The Hawthorne legacy

A reassessment of the impact of the Hawthorne studies on management scholarship, 1930-1958

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Abstract

Purpose – This paper seeks to analyze the contribution that the Hawthorne studies made to the discipline of management. The recent scholarly trend has been to attack the Hawthorne studies on the grounds of methodology and originality. However, the only way to accurately view the Hawthorne studies is to recreate the intellectual environment in which the studies were conducted. Why did this version of human relations rather than Dennison's or Williams's emerge as the scholarly contribution?

Design/methodology/approach – Both primary and secondary sources were utilized in the research. The focus was from the time period of 1930 to 1958. More contemporary work was considered as well.

Findings – Contemporary scholars viewed Hawthorne as being more thorough and complete than previous work. They also viewed the study as a contribution in light of some methodological issues and political biases.

Practical implications – Performing temporal analysis allows the perceived strengths and weaknesses of scholarly works to become more apparent.

Originality/value – Previous accounts of the Hawthorne studies have mostly studied their impact on practitioners. This study examines the impact on scholars.

Keywords Hawthorne studies, Historical manuscripts, Management history, Management techniques, Management research

Paper type Research paper

Introduction

The Hawthorne studies (1924-1932) are the most famous of all management research but also the most criticized (Bedeian and Wren, 2001). The recent trend has been to attack both the studies' methodological shortcomings and originality. This trend should not surprise scholars, as the more original and important a study, the greater the likelihood that the study will be criticized, especially as time passes (Sonnenfeld, 1985). According to Sonnenfeld, the criticism often comes because either the younger scholars hope to gain fame by attacking the studies or because the creator is no longer around to defend them. Accordingly, the perceived value of a research project or a theoretical advancement often does not outlive its creators. The Hawthorne studies are no exception. This paper is not a defense of the Hawthorne studies, nor a synopsis of work of the individual researchers – Elton Mayo, T.N. Whitehead, Fritz Roethlisberger, L.J. Henderson, and George Homans. Rather its purpose is far more specific: to point out how contemporaries perceived the Hawthorne studies. Through an analysis of contemporary literature, we hope to allow modern scholars to understand how the Hawthorne studies contributed to contemporary management thought.

Several scholars have attacked the Hawthorne studies for lacking originality (Bruce, 2006; Wren, 1987). Others (O'Connor, 1999) have accused the Hawthorne researchers of taking advantage of a time of great economic uncertainty to increase their own respectability. Still others have called them consultants rather than researching scholars (Yorks and Whitsett, 1985). There is a great deal of truth to these and other charges levied at the Hawthorne studies. For example, Greenwood *et al.* (1983) researched whether or not the claims of Whitehead that the participants did not care about their pay. Based on interviews from participants many years later, it appeared that the participants' incomes were often their families' most important wage. In addition, Wren (1987) is absolutely correct in claiming that the Hawthorne researchers should have quoted the work of Williams (1920), Mathewson (1931), and Taylor (1911) – for they did anticipate many of the findings unearthed at Hawthorne. Other scholars (e.g. Carey, 1967; Parsons, 1974) have noted that the researchers had methodological problems; Carey viewed the studies as scientifically worthless.

The extent of this historical and methodological criticism begs several questions to be asked – the most important was why did Hawthorne emerge as the dominant study of human relations, rather than Whiting Williams or the executive Henry Dennison's work? Why did scholars follow the Harvard approach led by Australian Elton Mayo, rather than Williams or Dennison? This question has several components, as Hawthorne could be examined as either a scholarly or consulting contribution. I examine the scholarly side of the equation, and seek to examine the temporal context from which the Hawthorne studies emerged. In doing so, I examine scholarly research from the first reports of the Hawthorne study until the first re-evaluation of the critics.

The temporal context in which the Hawthorne researchers worked will provide the best explanation on how scholars saw the contribution of Hawthorne (Bedeian, 1998). Kuhn (1970) argued that understanding the temporal context is the most effective way to judge the scientific discovery, as it would be unfair to judge previous scholars on the basis of what we know now. For example, we venerate Copernicus as a genius and we view his doubters as ill informed because his model was generally correct. As Kuhn notes, Copernicus's model left some important questions unanswered and the technology necessary to prove Copernicus's ideas correct did not then exist, so his contemporaries had reason to reject his paradigm. A generation of scholars, however, led by Galileo and Kepler, built on the Copernican framework by providing the empirical evidence necessary to model the solar system. Similarly, the Hawthorne studies must be viewed in comparison with contemporary scholarship and the impact that these other studies had on research. Therefore, rather than judging the Hawthorne studies from a modern viewpoint, we must judge them in comparison with other studies of that time period to understand why this particular study, rather than Williams's (1920) work, became the seminal study (Kuhn, 1970).

An analysis of contemporary commentary and book reviews of the various Hawthorne studies demonstrates that reviewers were often aware of the brilliance and originality of the research, but at the same time, recognized its ideological and methodological limitations. Many of the critics sought either to redefine the Hawthorne studies in different or less ideological terms or sought to use some of the Hawthorne concepts and methods to study other workplace problems. Whereas reviews can be contradictory, most of the reviews praised the Hawthorne studies for their originality, use of new methods and overall empirical thrust.

If, as Merton (1973) suggests, discoveries are products of their time, only through reconstructing the past can we truly gauge a work's originality and why the Hawthorne version of human relations, rather than Williams's version, became the standard. In doing so, this paper asks several empirical questions to explore how contemporaries felt about Hawthorne and why it was the most important version of human relations. How did contemporary scholars perceive the Hawthorne studies? Why did this version of human relations dominate the scholarly literature? How did contemporaries perceive the methods of the Hawthorne studies? How did various commentators view the political and managerial implications of the work?

Original work

Several historians (e.g. Bruce, 2006; Wren, 2005) claimed recently that the Hawthorne researches were not as original as contemporaries suggested. Indeed, Wren (2005) noted that the Hawthorne studies did not really discover anything new: Williams had discovered most of the ideas that were believed to be initially derived from the Hawthorne studies. Williams was a non-academic writer who would go undercover to find out how workers interacted. He found that workers would form groups to protect themselves from management. In *White Collar Hobo*, Wren criticizes the Hawthorne researchers for being unaware of Williams's reports, which he argues would have produced a far different study. Wren also quotes Gilson (1940) who believed that a good deal of time and energy would not have been wasted had the Hawthorne researchers been aware of the "experiences of others" (p. 98). One of the "others" was her good friend Williams (Wren, 1987).

Wren (2005) further argues that the discovery of the informal organization, soldiering, and the restriction output had occurred years before by Williams, Taylor and Mathewson (Wren, 2005). According to Wren, the major reason Williams's work was not as highly regarded as the Hawthorne researchers' was that Williams lacked an affiliation with a prestigious school like Harvard. Building on Wren's claims that the Hawthorne research did not represent anything new to the management discipline, Bruce (2006) argues that although Henry Dennison and others developed the field of human relations, Mayo's concepts offered management a far more subtle means of control. Until Wren rediscovered him, Whiting Williams had been all but forgotten, not warranting a mention in George's (1972) history of management. Williams's absence from the historical record was surprising, given his importance during the 1920s. Perhaps one of the reasons why Williams may not have received his due was that his work was published during the era of scientific management, when scholars were concerned with different issues.

Yet, it would be wrong to assume that contemporaries were unaware of Williams's (1920) or Mathewson's (1931) work. Contemporaries felt that the general difference between Williams/Mathewson and Hawthorne was that the Hawthorne studies gathered more evidence under scientific conditions, and combined several different academic fields to develop new explanations for the challenges in industrial life such as the restriction of output. For example, the contribution of the Hawthorne researchers was that it was among the first studies to attempt to quantify a worker's frustration level, unlike Williams's more impressionistic work (Lynd, 1939). Furthermore, the consensus among scholars was that the works of Williams and Mathewson were flawed and limited in scope. For example, scholars had noted that Mathewson's work

contained statistical flaws (Stone, 1931) and that it was conducted in an uncontrolled experiment. In comparison to Mathewson's statistical flaws, the Hawthorne studies were praised for their statistical sophistication (Betram, 1939). In addition, Williams's work was considered brilliant, but he lacked the follow-through to prove his arguments. His contemporaries praised the Hawthorne studies, because they provided rigorous detail in their analysis of worker interaction (Elliott, 1934; Miller and Form, 1951).

Hawthorne's second contribution was that it provided researchers with a more focused analysis of workers' interactions within the organization, such as the social interaction between workers and supervisors. Contemporaries understood that the work of the Hawthorne researchers was not only more rigorous than the work of Williams (Thompson, 1940), but also provided new paths and understandings for future research. Whether the contribution was providing the concept of the man in the middle or exploring the dynamics of social influence on production (Miller and Form, 1951; Whyte, 1956), scholars noted that the Hawthorne studies provided a new and significant break from the work of Williams and other contemporaries. Hughes (1958) summed up this idea when he conceded that the original and pioneering effort of industrial sociology was Williams's (1920) *What's on the Worker's Mind*. He also noted, however, that Mayo's group made the most influential contribution because it focused attention squarely on the internal organization so that it became the dominant concern of industrial sociology. The general conclusion from both Mayo and Williams was that workers' motivation a combination of both monetary and non-monetary benefits (Hughes, 1947; Kalven, 1947; Parsons, 1940; Rogers, 1946).

The third contribution of the Hawthorne studies was its use of sociological and psychological concepts to challenge the foundations of economic theory (Park, 1934). Park's sentiment received its most well developed argument in Lynd (1939), who argued that for social science to receive more recognition it must be fully integrated into one unified social science or scholars would lose relevance in society. A fully integrated science would come from scholars studying the same phenomena from different perspectives, each being aware of the terminology and concepts from the other social sciences. Although Lynd did not approve of the capitalistic sentiments behind the research, the Hawthorne studies could be viewed as a fulfillment of Lynd's vision regarding a fully integrated social science (Chase, 1946; Gillespie, 1991; Hart, 1943). Mayo had intended to use the studies as a bridge to build a real integrated social science, to promote social peace and prosperity (Homans, 1949). Other scholars shared Mayo's view that the Hawthorne studies could be a bridge to peace and prosperity. For instance, Hart (1943, p. 151) viewed the Hawthorne researchers attempt to eliminate the growing compartmentalization of the social sciences to be as revolutionary as "Galileo's and Mendel's", a fact not lost on other scholars (Bladen, 1948; Chester, 1946; Park, 1934; Tead, 1930; Weiss, 1949).

The fact that the Hawthorne studies would have such a broad appeal might surprise the modern scholar, who thinks that the studies were mostly inspired by the ideas of Vilfredo Pareto's concept of the irrational man, which they were not. Indeed, some scholars at the time overstated the influence of Pareto on the research and criticized them on that basis (Friedmann, 1955; Hacker, 1955; Knox, 1955). Keller (1984) argued that the Harvard connection provided legitimacy to Pareto's work. Yet contrary to Keller, the Mayo group's embrace of Pareto was as much a hindrance as it was a

blessing – even in their social status on the Harvard campus (Schlesinger, 2000). Whyte (1994), Mayo (Trahair, 1984) and Roethlisberger (1977) were never Pareto disciples. Whitehead and Henderson (Roethlisberger, 1977) were, but to consider the entire Harvard group Pareto inspired is an overstatement.

Mayo was influenced by famous psychologists, and sociologists, such as Janet, Freud, Piaget, and Durkheim. Mayo's training was broad and he read a wide variety of scholarly works. His prime influence may have been Janet; one of the few books that Mayo published during his time at Harvard was a book that introduced the theories of Janet. At least one reviewer faulted the work for being inspired more by Freud – who the reviewer regarded as an apostate (Hart, 1949). Homans was a proponent of Pareto and, outside of Henderson and Whitehead; he may have been the only one under the direct influence of Pareto. Indeed, Homans's selection to the prestigious Society of Fellows at Harvard was due to a book he published on Pareto (Homans, 1984). Therefore, it is important to view the Hawthorne studies as being influenced by many social science fields and thinkers, not just sociology and Pareto.

Despite the desires of Lynd (1937), Hart (1943), Chase (1946) and others, the unification of the social sciences failed. Social sciences were too idiosyncratic in the 1930s to be united, due to their different assumptions, jargon, and research methods. That being the case, other scholars saw the Hawthorne studies as a means of strengthening their own disciplines. Scholars from political science (De Grazia, 1951), public administration (Platt, 1947), and industrial sociology (Parsons and Barber, 1948) admired the contributions of the Hawthorne studies. Parsons and Barber went so far to state that the Hawthorne studies were the pre-eminent work of scholarship in their respective fields. Whereas there were important differences in regards to approach and analysis, both sociometrics (Rogers, 1946) and industrial psychology (Hart, 1943; Homans, 1949) were indebted to the study.

Initially, Hugo Munsterberg and Frank Gilbreth attempted to explain physical fatigue through completely physical means (Wren, 2005). The inability to explain physical fatigue left the door open for the Hawthorne studies to explain physical fatigue using the informal group, a group of workers that functioned as a clique. Unlike Hugo Munsterberg and Frank Gilbreth, the Hawthorne researchers found that the informal group deeply mattered in ensuring the highest degree of performance from their employees.

While the Mayo group's arguments were similar to Williams, they had the advantage of publishing their work during a period of economic upheaval. Williams's (1920) work was published during a time when Taylor's scientific management was still at the height of its influence. Perhaps the remarkable prosperity of the 1920s did not allow economic man to be addressed or, as this paper argues, that Williams did not empirically demonstrate his findings. In the subsequent decades of the 1930s and 1940s, scholars were willing to focus on different aspects of worker motivation.

The establishment of an intellectual movement takes more than the publishing of a single study, no matter how brilliant that study may be. The Mayo group had their ideas defined and redefined either by their students or by different fields. Establishing a field requires students, colleagues, and other interested parties to challenge your discovery (Kuhn, 1970). It also requires adhering to professional norms. For instance, the complementary concepts of the informal group and group dynamics that Mayo and Rogers (Rogers, 1942) initially developed were used, redefined and applied by new

academic groups such as the Committee on Human Relations at the University of Chicago (Parsons and Barber, 1948). The new program of industrial sociology at University of Chicago featured several professors with connections to the Mayo group such as Whyte and Warner (Gardner and Whyte, 1946). In addition to the Chicago group, the Hawthorne researchers also had a strong connection to the ongoing research of the Lewin group at Iowa who studied the psychological inner workings of groups (Davis, 1957). This connection was in part derived from similar outlooks on democratic and authoritarian leadership (Parker-Weiss, 1958). Finally, the concept of the small group interactions inspired educators (Horwitz, 1953), socio-metricians and other social scientists (Rogers, 1946), who challenged the view that groups were simply a loose collection of individuals motivated by nothing other than self-interest. As noted from the citations in this paragraph, contemporaries were well aware of the influence that the Hawthorne studies had on building a new field – industrial sociology.

Problems with methods

Scholars have criticized the design (Argyle, 1953; Carey, 1967), arguing that the increased output could be explained by monetary factors (Parsons, 1974). Today, the Hawthorne studies are perhaps more recognized for their methodological problems and their flawed arguments rather than for their significant findings. However, scholars at the time recognized some of Hawthorne's methodological limits, e.g. such as theoretical limits, situational bias, and a paucity of evidence regarding worker's home life. In other words, although contemporary scholars were aware of limitations regarding the Hawthorne finding, they still recognized the Hawthorne studies as an important contribution. The question is why, despite methodological problems, they recognized the Hawthorne studies as an important contribution?

In terms of research methodology, several scholars (Briefs, 1940; Moore, 1947a, b; Viteles, 1953) noted that the women selected for the study were not selected at random and that Hawthorne's findings were limited by the sample size. The small number of operators studied created some serious questions relating to the generalizability of the study. For example, Briefs (1940) questioned the external validity of the sample as the women formed relationships that they might not have if the sample size had been larger. Another major concern was that the sample size was too limited to make a judgment regarding a full population (Grodzins, 1951; Hughes, 1958) and did not sufficiently consider various minority populations such as African-Americans (Moore, 1947b). On the other hand, scholars at the time also understood that the sample size provided strength in that it allowed for the creation of new research questions. Although Briefs did criticize the small sample size, he also noted the novel approach allowed for other interesting ideas to emerge. Florence (1938) argued that the small sample size provided an advantage because it effectively allowed for workers' activities to be studied in great detail, leading to the serendipitous discovery of the informal group. Moore (1947b) criticized the study for not including African-Americans. It must be noted, however, that the Hawthorne studies were conducted before the great migration of African-Americans to the north, which would change forever the composition of society during World War II. This work would be conducted by Hughes (1946, 1949), who would examine and analyze the interaction between various ethnic groups, including African-Americans, both within informal groups and within management.

Industrial psychologists, questioned whether the idiosyncratic elements of individual interactions of the Hawthorne studies could be replicated, creating a bias (Viteles, 1941, 1953). In contrast, sociologists believed that industrial sociologists created a situational bias when they failed to note the difference between the worker at home and what outside social interactions impacted his performance (Friedmann *et al.*, 1949; Kornhauser, 1934), creating perhaps a much richer study (Kornhauser, 1934). Contemporary scholars hypothesized (Viteles, 1953) that researchers would have a difficult time understanding the workers, anticipating a criticism that would be raised 30 years later (Greenwood *et al.*, 1983). They suggested that this would occur because of an inherent cultural gulf between worker and researcher such that workers might tell researchers what the researchers wanted to hear, or nothing at all (Schneider, 1950). This difference in methods and interests created a rift between sociologists and industrial sociology that was never resolved.

Contemporary scholars also noted that economic benefits perhaps motivated the Hawthorne workers more than social benefits (Viteles, 1941). For example, Roy (1952) took umbrage with people who argued that workers did not care about money, because the workers he had studied functioned like "calculating machines" in determining output and their daily pay. Yet, Viteles noted later that criticisms regarding financial rewards were incorrect because they did not operate at the same strength everywhere and every time; thus weakening the economic explanation of worker/management interactions (Viteles, 1953). Future scholars would have to research and theorize, using concepts of sociology and psychology, to develop the link between economic and social motivation (Weiss, 1949).

Homans, a student of Mayo and Whitehead, provided what may have been an accurate statement regarding the limits of the discoveries of the Hawthorne studies. Specifically, Homans noted that the experiments demonstrated that other kinds of things were too vague; maybe "factors" besides the raw physical work conditions determine output. This, of course, had been a problem that had plagued management since the time of Taylor. Homans's point hits on something that has been lost in history. While he notes that his colleagues felt that the experiment had failed, he argues that through the process revealed by the experiment, they were able to demonstrate the worker output of the group was largely dependent on the informal group. This could be attributed to social pressures that individuals placed on their fellow workers to restrict output or to protect themselves from management. In Homans's phrase, the Hawthorne studies provided the basis of a science, "the experiments of light," which under some experimental control could provide the basis which would become the "experiments of proof," which would determine the effective relationships between two variables (Homans, 1949).

By 1956, scholars had a far better understanding of the various forces beyond the direct supervisor that affected workers (Whyte, 1956). The dynamics of group interaction in industrial settings which the Hawthorne researchers examined led to a series of studies that included department stores, hotels, restaurants, railroads, insurance companies, and banks (Moore, 1947a; Whyte, 1956). Whyte noted that whatever merits the initial Hawthorne approach had regarding the breakdown of the traditional order, Mayo, and his research group's work was too much of a broadside to allow development of accurate inferences concerning the influences between interactions within the industrial plant and the surrounding society. Later, scholars had a better

understanding of the interaction of society and the industrial plant than did Mayo, but each of them was indebted to the techniques that the Hawthorne group had developed. For example, Hughes, Jacobson/Rainwater, and Collins (Collins, 1946; Hughes, 1946; Jacobson and Rainwater, 1953) examined how racial and ethnic interactions played out in the workforce. Warner and Low (1947) showed how technology and unions changed the interactions of workers at the plant. Work in the 1950s would bring studies on the bank (Argyris, 1954) and among salesmen (Lombard, 1955). Part of the contribution that Hawthorne studies made was that their work was able to be expanded and tested in different circumstances, in order to demonstrate the junction between material and immaterial benefits, junction modern scholars still examine.

Political and moral concerns

Yet another scholarly critic O'Connor(1999) argued that the Harvard Business School sold the Hawthorne studies as a cure for the ills of the Great Depression and that this marketing allowed the Harvard Business School to become a legitimate institution. Her comments are largely correct in terms of creating legitimacy for business schools in general and the Harvard Business School in particular. Nevertheless, scholars from sociology and psychology were not happy with the consulting implications of the work.

The Hawthorne researchers were blasted for being totalitarians (Sheppard, 1950), fascists (Lynd, 1937), encouraging Nazism (Kimball, 1946), capitalists (Lynd, 1937), "cow sociologists" (Bell, 1947a) and anti unionists (Bendix and Fisher, 1949). Perhaps the harshest of all critics was Grodzins (1951), who argued that the work encouraged manipulative techniques that are designed to keep workers under control. One of Grodzins's major arguments is that applied scientists – bomb makers, army psychologists, human relations scholars – confuse science with morality. Grodzins believed that they develop brilliant concepts, but those concepts do not bring anything of worth to humanity. Mayo's advocacy and general arguments became something that scholars were able to berate (Dunlop and Whyte, 1950). Even those scholars (Warner and Low, 1947; Whyte, 1948) who basically described interactions within an industrial setting and how change occurred were criticized because they assumed the existence of capitalism (Bell, 1947b). Although the Hawthorne studies increased practitioner respect for the Harvard Business School, many scholars were angered by their managerial bias.

While researchers noted the brilliance of the Hawthorne research (Friedmann, 1955) and recognized its intellectual contribution (Kimball, 1946), they could not embrace it fully because of the underlying differences in assumptions and viewpoints regarding the nature of capitalism. Most critics of the Hawthorne studies were (like Friedmann, Lynd, and Bell) to the left politically – ranging from firm believers in industrial democracy to socialists. Industrial sociology followed several different courses, only one of which one was the "human relations" or Harvard Business School approach (Sorensen, 1951). These courses became two schools. The two schools of industrial sociology emerged: one based on the concepts derived from Emile Durkheim, the other from Karl Marx. The argument between these conflicting schools was that one viewed capitalism as a blessing and the other desired a more socialistic society (Stone, 1952). This breach made some scholars believe that the human relations movement was created merely to "manipulate and control" workers to increase production (Koivisto, 1953).

Some scholars believed that human relations movement was designed to drive workers away from unions (Gilson, 1940; Knowles, 1955). This gap in research occurred

because scholars felt that Mayo *et al.* did not consider the impact of the union on the informal work group. Attempts to paint Mayo as a slave driver failed because Mayo renounced the harsher and more oppressive forms of supervision (Freeman, 1936). In contrast, the historic image of Mayo as a "manipulator" has endured. The Hawthorne studies did consider the role of unions, but the Hawthorne researchers sought to understand production through the informal group, rather than through the formal group, such as a union. For example, whereas Whitehead covered the role of unions, he argued that they did not help the situation because they were basically conforming to the same economic pressures as was big business (Starnes, 1937). Scott and Homans suggested that unions were not a panacea for order – they argued that only human interactions could unite the working class (Scott and Homans, 1947). In addition, the Hawthorne researches were conducted before the Hawthorne plant was unionized. Attacking Mayo *et al.* for not considering unions is akin to faulting Dmitri Mendeleev for not considering elements that had yet to be discovered when he organized the periodic table.

It is important to note, as did Landsberger, that most of the early vitriolic attacks were directed at Mayo's preaching, rather than at the important findings of the more scientific works that emanated from the Hawthorne studies, such as *Management and the Worker* (Landsberger, 1968). Many scholars admired the general methods of research and analysis that the Hawthorne studies produced, but sought to transform findings and conclusions generated from Hawthorne into something less pro management (Babchuk and Goode, 1951; Medalia and Miller, 1955). For instance, Barkin outlined a program similar to that of Human Relations, which would include unions, industrial democracy, and understanding outside values and commitments (Barkin, 1955). Some of Mayo's students and associates, such as Whyte, Warner, or Agryis, who were either students during the 1930s or otherwise connected to the Harvard Business School, would continue to analyze groups within the work environment. Furthermore, Hart wrote that the need to examine unions would have to be addressed, and this was done by Whyte and others (Hart, 1949; Powell, 1957). It is important to note that while management scholars are concerned with issues such as production, sociologists are concerned with issues such as alienation. Also, sociologists such as Moore would be indebted to the studies. The studies' theoretical attempt to explain the results influenced his development of a theory regarding cliques (Moore, 1946). In conclusion, sociologists and others noted that the merits of the study included the discovery of the informal group, observation of the interactions in the workplace, in particular how different ethnic and racial groups interacted. They paid the study the high complement of extending it using different assumptions.

Conclusion

The arguments made in this paper are not meant to point out the fallibility of Mayo's contemporaries, but to suggest that they raise some of the same issues as those of modern scholars. Rather than viewing the Hawthorne studies as the definitive answer to questions of work motivation, contemporaries wanted to redefine, limit, and understand their findings. Yet, they recognized the brilliance and thought provoking research despite the research flaws and political issues. The recognition, in turn, made Hawthorne the perceived contribution.

As historians of a social science, we must seek to understand why one research study arose and others did not. Wren (1987) has performed a notable service in their

rediscovery of Williams, because we now have a far richer and more nuanced vision of the past then we had previously. However, revisionist history is not without pitfalls, largely because it cannot be done without a serious overstatement (Levine, 1989). One of the major reasons that the Hawthorne studies have been subject to revisionism is that the advance of science and standards has called into question some of its initial findings.

Nevertheless it is wrong to claim, as Wren does, that the Hawthorne studies gained prominence at the expense of Williams or Mathewson because of the Harvard connections that Mayo possessed or the academic snobbery of the time (Wren, 2005). An evaluation of the scholarly literature indicates otherwise. When re-evaluating the work of Mayo and his group is that while the Hawthorne studies may not have been as original as modern scholars initially perceived them to be contemporary scholars were indeed aware of Williams, Dennison, and Mathewson. The most notable contemporary belief was that the experimental procedures of the Hawthorne studies largely validated the previous findings. But unlike Mathewson, Denison and Williams, the Hawthorne research appeared to be serious social science in it appeared as a controlled experiment, not an artificial one (The Yale Law Journal, 1951). Even the earliest critics of the study, e.g. Bell (1947a, b), Bendix and Fisher (1949), and Sheppard (1950) attacked Mayo's advocacy and criticized industrial sociologists as proponents of management against the interests of workers. Nevertheless, they recognized the contributions, even if they could not agree with the worldview. As mentioned previously Moore (1946), who blasted the research as unoriginal, built on their work by developing the concept of the informal group into a theory of a clique. Therefore, Hawthorne's critics, for the most part, perceived the work of Mayo *et al.* as important and original, if not ideologically pleasing.

The establishment of an intellectual community requires more than a single book, no matter how brilliant or well researched it may be. Scholars require evidence from more than a single set of observations in order to develop a potential paradigm or typology. In this situation, many of the reviewers admired the tremendous level of intellectual talent that was brought to the analysis of the Hawthorne results. They produced research that combined several different social science approaches and more thorough statistical research and analysis. They also had the personnel to defend the Hawthorne research and the commitment to expand several different fields, which provided a steady stream of reviews, rebuttals, and arguments. For instance, Homans would build theories to explain interactions in social groups; Whyte, a student of Mayo's, would research work-place phenomena the rest of his life. Innovation comes through social capital and brokering between ideas.

Burt (2004) argues that innovation comes from bridging structural holes, which allows for brokerage to occur. Brokerage is the nothing more than a fusion of different ideas and concepts being melded together through social capital. In Hawthorne studies, the multidisciplinary approach that emerged was a direct result of Henderson's and Mayo's social capital and brokerage. The Hawthorne studies appeared to create a distinct, new brand of research that would allow for a more integrated social science, a fact not lost at the time to many of the reviewers (Hart, 1943). One of the major contributions of the Hawthorne studies was that it held out hope for a while that an integrated social science could emerge.

Yet it did not. Homans (1984) spent the rest of his life in an attempt to develop a unified theory of the social sciences and to live up to the initial promise of the

Hawthorne experiments. Indeed, his magnum opus, *The Human Group,* used concepts of economics, psychology, and sociology to develop a theory of informal group interaction. Yet his quest to create a unified field was like Captain Ahab chasing the white whale – the task was simply beyond his reach. One day at Harvard, several sociologists passed around a paper, which attempted to create a unified social science by developing a terminology common to the various social sciences. Homans looked at it and exclaimed: "What, is English not good enough?" (Schlesinger, 2000). However, he discovered during the Hawthorne research, the different normative values of different academic fields, as well as their different methodological standards and assumptions, present a real hindrance to the integration of the social sciences. What did emerge, however, was a great understanding of, and drive to study workplace motivation and other organizational behaviors. A great many organizational behavior topics have their roots in the Hawthorne studies (Locke and Latham, 2004; Organ *et al.*, 2006).

Why should scholars care about the Hawthorne studies after all these years? It is not enough to say that they have influenced researchers. But by understanding the studies historical importance and how contemporary scholars perceived contribution provides the modern scholar with a template for potential contributions and insights. It allows us to have a greater understanding of our field as it currently stands. While, future research is needed to carry the Hawthorne legacy from 1958 until the present, it is clear that Hawthorne could continue to provide motivations and reasons for cross-disciplinary research, since human interactions are so complex that neither "economic (wo)men" or "sociological (wo)men" fully explain work behaviors. Yet Hawthorne proved that this type of research comes with a potential cost, as different fields have different assumptions and values that limit cross-disciplinary research; the modern scholar should take note of this.

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