

## **The Road Not Taken: Putting “Management” Back to Taylor’s Scientific Management**

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### Abstract

Developments in management thought since the publication of Frederick W. Taylor’s *The Principles of Scientific Management* have taken the notion of “scientific” too seriously while overlooking the fact that Taylor’s interest was aimed at using scientific principles to enhance *management*. Such a “misreading” of Taylorism leads to scientism and an overemphasis on the entailed rationality concept. In this article, we point to several “deficiencies” resulting from scientism. Management thoughts and research had suffered from such deficiencies over the past century. If researchers do not heed such concerns, these problems are likely to continue and undermine management practices and research in the future. We suggest two strategies to remedy these deficiencies, to cure scientism, and to return to Taylor’s true interest in management. The first strategy relies on an “edification” philosophy that encourages managers and researchers to enhance their awareness and expand their understanding. The second strategy calls for managers and researchers to consider management not only as a science but also as an art. With broadened perspectives, the two strategies can give new meanings and life to Taylorism in the future.

### Keywords

scientific management, Taylorism, edification

### Introduction

In his book, *Anxiety of Influence*, Harold Bloom (1973) suggests the power of the poet comes from his or her “strong misreading” of predecessors. Such a reading reconstitutes the past as appropriated by the would-be genius of the present (Hall, 1994). We can paraphrase Bloom and assert that since Frederick W. Taylor published *The Principles of Scientific Management* in 1911, developments in management thought have arisen from a “strong misreading” of Taylor’s work.

Bureaucrats, corporatists, management scientists, and others have taken the notion of “scientific” so seriously as to overlook the fact that Taylor’s “scientific management” aims to use scientific principles to enhance *management*. Under a “strong misreading” of Taylorism, most management thinkers and scholars have focused on turning management into a science. They, in turn, have transformed the spirit of scientific management into scientism.

This article points out that such a “strong misreading” and overemphasis on scientism (as well as its entailed rationality concept) has directed thoughts on management and research during the last century and led to several “deficiencies” that are not healthy for management. Two strategies for management practice and research will be useful for remedying these deficiencies, to cure scientism and return to Taylor’s true interest in management. The first strategy calls for managers and researchers to examine and revise constantly their frameworks of understanding. The second strategy calls for managers and researchers to consider management not just as a science but also as an art. These two strategies, in a sense, are an actualization of edification philosophy. One may call these two strategies another “strong misreading” of Taylorism. After all, Taylor would not have envisioned these strategies in his scientific management. However, the two strategies contain some of the spirit of scientific management. Moreover, with a broadened perspective and an expanded understanding, the two strategies give new meanings and new life to Taylorism.

The organization of the rest of this article is as follows: Section 2 gives an overview on the deficiencies caused by the misreading of Taylor’s scientific management. Section 3 proposes an edification philosophy to remedy these deficiencies. Section 4 further suggests the need to go beyond science to incorporate art into management. Section 5 concludes the article by suggesting future directions for subsequent research.

### The Over-Trodden Road

There have been various management thoughts developed since Taylor published his master work (e.g., George, 1972; Howell, 1995; Wren & Bedeian, 2008). It is not our intent here to repeat the review of management thoughts during the past century. Rather, most of the management thoughts and research are indeed “strong misreading” of Taylorism. Such misreading leads to the deficiency of scientism (and its overemphasis on rationality).

For example, one of the most significant management thoughts after Taylor’s was bureaucratism. Max Weber’s bureaucratism celebrates the development of formal rationality. Such rationality allows the modern self to exist in society as an empty, merely formal, decision-maker without the presence of any normative content by which to guide decisions (Hall, 1994, p. 30). Formal rationality results from a process of abstraction, formalization, and generalization that eschews differences by suppressing content. Formal rationality, as the process of enacting formal procedures for implementing instrumental actions, is, in a technological society, indifferent to ends or values.

As Waring (1991) points out, post-Taylorite bureaucratic thinkers believed in the basic rationality and legitimacy of centralized power and specialized tasks; but they observed that theoretical explanations of bureaucracy were inadequate and realized that one would not be able to integrate specialized operations through the methods of scientific management alone. They, therefore, developed theories that validated faith in bureaucracy, and invented mathematical and mechanical techniques that could help make it more efficient (p. 7). Indeed, the mathematical

and mechanical techniques carry “formal rationality” to its extreme and become the backbone of the later developments such as management science, operations research, decision science, and analytics, among others.

Post-Taylorite scientism and its consequent overemphasis on rationality have led to the development of (at least) four “unhealthy” phenomena that still are prevalent in current management thoughts and research. They are the following: (1) the naiveté of reductionism, (2) the straitjacket of positivism, (3) the dominance of scientism, and (4) insularity (Chung, 2010, p. 2). Some of these phenomena are overlapping and interdependent of each other.

The reductionist mentality of many management researchers often is reflected in their naïve and oversimplified views on fundamental concepts of management problems. Their research works are accordingly naïve and oversimplified. For example, in a study of the so-called “rationality in strategic information technology (IT) decisions” (p. 59), Ranganathan and Sethi (2002) use the notion of procedural rationality – “the extent to which the decision process involves collection of information relevant to the decisions and the reliance upon the analysis of the information in making the choice” (p. 60) – as the basis for studying the key factors influencing rationality in IT decision processes. The study, like many prior researches on this topic, largely ignores other important aspects or types of rationality. There are many ways of thinking about rationality. For example, in terms of practical rationality, there are contextual rationality and strategic rationality. In a theory of “communicative action,” Habermas (1987) suggests the idea of communicative rationality. According to Follesdal (1986), there can be more than 20 senses of rationality. Indeed, many rationality concepts are relevant and crucial to IT (or management, for that matter) decisions. Using the procedural rationality as the only type of rationality in decisions is not only oversimplified but also misleading.

Another example of “deficiency” in research due to naïve and oversimplified views often appears in many of the so-called “empirical research,” particularly those using the questionnaire-based survey research. Many researchers conducting this type of research would justify their low response rates by quoting similar low response rates reported in the literature (or in some unpublished working papers, including their own). Without the (slight) idea of the concerns in the philosophy of sciences, these researchers justify their errors by the mentality of “everybody does the same.” In a sense, they ignore the problem by comforting themselves with the self-deceiving rationale that the low response rate would not be problematic since everyone else suffers the same difficulty. Obviously, no matter how numerous previous reports there may be on low response rates, those precedents can hardly be qualified as “norms,” “the consensus of the scientific community,” or “exemplars” as Kuhn (1962, 1970) termed them. Furthermore, many researchers assume they can translate the respondents’ perceptions into a set of numerical scales and that such a translation still gives an accurate picture of reality. They assume they can average or aggregate the scores from the questionnaire across the respondents with a wide variety of backgrounds. In fact, they advocate the diversification of the respondents to have the so-called “generalized” research results. It is both interesting and important to note that such reductionist mentality does not appear anywhere in Taylor’s scientific management.

The second problem with many management researchers is their inability to shed the straitjacket of positivism. For example, many researchers who engage in the so-called “empirical research” do not have a good understanding of what empirical research really means. They simply claim that empirical means “based on experience” and that empirical research means basing research on real-world phenomena or data. They then unknowingly fall into the trap of

positivism-empiricism whose central doctrines are that seeing is believing and that appearances or experiences are the only reality. Early logical positivists also claim that we derive our knowledge of the physical world entirely from sense experience, and that we can characterize the content of science entirely by the relationships among the data of our experience (Mach, 1911). However, all logical positivists have difficulty in spelling out what is to count as an experience statement. Such difficulty often escapes the radar screen of management researchers. The real world is, in fact, much more wide open than the confines of positivism of any kind. A narrow view of the real world easily can lead to a positivist reduction to the observables while leaving out factors, phenomena and issues that are important to management. Taylor himself would be surprised to find how narrow people's views are nowadays. From the concept of scientific management Taylor himself summarized, we will find what broad perspectives he had. According to Taylor (1911), "It is no single element, but rather this whole combination, that constitutes scientific management, which may be summarized as: Science, not rule of thumb; Harmony, not discord; Corporation, not individualism; Maximum output, in place of restricted output; The development of each man to his greatest efficiency and prosperity" (p. 74).

**The third problem** with many management researchers is the domination of scientism in their research. Rosenberg (2000) defines scientism as "the unwarranted overconfidence in the established methods of science to deal with all questions, and the tendency to displace other 'ways of knowing' even in domains where conventional scientific approaches are inappropriate, unavailing or destructive of other goals, values and insights" (p. 7). The mentality of scientism can be exemplified by Lahoti's (2002) claims on the benefits of "revenue management." According to him, one of the benefits of revenue management is that it "use(s) science not guesswork; in a dynamic pricing and demand environment, *there is no room for gut-feel and subjective decision making*. Companies implementing revenue management basically employ proven principles of management science and information technology, including historical data analysis, accurate data modeling, and statistical and mathematical optimization" (p. 36, italics added).

Is it plausible for a decision makers or the management to forget the human element in any decision or management situation? Melvin Salvesson (2003), one of the founding fathers of management sciences, points out that the scope of management sciences should include *understanding of humans and their characteristics* (for training and placement of employees in an organization and for enhancing their acquisition of knowledge and skills, their participative senses and emotions, their sense of satisfaction and compensation from participating in the business enterprise, etc.). Indeed, there are human factors even in natural sciences. The belief in that "there is no room for gut-feel and subjective decision making" (in a dynamic pricing and demand environment) is really too subjective, too emotionally attached to the so-called "scientific methods," and too dangerous for sound decision making.

Lahoti (2002) is not alone in infatuation with the so-called "scientific method." Ross (1991) documents the "triumph" of scientism in U.S. social science (pp. 390-470). Klein and Lyytinen (1985) point out the "poverty of scientism" in information systems research (p. 132). In the field of operations management (OM), Wacker (1994) contends that many OM studies are not scientific since they do not strictly follow scientific procedures. He suggests OM researchers make their discipline scientific through the use of theory. In advocating for so-called "theory-driven empirical research," Handfield and Melnyk (1998) also concur with the view of OM-as-science by stating "underlying the notion of theory-driven empirical research is the view of OM

as science. One of the major traits of a science is that it is concerned only with those phenomena that can be publicly observed and tested” (p. 322). This trait is one of the most important positions logical positivists hold – the principle of verification. It is the thesis that only the testimony of the senses can justify our knowledge of the world – that is, experience, observation, and experiment. Concepts that no one can verify or falsify through experience are, strictly speaking meaningless. Unfortunately, such empiricism encounters serious problems when one has to deal with unobservable entities and processes. Handfield (2002) also calls for “methodological rigor and scientific method” in OM research. It would be rather unfortunate if one is to interpret such a call as an indiscriminate adoption of the natural science model (NSM). It is simply wrong for management researchers to, in Rorty’s (1991) words, “divinize” the so-called “scientific methods” (p. 34).

Post-Taylorite management thinkers tend to consider Taylor and his “scientific management” *inhuman* simply because of the notion of “scientific” (Waring, 1991, p. 7). However, reading carefully, we find that Taylor is humanistic, quite humanistic indeed. For example, he clearly points out that “the manager must give some special incentive to his men beyond that which is given to the average of the trade...(A)bove all, this special incentive should be accompanied by that personal consideration for, and friendly contact with, his workmen which comes only from a genuine and kindly interest in the welfare of those under him” (Taylor, 1911, p. 14 [sic]). No doubt, Taylor’s interest is in management, better management, and the best management. The purpose of scientific management is nothing but to serve management so as to enhance the welfare of all parties in an organization.

The fourth problem with many management researchers is the tendency to conduct research in an insulating and fragmentary fashion. To some extent, this is a consequence of the three previous problems. Stuart et al. (2002) point out that “one of the most important recent changes in organizations is the destruction of ‘functional silos’ within areas such as marketing, manufacturing, finance, and administration” (p. 420). However, management research has not adopted such “destruction” adequately. Whether engaging in empirical research or otherwise, many researchers tend to reduce their problems to highly abstract and narrow domains. Based on the concept of scientific management Taylor summarized (as above), it is obvious Taylor would stand for the destruction of these functional silos. His summary does include not only the hard but also the so-called “soft issues” Samson and Whybark (1998) advocate.

Developments in management thoughts and research during the last century, and the deficiencies resulting from these, definitely are not what Taylor intended, much less expected. It is true, with the notion of “scientific management,” Taylor suggests that managers should become *scientific*. That is, managers should study the organization of work. They should invent apolitical methods for overcoming industrial waste and conflict. Through scientific management, forepersons and workers can overcome potential disputes between them. Scientific managers can and should conduct experiments to find the “one best way” to work. Employees (e.g., workers and forepersons realize the shared interest in maximizing income by maximizing output (by employing the best way to work). Indeed, Taylor emphasizes the importance of becoming scientific; however, he wants people (and management) to be scientific *to have a better management*. It is *management* that Taylor’s scientific management aims to improve. Taylor really did not intend to turn management into a science, much less scientism.

## Edification as a Cure for Scientism

Beginning with Taylor's scientific management and moving from an Operations Research-Management Science movement beginning at the end of World War II, the rationalist approach, or the so-called natural science model, has dominated management research in general, and decision and management sciences research in particular (Steffy & Grimes, 1986). The rationalists believe that there is a "real world" out there and that the researcher's task is to learn what this real world really is. In other words, "truth-seeking" is what all scientific inquiries aim at. However, as Rorty (1989) puts it, "Only descriptions of the world can be true or false. The world on its own – unaided by the describing activities of human beings – cannot" (p. 5). For management in general, it is plausible and "pragmatic" to adopt the attitude that, in the words of William James (1995), "the true is the name of whatever proves itself to be good in the way of belief" (p. 30). In other words, there is no need to "waste time and effort" in finding the way things really are. Rather, the "truth" is what works. In finding what really works, we need to look constantly at things from different perspectives. New possibilities and new opportunities will continue to appear through constant re-description of the states of the organization and its environment.

Although notions such as "continuous improvement" and "ceaseless renovation" were not buzzwords a century ago, the spirit of such philosophies was implicit in Taylor's scientific management. For example, Taylor suggests that management should conduct *experiments* to search for "scientific laws," general principles, and so on. One does not expect to achieve "the best type of management" overnight. Instead, one needs to inject efforts continuously and persistently into the scientific management movement. As with continuous improvement, the search for "the best management" is itself a "re-description process." Furthermore, in organization management, the best management is difficult to define and literally impossible to attain. The best management is a moving target at best.

Rorty (1979) suggests the use of "edification" to stand for the goal of finding new, better, more interesting, more fruitful ways of speaking (i.e., new ways to describe things). He feels "education" sounds a bit too flat and *Bildung* (education, self-formation), a bit too foreign, thus, the term "edification." Today, the notion of "education" can be mistaken easily as nothing but the "transfer of knowledge" and, therefore, is not appropriate for conveying the idea of edification. The aim of edification is to continue a conversation – a conversation with oneself and others – rather than to discover truths. Note that philosophers such as Gadamer, Heidegger, and Sartre do not really reject the quest for truth. Rather, they view such a quest as just one among the many ways to edify ourselves. That is, the search for objective knowledge is just one human project among others. However, they believe that, even though "objective inquiry is perfectly possible and frequently actual,...it provides only some, among many, ways of describing ourselves, and that some of these can hinder the process of edification" (Rorty, 1979, p. 361). Furthermore, the purpose of continuing conversation is to enhance understanding – understanding of oneself (and perhaps more importantly, one's own "self"), environments, and the relationship between oneself and the environments. Any conversation – be it conversation between parties or conversation with one's inner self – is a process of exchanging descriptions and re-descriptions. In the context of management, new ways of speaking lead to new descriptions of the organization and its environment, and, therefore, a new perspective on what is going on.

With edification philosophy, management involves a process of continuing conversations between organization members and their relevant parties in the environment.

Edification philosophy facilitates management in at least the following three closely related areas:

(1) *Edification enhances our consciousness and awareness, rather than knowingness and pigeonholing, of what goes on in the organization and its environment.*

In dealing with an ever-changing environment and the resultant uncertainty, we, as human nature dictates, are often anxious to find regularities, laws, rules, structures, theories, etc. (Isn't this what Taylor's scientific management is all about?) We would like to explain phenomena. We would like to predict the future. We believe our tasks should not only be finding the truth or knowledge but also providing management with principles, guidelines, advices, etc. Therefore, we develop theories, propositions, theorems, and their corollaries. We perform so-called configuration research that categorizes phenomena into typologies, taxonomies, etc. We conduct simulation or "what-if" analyses and hope that we know *what* to do *if* our businesses fall into a certain category. Unfortunately, as in Lao Tzu's "running water" analogy, "trying to understand running water by catching it in a bucket" is an effort of creating the illusion of certainty where there is none and suggests that we can never duplicate exactly the same conditions (Chung, 2012, p. 5). All those rules, guidelines, and principles may not always be helpful. In fact, blind applications of them can be dangerous. Edification is an attitude interested not so much in what is out there in the world, or in what happened in history, as in what we can get out of nature and history for our own uses (Rorty, 1979). With edification philosophy, we are not looking for truth, generalized knowledge, structures, laws, rules, etc. In the spirit of scientific management, even Taylor himself would not deny that if the laws, generalizations, and principles are not useful for management, they are subject to modification. Generalities, structures, and patterns are, in fact, products of our own description, rather than of an independent order of things. Thus, instead of seeking the so-called truth, or the generalized laws and theories, we should focus on consciousness and awareness of what is going on. This is what we need for coping with changes and coping with the world. Consciousness and awareness make us understand that all of our knowledge is the product of particular prejudices. We should be more open-minded and not blinded by our own prejudices.

(2) *Edification helps us expand our horizons of understanding.*

Being open-minded, we are better able to recognize other frames of reference, other views, and other interpretations (of the states of the environment and of changing phenomena). The persistence of alternative understandings is an essential condition for edification. As Meredith (1998) and Hudson and Ozanne (1988) point out, understanding is a never-ending process, rather than an end. The edification approach to organization management is a never-ending process as well. Specifically, it is an endless process of new understanding through the process of re-description. Human beings tend to stay in their comfort zones or habitual domains. Sometimes, they cherish "inertia" in the name of "stability." Such a myopic mentality can be dangerous in today's environment, which is full of hyper-changes and hyper-competitions. Without the open-mindedness, we limit our ability to re-describe the circumstances and the

future. We would be less likely to see things from different perspectives. An edification philosophy advocates not only for the exploration of the fullest range of perspectives possible but also for skepticism of some (if not all) interpretations. All perspectives and all interpretations are subject to change or re-description.

*(3) Edification encourages us to re-examine and revise our frameworks of understanding.*

As the result of widening perspectives and continuous skepticism, we will revise and reconsider constantly our own frameworks of understanding through the process of edification. This requires us to re-examine our assumptions, criteria, interpretations, etc. In other words, we need to move out of our comfort zones (which may soon prove to be quite uncomfortable). We need to feel uncomfortable about the comfortable. We need to have a persistent interest in learning and considering the organization and the environment through new lenses. As Warnke (2003) puts it, "Openness to the open interpretations of others provides a way of directing the course of our inspirations without falling prey to either knowingness or naiveté" (p. 118).

These three premises of edification philosophy show that this philosophy, through the notions of "continuing conversation" and "continuing re-description," does recognize business management as a dynamic process of coping with the constant and rapid changes of the environment. In this regard, the edification philosophy is quite in accord with the thoughts of both John Dewey and Alfred North Whitehead. They both agree that we should understand all things primarily as moments within a dynamic process. Consequently, we should think of knowledge as "a form of action, rather than as a possession or purely mental condition" (Frisina, 2002, p. 125). With knowledge as a form of action, knowing has less to do with an inner representation of the outer reality and more to do with a refinement of the way we behave or do business. In other words, we unify knowledge and action as an inseparable one. Our understanding and awareness of the environment, thus, will rely less on the description of states and more on the process of re-description.

From the perspective of edification, the aforementioned reductionism, scientism, fragmentation, etc. are just a few among many ways to describe the reality. With re-descriptions, we can mitigate these deficiencies by "mixing" numerous varieties of "pictures" (i.e., descriptions) of the reality. Without appealing to logic, rigor, and precision as eternal "rules," without seeking some foundation that itself requires no foundation, in Rorty's words, "we live in story after story after story" (Calder, 2003, p. 9).

### The Art and Science of Management

The above sections have discussed the dominance of the so-called Natural Science Model in organizational and management research. Rationality is the foundation of the NSM. Even notions such as bounded rationality, satisfactory solutions, heuristic approach, etc. are still approaches based on the concept of rationality. They recognize the impossibility of complete rationality, but strive to achieve rationality as closely as possible. It is doubtful whether science can explain all aspects of reality. Paradoxically, in his quest for an objective knowledge of reality, humans have become more and more detached from reality itself. NSM truncates reality into a system of simpler, reduced units, omitting the "irrelevant" details of life. The fracturing of life also

leads to the fracturing of humanity, dissociating the rational self from the intuitive self. Reality is certainly not what the NSM can describe in algorithms and formulas. No scientific means really can quantify and measure the inner depth of life and the richness of the human experience. The development of philosophy over the past hundred years also has shown “a progressive orientation toward the immediate and qualitative, the existent and the actual” (Barrett, 1958, p. 18). This development is a response to the limitation of rationalism (positivism and analytic philosophy in particular). Many modern thinkers recognize the need for finding ways to look into human experiences. “Philosophers can no longer attempt, as empiricists Locke and Hume attempted, to construct human experience out of simple ideas and elementary sensations” (Barrett, 1958, p. 18).

While science condenses reality into reduced, unerring truths, art reveals truths about reality in its complexity. The artist, whether through the medium of oil on canvas, of music notes toppling off a staff, or of the interweaving of words in a poem, attempts to externalize the darker, inner realm of humanity. A work of art can capture the contradictory, ambivalent, and irrational elements of the world. Art aspires to bring back together the totality of humankind. The artist hopes to startle the spectator into a consciousness of a “truer” reality – existence as it really is, with all the contradictions and enigmas that science cannot explain.

Since Taylor advocated the importance of being scientific, one would not expect him to use the notion of “art” in scientific management. However, he did use such a term in calling for “the gradual substitution of science for rule of thumb throughout the mechanic *arts*” (Taylor, 1911, p. 9, emphasis added).

It is not really a new idea to suggest that management is an art (e.g., Pascale & Athos, 1981). However, the dominance of NSM has discouraged researchers to make a greater effort to explore management as an art. For example, Wacker (1994) suggests that many (operations) management studies are not scientific, since they do not strictly follow “scientific” procedures. While the pursuit of scientific or theoretic rigor is plausible, we doubt whether turning management into a science can really help address the issues related to the gap between theory and practice. Chung (1994) contends that management can and should be both an art and a science. Gagliardi (1996) also calls for researchers to pay attention to the “aesthetic” side of organizational life. After quoting the beautiful lines, “Beauty is truth, truth beauty – that is all” by Keats, Van Mieghem (2013) describes “desirable research” as seeking “to discover truth by creatively building a thing of beauty” (p. 3). No doubt, scientific research can be a thing of beauty.

There are many issues in the context of the art of management. What constitutes the art of management? In what ways will the art of management complement the science of management? What can managers and researchers learn from artists? What are artists’ perspectives of the “real world”? What are the managerial implications of these perspectives? With lessons learned from artists, we can develop a better model for the art of management, and for the science of decision and management. We also will find ways to bridge the gap between theory and practice in the field of decision and management.

As Rorty (1998) puts it, “It is rather unfortunate that Kant would organize value spheres into the scientific, moral, and aesthetic and that Hegel would attempt to preserve and defend such organization” (p. 7). Management involves all these value spheres. Moreover, the “science” of management should be a mixture of natural, social, and human sciences (Chung, 2010).

## Conclusion

The assertion that developments in management thought since the development of Taylor's scientific management are the result of a "strong misreading" of Taylorism does not imply an entirely negative connotation. Rather, as with Bloom's observation on poets, "Such a reading reconstitutes the past as appropriated by the would-be genius of the present" (Bloom, 1973, p. 50). Management thoughts and research during the last century do have their historical backgrounds and do contribute positively to management practices and research over the years. Unfortunately, the overemphasis on the notion of being "scientific" and the consequent failure to put management *before* the pursuit of becoming "scientific" have resulted in persistent deficiencies, such as reductionism, scientism, positivism, fragmentation, etc. This article, suggests two strategies to remedy these deficiencies. The two strategies also will help us put "management" back in Taylor's "scientific management." Indeed, the edification philosophy and the re-description strategy facilitate better awareness of management problems. With widened perspectives and expanded horizons of understanding, management will not confine itself to "functional silos." The call for attention to the art of management further expands horizons and perspectives. Management is as much an art as a science. Even for the science of management, we suggest that such a science be a mixture of natural, social, and human sciences. In this way, we will inject new meanings and new life to Taylor's scientific management for the future.

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#### Discussion Questions

1. Discuss the differences and relationships between “scientific management” and “management science.”
2. Is management an art? Why and why not?
3. Can we hold the art and science of management in a single vision?

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