INTRODUCTION TO WORLD CINEMA
SPRING 2011
HANDOUT 9

LECTURE 9:
LATE SILENT CINEMA IN THE UNITED STATES AND *THE CROWD*
KEY NAMES/TERMS

Mass ornament
Division of labor
Frederick Winslow Taylor
Taylorism
Henry Ford (Model T)
Fordism
Consumption
Simon Nelson Patten (1852-1922)—economist *The New Basis of Civilization* (1907)
Buster Keaton
Sherlock Jr. (1924)
Picture palace
Vertical integration

From The Wealth of Nations (Adam Smith, 1776)

The greatest improvement*17 in the productive powers of labour, and the greater part of the skill, dexterity, and judgment with which it is any where directed, or applied, seem to have been the effects of the division of labour… The effects of the division of labour, in the general business of society, will be more easily understood, by considering in what manner it operates in some particular manufactures…To take an example, therefore,*19 from a very trifling manufacture; but one in which the division of labour has been very often taken notice of, the trade of the pin-maker; a workman not educated to this business (which the division of labour has rendered a distinct trade),*20 nor acquainted with the use of the machinery employed in it (to the invention of which the same division of labour has probably given occasion), could scarce, perhaps, with his utmost industry, make one pin in a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire, another straights it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on, is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though in others the same man will sometimes perform two or three of them.*21 I have seen a small manufactory of this kind where ten men only were employed, and where some of them consequently performed two or three distinct operations. But though they were very poor, and therefore but indifferently accommodated with the necessary machinery, they could, when they exerted themselves, make among them about twelve pounds of pins in a day. There are in a pound upwards of four thousand pins of a middling size. Those ten persons, therefore, could make among them upwards of forty-eight thousand pins in a day. Each person, therefore, making a tenth part of forty-eight thousand pins, might be considered as making four thousand eight hundred pins in a day. But if they had all wrought separately and independently, and without any of them having been educated to this peculiar business, they certainly could not each of them have made twenty, perhaps not one pin in a day….This great increase of the quantity of work which, in consequence of the division of labour, the same number of people are capable of performing,*26 is owing to three different circumstances; first to the increase of dexterity in every particular workman; secondly, to the saving of the time which is commonly lost in passing from one species of work to another; and lastly, to the invention of a great number of machines which facilitate and abridge labour, and enable one man to do the work of many.*27

From "Shop Management" (Frederick Winslow Taylor, 1911)

The work of these men consisted mainly of unloading from railway cars and shoveling on to piles, and from these piles again loading as required, the raw materials used in running three blast furnaces and seven large open-hearth furnaces, such as ore of various kinds, varying from fine, gravelly ore to that which comes in large lumps, coke, limestone, special pig, sand, etc., unloading hard and soft coal for boilers gas-producers, etc., and also for storage and again loading the stored coal as required for use, loading the pig-iron produced at the furnaces for shipment, for storage, and for local use, and handling billets, etc., produced by the rolling mills. The work covered a large variety as laboring work goes, and it was not usual to keep a man continuously at the same class of work. Before undertaking the management of these men, the writer was informed that they were steady workers, but slow and phlegmatic, and that nothing would induce them to work fast. The first step was to place an intelligent, college-educated man in charge of progress in this line. This man had not before handled this class of labor, although he understood managing workmen. He was not familiar with the methods pursued by the writer, but was soon taught the art of determining how much work a first-class man can do in a day. This was done by timing with a stop watch a first-class man while he was working fast. The best way to do this, in fact almost the only way in which the timing can be done with certainty, is to divide the man's work into its elements and time each element separately. For example, in the case of a man loading pig-iron on to a car, the elements should be: (a) picking up the pig from the ground or pile (time in hundredths of a minute); (b) walking with it on a level (time per foot walked); (c) walking with it up an incline to car (time per foot walked); (d) throwing the pig down (time in hundredths of a minute), or laying it on a pile (time in hundredths of a minute); (e) walking back empty to get a load (time per foot walked). In case of important elements which were to enter into a number of rates, a large number of observations were taken when practicable on different first-class men, and at different times, and they were averaged. The most difficult elements to

time and decide upon in this, as in most cases, are the percentage of the day required for rest, and the time to allow for accidental or unavoidable delays. In the case of the yard labor at Bethlehem, each class of work was studied as above, each element being timed separately, and, in addition, a record was kept in many cases of the total amount of work done by the man in a day. The record of the gross work of the man (who is being timed) is, in most cases, not necessary after the observer is skilled in his work. As the Bethlehem time observer was new to this work, the gross time was useful in checking his detailed observations and so gradually educating him and giving him confidence in the new methods. The writer had so many other duties that his personal help was confined to teaching the proper methods and approving the details of the various changes which were in all cases outlined in written reports before being carried out. As soon as a careful study had been made of the time elements entering into one class of work, a single first-class workman was picked out and started on ordinary piece work on this job. His task required him to do between three and one-half and four times as much work in a day as had been done in the past on an average. Between twelve and thirteen tons of pig-iron per man had been carried from a pile on the ground, up an inclined plank, and loaded on to a gondola car by the average pig-iron handler while working by the day. The men in doing this work had worked in gangs of from five to twenty men. The man selected from one of these gangs to make the first start under the writer's system was called upon to load on piece work from forty-five to forty-eight tons (2,240 lbs. each) per day. He regarded this task as an entirely fair one, and earned on an average, from the start, $1.85 per day, which was 60 per cent more than he had been paid by the day. This man happened to be considerably lighter than the average good workman at this class of work. He weighed about 130 pounds. He proved however, to be especially well suited to this job, and was kept at it steadily throughout the time that the writer was in Bethlehem, and some years later was still at the same work.

From *The Principles of Scientific Management* by Frederick Winslow Taylor, 1911

Third. As to the third cause for slow work, considerable space will later in this paper be devoted to illustrating the great gain, both to employers and employés, which results from the substitution of scientific for rule-of-thumb methods in even the smallest details of the work of every trade. The enormous saving of time and therefore increase in the output which it is possible to effect through eliminating unnecessary motions and substituting fast for slow and inefficient motions for the men working in any of our trades can be fully realized only after one has personally seen the improvement which results from a thorough motion and time study, made by a competent man.

To explain briefly: owing to the fact that the workmen in all of our trades have been taught the details of their work by observation of those immediately around them, there are many different ways in

common use for doing the same thing, perhaps forty, fifty, or a hundred ways of doing each act in each trade, and for the same reason there is a great variety in the implements used for each class of work. Now, among the various methods and implements used in each element of each trade there is always one method and one implement which is quicker and better than any of the rest. And this one best method and best implement can only be discovered or developed through a scientific study and analysis of all of the methods and implements in use, together with accurate, minute, motion and time study. This involves the gradual substitution of science for rule of thumb throughout the mechanic arts.

laws of a science or art, even where one exists.

The writer asserts as a general principle (and he proposes to give illustrations tending to prove the fact later in this paper) that in almost all of the mechanic arts the science which underlies each act of each workman is so great and amounts to so much

that the workman who is best suited to actually doing the work is incapable of fully understanding this science, without the guidance and help of those who are working with him or over him, either through lack of education or through insufficient mental capacity. In order that the work may be done in accordance with scientific laws, it is necessary that there shall be a far more equal division of the responsibility between the management and the workmen than exists under any of the ordinary types of management. Those in the management whose duty it is to develop this science should also guide and help the workman in working under it, and should assume a much larger share of the responsibility for results than under usual conditions is assumed by the management.