Taylorism and the Root Reforms

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Frederick Winslow Taylor opens his book, *The Principles of Scientific Management*, thus: "We can see and feel the waste of material things. Awkward, inefficient, or ill-directed movements of men, however, leave nothing visible or tangible behind them." Rising to popularity during the Second Industrial Revolution, the ideas in this book concerning efficiency in work changed the face of industry. While Taylor's system was primarily applied in industrial plants, the underlying ideas reached beyond industry. Scientific Management (or Taylorism, as it has been dubbed) and the military reforms authored by US Secretary of War Elihu Root circa 1900 share several common themes. Both of them place great importance on efficiency. Both entail similar changes in regard to management structure. And behind both Taylorism and and the Root Reforms was a high view of methodical study of systems. The ideas inherent in Taylor's teachings reached beyond the industrial sector, defining the military reforms of Secretary Root.[1]

Several historians have studied Taylor's ideas. One points out how Louis Brandeis made Scientific Management popular through his advocating of "industrial democracy." He does not connect the ideas of Scientific Management to the military; the closest that he gets is mentioning that in 1912 Congress appointed a committee to evaluate the possibility of Scientific Management in government jobs. G. Alan Tarr contends that Taylor argued the benefits of Scientific Management for government, and that Taylor's ideas influenced Brandeis' views about state policy. Again, this historian does not connect the ideas of Scientific Management to

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[1] Frederick Winslow Taylor, *The Principals of Scientific Management*, (1919; Google Book Search, n.d.), 5, nhttp://strategy.sjsu.edu/www.stable/pdf/Taylor,%20F.%20W.%20(1911).%20New%20York,%20Harper%20&%20Brothers.pdf (Quote); C. Bertrand Thompson, "Scientific Management in Practice," *The Quarterly Journal of Economics* 29, no. 2(1915): 264, http://www.jstor.org/stable/1884960.

the military specifically. Another historian reveals that Taylor's ideas were implemented in converted munitions factories during World War I. This historian brings Scientific Management closer to the military, but only in passing. Approaching the subject from the side of the reforms, Philip Semsch examines Root's struggle to bring one of his reforms to reality, but only vaguely mentions Root's history in the business world. James E. Hewes, Jr., draws this out, writing that Root compared the War Department to industrial businesses. None of these historians, however, draw a direct connection between Taylor's ideas and Root's military reforms.[2]

In *The Principles of Scientific Management*, Taylor emphasizes the importance of efficiency in human action. In the introduction, he draws attention to an area of great waste. He forewarns of "forests vanishing…water-powers going to waste…soil being carried by floods into the sea" and the imminent depletion of iron and coal. This is a stark picture. It creates a sensation that all that the nation depended on was slipping through its finger-tips—that the nation was at the end of its rope when it came to natural resources. But Taylor claims that these great wastes pale in comparison to "larger wastes of human effort." The greatest waste of all, he says, is that caused by human inefficiency.[3]

Taylor pointed to his principles of Scientific Management as the solution to this issue. He wrote *The Principles of Scientific Management* for three reasons. He wanted to provide examples of the national epidemic of inefficiency. He wanted to show that the solution was not in finding

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[2] Oscar Kraines, "Brandeis' Philosophy of Scientific Management," *The Western Political Quarterly* 13, no. 1(1960): 191-201, http://www.jstor.org/stable/444343 (Quote); G. Alan Tarr, "Laboratories of Democracy? Brandeis, Federalism, and Scientific Management," *Publius* 31, no. 1(2001): 37-46, http://www.jstor.org/stable/3331039; H. Stanley Jevons, "The Second Industrial Revolution," *The Economic Journal* 41, no. 161(1931): 1-18, http://www.jstor.org/stable/2224131; Philip L. Semsch, "Elihu Root and the General Staff," *Military Affairs* 27, no. 1(1963): 16-27, http://www.jstor.org/stable/1983945.
[3] Taylor, *Scientific Management*, 5 (Quotes 1-2).

the right leader, but rather in establishing systematic management. Finally, he wanted to prove

that the "best management is a true science," and that this management could be applied to "all

kinds of human activities" with great results. Taylor believed that his principles of Scientific

Management would greatly improve the efficiency of any activity—large or small. In the past, he

writes, the focus had been on finding the right men, but now the system of Scientific

Management must take first priority in order to solve the problem of inefficiency in labor.[4]

The military reforms authored by Secretary Root emphasize efficiency as well. The act

reforming the militia begins stating that its main purpose is to "promote the efficiency of the

militia." The General Staff Act begins in much the same way, the main difference being its

reference to the army instead of the militia. The weight that efficiency had upon these these

reforms is self-evident. Root elaborates on this in a 1902 report regarding the formation of the

General Staff. He writes that the proposed General Staff would play an important role in

ensuring the equal performance of each officer involved in an operation. Full efficiency could

not be achieved without this full participation, and Root cites the Santiago expedition of 1898 as

an example. He writes that because of the nonexistence of a "body of men" like the General

Staff, confusion was the result. Thus, the General Staff was to ensure efficiency by eliminating

confusion in military operations.[5]

The first of Root's reforms, regarding the military's education system, emphasizes

[4] Taylor, *Scientific Management*, 7, (Quotes 1-2).
[5] "Fifty-Seventh Congress. Sess. II. Chapter 196," LegisWorks.org, last accessed September 2015, http://legisworks.org/sal/32/stats/STATUTE-32-Pg775.pdf (Quote 1); "Fifty-Seventh Congress. Sess. II. Chapter 553," LegisWorks.org, last modified February 2014, http://legisworks.org/sal/32/stats/STATUTE-32-Pg830.pdf; Elihu Root, *The Military and Colonial Policies of the United States: Addresses and Reports* (Cambridge: Harvard university Press, 1916), 424-425 (Quote 2).

efficiency as well, though not in such clear-cut terms. Like the other reforms, it begins stating its purpose: "maintaining the high standard of instruction" in the army, and establishing a plan for making "work" "progressive." While efficiency is not explicitly mentioned, the word "progressive" is a clue to the existence of this theme. The context of the word implies that at the time these orders were written, "work" was not progressive. What was required for work to become progressive? The Secretary writes that any officers who "fail to acquire a proper degree of efficiency in any subject" must repeat the course. If any officer fails a second time, a "special report" will be made, and an examining board will determine whether the officer is fit for his position or not. In other words, if an officer could not demonstrate his ability to fit in with the system, he could lose his job. This is an example of the progressivism which Secretary Root advocated, the underlying goal being increased efficiency in the army.[6]

This emphasis in efficiency is a very basic similarity between Taylorism and the Root Reforms. It is not the only similarity, however. Within both Taylor's ideas and Root's reforms was a dramatic change in structure for the management.

Taylor's proposed Scientific Management included a fundamental shift from previous management systems. He writes that the problem with the "old" system of management was its delegation to the worker the "final responsibility" for finding the best way to accomplish a task "with comparatively little help and advice from the management." The workman had freedom to do a task how he thought best. According to Taylor, this was a hindrance to the overall efficiency of a system. His new system promoted a greater degree of control within the management. In Scientific Management, "the managers assume new burdens, new duties, and responsibilities

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[6] "General Orders, No. 155," History.Army.Mil, last modified May 31, 2001, http://www.history.army.mil/documents/1901/wdgo155-1901.htm (Quotes 1-7).

never dreamed of in the past." These new responsibilities included accumulating and organizing information regarding workmen's tasks, training each workman in this knowledge, and cooperating with the workmen to ensure conformity to the new Scientific Management methods. Taylor writes that this larger role for the management is part of what makes Scientific Management so much more efficient than "the old plan."[7]

A similar shift in management structure and responsibilities took place in the Root Reforms. Previous to the reforms, the Department had consisted of several autonomous bureaus that acted under the President and Secretary of War. The chiefs of these bureaus remained in office until death or resignation, oftentimes longer than the Presidents or Secretaries of war did. This led to greater "congressional influence" for the chiefs in comparison to the Secretaries of war. Because of this level of autonomy for the war department bureaus, Hewes describes the War Department of this time as a "hydra-headed holding company, an arrangement industrialists were finding increasingly wasteful and inefficient." He gives an example where five of these autonomous bureaus overlapped to provide electricity to coastal defense fortifications. He writes that if the Secretary of War granted one bureau's request during this process, the other bureaus would complain of "interference with their work." The Secretary would have to use valuable time with the bureau chiefs "thrashing out a decision." This system of independent bureaus was inefficient. Hewes quotes one War Department committee that discussed the administrative problems within the Department. The committee writes that the current system was "founded upon the idea that the bureau chiefs. . . and the Secretary of War were the only ones who could be trusted to decide either important or trivial matters in a manner to properly protect the interests of the Government." In other words, responsibility for managing the army was largely

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[7] Taylor, *Scientific Management*, 35 (Quotes 1-3); Ibid, 36; Ibid, 37.

left to the War Department bureaus, bureaus that were unequipped to handle this task due to the

lack of organization between them. Previously mentioned was Root's example of the Santiago

expedition. The Secretary writes that the confusion experienced during this time was a result of

many men doing their "own special work the best" that they could—apart from a guiding body

of men "seeing that they pulled together according to detailed plans made beforehand." This idea

of men doing their work with little guidance from the management is exactly what Taylor

noticed.[8]

Elihu Root's General Staff was meant to deal with this "hydra-headed" monster. His plan

was to subject the bureaus to an administrative hierarchy (the General Staff Corps) under the

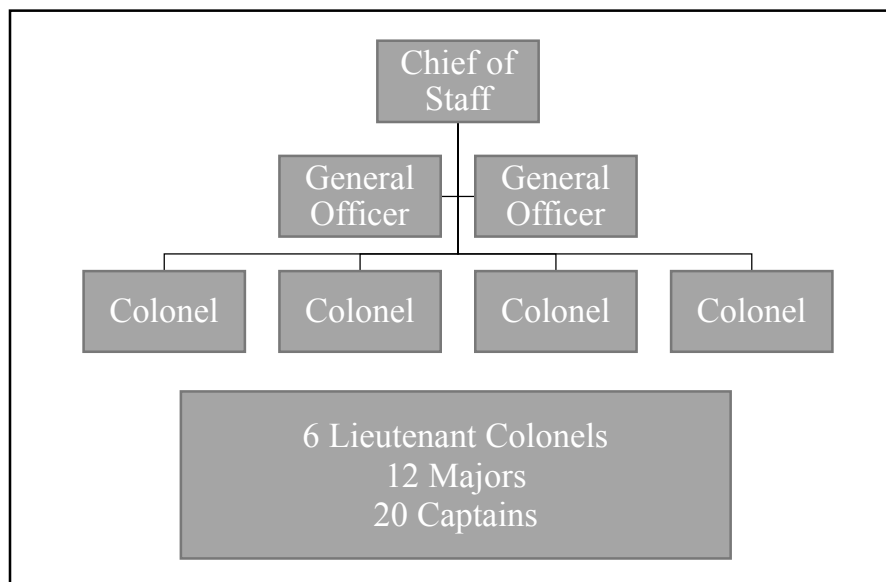President and Secretary of War. Figure 1 illustrates the structure of this hierarchy.

Figure 1. The structure of the General Staff

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[8] "Fifty-Seventh Congress, Chapter 553"; James E. Hewes, Jr., *From Root to McNamara: Army Organization and Administration 1900-1963* (Washington, D.C.: US Army Center of Military History, 1983), 3, http://www.history.army.mil/html/books/040/40-1/cmhPub_40-1.pdf; Ibid, 5 (Quotes 1-2); Ibid, 9 (Quotes 3-4); Ibid, 6 (Quote 5); Root, *Military and Colonial Policies*, 425 (Quote 6-7).

The General Staff Corps was an organized body that would oversee War Department operations to eliminate confusion caused by the previous system of bureaus. In creating this General Staff, Root removed much responsibility for accomplishing goals from the War Department Bureaus, and consolidated it under the General Staff. This is remarkably similar to Taylor's new management system, which gave the managers more control over the tasks of each workman in order to improve efficiency.[9]

Both the Root Reforms and Taylorism involved a shift of administrative power to the management. But there is a deeper similarity between the underlying ideas of the two systems. Both The Root Reforms and Taylorism placed great valued on scientific research in the pursuit of efficiency.

In his theory of management, Taylor valued methodological research, hence the name "Scientific Management." This is evident in the duties assigned to the management under his system. He writes that the management must gather all of the "traditional knowledge" that was previously "possessed by the workmen." Next, the management is to organize this data into "rules, laws, and formulae which are immensely helpful to the workmen in doing their daily work." This is not the only scientific aspect of Taylor's system. More than simply condensing the collected data into a set of rules for the workmen, the Taylor's new management must "scientifically select" and train each worker according to these new rules. These methodological qualities are what make Scientific Management scientific.[10]

Elihu Root valued scientific methods as well. In an address to alumni of the Harvard Law School, Root declares that science "has remade the life of man." He states that "research, patient

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[9] Hewes, *From Root to McNamara*, 5; Ibid, 10; "Fifty-Seventh Congress, Chapter 553" (Figure 1); Hewes, *From Root to McNamara*, 9-10.
[10] Taylor, *Scientific Management*, 36 (Quotes 1-3).

systematic organized research" has brought all the marvels of science. He draws attention to the "impossible situation" of the vast amount of statutes and court decisions, contending that the only way to make sense of this mess is to "have such an inquiry, such research." This address reveals the importance Root placed on scientific methods. However, he gave this speech about twenty years after the Root Reforms were passed, and he was speaking on law, not the military.[11]

Root's value of "patient systematic organized research" is present in the Root Reforms as well. Brigadier General William Carter writes that Root recognized the importance of studying the military system before suggesting any improvements upon the disorganization of the Spanish-American War. As previously mentioned, Root himself writes that the confusion surrounding the Santiago expedition resulted from the lack of a body of men like the General Staff. But just how would the General Staff have fixed the problem? Like Taylor's new management, it would gather and organize information in order to make "intelligent" command possible, "by keeping all the separate agents advised of the parts they are to play in the general scheme." This methodical focus is much like that found within Scientific Management.[12]

The similarities between Taylorism and the Root Reforms show that themes within Taylor's system reached beyond the area of industry to the reforms authored by Root circa 1900. Both of these men emphasized efficiency in their writings. This led them to recommend similar shifts in management structure within their spheres of influence. Permeating the changes that they advocated was the importance of methodical study methods in order to improve efficiency.

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[11] "Address by Elihu Root," *The Virginia Law Register* 12, no. 9(1927): 553-554, http://www.jstor.org/stable/1107670 (Quotes 1-4).

[12] "Address by Elihu Root," 553 (Quote 1); William H. Carter, "Elihu Root: His Services as Secretary of War," *The North American Review* 178, no. 566(1904): 110-111, http://www.jstor.org/stable/25119516; Root, *Military and Colonial Policies*, 425 (Quotes 2 and 3).

Both of these men influenced great change. Root reflected upon these changes at the General

Staff dinner: "I confidently believe that…the American people will look back to the inauguration

of the General Staff…as the beginning…of an efficiency never known before in the defenders of

government and of our nation."[13]

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[13] Carter, "Elihu Root: His Services," 121 (Quote).

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