



The Taylorization of Lenin: rhetoric or reality?

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Lenin

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Abstract *Lenin advocated “Taylorization” (i.e. scientific management), to rebuild post-revolutionary Russia’s economy. The evidence, however, indicates that Lenin’s advocacy caused conflict within the communist party, and scientific management was rarely implemented successfully. Noting a rhetoric-reality gap, the paper explains the difference between Lenin’s advocacy and actual practice. Lenin wished to convey the message that his regime was progressive, using the latest management techniques. Rather than following scientific management precepts, pressure was placed on Soviet workers to increase productivity without improving work methods. The paper’s conclusion is that Lenin’s advocacy of scientific management was a leader’s rhetoric, a political expediency, and it would be misleading to connect scientific management with the practice of management in post-revolutionary Russia.*

Introduction

The transfer of technology across national boundaries can be traced through licensing agreements, patent records, and other devices, but documenting the diffusion of ideas is more problematical. In the early twentieth century the ideas of Frederick W. Taylor captured the attention of much of the industrial world (Thompson, 1940). Taylor’s scientific management was put forth as a means to greater productivity through improved efficiency while paying higher wages and lowering product costs to consumers. Russia, just emerging from the 1917 revolution, faced myriad economic problems and a need to reorganize its industrial system along modern lines. Merkle (1980, pp. 134-5) is among those who Taylorize Lenin: “... the post revolutionary introduction of Taylorism, with its powerful arguments for the dominance of a technocratic class, finished the work that Lenin had begun when he advocated the direction of the ‘spontaneous’ sentiments of the proletariat by a more enlightened and systematic vanguard”. Gvishiani (1972, p. 6) credited Lenin’s leadership for placing Russia on its correct socialist path because he “analyzed every step in socialist construction, drew general conclusions from the experience of management acquired by various branches of the national economy, and worked out and formulated the socialist principles of scientific management”. Scoville (2001, p. 625) has suggested that the Bolshevik ruler, V.I. Lenin, was “Taylorized” and viewed scientific management as the solution to the soon-to-be Soviet Union’s economic problems and “in fact a necessary feature



of such a state”. Was scientific management a necessary feature of the emerging Soviet socialist state? Were the elements of Taylorism compatible with state ownership and collectivization in practice? Was scientific management implemented successfully? If so, which scientific practices worked most effectively? Our purpose is to trace developments in post-revolutionary Russia seeking the alleged Taylorization of Lenin. We will attempt to determine if Lenin’s advocacy was a leader’s discourse, rhetoric designed to appear modern and progressive, or was scientific management a reality in practice?

Abrahamson’s “theory of management fashions” proposes that managers, including heads of state, need to create the appearance of adhering to norms of rationality that provide for progress through better organizational performance: “Fashionable management techniques must appear both rational (efficient means to important ends) and progressive (new as well as improved relative to older management techniques)” (Abrahamson, 1996, p. 255). For Lenin, scientific management would be rational and progressive, and in step with “scientific socialism” (Scoville, 2001, p. 625). Carson and her colleagues, however suggest that, after examination, fashionable techniques “may expose research that embodies advocacy rather than an objective focus” (Carson *et al.*, 2000, p. 1145). The danger of appearing fashionable concerns the accuracy of what information is passed on as part of our intellectual legacy. Bedeian has noted the dangers of “serial transmission” of errors of historical fact: “The deleterious impact of these errors is felt as they are transmitted from generation to generation of scholars and ultimately accepted as facts” (Bedeian, 1998, p. 5; see also Bedeian, 1986).

Other scholars have sought to correct the historical record such as illustrating that Taylor greatly embellished the story of the pig-iron handler known as “Schmidt” (Wrege and Perroni, 1974); the conclusions of the Hawthorne studies at Western Electric have been corrected by closer scrutiny (Carey, 1967; Greenwood *et al.*, 1983); and a re-examination of early studies of the alleged salutary effects of participative management has indicated some fallacies in that research (Zimmerman, 1978). In this spirit, we seek to examine the accuracy of Lenin’s alleged Taylorization in the post-revolutionary Soviet economy.

Lenin’s Taylorization

The pre-revolutionary Lenin was critical of scientific management. Writing in *Pravda* in 1913, he saw *nauchnaya organizatsiya truda* (NOT) (Russian for the “scientific organization of work”) as a means of worker exploitation:

It’s purpose is to squeeze out of the worker three times more labour during a working day of the same length as before; all the worker’s strength is unmercifully roused, every bit of nervous and muscle energy is drained from the slave labourer at three times the speed . . . Advances in the sphere of technology and science in capitalist society are but advances in the extortion of sweat (Lenin, 1963, pp. 594-5).

Again in 1914, he viewed the Taylor system as “man’s enslavement by the machine” and predicted in *Pravda*, “The Taylor System – without its initiators knowing or wishing it – is preparing the time when the proletariat will take over all social production and support its own workers’ committees for the purpose of properly distributing and rationalizing all social labour” (Lenin, 1964, p. 154).

In these pronouncements, Lenin was expressing the same position taken by socialist parties in Europe that scientific management was “the most modern and ruthless form of capitalist exploitation” (Traub, 1978, p. 82).

In exile in Zurich in 1916, Lenin encountered a translation of Taylor’s *Shop Management*, Seubert’s (1914) book about the Taylor system in practice, and a translation of an *Annals of the American Academy* article by Frank Gilbreth (1915) on motion study as a means of increasing national wealth. Seubert worked eight months at the Tabor Manufacturing Company in Lansdale, PA. He praised the positive features of Tabor, which was considered one of Taylor’s model installations of his system. Lenin made copious notes on these scientific management writings and modified his views after the 1917 revolution. In an April 28, 1918 article in *Pravda* discussing the “urgent problems of the Soviet rule”, and under the heading “Higher productivity of labor”, Lenin (1965a, p. xxii) wrote:

We should immediately introduce piecework and try it out in practice. We should try out every scientific and progressive suggestion of the Taylor system . . . The Russian is a poor worker in comparison with the advanced nations, and this could not be otherwise under the regime of the Czar and other remnants of feudalism. The last word of capitalism in this respect, the Taylor System, as well as all progressive measures of capitalism, combine the refined cruelty of bourgeois exploitation and a number of most valuable scientific attainments in the analysis of mechanical motions during work, in dismissing superfluous and useless motions, in determining the most correct methods of work, the best systems of accounting and control, etc. The Soviet Republic must adopt valuable and scientific technical advance in this field. The possibility of socialism will be determined by our success in combining Soviet rule and Soviet organization of management with the latest progressive measures in capitalism. We must introduce in Russia the study and teaching of the new Taylor System and its systematic trial and adaptation.

Scientific management, reprehensible to Lenin earlier, could be a necessary element for building a socialist state if “properly controlled and intelligently applied by the working people themselves” who must “learn how to work” (Lenin, 1971, p. 417). Lenin’s goal was to increase labor efficiency to the extent that the surplus, rather than going to the capitalist class as profits, would benefit the workers. In a speech to the Supreme Economic Council he proposed the introduction of piece rates payment based on performance, a scientific management notion that had not found extensive support among trade union officials elsewhere. He also told the Supreme Economic Council that discipline must be more strict, a view that reached English reading audiences through the *Bulletin of the Taylor Society* which reprinted Lenin’s speech: “It would be the

greatest stupidity and the most absurd opportunism to suppose that the transition from capitalism to socialism is possible without compulsion and dictatorship” (Lenin, 1965a, p. 378). No one in a free society could speak with such hubris.

Russia was on its way to industrialization when the October 1917 revolution came. It was a labor-rich, capital-poor nation, but foreign loans were furthering railroad construction, textile production, and smelting of iron into steel (McKay, 1970, pp. 3-5). After the revolution, the Russian transportation system was in shambles, raw materials and foodstuffs were scarce, factories were idle, and power supplies were erratic. By 1918, the rate of industrial output was one-third of what it had been in 1913 (Traub, 1978, p. 83).

Economic chaos was only part of Lenin’s problems. He was determined to manage the socialist economy as a model for the world, as an exemplar for reconstruction after revolution. This could occur, Lenin perceived, only to the extent that the new regime could demonstrate a superiority of life over that under the former Czarist government. This could be accomplished if he could consolidate political control to keep out foreign enemies, prevent internal counter-revolts, and enable a viable economic system that would sustain the populace. These difficult times led Lenin to revise his view of scientific management, and to embark upon an ambitious educational plan.

Alexei Gastev and NOT

Alexei Kapitonovic Gastev, called the “Russian Taylor”, was a son of a teacher, a member of the *intelligentsia*, and was expelled from Moscow Teachers’ Institute for his revolutionary views (Bedeian and Phillips, 1990; Traub, 1978). He gained exile in France, where he worked several jobs, including the Renault automobile factory. Louis Renault tried to install scientific management, used untrained personnel to do time studies, met union resistance followed by a strike, and was criticized by Taylor for going “against the experience of men who know what they are talking about [trained time study people] ... he deserves to get into trouble” (Wren, 1994, p. 202-3). Gastev would have agreed with Taylor about the Renault experience: time study personnel had to be trained before they were turned loose in a factory.

After the 1917 revolution, Gastev returned to Russia and became a leader in implementing Taylor’s techniques as Lenin desired. Gastev became first secretary of the All-Russia Metal Workers’ Union, and founded the Central Institute of Labor as the guiding force behind the study and teaching of scientific management techniques and promoting their use. Both Taylor’s time study and Frank Gilbreth’s motion study would be included in the plan of study.

In addition to editing some 20 journals about the scientific organization of work (NOT), he organized ten institutes to train people in Tayloristic notions and techniques (Bailes, 1977). He felt that all citizens should learn the basic

work motions, “the stroke and the thrust”. Gastev used a metronome to teach “the biomechanics of the stroke” to develop a work rhythm “with regular movements and an automatic pace” (Bedeian and Phillips, 1990, p. 30).

Gastev encountered two major difficulties: one, an inadequacy of training facilities; and two, an anti-Taylor faction. According to one observer, the Central Institute of Labor lacked stopwatches and other training aids, food for trainees, fuel for heating classrooms, and used wooden machinery to simulate factory conditions (Slonim, 1976, p. 382). Another study of Gastev’s efforts reported that there were many committees to study Taylor’s methods, but the results in practice had been “insignificant” (*American Machinist*, 1922, p. 122). With inadequate equipment and facilities, Gastev’s efforts were confined to the study institutes, never achieving implementation in practice. NOT was not working.

The anti-Taylor faction was a product of an inner Communist Party controversy between Lenin and the “Left Communists”. Those to the left of Lenin felt that capitalist means, such as scientific management, could not be used to achieve socialist ends, but must be fundamentally altered to serve the worker’s interests. Lenin denounced the Left Communists in 1918 as “absolutely disloyal, [and engaging in] uncomradely actions that violate party discipline” (Lenin, 1965b, p. 202). In 1920, Lenin wrote a lengthy article calling Left Communism “an infantile disorder” (Lenin, 1972, pp. 21-38). The Left Communists appeared in 1921 at the All-Russian Scientific Management Conference, organized by Leon Trotsky, and held in Moscow. Pavel Kerzhentsev, a Left Communist and the leading critic of Gastev, proposed an alternative to Gastev’s work. Kerzhentsev argued that Taylorism was “unscientific” and would never fulfill the objectives of “scientific Marxism” (Bailes, 1977, pp. 389-90). The problem, as viewed by the Left Communists, was Gastev’s focus on the “narrow base” of studying workers and neglecting the more general aspects of production in a planned socialist state. The dispute was not resolved in 1921, but the Central Council of Scientific Organization of Labor (SOVNOT) was formed to “reorganize the whole industrial system and to develop a coherent program of production” (Devinat, 1927, p. 68). SOVNOT was to direct and coordinate the efforts of local and regional institutes, and to centralize the efforts of 60 institutes in the study of work, the training of workers, and the application of time and motion study.

SOVNOT did not, however, reconcile the contending views of Gastev and Kerzhentsev. Another All-Russian Scientific Management Conference was held in Moscow in 1924. The pro-Taylor (Gastev) and anti-Taylor (Kerzhentsev) groups put forth their platforms. Because chairman Lenin was pro-Taylor, Gastev’s Central Institute of Labor received the conference’s seal of approval. Kerzhentsev’s argument that Gastev’s institutes had “wasted three years of research” was rejected (Bailes, 1977, p. 391).

In addition to the failings of Gastev's efforts, another scientific management idea was tried and proved unsuccessful. Taylor envisioned an organization that used functional experts who would advise workers on various technical problems. This idea of "functional foremen" found favor in Russia during the 1920s, where there were few qualified managers who were ideologically trustworthy. The Russians adopted a system of technical supervision that lodged authority in the hands of technical specialists, each of whom was responsible for some phase of factory work. For example, a planning staff laid out a production program, a supply staff provided materials, and cost accounting, standards, personnel, and other activities were under specialists, much as Taylor had recommended. Specialists enabled those who were loyal, but untrained in managing, to meet pressing production problems. Plant managers complained to G.K. Ordzhonikidze, chair of the Supreme Council of the National Economy, that the experts were usurping their authority. Ordzhonikidze ordered the practice abandoned, and the plants assumed a more traditional line-staff structure of authority (Bedeian and Phillips, 1990, p. 31).

Shock-workers and Stakhanovites

The outcome of the 1924 conference affirmed Gastev's role in moving the economy toward greater productivity through the adoption of Taylor's time study and Frank Gilbreth's motion study. The doubting followers of Pavel Kerzhentsev were unable to derail Gastev's institutes even though the results had been non-existent, or negligible at best.

Taylor (1895) had stressed the importance of time study to discover proper work methods and tools. Jobs were to be studied, motions analyzed and timed, and allowances would be made for workers' experience on the job, interruptions or unavoidable delays, and for rest periods. From this, a performance standard would be established, based on study and analysis, rather than relying on traditional rule-of-thumb hunches about how much work workers were expected to produce. Incentives, that is, pay for performance plans such as a piece-rate, were not to begin until after a proper performance standard had been established. Leon Trotsky, second only to Lenin in proposing scientific management methods, employed Royal Keely in May, 1919 to assist in the transition. Keely, an American consulting engineer who had worked with Taylor, spent two years studying Russian factories and working conditions (Wren, 1980, p. 3). He reported to Trotsky that loafing accounted for 50 percent of all time on the job in industry (Hughes, 1989, p. 257). This figure exceeded what Taylor had found as "soldiering" in American manufacturing. Trotsky and Lenin proceeded to make the punishment for malingering more severe, relying on the proverbial stick rather than the carrot.

Keely's years in Russia had negative side effects. He was arrested as he attempted to leave the country, no reasons were given, no charges made, but he lingered in a Russian prison for one year before his trial. The verdict was he

was guilty of spying, and he was sentenced to two years in a labor camp. His plight was resolved by diplomatic negotiations, and he returned to the USA. He wrote a series of articles in the *American Machinist* (Keely, 1921a, b, c, d, e) that described the bad housing conditions, food shortages, censorship of the press, and the oppression of workers and peasants. Readers, if they believed Keely, would not be eager to help Russia solve its productivity problems.

Although Keely observed widespread loafing, there were reports of bottom-up attempts to produce more. Podkolzin (1968, p. 100) reported a “new socialist attitude” in a worker volunteer movement that began in 1919 in a locomotive repair shop. The workers spent extra hours on the job to keep the trains running, and this practice continued week after week. The worker volunteers were called *udarniks*, literally shock-workers, whose enthusiasm for overtime work spread to other industries. The shock-workers were one form of a worker-originated speed-up, rather than the careful study of workers’ jobs.

A severe famine in 1921 caused Lenin to re-think national goals. The American Relief Association, headed by Herbert Hoover (then Secretary of Commerce) provided the food and supplies that saved the Bolshevik regime. Following the 1921 famine, Lenin recognized the lack of progress and developed his new economic policy (NEP) to slow collectivization, and to restore numerous market mechanisms, while retaining state ownership of utilities and the steel, mining, and transportation industries. It was a pause in policy, but NEP enabled the economy to regain some of its pre-war vigor: by 1926 the productive level of 1913 had been regained (Nove, 1975).

Lenin died in 1924, but Trotsky continued to promote scientific management until his exile. Lenin’s successor, Joseph Stalin, abolished NEP, discouraged private sector manufacturing, and resumed collectivization of farms. Emphasis on piece-work continued and, by 1926, over 60 percent of the workers were being paid based on performance (Polakov, 1932); by 1931, this figure had reached 75 percent. It was also reported that these piece-rate incentive plans had been introduced without the preliminary time-and-motion study required by Taylor and Gilbreth. Work measurement had not reached the worker level, and the drive to increase productivity relied on worker initiatives – such as the Stakhanovites.

Alexei A. Stakhanov became the household name for worker initiated performance increases. Born to a poor peasant family, Stakhanov became qualified in the use of a pneumatic drill to break coal loose from veins in coalmines. Then:

In 1935, while working as a coal miner, Stakhanov performed a superhuman feat. During one shift, he cut 102 tons of coal – 15 times the normal output. He did this by arranging his work team so that he alone used the automatic coal-cutting tool, while other members of his team did propping and other subsidiary tasks. The work was thus based on a specialized division of labour. In this respect, it was similar to Taylor’s idea that work should be limited to a single leading function (Bedeian and Phillips, 1990, p. 32).

Stakhanov became a model for other workers, and meetings and addresses were held to describe and promote his good works.

By July 1938, 29 percent of all union members in the Soviet Union were designated Stakhanovites. By 1939, this number had risen to 34 percent of all union members (who comprised 80 percent of the workforce). Payment for performance was given to Stakhanovites and this could range from 130 to 150 percent of their normal pay. In addition to increased pay, they received better jobs, and social and political recognition. V.M. Molotov spoke at the first All-Union Conference of Stakhanovites in 1936, and Joseph Stalin continued to praise them as model Soviet workers. The Stakhanovites were a new management rhetoric, stressing the selflessness of hard work and devotion to the state.

The higher productivity of the Stakhanovites came from extra efforts in workplace competition. This, however, found displeasure among plant managers who complained that these over-achievers upset the flow of work among factory departments, broke rules regarding safety, quality of work suffered, and the overwork of machinery led to mechanical breakdowns.

What Alexei Stakhanov started became a national norm. G.K. Ordzhonikidze, Chair of the Supreme Council of the National Economy placed Alexei Gastev in charge of training Stakhanovites (Bailes, 1977, p. 393). In Gastev's institutes, worker cadres would be trained to be rate-busters, and to go into the factories as an example to others. With shock-workers and Stakhanovites, scientific management precepts about the careful study and analysis of the appropriate work methods and tools were being violated.

The five-year plans

On the eve of the first five-year plan in 1929, Russian management was still characterized by shared authority, the avoidance of accountability, poor planning, a lack of adequate performance standards and measures, and a "poor system of management" in general (Zaleski, 1971, p. 123). In 1929, the Party Central Committee redefined the basic unit of industrial management as the enterprise. It was to be independent within the framework of financial and production planning. Each factory would set its own plans, keep its accounts, and measure its efficiency by comparing planned with actual performance. The Supreme Council of the National Economy (VSNKH, or "Vesenkah"), under the chairmanship of G.K. Ordzhonikidze, became the central group for industrial planning, coordination of industrial branches, and control of plan fulfillment.

National planning on such a scale had never before existed and, once again, Western know-how was sought. Henry L. Gantt, considered a Taylor disciple, but an independent consulting engineer, had developed a relatively simple chart for planning and controlling work, the Gantt chart. Gantt died in 1919, but Wallace Clark and Walter N. Polakov had prepared the manual on Gantt charting and it was translated into numerous languages, including Russian.

Ordzhonikidze invited Polakov to become a consultant on using the Gantt chart.

Walter Nicholas Polakov was born in Luga, Russia in 1879, and educated as a mechanical engineer at the Royal Institute of Technology in Dresden (Saxony) and in psychology and industrial hygiene at the University of Moscow. He and his wife and children fled Russia following the 1905 revolution, emigrating to the USA where he learned English and used his engineering skills to get a job at the American Locomotive Company. There he met Gantt, who was consulting with the company. Polakov would eventually work in Gantt's firm before launching his own consulting company.

Polakov arrived in his native land in December 1929 and remained until May 1931. Polakov began with one factory to demonstrate to Russian managers how Gantt charts, such as daily-order-of-work charts, machine-record charts, man-record charts, and progress charts, could improve planning. From his successful demonstration of Gantt charting, Polakov moved to other assignments at the direction of Vesenkah. It is not known how many installations he made, but his work was praised at Russia's First Conference of Industrial Executives (February, 1931) as "warmly recommended" for all Soviet enterprises. It was reported that the Gantt chart method had produced an annual savings of one million rubles (approx. \$250,000 in 1930) in a machine tool plant, which also reported a 400 percent increase in output. A Vesenkah official said that Russian plants were using the Gantt technique to report to their "headquarters" (i.e. "trust" or regional departments) and, in turn, the headquarters units used them to report to the central government. Polakov was the only person to succeed in installing a scientific management technique in Russia (Wren, 1980).

After Polakov left, Vesenkah tried another Gantt expert, Wallace Clark, to engage in a contract to follow up on Polakov's work. Clark spent a week in Russia and reported that he could not accept a contract to work there because:

You can't talk to people who make basic decisions. These are made chiefly from a political point of view. The success of any planning would be at the mercy of political changes and would not depend on thorough and conscientious work. In any organization that is political, the worker's attention is diverted from doing a good job to standing in with those who have the power to remove them (Clark, 1957, p. 110).

Clark's refusal left Polakov as the only scientific management consultant used by the USSR.

Clark must have been prescient: in 1934 events sounded the death knell for scientific management in Russia. A great purge of managers, engineers, scientists, and military personnel began at Stalin's direction. The Central Administrative Office for Prison Camps (GULAG) had quotas of "workers" to provide for factories, mines, construction, and other work places. By 1938, an estimated 8-9 million persons were assigned by GULAG authorities to work in Russian industry (Blackwell, 1970, p. 114). G.K. Ordzhonikidze, the Vesenkah

Chief who had stopped the use of Taylor's functional management and who had hired Polakov, committed suicide in 1937 (Solzhenitsyn, 1973, p. 630). Alexei Gastev was executed in Stalin's purge (Chanvier, 1975, p. 205); the *Large Soviet Encyclopedia* provides the date of his death as 1941 (Traub, 1978, p. 86). What began with Lenin's hatred, then received his praise as a means to Soviet progress, was dead under his successor.

Conclusions

The idea that Lenin was Taylorized requires a historical clarification. Lenin's initial distaste for scientific management was in tune with the socialist party line elsewhere, that it was one more device to exploit the workers. Ascending to power, Lenin advocated Taylor's ideas as necessary to advance socialism. Was this a leader's rhetoric? Did Lenin's Taylorization succeed? In 1927, Paul Devinat, an official of the International Labor Office in Geneva, was commissioned to study the international impact of scientific management. In his report, Devinat judged the Russians long on management theory, but short on applications in practice. The proceedings of the All-Russian Scientific Management Conferences (1921 and 1924) were deemed "more or less confined to the realm of theory, and little allusion was made to practical experiments" (Devinat, 1927, p. 67). Attempted massive educational efforts were impressive but "the practical results secured by these various activities may fall short of what might be expected in view of the imposing appearance of the organization of the movements in Russia" (Devinat, 1927, p. 88). Devinat found that the Gilbreths were more popular in Russia than Taylor, but that the Russian version of time-and-motion study had been confined to the laboratory and had made little headway in factory practice. Filipetti's (1946, p. 199) assessment was that "chief reliance for improvement in output was placed on the workers themselves" rather than in improved work methods. Examples would be the shock-workers and the Stakhanovites being used to stimulate productivity. The Bolsheviks were enamored with the idea of efficiency, improved productivity, and scientific job study, but the only Taylor System idea that gained widespread acceptance was the notion of functional foremanship, and this was later abandoned. The other techniques of scientific management rarely made it from institutional laboratories to factory floors.

Why? We take the position that Lenin was playing a political rather than an economic role. Scientific management was in fashion, an internationally known movement to improve productivity, and one that had demonstrated successes in other lands. Defending the new regime, holding off the Left Communists, consolidating the power of Lenin's Bolsheviks, and assuring those in doubt that socialism would succeed, were uppermost in the mind of Lenin and his followers. Advocating scientific management sent a clear message: your new leaders are progressive, seeking the most modern knowledge available; they are in the vanguard of socialist revolution that can succeed by the use of the

latest management techniques; and, although the capitalists use this technique to exploit workers, it will be a tool of progress when placed in the hands of workers. Lenin's advocacy was rhetoric, not realism; slogans, not substance.

Was scientific management compatible with a socialist economy? The historical record in this case suggests otherwise. There are fundamental ideological differences between capitalistic and socialistic socio-economic systems, and the prospects for a rapprochement appear slim. Scientific management, for example, posed an ideological dilemma for the Russians because Taylor saw a mutuality of interests between labor and management (i.e. the "mental revolution"), whereas the Bolsheviks saw a conflict between owning and working classes. Furthermore, scientific management required the systematic study of jobs, using data to set standards, and rewarding workers for increased productivity. In contrast, the Russians advocated the use of time study, established institutes for this purpose, but rarely used time study as intended. Polakov (1932) reported that the Russians relied on piece-rate incentives to stimulate productivity, but that the rates had not been set in a manner such as scientific management would require. Finally, decisions regarding work standards and output were made on the basis of national priorities as determined by the Communist Party rather than by any notion of a systematically designed production-marketing system. Hence Wallace Clark would turn down a consulting contract with the Russians because he felt that any decisions would be politically motivated.

The Gantt chart was ideologically neutral, and formed the basis for national five-year plans and factory planning. In other techniques, Taylor's precepts were violated. Where he proposed setting standards based on study and analysis, the shock-workers and Stakhanovites became the Soviet models; and where he proposed cooperation, discipline became more rigid. Where there are ideological differences, such as in labor-management relations and human relations, Leninism and Stalinism followed the beat of a different drummer.

In conclusion, Lenin's advocacy of scientific management was based on political expediency, and not a true test of the possibilities of scientific management. It would be misleading to pass on to future generations the notion that the practice of scientific management in Russia followed Lenin's advocacy of Taylorization.

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