JULIAN BEINART: I like just having you understand that if you really want to understand anything about cities, you have to immerse yourself in the vast, vast amount of material. Now seriously, it's a joke.

[LAUGHTER]

The class on Tuesday referred to a number of theories which I didn't have much time to expand on. For those of you interested, the reading on the sheet I gave you is available and worthwhile looking at if you're at all interested in expanding beyond what we did on Tuesday.

This is supposed to be an advanced class. There's a prerequisite before you can take this class. And yet the field is such that so much of this material [INAUDIBLE] is the first time you've encountered it. So I work on the basis of those of you who want to pursue more have available at least some direction which to travel. So the sheet is really the direction in which you might travel if you want to explore anything from [INAUDIBLE] text to the work of other theorists.

OK, we switch gears completely now. We are on to the serious material. The first part of this class is really just to warm you up, to make you understand something about urban history, and to give you a superficial grasp of what theories about the form of cities might mean.

The second part of this glass deals more meticulously with particular items in cities. It starts off with a review of industrialization. Some historians claim that there have been three momentous times in human history-- something in the neolithic period, something in the post-religion period of the Enlightenment, and the Industrial Revolution.

Nothing in my mind contests with the Industrial Revolution. And in a sense, except for your own education, anything prior to the period from 1750 onwards is irrelevant. I know it's a stupid thing to say but I'll say it again. From this class' point of view, we start at 1750. And today, we will try to understand a very complex phenomenon, the phenomenon [INAUDIBLE] which increased almost every aspect of human life, particularly in England.

Why in England? [HEAVY SIGH] Enough theorists have tried to understand why in England. I referred you in the reading to a book by-- a recent book by a man called Clark from the West Coast university, University of California in Davis, I think. The book is called *A Farewell to Arms.* Did you find any interesting ideas in that book? Let me explain.

The Industrial Revolution, as I was confronted with it is a high school student and then at university, was a set of events by people, individuals, who transformed the built world, from Telford in Newcastle using steel to-- not Telford-- sorry, Stephenson in Newcastle, learning how to-- teaching us how to industrialize the railroad. McAdam, from which we learn how to pave roads. From 1901, the first British census, we learned the value of establishing a uniform system for counting how many people are in the nation. The penny postage stamp-- the first stamp which allowed communication by mail in a systematic manner, and so on and on and on and on and on and on and on and on.

Nobody explains why it happened. The theory is the genius of human beings all lumped together changed the British landscape. However, we can't be that naive. We have to ask ourselves deeper questions, because these changes are serious and affected the world in significant ways.

Clark's book argues that, in a crude sense, the world in England in 1200 was a world securing property, free trade, all of the basic economic conditions which initiative could take place. In fact, [INAUDIBLE] a table in the book, if you ever read the book, which compares 1200 England with 2000 England and shows the metaconditions were the same. What he argues of, which is novel in this argument about the Industrial Revolution, that there was a transmission, either culturally or biogenetically, from the wealthy, who had bigger families and who lived longer, through a downward mobility to the rest of the population. And he cites a number of conditions, having examined the wills of people from 1200 to 1800.

He derives a number of conclusions-- that the world changed for the people en masse. Interest rates fell. Murder rates declined. Work hours increased. Taste for violence declined. Education spread to the lower classes. And savings increased.

In the handout today, I gave you a review. There have been many reviews of this book-- some arguing with it, some saying it's nonsense, some saying it has some basis. But Clark has not concluded that it's biogenetic or cultural or how the transmission actually took place. What is powerful about his argument is that it's new. It's fresh. It's much more vigorous than previous examples.

The taste for violence declined. In 1851, boxing was conditioned by weight. In medieval boxing, a big man seven foot tall, boxed somebody three foot tall. And everybody laughed. [LAUGHTER] I will cite you, when we talk about Paris, about the burning of cats in public space to amuse people. The tradition of beating up animals through cockfighting, bullfighting, and so on declined and was replaced by a rationalized form of sport.

Manchester United was formed as a club in 1878. Today it's the wealthiest sporting franchise in the world. Manchester, where Engels wrote *The Condition of the Working Class in England,* was hardly the site, according to Engels, for the emergence of a $100 billion sports franchise.

Taste for violence declined. How do you explain how a taste for violence can be-- this country, at the moment, is engaged in trying to deal with what we could only call a culture of violence, in which violence seems to be built into the grain of the society in a way which is difficult to understand and difficult to do something about. How do these changes take place? And how aware were those of us who were preoccupied with making decisions for people about the cities they live in? How do we understand these cultural shifts?

I grew up as a modernist. When I look at the work I did as a student, both in architecture and in city planning, I'm embarrassed. The culture in which I worked was very different from the one in which you work now.

We can only understand-- and I'm not going to deal extensively with societal changes in this period in England. I'm only going to deal with them when they affect some notion about the built form of places. Otherwise, we'd be here, and I'm incompetent to give you a very good background in 19th century English history. I'm just going to pick on certain coincidences and events.

For instance, Peterloo was a gathering of protesters in Liverpool, I think it was, just after the British won the great battle against Napoleon in Waterloo. 11 Englishmen were killed by the police and the military. 152 years later, 13 Englishmen-- actually, Catholic Irish-- were killed by the British police and military. Over a period of 152 years of this incredible transformation of the society, the British police and the military didn't kill more than 11 or 13 people. It's a remarkable story. And in it the origins of Marxist thought fits quite neatly, which I will talk a bit about later when we deal with Engels in Manchester.

Clark makes a big story about the Malthusian trap. Malthus wrote a book in 1798-- I forget the title. I used to know the title. Does anybody know the title of Malthus' book?

AUDIENCE: The dismal science [INAUDIBLE]?

JULIAN BEINART: No, no. That's what it was called by critics. It's something about the population. Essentially, the Malthusian trap, Clark argues, is that, until the Industrial Revolution, the amount of food that would be produced in a society or in a city or in a village was equal to the amount of population that could be fed. If there was an innovation in the society's production, incomes rose, but the population stayed the same because the food supply wasn't enlarged.

Malthus in 1798m as I will show you in the graph, observed the most rapid change in percentage of population increase that Britain had ever seen. Manchester was increasing in population by 10% per annum, whereas European birth rates or growth rates, population growth rates, largely because of disease over the medieval period, averaged about 0.6% or 1%.

Trevelyan, one of the great British historians, I quote-- "The survival of many more infants and the prolongation of the average age of adults marks off modern times from the past. And this change begins in the 19th century." Two phenomenon-- death rate, people live longer, and more children survive. Put those two together, and you have the fundamentals of population growth.

In 1500, London's population was between 40,000 and 60,000 people. Paris was already had a population of about 200,000. So London was almost the second great European city. By 1851 or 1850, it was the largest city in the world, with an estimated population of 2 to 2 and 1/2 million people.

1851 is the signal date in the 19th century for us. What happened in 1851, or around about 1850? The most significant building of the 19th century was built in London, the Crystal Palace. Who is the chairman of the committee? And who built the Crystal Palace?

AUDIENCE: It was Paxton, right?

JULIAN BEINART: Paxton was chosen by James Cubitt. Cubitt was the first Industrial builder. Instead of using medieval feudal labor, journeymen, on a daily basis, he employed up to 1,000 people on permanent salaries. He believed, like many of these progressive individuals, that architects were second rate and [INAUDIBLE] in their behavior. Cubitt, for instance, advised the queen, who wanted to develop a large part of the Isle of Wight, I think it was, if I'm correct. I'm trying to remember. He said, don't use architects. They just waste your time. Baron Haussmann in Paris did exactly the same thing.

1850-- England was, for the first time, divided into 50% of the population living in cities and 50% living in rural area. A trivial event, the invention of camera processing, the capacity to photograph, to make recordings of the built world-- the conquering of disease.

In 1854, a physician in London decided that cholera, which is the most prevalent and most dangerous of urban diseases, was not born in the air but was water borne. These are pieces we are reading for next Tuesday, which deals with this, and followed by the biggest piece of infrastructure yet built in the world to-- imagine living in [INAUDIBLE]. Manchester in 1830, the city couldn't get people, municipal workers, to go into their houses. They had to open the windows first, break the windows to let in fresh air.

The British parliament had to be stopped one summer because the smell was so bad. London rivers was so polluted, all the garbage and sewage and feces produced by the English in London, in a city of two million people, went straight into the river. People made a living picking up bones in the river. This is the first chapter of the book called *The Ghost Map,* which deals with the invention of the cholera phenomenon-- not the invention of the phenomenon, the invention of the cure-- which details that concept of life in London.

AUDIENCE: [INAUDIBLE] started to compare [INAUDIBLE]

JULIAN BEINART: Yeah, he did he did a kind of Sherlock Holmes thing--

AUDIENCE: Yeah, [INAUDIBLE]

JULIAN BEINART: --taking random clues. When somebody died, the family would say, oh, we drank something last night.

AUDIENCE: Yeah, he would track it.

JULIAN BEINART: And he would track-- and he tracked it to the central water fountain. Remember that the British had no sewage system. So if you went to the toilet-- for a long time, the British-- at the Crystal Palace, they invented, or produced for the first time, the toilet seat. But the British bought the toilet seat but didn't understand that, if you used the toilet seat, something would happen to the material you produced. It's an extraordinary phenomenon.

Let me just draw these two graphs. 1700 to 1750, 1750 to 1800, 1800 to 1850, 1850 to 1900-- these are 50-year intervals-- 1900 to 1950. This is 100%, 50%, 100%-- 1850, 50%, 33%. 1798-- Malthus' observations are at the peak period of the population increase. So therefore, his conclusion that the Malthusian trap would still continue was totally eviscerated by the industrial process.

What explains this phenomenon, the decrease in the rate of population growth? The graph shows two lines-- one ascending very rapidly, one descending not quite as rapidly, but rapidly. This is explained by a theory called demographic transition. As you urbanize, you have fewer children. There are more costs involved in producing and maintaining a large family. And typically, populations once they have achieved their maximum through the migration of rural to urban, as the population now is largely urbanized-- or 50%, at least, is urbanized-- the population will drop.

1800, 1950, 1850, 1900-- 1800, three quarters of the country is agricultural. 1900, half is agricultural. One quarter is agricultural, and then a small addition to make it about 70%-- 80% urbanized.

These phenomena, in different variations, occur at the moment. Population growth in Russia projected for the next 50 years is minus 25%. Population growth for Western Africa is plus 122%; Middle Africa, 175%; Japan, minus 13%; as you move from Russia towards the West, Central Europe, Western Europe, minus 0.2%.

It used to be that planners believe that if you wish to decrease population growth, you should urbanize people, that urbanization was the fastest non-lethal method of ensuring population maintenance. It's all a theoretical posture prior to cities being as large as 20 million people and also prior to the growth of population being limited now to people who are in the absolute poverty state.

So you have a combination of-- in a sense, you could argue that, demographically, when people have reached the maximum point of urbanization, and the family sizes decrease, population can only increase by virtue of an increase of that group of people, which is largely possible due to immigration. So the more the economy is advanced, the more likely it is that immigration will replace work and increase population.

I don't know what the percentage of immigration is in America's population growth, but it certainly must account for a significant amount, because these projections for the United States are plus 33% over the next 50 years. Now, these are guesses, but they're better guesses than most people, the guesses by the United Nations, who employ a fairly respectable group of people.

OK, why do people shift from the rural areas of the country to its urban areas?

AUDIENCE: [INAUDIBLE]

JULIAN BEINART: Hm? Sorry.

AUDIENCE: [INAUDIBLE] jobs. [INAUDIBLE]

JULIAN BEINART: Yeah. But that presumes there's no work where they are-- better work. And better work implies a number of things. It implies what's being called by demographers the life lottery, that you stand to higher random chance of producing good things or being recognized than you do in the country. The second is the capacity of the country to support you.

There are always two phenomenon. Land reform has been one of the more difficult aspects of urban, rural change. In South Africa, if I remember the statistics correctly, although 80% of the people are Black, of the population are Black, or 70% to 80%, less than 20% of the agricultural land is owned by Black people. You can see what happens, what traumatic events happened in Zimbabwe, when Mugabe tries to manufacture the removal of people from the land in order to-- it happens to be white people. South Africa is on the way to increasing the amount of land and operated by its Black people.

But one of the significant events-- and I think there's a sheet which covers this in your reading-- is the Enclosure Acts. The Enclosure Acts eliminated the possibility of poor people, rural populations, having access to commons land. At the time of the census in 1086, more than half the arable land belonged to the villages. Enclosure, by redefining land as property-- the Enclosure Acts from the 15th to the 19th century, enclosed commons lands and made it into property. Between the 14th and 16th century, thousands of residents were evicted from their holdings when many more saw the common land that were the basis of their independence fenced off for sheep.

Raymond Williams' book *The Country and the City* examines this phenomenon. In 1873, half the country was owned by some 7,000 people in a rural population of around 10 million. The capitalism of the Manchester has been built on an agrarian capitalism. In the 18th century, half the cultivated land was owned by 5,000 families, nearly a quarter by 400 families.

Now, you can argue that modern farming needed more land in the subdivision of land into common parcels. But there's a rejoicing about the profit of making-- converting common land into property. Philip Sidney, the poet, writes about-- the term Arcadianism refers to a Utopian condition in English literature. Arcadia is invented as some sort of alternative world of wonder, largely because of nature. Philip Sidney invented the term Arcadianism in a part which was made as a result of the enclosure of the commons land.

So on the one hand, if one simplifies the story, one suggests that the conditions of the poor were exacerbated by the removal of their rights to land and was one of the phenomenon which caused them to move involuntarily to cities. Now, whether this is absolutely true or not, I don't know. Economic historians start dividing themselves up into capitalist-oriented historians and labor-oriented historians. And you can take your pick as to who.

But the notion that land becomes-- that land is available to the population is changed to property has severe implications which Engels, in his writing about Manchester, observes. He says there are changes in the social structure of families once they move into the factory system. These are not voluntary labor moves.

Engels claims that the capitalists keep people in an insecure state by not making them have available alternatives to their jobs. They don't have security of jobs anyway. And so therefore, they abide by low wages. Manchester, which I'll deal with in some detail, largely through the writing of Engels, became the most important example of this manifestation, the conjunction of rationalized labor in factory production and the deterioration of social circumstances beyond which the world had not ever experienced before.

James Joyce wrote a collection of essays called *The Dubliners* in which one of the essays is called "The Dead," which was made into a film. I don't know-- I don't remember-- Joseph Cotten, I think, was in the film. I'm not sure.

The situation is such-- in the story, there's a young man who decides to leave Dublin. Nobody can understand why he wants to leave Dublin. He says the only way to get out of Dublin, as Dublin is totally controlled by religion and by social pressure, is to drink. Irish drink because they can-- only where they can liberate themselves from the compulsion of their circumstances. This man is considered to be dead, but he's actually very alive in making the decision to move out of the society. It took an Irishman like Joyce to see the-- use this as ammunition.

I'm just jumping all over the place. Let's go on, because there a number of things I want to touch in more detail. I gave you Leo Huberman's subdivision of the nature of manufacturing, from the household or family system-- it's there, is it? I'm not sure what I hand out every time. It starts off with a household or family system.

AUDIENCE: Mhm.

JULIAN BEINART: OK. This is a construction of the move from a system where you produce in your own house for your own use, not for sale-- there's no work for an outside market-- all the way to the Guild system, where there's a small stable outside market. Workers own their own materials and tools. They sell their products, not their labor.

Up to the early Middle Ages, space in the house was undifferentiated. In Henry Fielding's 18th century novel *Tom Jones,* which was also made into a movie, you see the behavior of a family and the journeymen who come and work and have sex with the young women in the attic. There's a whole bodily kind of scene. People eat together. Production and eating and sex and families and children are all maintained in the same ensemble of interest.

The guild system runs into trouble in the 19th century with the emergence of a factory system, where production now is for a fluctuating outside market, carried out in the employer's buildings. Workers own neither raw material nor tools, and capital is needed.

The mortgage system, as I will explain to you next week, emanates from, at the time of the transition, from the fluctuating building guild to the permanent building society. Those of you who live in India and in South Africa know that you borrow money, still today, from the building society, not from a bank. Is this true in India? OK. I thought so.

What happened with the temporary building-- the building guild is that, as the middle class emerged and became an enormous clientele for housing, they transformed their identity from simply making houses for themselves or for the guild to becoming virtually a bank for housing. They invented the mortgage system, which according to housing historians, was as fundamental an invention as the steam engine in the 19th century England.

The genius of the mortgage system is that you pay off the interest before you pay off the capital. The availability of loans in the United States prior to later use of the mortgage system meant that you could borrow money wither in a balloon loan or a standard loan. You borrow money of $100,000. You go away for 20 years, and you come back and say, here's the $100,000. By that time, the interest is made it increased to $300,000, and you haven't got the $200,000 you need to pay off your loan. Some people argue that this is one of the fundamental reasons for the Great Depression in the United States in 1930s.

You have to also understand, I think, the transference, or the invention, of the idea of capital. According to Engels, capital is the unpaid labor of others. In a simple experiment, those of you who are architects are not going to be able to make much money in your life if you use your own skills by yourself. As soon as you employ others, you pay them less than they deserve or less than they produce, and you skim off the profit. That's capital.

I'll repeat Engels-- capital is the unpaid labor of others. So capital, in a sense, is a new creation in the factory system and identified by Marx and Engels-- Marx more than Engels, in *Das Kapital.* So much for the change in labor.

I mentioned the transformation of industry. None of these economic historians connect the invention of mass-produced iron or the various shuttles and steam power they used to produce cotton or to manufacture cotton, process cotton-- with science. I don't know who's written about the fact that people were operating on scientific principles, new scientific principles, introducing these.

Let's see. I'd rather get onto-- by around 1825, while England had only 2% of the world's population, the volume of production in English ironworks was equal to that of all the rest of the world. Iron was always a material resistant to-- copper and bronze, in human tool development, preceded iron. Iron was always difficult to work with until somebody thought about using coal in relation to iron and eventually producing steel. Iron with a hopeless commodity. Cast iron, pig iron wasn't capable of much capacity in the building industry. Let's move on to another cycle.

One of the dictums the invention of 19th century Marxism, which took place largely in England, with Engels at age of 24 in Manchester and Karl Marx living it up in London, supported partly by Engels from Manchester-- both of whom were German-- Karl Marx a German Jew. Friedrich Engels was younger but the son of a merchant, cotton merchant, in the Ruhr. Well, after Marx was banished to England, he set about constructing a philosophical structure of what he thought would be-- what he thought was a version of the Hegelian idea that history is not linear, but history is composed of a dialectic in which one state is confronted by its opposition. And then a synthesis occurs, which moves which moves rationally towards freedom. God alone knows that's a cross explanation of Hegelianism.

What Marx didn't have, although he read *The London Times* every day and studied the stock market, didn't have the facts of the case facts. Marx was a bit of a snob. He sent his kids, his daughters, to private school in London. He never earned a penny himself, but was a man who sat in the British Library.

I had a friend, an old man, who worked in the British Library. And one day, he went to a retirement parity for one of the guards. And he asked this guard if he remembered a man with a beard who sat in the corner. And he said, oh, yes, I wonder what became of him.

[LAUGHTER]

Engels, at the age of 24, was-- both of them had been under the influence of Hegel. Hegel was first-- was a professor in a rural university. But then for a short period of time was given a chair at Berlin because his philosophy was not considered to be dangerous to the regime of the Prussian kings. Engels provided them with the data that they needed. Marx talks about facts, facts, facts.

Engels arrived in Manchester because his family had share in a cotton produce manufacturing operation in the city. Engels' reaction to what he saw in Manchester was multifold. He liked the good life. He drank Chateau Margaux. He ate lobster salad. He belonged to the Manchester Royal Exchange. He went foxhunting. He accepted the life of a-- he liked expensive women, on the one hand.

On the other hand, he was curious about the world in which he suddenly found himself. He had an association with Elizabeth Burns, an illiterate Irish woman whom he walked around and asked her questions about why the world was the way it was-- extraordinary for a young man of 24 to produce probably the most important book of housing ever written.

He would ask her question such as, why does the main road not run to the slum that we're in? And she would say, because they don't want to see us-- the whole idea of critical distance, the phenomenon of putting people and pathways out of the way of where other people of another kind live. You could take the plan of a city and demarcate its roads in terms of critical distance.

Nobody goes through Mattapan to get anywhere else in Boston unless you live in Mattapan itself. No roads run through Roxbury. Robert Moses created the pathways of it in the book on Moses. The frontispiece-- there's a map of Moses' road systems evading the property of the wealthy. He would ask her why-- all kinds of questions. I'm just drifting off to some of them.

He writes about health. 50% of children born in Manchester died, either in childbirth or as infant. He says, why do people live this way? And the answers are we have no other opportunities. He says, why are you kept in such a state of insecurity? You don't have permanent jobs.

Why do you work at work which alienates you? You have to go to work at 6 o'clock in the morning. The bell rings. If you're late by five minutes, your pay is taken away, and so on and so on. Why are you supervised in everything you do. And then they say, well, that's what the factory system is. Why are you-- and so on.

Engels writes, I've never seen such a social class, seen a social class so deeply demoralized as the middle class. They know no happiness except quick profit. Marxist philosophy needed the establishment, the factual establishment of Engels' writing about Manchester in order to deliver a philosophy, which Engels had something to do with, and propagating it in Europe until he died at the age of 75, close to the end of the century.

Manchester was-- the historical dialectic of Hegel didn't specify what the final condition of the dialectic would be. It simply said freedom. There was no instruction in Hegel that it would end up in a state devoted to egalitarianism. Engels and Marx did this change. They did something else. They didn't consider the British capable of moving to the justification to the-- they didn't consider the British capable of doing the changes that need to be done to make Manchester a relic, historical relic. They were too slow.

There was a British countermovement all the time. The Chartist movement was considered by Engels to be not radical enough. He and Marx decided after 1848 that revolution was the only way to transform society according to the Hegel philosophy, that it needed to be abrupt. And the 1917, 1918 revolution in Russia was, in fact, the apotheosis of this philosophy.

In England, as I said 20 minutes ago, it took time. The Chartist movement was a working class movement which asked only for people-- males to vote, not women to vote. They were asked for minor securities in jobs and so on. The English version of the Socialist Party only started gaining political strength as the years went on.

But by 1902, the English had a Town and Country Planning Act. And many of the anticipated conditions of Manchester had been alleviated in part. There's some question, again, as to how much or not.

Manchester was the site of some other events. Let me just-- a woman called Ann Lee worked 14 hours a day in a cotton mill as a child. Her first three children died in infamy. The fourth was stillborn, and, quote, "as she lay in the agony of delivery for hours, screaming that sexual intercourse was the cause of all the world's evil."

What happened to Ann Lee? Why's Ann Lee-- why do I mention Ann Lee's name? She left for New York in 1774. What did she do? Hm?

AUDIENCE: Shakers?

JULIAN BEINART: Yes. Yes, yes, yes, yes, of course. Sexual intercourse, being infamy, would lead to a resistant community such as Shakers, which only shook your hand. That's the closest you came to another body, at least another body of the opposite sex. Yes, Ann Lee left London for New York in '74 to lead the-- invent the Shakers movement.

In 1789, 15 years later, a young Welshman who was 18 years old, Robert Owen, borrowed 100 pounds and went into the cotton business in Manchester. He later went to New Lanark in Scotland at the age of 28 from the USA. He was the first socialist leader in Great Britain and the leader of the first short-lived national trade union-- also from Manchester.

I suppose, at any point in human history, there's a place which is important enough to change the world. Manchester was that in 1830. And Friedrich Engels fell upon Manchester by accident. It transformed him. It transformed many parts of the world. And Manchester was the-- I'm just worried about time. There's so many pieces to this story.

The story of this part of urbanization can also be told as the story of the encounter with disease. I mean, 200 million people died of the plague in Europe. The Black Death which killed a third of the population of Europe enters our story of London when we deal with London on Tuesday. In 1666, one of the people I will feature dies of the plague, dies intestate in these-- we'll tell that story on Monday-- on Tuesday.

The correlation between health and disease, between health and the improvement against disease, is interesting. When cholera threatened in 1832, cities like New York, Boston, New Haven, New York, and Philadelphia still had pigs roaming the streets, in 1832. Sewage flowed in open ditches along major arteries. Mud and ice plagued unpaved streets. And decaying garbage could be found everywhere. The rest are reports from American towns of similar conditions.

What is interesting is that decline in epidemic diseases-- smallpox, whooping cough, all of them-- follow this pattern. The introduction of chemical antibiotics in medicine occurs when the disease is virtually at its end. All of this prevention of disease occurs through environmental control. The correlation between income and health is being proved by the World Health Organization over and over.

In 1899 to 1902, the British fought a war in South Africa called the Anglo-Boer War. In evaluating men for the British Army, they found that only a percentage of Englishmen were capable of serving in the military. Such was the state, the miserable state, of health.

But over time, the changes in the environmental condition of cities like Manchester, although sporadic and due to phenomena such as charity or British experiments with charitable institutions, the invention of social housing, the fact that the state would actually play a role in providing housing was all a phenomenon of the British creation. But they didn't succeed in many circumstances. I will show you a slide which showed the case of housing in Scotland only a few years hence, at least a few years past, still in abominable condition.

We move on to a set of policies and changes which were fundamental in making this jump from the 19th century emergence of the industrial city to the condition of emancipation that I think everybody has been wondering about since the Great British achievement. Let's look at some of these pictures.

This is Pugin's famous depiction-- the upper image is of 1440 and the lower image is of 1840. Look at what he's conceives of in 1840. The water system, the river, is now enclosed by factories. The determination in the above slide of tall religious buildings is diminished. Maybe one or two survive. What is this?

AUDIENCE: [INAUDIBLE]

JULIAN BEINART: But it's got a particular--

AUDIENCE: Panopticon?

JULIAN BEINART: Panopticon, yes. How he conceives of a panopticon in England in 1840, I don't know. They were invented in England by Bentham. But it's strange that he would place a panopticon so centrally in the image of an industrial city. There's a church. It's all a very strange composition. He identifies the Catholic city of 1440 and the industrial city of these steam pipe towers as living together some how. Next.

Manchester in 1850-- sewage running into a public waterway. Next. Manchester and Liverpool, imports, exports, railway mileage in Britain-- you can take almost any graph 1840, 1845, 1850. The railway system in England predicted the invention of the use of railways in urban situations. In 1876, the first subway in London, on the northeast of London, was connected to a suburban system. An enormously foresighted-- one of the reasons London is at such a low density compared to Paris is the railway system. Next.

The plan of a street in an enclosure in Manchester, tunneled 2 foot 10 inches wide. It's 3 [INAUDIBLE] Glasgow, an overcrowded dwelling still in existence in 1948-- amongst the many critiques of health in the British slum are the drugging of children, incest, people sleeping in the same bed. Here is a plan of an overcrowded dwelling still in existence in 1948-- built-in bed, man, wife, child, and two girls; single bed, three boys; mattress on floor, girl on mattress. Next.

Mumford's-- on the left-- Coketown-- the imposition of an order of time on people's lives, which was different to the time structure in rural life-- it was the kind of condition of being enslaved by time. The other critiques of 19th century industrial was that it had absolutely no respect for nature, that it used land as possibility of development independent of what its outcomes would be on natural systems such as water, sloping land, and so on. Next.

A warning-- been invited by the commissioner-- in the pest-house of the metropolis, the disgrace to the nation, the main thoroughfares are still without common sewers-- rates from time to-- and so on. Unless something be done speedily to allay the growing discontent of the people, retributive justice in her salutory vengeance will-- and so on and so on. Here's cholera protesting to Baron Haussmann that the disease-- and so on and so on. Next.

A commons environment-- land subdivided into strips on the left, enclosed off the common land, the same village. Now these are objects or sites for development. Next. And the pattern of future industrialization follows the pattern on the left. The first of the British reactions to bylaws standardizing housing-- this is in the East London. Next.

OK, on Tuesday, we will deal with the marvelous story of London's 19th century development.