerous. As this class comes to realize and exert its power, the legislation becomes again class legislation, of which we have a glaring example in the steadily widening and increasing dole in England. What we do is to substitute one class for another, the so-called lower for

the so-called upper. Both classes when in power will unconsciously think in terms of their own class, but the upper class is bound to have a better understanding of the extreme complexity of modern civilization, and the exercise of their power has limits in the very numbers of the lower class. A socialist government, for example, might well lay a capital levy of fifty per cent regardless of the fact that it would mean ruin for the whole country, poor as well as rich, whereas the upper class would never think of making a "labor-levy," taking fifty per cent of the labor of the country free. Somewhere along the line increased representation was an all-round gain, but we reach the point where the law begins to work, and increased representation, instead of doing away with the evils of a class government, begins to substitute the evils of government by another, and on the whole, for governing purposes, a less able class.

The possible existence of this law in all social life is not a mere theory to be toyed with. It is of just as much practical importance to us in considering our institutions as it is to the farmer in considering his fertilizing. Consider, for example, the situation in English education at this very moment. I take England rather than America because we have ignored the possibility of such a law entirely, as well as a certain range of human values, whereas in England those values, if not the law, are recognized by many. There seems to be a general impression at home that English education for the masses is a very poor affair, so far as it may be existent at all. Of course, this is not the case. There is a good system of public education, and every child has to attend school up to the age of fourteen, soon to be made sixteen. There are also the great and rapidly growing "provincial" universities, access to which is practically as easy as to our own, State and other. There is no difficulty in England for a poor boy, if he has a mind, to get an education including a university course.

But obviously, a boy from a meager home background, who has to count on his education (and his degree) getting him a remunerative job in as few days after graduation as may be possible, requires and will insist upon a different sort of education from one whose home background is rich in the best sense, that is one who has opportunities for good social and mental

contacts, travel and other sorts of informal education outside his school and university, and who, while expecting to make a career later, does not have to look upon his education as narrowly heading toward some very special remunerative job but can regard it as a general broadening and developing of his mind and all his nature. That, in the past, has been the ideal of the great endowed schools like Eton and Harrow, and the universities of Oxford and, to a lesser extent, Cambridge. Such a group of students and such an ideal have created a certain type of teaching and a certain atmosphere, alien to that in most American institutions and to the public "job-training" institutions in England. To anyone who wishes to understand the situation and problem better than it can be touched upon briefly here, I commend a small volume called *Isis, or the Future of Oxford*, in the excellent "Today and Tomorrow" series, which should be read by American educators as well as English Labor politicians.

There is at present a good deal of agitation in England on this subject, the agitators claiming that the special atmosphere and opportunities of Eton, Harrow, Oxford, Cambridge, and such places, should not be confined only to the few but should be enjoyed by the many and that, in some way, the State should make it possible by financial acts of some sort for large numbers of the poorer classes to attend these institutions. A few do now, but it is quite clear, if the Laborites have their way, that the law we have been discussing will also have its way, and that instead of the masses enjoying Eton and Oxford, Eton and Oxford will merely evaporate. Swamped with students of the same type as those who now attend the State schools and universities, they will become like them; and instead of the many enjoying the privileges of the few, those privileges will have disappeared for everyone.

In some of the above instances I have, perhaps, stretched the strict letter of the Law of Diminishing Returns but I have, I think, indicated that there is some general law at work that is worth our studying and recognizing. It appears to be a very unfortunate one for idealists, but we do not make the universe. Such as it is we have to accept it and work with it, not against it. It is to be regretted that, having found a profitable lead, we cannot follow that lead forever but instead find that it invariably turns back on

itself at some stage and gets us into trouble. It is also to be regretted that everyone cannot have everything, that eight thousand people, for example, cannot enjoy the same solitude at the same spot at once, but there seems to be something in the foundation of the universe that prohibits it, and there is no use in our insisting that the contrary is true and that the thing is possible. The cow can insist that it has as much right to follow the track in its direction as the Chicago Flyer has in its, but that does not prevent the catastrophe to the cow.

In the last century and a half we have heard a great deal about rights – "natural rights," the rights of man, woman's rights. The word is an unfortunate one for it carries an implication that somehow the universe is back of the human wishes and desires embodied in the word "right." There are, of course, no "natural rights." Nature knows nothing of rights. She knows only laws. Man, on the other hand, has ideals and aspirations. These, however, can be fulfilled only when they run with, not counter to, nature's laws, and there is no use blinking that fact.

Because a hundred dollars an acre in fertilizer will double the crop, it does not follow that five hundred dollars will quintuple it. Because a thirty-story building on a given lot is more profitable than a ten, and sixty is more profitable than thirty, it does not follow that a hundred is more profitable than sixty. Because a hundred motor cars on a given road will give people pleasure, it does not follow that a thousand will give ten times the number pleasure. Because twenty people can enjoy a beauty spot, it does not follow that two thousand can. Because going into business may benefit some women, it does not follow that it will benefit all. Because government becomes juster if the laboring class has some votes, it does not follow that it will become still juster if we give them still more. Unfortunately the reverse seems true. There seems to be a law also that although up to a certain point we can increase the number of people who can have, see, and enjoy, if we go beyond a certain point, instead of giving everybody everything, nobody has anything. A Labor Government could destroy Eton and Oxford. They could not, with all the power in the world, give Eton and Oxford to the mob. The universe would say "you are paying no attention to my laws,"

and the real Eton and Oxford would disappear under the very eyes of the mob which had gone to look for them.

Is it not time that we recognized more clearly the law, or perhaps two laws, hinted at in this article? They are laws that are unfortunately hostile to many of man's aspirations and especially to much of the democratic doctrine, but that has nothing to do with their existence and power. If they are there we have got to recognize them or suffer the consequences. We have refused so far to recognize them for the simple and childish reason that we do not like their implications. We do so to some extent in our economic life but not in our social and political. May not we account in some part, at least, for the rise and fall of civilizations in the past by the working of these laws that man has declined to recognize, the law, if we separate them, that returns increase up to a certain point and then decline, and the law that if too many people strive to enjoy the same good, that good disappears? The farmer, the miner, or the business man studies to find the exact point at which, according to the Law of Diminishing Returns, advantage begins to turn into disadvantage. If there is any chance of regulating society scientifically and saving it from the recurring cycle of the rise and fall, have we not got to seek the same point for our political and social tendencies as our "practical" men do for our economics? If the farmer, the miner, and the manufacturer pay no attention to this law, they go bankrupt and are sold up. If society pays no more attention to it in the future than in the past, it will do likewise, as it has a thousand times before, and no amount of declaiming about "rights" will save it for a moment longer than the law will take to work out its own inevitable end. The rights of man, the rights of labor, the rights of woman as expressions of ideals to be worked out in harmony with nature's laws are beneficent concepts. When, however, they are proclaimed as superior to her laws they are of no more avail than the twittering of sparrows on the roof when Ætna breaks loose and the lava flows over the house.