

# **The Parable of the Pig Iron: Using Taylor's Story to Teach the Principles of Scientific Management**

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*Frederick Winslow Taylor used stories in his writings and during his lectures about Scientific Management. The most famous of these is the story of "Schmidt" and the handling of pig iron. It is clear from Wrege and Perroni's (1974) historical analysis that this story, as told, cannot be true. Perhaps Taylor was using this as an illustrative story to make a point about Scientific Management. This paper explores the pig iron story as a parable on Scientific Management and discusses how this story can be used to teach the principles of Scientific Management.*

## **INTRODUCTION**

Frederick Winslow Taylor used stories in his writings and during his lectures. In "The Principles of Scientific Management," (1911) Taylor tells several stories including stories about inspecting ball bearings in a bicycle plant, the machinist who developed rules-of-thumb for cutting metal, and his most famous story of "Schmidt" and the handling of pig iron. This last example even seemed to take on a life of its own. Taylor, himself, was "puzzled by the fame which his work with pig-iron handlers had achieved" (Wrege & Greenwood, 1991, p. 98).

We know that this story, as presented, is erroneous (Wrege & Hodgetts, 2000). There was no actual pig iron worker named Schmidt. Wrege and Perroni (1974), in their historical analysis of the pig-iron story, went so far as to say "Whether imaginative or impudent, the fact is that Taylor seems to have believed that the end justified the means. This philosophy was not morally acceptable during his period, and it is certainly not part of the standards of morality of our own" (p. 26). This is a strong indictment from the viewpoint of history. Why, then, did Taylor continue to tell it? Was it a matter of self-aggrandizement? Was Taylor merely taking credit for the work done by others? Or perhaps, was Taylor using this as an illustrative story to make a point about Scientific Management?

In this paper we investigate this last of the possible explanations for the story of Schmidt and the pig iron. We explore the story of the pig iron handler as a parable on Scientific Management. First, we explain the elements of a parable as a literary device. Next, we analyze the pig iron story to determine what it might tell us when viewed as a parable. Following this, we present the historical evidence that Taylor and his intended audience would have been familiar with this literary device and, therefore, could have used it. We next explore the implications for management history in general and the history of Taylor, specifically. Finally, we demonstrate how this story can be used in our classrooms to take

teaching the Principles of Scientific Management from an abstract knowledge exercise to application and reflection on these principles as they apply in current organizations.

### **Parable as a Literary Device**

According to Harmon and Holman (1996), a parable is “An illustrative story teaching a lesson. A true *parable* (sic) parallels, detail for detail, the situation that calls forth the *parable* (sic) for illustration. A *parable* (sic) is, in this sense an ALLEGORY” (p. 372). This, of course, leads us to the explanation of allegory. Here, we learn that allegory is a form of an extended metaphor “in which objects, persons, and actions in a NARRATIVE are equated with meanings that lie outside the NARRATIVE itself” (Harmon & Holman, 1996, p. 12). In other words, allegory attempts to represent one thing, for example one or more of the principles of Scientific Management, in the guise of another, for example a story about a man named Schmidt. In doing this, allegory attempts to tell a story that has meaning on more than one level. It presents a narrative, which is interesting in itself, and, at the same time, illustrates ideas that have their own significance. The test of a parable, according to Harmon and Holman (1996) “is that these materials be so employed that they represent meanings independent of the action in the surface of the story” (p. 12).

### **An Analysis**

If, as we argue, the tale of Schmidt is a parable on Scientific Management, then it must be more than a simple metaphor. A parable is a metaphor, but it is also something more. It is an allegory. As an allegory the people, actions, and objects in the story are symbols which represent a truth or meaning beyond the narrative of the story (Ristow, 2000). This story, then, must somehow illuminate some concept/s of Scientific Management.

Since allegory is dependent on its meaning or referent (Via, 1967), we start by examining the context of the story. The tale of Schmidt appears in the second chapter of Taylor’s book. This chapter is titled “The Principles of Scientific Management.” In this chapter, Taylor carefully differentiates his ‘scientific’ management from ‘ordinary’ management, or, as he calls it, the management of ‘initiative and incentive’. It is here that Taylor lays out the four principles that guide the ‘science’ of management:

1. Managers must develop a science for each element of an individual’s work.
2. Managers must scientifically select and then train, teach, and develop each workman.
3. Managers must heartily cooperate with the workers so as to insure all of the work is done in accordance with the principles of science.
4. There is an almost equal division of work and responsibility between the management and the workers.

These principles are laid out only four paragraphs before the start of the Schmidt story. With such clear parallels and direct linkage, we argue that Taylor must have intended this story to directly illustrate these principles.

The story can be separated into four distinct sections, each relating to one of the above principles. The story starts with a three-paragraph exposition on why it is necessary to address the question of handling pig iron. Earlier, Taylor says “this work is chosen because it is typical of perhaps the crudest and most elementary form of labor which is performed by man” (Taylor, 1911, p. 40). In the first two paragraphs of the story, Taylor explains the situation before the introduction of scientific methods of handling pig iron. In the third paragraph, he goes into great detail about the “task which faced us as managers under the modern scientific plan” (p. 42).

We found that this gang were loading on the average about 12 ½ long tons per man per day. We were surprised to find, after studying the matter, that a first-class pig-iron handler ought to handle between 47 and 48 long tons per day, instead of 12 ½ tons. This task seemed to us so very large that we were obliged to go over our work several times before we were absolutely sure that we were right. Once we were sure, however, that 47 tons was a proper day’s work for a first-class pig-iron handler, the task which faced us as managers under the modern scientific plan was clearly before us. It was our duty to see that the 80,000 tons of pig iron was loaded on to the cars

at the rate of 47 tons per man per day, in place of the 12 ½ tons, at which rate the work was then being done. And it was further our duty to see that this work was done without bringing on a strike among the men, without any quarrel with the men, and to see that the men were happier, and better contented when loading at the new rate of 47 tons than they were when loading at the old rate of 12 ½ tons” (Taylor, 1911, pp. 42-43)

This paragraph is clearly meant to be read as an indictment of ‘ordinary’ methods of management and put the responsibility of determining the appropriate rate of work squarely on the management. We must remember that for the day, this was a revolutionary concept. If this concept were broadly applied, it would mean a drastic change in the relationship between managers and workers. Taylor said it was the ‘duty’ of management not only to ensure that the work was done at the appropriate rate, but also to do so without causing a labor action and in a manner that would make the workers more contented and happier than when they determined the rate of work. This paragraph is about more than the proper rate for loading pig iron. It is about a revolution in the relationship between managers and workers.

The next paragraph of the story on the surface explains how Schmidt was selected as the first laborer to be indoctrinated in the ‘science’ of pig iron handling. This clearly relates to the second of the above principles, ‘Managers must scientifically select and then train, teach, and develop each workman.’

Our first step was the scientific selection of the workman. In dealing with workmen under this type of management, it is an inflexible rule to talk to and deal with only one man at a time, since each workman has his own special abilities and limitations, and since we are not dealing with men in masses, but are trying to develop each individual man to his highest state of efficiency and prosperity. Our first step was to find the proper workman to begin with. We therefore carefully watched and studied these 75 men for three or four days, at the end of which time we had picked out four men who appeared to be physically able to handle pig iron at the rate of 47 tons per day. A careful study was then made of each of these men. We looked up their history as far back as practicable and thorough inquiries were made as to the character, habits, and the ambition of each of them. Finally we selected one from among the four as the most likely man to start with. He was a little Pennsylvania Dutchman who had been observed to trot back home for a mile or so after his work in the evening about as fresh as he was when he came trotting down to work in the morning. We found that upon wages of \$1.15 a day he had succeeded in buying a small plot of ground, and that he was engaged in putting up the walls of a little house for himself in the morning before starting to work and at night after leaving. He also had the reputation of being exceedingly ‘close,’ that is, of placing a very high value on a dollar. As one man whom we talked to about him said, “A penny looks about the size of a cart-wheel to him.” This man we will call Schmidt (Taylor, 1911, pp. 43-44).

This paragraph demonstrates how the selection of workers moves from an issue of minor importance under a day labor system and ordinary management to a careful process that forms part of the essence of the entire scientific management system. According to the lesson here, management must not simply select the first worker who appears to meet the qualifications of the job. Careful study is required. Management must move beyond the physical attributes of the individual and look into the ‘character, habits, and the ambition’ of each of the workers under consideration. Today we would say that we would be exploring broad human resource issues of what motivates each individual worker. Taylor did not have theories of motivation to turn to. However, it is clear from this explanation that management is expected to learn as much as possible about the individual to ensure the right person is chosen for the assignment. As we learn at the end of the paragraph, Schmidt’s motivation was money. Taylor showed himself to be well ahead of his time.

The third section of the story goes on to relate a ‘conversation’ between Taylor and Schmidt. This section refers to the third principle, above: “Managers must heartily cooperate with the workers so as to insure all of the work is done in accordance with the principles of science.”

The task before us, then, narrowed itself down to getting Schmidt to handle 47 tons of pig iron per day and making him glad to do it. This was done as follows. Schmidt was called out from among the gang of pig iron handlers and talked to somewhat in this way:

“Schmidt, are you a high-priced man?”

“Vell, I don’t know vat you mean.”

“Oh yes, you do. What I want to know is whether you are a high-priced man or not.”

“Vell, I don’t know vat you mean.”

“Oh, come now, you answer my questions. What I want to find out is whether you are a high-priced man or one of these cheap fellows here. What I want to find out is whether you want to earn \$1.85 a day or whether you are satisfied with \$1.15, just the same as all those cheap fellows are getting.”

“Did I vant \$1.85 a day? Vas dot a high-priced man? Vell, yes, I vas a high-priced man.”

“Oh, you’re aggravating me. Of course you want \$1.85 a day – every one wants it! You know perfectly well that that has very little to do with your being a high-priced man. For goodness’ sake answer my questions, and don’t waste any more of my time. Now come over here. You see that pile of pig iron?”

“Yes.”

“You see that car?”

“Yes.”

“Well, if you are a high-priced man, you will load that pig iron on that car to-morrow for \$1.85. Now do wake up and answer my question. Tell me whether you are a high-priced man or not.”

“Vell – did I got \$1.85 for loading dot pig iron on dot car to-morrow?”

“Yes, of course you do, and you get \$1.85 for loading a pile like that every day right through the year. That is what a high-priced man does, and you know it just as well as I do.”

“Vell, dot’s all right. I could load dot pig iron on the car to-morrow for \$1.85, and I get it every day, don’t I?”

“Certainly you do – certainly you do.”

“Vell, den, I vas a high-priced man.”

“Now, hold on, hold on. You know just as well as I do that a high-priced man has to do exactly as he’s told from morning till night. You have seen this man here before, haven’t you?”

“No, I never saw him.”

“Well, if you are a high-priced man, you will do exactly as this man tells you to-morrow, from morning till night. When he tells you to pick up a pig and walk, you pick it up and you walk and when he tells you to sit down and rest, you sit down. You do that right straight through the day. And what’s more, no back talk. Now a high-priced man does just what he’s told to do, and no back talk. Do you understand that? When this man tells you to walk, you walk; when he tells you to sit down, you sit down, and you don’t talk back at him. Now you come on to work here to-morrow morning and I’ll know before night whether you are really a high-priced man or not.”

This seems to be rather rough talk. And indeed it would be if applied to an educated mechanic, or even an intelligent laborer. With a man of the mentally sluggish type of Schmidt it is appropriate and not unkind, since it is effective in fixing his attention on the high wages which he wants and away from what, if it were called to his attention, he probably would consider impossibly hard work.

What would Schmidt’s answer be if he were talked to in a manner which is usual under the management of “initiative and incentive”? say as follows:

“Now, Schmidt, you are a first-class pig-iron handler and know your business well. You have been handling at the rate of 12 ½ tons per day. I have given considerable study to handling pig iron, and feel sure that you could do a much larger day’s work than you have been doing. Now don’t you think that if you really tried you could handle 47 tons of pig iron per day, instead of 12 ½ tons?”

What do you think Schmidt’s answer would be to this?” (Taylor, 1911, pp. 44-47)

This is the section of the narrative that has led some writers to accuse Taylor of having disdain for his workers. Rather, we posit that read as a parable this section demonstrates the nature of the revolution in

the relationship between management and the workers that Taylor advocated. Recall, that Taylor said it was the duty of management to set the rate of work and to do so without causing a labor action and in a manner that would make the workers more contented and happier than when they determined the rate of work (Taylor, 1911, p. 43). This section illustrates how management should treat workers under scientific management and how this method is an improvement over the way they were handled under ordinary management. To properly understand this ‘conversation,’ we must be familiar with the state of society at the turn of the 20<sup>th</sup> Century. America of the late 1800s was a far cry from the classless society we believe we have today. Taylor was writing for an audience much different from that which he would encounter and which reads his work today. The period of the pig iron experiments was before the great American experiment with universal education. There was a clear distinction between individuals who managed (the middle class) and individuals who performed manual labor (the lower class) (Jable, 1991). Immigrants, such as the ‘little Pennsylvania Dutchman,’ Schmidt were part of this under class. At the time, individuals like Schmidt were not educated because it was widely believed that they were not capable of being liberally educated (Ravitch, 2000). In fact, children of this lower class were found working in factories rather than attending school up to World War I (Shanahan, Miech, & Elder, 1998). It was not until the early 1900s that even the concept of education beyond the basics of ‘reading, ‘riting, and ‘rithmetic’ changed from being the province of the upper classes to the idea of universal education for all that we hold today (Ravitch, 2000).

Taylor was writing for the educated upper class. Individuals of this class would not even have considered talking to an individual like Schmidt in any other way than as Taylor recounts. Taylor even admits that taking a more reasonable approach would be counter-productive. This portion of the story again places the responsibility for keeping the workers content and productive clearly on management. Taylor is saying here that it is management’s responsibility to motivate the workers and keep them satisfied. A job action on the part of the workers becomes the result of faulty management, not the contrariness of the workers.

The final paragraph of the story seems to simply expound on the success of the experiment.

Schmidt started to work, and all day long, and at regular intervals, was told by the man who stood over him with a watch, “Now pick up a pig and walk. Now sit down and rest. Now walk – now rest,” etc. He worked when he was told to work, and rested when he was told to rest, and at half-past five in the afternoon had his 47 ½ tons loaded on the car. And he practically never failed to work at this pace and do the task that was set him during the three years that the writer was at Bethlehem. That is, he received 60 per cent. higher wages than were paid to other men who were not working on task work. One man after another was picked out and trained to handle pig iron at the rate of 47 ½ tons per day until all of the pig iron was handled at this rate, and the men were receiving 60 per cent. more wages than other workmen around them. (Taylor, 1911, p. 47)

Again, viewed as a parable, Taylor is presenting lessons on the principles of Scientific Management. Specifically, here Taylor is talking about the fourth principle, above: ‘There is an almost equal division of work and responsibility between the management and the workers.’

The success of the experiment is a result of the selection of the correct workman and, as importantly, the division of the work between the worker and management plus the proper training of the worker to meet the new standard. This part of the story informs us that if the worker is properly selected and if management does its job by determining the proper way for the work to be done to standard plus training and supervising the worker, both management and the worker will benefit (with four times more tonnage loaded and 60 percent more pay). To Taylor, Scientific Management was not only a means of improving productivity; it was also a means of improving the lot of the worker. Again, the concept of class is important here. Management’s duty is not only to the organization, but also to the worker. Here we see a fundamental difference between ordinary management and Scientific Management. Under the former, it is management’s job to make sure the work gets done. Under the latter, management assumes much broader responsibility, including that of improving the income of the individual employee.

Looked at this way, the four sections of the story of Schmidt and the pig iron are clearly a parable illustrating the four Scientific Management principles. Literally translated, the term ‘parable’ refers to

something ‘thrown alongside’ something else. Through this juxtaposition, the story should leave in the mind sufficient doubt about its precise application to tease one into active thought (Black, 2000). The above is certainly only one possible interpretation of the story of Schmidt. If the story is allegorical, its intent is to open the issues to additional interpretation.

However, all of the above is only academic drivel if Taylor might not write a parable. In order to argue that we might interpret this story as a parable, it is necessary to determine if Taylor was sufficiently familiar with this literary form to successfully employ it. This issue is addressed next.

## **HISTORICAL EVIDENCE OF TAYLOR AND PARABLES**

We know from Copley’s (1923) biography that Taylor’s parents were raised as Quakers. We also know that while Taylor’s father remained a member of the Friends Meeting in Germantown, Taylor’s mother became identified as a regular attendee at the Unitarian Church. We further know from this same source that the elder Taylors had in common a love of literary study and that both were interested in history and languages. Mrs. Taylor also participated at a salon in the home of Mrs. Isaac Pugh for those devoted to plain living and high thinking. And finally, Copley tells us that Taylor identified himself with the church his mother came to attend, the Unitarian Church, and that as long as he attended church as an adult, Taylor attended the Unitarian Church.

Copley (1923) tells us that Emily Taylor attended the local Unitarian Church while the pastor was Samuel Longfellow from 1878 to 1882. Samuel Longfellow, the brother of the poet Henry Wadsworth Longfellow, made his place in Unitarian history as a hymnist. Though the Transcendentalist movement influenced him, he retained an interest in the act of corporate worship as well as individual devotions. Additionally, Dr. William H. Furness often took the pulpit there. Furness, on the other hand, was important to Unitarian history for his scholarly and speculative work in biblical criticism. His most famous work was “Remarks on the Four Gospels”, published in 1836. Furness remained devoted to biblical studies and later published works on the life of Jesus (Robinson, 1985).

Given the above information, and the fact that Taylor attended the Phillips Exeter Academy for two years, what can we surmise about his familiarity with the form and essence of the parable?

By the time Taylor began attending school in the 1860s, the Bible was no longer the pivotal text used for the teaching of reading. It had been augmented by various grammars, spellers and textbooks that were then widely available (Gutjahr, 1999). This was a period of change, not only in American religious life, but also in the literary life of the nation. New printing techniques made it possible to publish a variety of books, such as William Holmes McGuffey’s “Readers” (first four published 1836-1879) at an affordable price. People, especially well-to-do families, such as Taylor’s, could afford books other than the Bible.

We know from Copley (1923) that in June 1874, Taylor passed the Harvard entrance examinations ‘with honors.’ In those days, one did not actually graduate from a preparatory school, rather one attended the school until one was able to pass the entrance examinations to college. The family’s intent in sending him to Exeter was that he would eventually become a lawyer. Eye trouble, brought on by the severe academic discipline at Exeter, prevented Taylor from attending Harvard.

At the time, Harvard was the center of ‘liberalism’ and Unitarianism in religious education. In 1805, the liberal Henry Ware was elected to the post of Hollis Professor of Divinity at Harvard in which he served until 1840 (Robinson, 1985). This election set the direction of the Harvard Divinity School for the foreseeable future. In preparing students to enter Harvard, therefore, Exeter would follow the lead of the senior school. Copley (1923) reports that an important part of Exeter’s curriculum was mandatory chapel attendance.

What, then, was the position of Unitarian thought on the Bible, especially the New Testament, during Taylor’s lifetime? Unitarians saw theirs as a biblical religion well into the nineteenth century. Their essential difference from mainline Christian sects was seen as one of scriptural interpretation (Robinson, 1985). Unitarians rejected a literal interpretation of scripture and looked at the Bible as two separate but related books.

Ephraim Emerton published one noted contemporary explanation of Unitarian thinking in 1911. In the fourth chapter of his work (pp. 110-147) he explains Unitarian thinking about the Bible. The preface of Emerton's book, dated October 1910, expresses thanks to William Wallace Fenn. The Reverend Fenn was Dean of the Harvard Divinity School from 1906 to 1922 (Robinson, 1985).

According to Emerton (1911), "The Unitarian approaches the Bible with reverent attention. He accepts it as the highest revelation of the past to the present, the clearest expression of that spiritual endowment which is to him an essential part of the very idea of mankind" (p. 146). The revelation here is men unfolding the divine plan through their own powers. This revelation leads to inspiration. For the Unitarian, this inspiration was the agency through which the revelation was received from the Bible works. Unitarians rejected a literal interpretation of the Bible as much as they rejected the right of any one individual to interpret scripture for them. In this view, the Protestant reformation failed by substituting the authority of 'the book' for the authority of the Pope to interpret Divine Will (Emerton, 1911).

We have presented reasonable circumstantial evidence that Taylor would have been familiar with the form and essence of the parable. Further, it is not difficult to surmise that Taylor's audience would also have been familiar with the concept of the parable. Like Taylor, they would have been educated individuals, mostly Christians, who would have been raised in homes in which Biblical study was accepted and attended schools, like Exeter, where chapel attendance was mandatory. Therefore, it is reasonable that Taylor could have used a literary device that was familiar to him and to his audience to help explain his revolutionary concepts and further stimulate thought.

## **IMPLICATIONS**

Taylor, to this day, remains a controversial figure. Just two years after Wrege and Perroni (1974) published their indictment, Drucker (1976) claimed that he had as much impact on the modern world as Marx or Freud. Taylor was misquoted and misunderstood in his own time as well as in the time since. Wrege and Perroni (1974) were right to call him a prevaricator if his pig-tale is assumed from our current historical position to be a factual explanation of what happened in loading of pig iron at Bethlehem Steel. If, however, as we have suggested, the story was not meant to be an exact rendition, but a parable expanding on the science of management as Taylor saw it, these objections, while still interesting, are less damaging both to Taylor's reputation and to his philosophy. And interpretation as a parable (whether strictly true or made up from a composite) supports Taylor's place in the historical development of the great changes in management-employee relations we benefit from today.

## **USING THE PARABLE**

One benefit of interpreting Taylor's story as a parable is that we can use the story in our classrooms the same way Taylor used it in his lectures, to help teach the four principles of Scientific Management. This story drives home these principles in a more interactive and entertaining manner than just a recitation of the principles and what they should mean. We use the story as a parable in both our traditional and online classes.

In our traditional classes we introduce the four principles of Scientific Management and then recite the parable to our students. We provide the students with a handout that contains the parable, place them in groups of three to five students and assign the groups the task of finding the four principles embedded in the story. We ask them to identify particular statements in the story that illustrate each of the principles. We then ask the groups to identify where they found each of the principles and lead a general discussion of the story as a means of learning the principles of scientific management. For work outside of class, we assign a short paper which requires the students to think about jobs they have had or places they have worked and identify the principles of scientific management in their job or organization. This raises the level of learning from comprehension to application and allows each student to see that these principles are not abstract ideas, but have already had an impact on their lives. In order to allow students to reflect

on this learning we also ask them to answer the questions: Do you think 100-year-old principles of management are valid for today's working environment? Why or why not?

In our online courses, or in the online portion of a blended course, we use the parable in much the same way. In a 'mini-lecture' recorded using Elluminate software, we introduce the four principles and recite the parable. Students have a copy of the parable in their online materials. We then ask the students to find the four principles in the parable and post their individual analysis of where each of the principles is illustrated by the story to a discussion space created for this purpose. Students must also think about the jobs they have had and identify the principles in that job or organization and answer the same two questions as above. To develop a discussion of the student answers, students are required to make a substantive comment about the posting of at least two other students in the class. Students are graded on the substance of their own posting and the value of the comments made about the postings of the two other students.

In this way we achieve an online version of discussion of these principles and the application and reflection embedded in the outside of class paper required of traditional students.

According to Nelson (2010), in her chapter, "Understanding Your Students and How They Learn", among other things today's students are accustomed to function as a part of a team, they value structure in their lives, and have little inclination for reflection or self-examination. Thus far, our primarily traditional undergraduate students have responded positively to the structure of these assignments, both in the classroom and online. In both cases, we have endeavored to move the learning from a rote memorization of the Principles of Scientific Management to an application of those principles to the student's life and a reflection on the value of the principles in modern society.

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## APPENDIX

### THE 'PARABLE OF THE PIG IRON'

As related in "The Principles of Scientific Management" (Taylor, 1911, pp. 43-47)

The Bethlehem Steel Company had five blast furnaces, the product of which had been handled by a pig-iron gang for many years. This gang, at this time, consisted of about 75 men. They were good, average pig-iron handlers, were under an excellent foreman who himself had been a pig-iron handler, and the work was done, on the whole, about as fast and as cheaply as it was anywhere else at that time.

A railroad switch was run out into the field, right along the edge of the piles of pig iron. An inclined plank was placed against the side of a car, and each man picked up from his pile a pig of iron weighing about 92 pounds, walked up the inclined plank and dropped it on the end of the car.

We found that this gang were loading on the average about 12 ½ long tons per man per day. We were surprised to find, after studying the matter, that a first-class pig-iron handler ought to handle between 47 and 48 long tons per day, instead of 12 ½ tons. This task seemed to us so very large that we were obliged to go over our work several times before we were absolutely sure that we were right. Once we were sure, however, that 47 tons was a proper day's work for a first-class pig-iron handler, the task which faced us as managers under the modern scientific plan was clearly before us. It was our duty to see that the 80,000 tons of pig iron was loaded on to the cars at the rate of 47 tons per man per day, in place of the 12 ½ tons, at which rate the work was then being done. And it was further our duty to see that this work was done without bringing on a strike among the men, without any quarrel with the men, and to see that the men were happier, and better contented when loading at the new rate of 47 tons than they were when loading at the old rate of 12 ½ tons.

Our first step was the scientific selection of the workman. In dealing with workmen under this type of management, it is an inflexible rule to talk to and deal with only one man at a time, since each workman has his own special abilities and limitations, and since we are not dealing with men in masses, but are trying to develop each individual man to his highest state of efficiency and prosperity. Our first step was to find the proper workman to begin with. We therefore carefully watched and studied these 75 men for three or four days, at the end of which time we had picked out four men who appeared to be physically able to handle pig iron at the rate of 47 tons per day. A careful study was then made of each of these men. We looked up their history as far back as practicable and thorough inquiries were made as to the character, habits, and the ambition of each of them. Finally we selected one from among the four as the most likely man to start with. He was a little Pennsylvania Dutchman who had been observed to trot back

home for a mile or so after his work in the evening about as fresh as he was when he came trotting down to work in the morning. We found that upon wages of \$1.15 a day he had succeeded in buying a small plot of ground, and that he was engaged in putting up the walls of a little house for himself in the morning before starting to work and at night after leaving. He also had the reputation of being exceedingly “close,” that is, of placing a very high value on a dollar. As one man whom we talked to about him said, “A penny looks about the size of a cart-wheel to him.” This man we will call Schmidt.

The task before us, then, narrowed itself down to getting Schmidt to handle 47 tons of pig iron per day and making him glad to do it. This was done as follows. Schmidt was called out from among the gang of pig-iron handlers and talked to somewhat in this way:

“Schmidt, are you a high-priced man?”

“Vell, I don’t know vat you mean.”

“Oh yes, you do. What I want to know is whether you are a high-priced man or not.”

“Vell, I don’t know vat you mean.”

“Oh, come now, you answer my questions. What I want to find out is whether you are a high-priced man or one of these cheap fellows here. What I want to find out is whether you want to earn \$1.85 a day or whether you are satisfied with \$1.15, just the same as all those cheap fellows are getting.”

“Did I vant \$1.85 a day? Vas dot a high-priced man? Vell, yes, I vas a high-priced man.”

“Oh, you’re aggravating me. Of course you want \$1.85 a day – every one wants it! You know perfectly well that that has very little to do with your being a high-priced man. For goodness’ sake answer my questions, and don’t waste any more of my time. Now come over here. You see that pile of pig iron?”

“Yes.”

“You see that car?”

“Yes.”

“Well, if you are a high-priced man, you will load that pig iron on that car to-morrow for \$1.85. Now do wake up and answer my question. Tell me whether you are a high-priced man or not.”

“Vell – did I got \$1.85 for loading dot pig iron on dot car to-morrow?”

“Yes, of course you do, and you get \$1.85 for loading a pile like that every day right through the year. That is what a high-priced man does, and you know it just as well as I do.”

“Vell, dot’s all right. I could load dot pig iron on the car to-morrow for \$1.85, and I get it every day, don’t I?”

“Certainly you do – certainly you do.”

“Vell, den, I vas a high-priced man.”

“Now, hold on, hold on. You know just as well as I do that a high-priced man has to do exactly as he’s told from morning till night. You have seen this man here before, haven’t you?”

“No, I never saw him.”

“Well, if you are a high-priced man, you will do exactly as this man tells you to-morrow, from morning till night. When he tells you to pick up a pig and walk, you pick it up and you walk and when he tells you to sit down and rest, you sit down. You do that right straight through the day. And what’s more, no back talk. Now a high-priced man does just what he’s told to do, and no back talk. Do you understand that? When this man tells you to walk, you walk; when he tells you to sit down, you sit down, and you don’t talk back at him. Now you come on to work here to-morrow morning and I’ll know before night whether you are really a high-priced man or not.”

This seems to be rather rough talk. And indeed it would be if applied to an educated mechanic, or even an intelligent laborer. With a man of the mentally sluggish type of Schmidt it is appropriate and not unkind, since it is effective in fixing his attention on the high wages which he wants and away from what, if it were called to his attention, he probably would consider impossibly hard work.

What would Schmidt’s answer be if he were talked to in a manner which is usual under the management of “initiative and incentive”? say as follows:

“Now, Schmidt, you are a first-class pig-iron handler and know your business well. You have been handling at the rate of 12 ½ tons per day. I have given considerable study to handling pig iron, and feel sure that you could do a much larger day’s work than you have been doing. Now don’t you think that if you really tried you could handle 47 tons of pig iron per day, instead of 12 ½ tons?”

What do you think Schmidt’s answer would be to this?

Schmidt started to work, and all day long, and at regular intervals, was told by the man who stood over him with a watch, “Now pick up a pig and walk. Not sit down and rest. Now walk – now rest,” etc. He worked when he was told to work, and rested when he was told to rest, and at half-past five in the afternoon had his 47 ½ tons loaded on the car. And he practically never failed to work at this pace and do the task that was set him during the three years that the writer was at Bethlehem. That is, he received 60 per cent. higher wages than were paid to other men who were not working on task work. One man after another was picked out and trained to handle pig iron at the rate of 47 ½ tons per day until all of the pig iron was handled at this rate, and the men were receiving 60 per cent. more wages than other workmen around them.