MONOPOLIES AND WASTES IN THE STEEL INDUSTRY

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MONOPOLIES AND WASTES IN THE STEEL INDUSTRY

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CHAPTER I

INTRODUCTION

The Problem

The general problem involved in this study is one of resource utilization. The specific approach of this study shall take the form of an inquiry into the relation between monopoly and waste.

Scope of the Study

This study shall be confined to the steel industry. Waste is seen, from an engineering point of view, as negative efficiency. And, according to Slichter, there are three main types of efficiency: (1) engineering or physical efficiency, (2) business efficiency, and (3) social or human efficiency. This study will be directed primarily towards the second and third types of efficiency. Moreover, the types of waste treated in this study shall be limited to certain types of waste that occur during the actual processes of steel production and distribution. In other words, no attempt will be made to treat the social and economic waste resulting from actual strikes or lockouts. Subsequent distinctions on this

See comments below on the integrated multiformity of steel production.

point will be seen to present some difficulty in this study. However, an attempt will be made to confine the study of waste of human resources to those times when workers are actively engaged in production within the steel mills. The monopoly element of the study will be viewed primarily in its functional context during the actual process of steel production and distribution. Consequently, this study of the concomitant relation of monopoly and waste may be characterized as a sort of marginal study.

Validation of the Problem

Validation for undertaking a study in the relation of monopoly and waste is seen in the prime relation that monopoly per se and waste per se have to the contemporary productive processes and to the core of economic science.

Concerning the monopoly problem per se, the late President Franklin D. Roosevelt said in his message to Congress on April 29, 1938:

Unhappy events abroad have retaught us two simple truths about the liberty of a democratic people.

The first truth is that the liberty of a democracy is not safe if the people tolerate the growth of private power to a point where it becomes stronger than their democratic state itself. That, in its essence, is fascism--ownership of government by an individual, by a group, or by any other controlling private power.

The second truth is that the liberty of a democracy is not safe, if its business system does not provide employment and produce and distribute goods in such a way as to sustain an acceptable standard of living.

Both lessons hit home. Among us today a concentration of private power without equal in history is growing.
This concentration is seriously impairing the economic effectiveness of private enterprise as a way of providing employment for labor and capital and as a way of assuring a more equitable distribution of income and earnings among the people of the Nation as a whole. 3

As a result of this message the 75th Congress established, via Public Resolution 113, a Temporary National Economic Committee to "make a full and complete study and investigation with respect to the concentration of economic power, and financial control over, production and distribution of goods and services." 4 This investigation has been described, in popular usage, as "the monopoly investigation."

Validation for the study of waste per se becomes rather obvious when it is seen that numerous leaders of economic thought have held that the problem of maximum efficiency properly constitutes the core of economic science. This point is substantiated by Slichter in the Encyclopaedia of Social Sciences when he says,

The concept [efficiency] occurred in embryonic form in Adam Smith, who made it clear in the opening paragraphs of his Wealth of Nations (1776) that he was addressing himself to the problem of how the produce of "the annual labour" of a nation could be made to bear the largest possible "proportion to the number of those who are to consume it." . . . The classical economists, as utilitarians, not merely sought to explain economic phenomena


in terms of men's efforts to seek pleasure and avoid pain but also attempted to discover the form of industrial organization and the economic policies which would enable men to achieve the maximum return with the minimum outlay. In most of the works of the classical economists, however, the concept of efficiency is taken for granted rather than given explicit formulation. Jevons . . . although he did not use the word "efficiency" he described the problem of efficiency as the central problem of economics.  

Adam Smith's answer to this basic problem of economic efficiency subsequently became world renowned. It entailed (1) a laissez faire philosophy of governmental policy, (2) a free competitive market governed by natural law, and (3) a market price system which most effectively allocates resources. Knowledge of the Adam Smith's doctrines is traditional discipline for those whose curiosity propels them into what Carlyle called the "dismal science."

Upon extension of Slichter's analyses above it is more understandable that Person should write:

Waste elimination is a problem fundamental to all social sciences. Since income is the simplest and most fundamental concept of economic science, elimination of the waste of sources of income is the very essence and art of economics. Because such elimination involves choice, it is important also to ethics . . . Waste elimination is important to sociology, inasmuch as social processes and relations are determined primarily by the modes of realizing income and the resultant wealth.

The depression which began in 1929 has caused statesmen as well as students to give more attention to the question of waste caused by dissipation of human energy through the absence of proper organization and coordination of the institutions and processes of the economic system. Not only has want satisfactions since 1929 amounted to only a fraction of what had been realized in more productive years, but strong evidence is being brought forward to show that they might have been far greater even in the most industrially active times

5 Slichter, op. cit., p. 437.
and that the resultant satisfactions have progressively been less and less equitably distributed. Because of this and other aspects of the problem waste elimination has become a major social concern. 

The general problem of waste as a concomitant of monopoly per se has received scant attention as will be shown below. The problem of waste of human resources during the productive process has received even less attention because the scientific or instrumental basis upon which to conceptualize the problem has been lacking until very recent years. The first official hint of the existence of the specific problem came in the summary of the celebrated study of waste made by the Federated American Engineering Societies in 1921. The Committee on Elimination of Waste in Industry, in summary of the study, says

It discloses losses and waste due to the restraint and dissipation of the creative power of those who work in industry. It lays the foundation for knowledge of the destructive influences which have too much controlled the past. From this knowledge will grow the conviction that mental and moral forces must be added in a much larger degree to the physical resources now employed if industry is to serve all who are dependent upon its continuous and effective operations. 

Since the Federated Engineering study of waste a number of very extensive scientific studies have been carried out in industry which bear relevance to the "losses and waste

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8See Chapter III below.
due to the restraint and dissipation of creative power of those who work in industry." [supra]. It is believed that the findings of these studies\(^9\) provide an adequate instrumental basis upon which to conceptualize "the destructive influences which have too much controlled the past." [supra]. So far as can be ascertained from the available data no studies have been made on the specific problem of the relation of monopoly and waste of human resources. This specific area of study appears to be entirely virgin. Yet an increasing volume of data is emerging which is giving shape to this specific problem by inference. And it is believed that this increasing volume of data presents an unmistakable picture of waste that warrants attention.

**Definition of Terms**

Monopoly has many meanings. And recently various terms have come into vogue in economic literature which specify certain variations and degrees of monopoly. However, there is a general connotative synthesis of meaning in the monopoly concept as it is usually employed by contemporary economists. The connotative synthesis of the monopoly concept has been aptly expressed by R. H. Mundhenke in a recent paper given before the Economics Section of the Southwestern Social Science Association. Under the general theme of monopolistic restrictions, Mundhenke read a paper entitled, "Monopoly, 1948 Version," in which he stated:

\(^9\)Ibid.
To comprehend the present-day picture of monopoly in the United States we need first to be fully aware of the fact that our concept of the meaning of the word monopoly has been undergoing change. Or perhaps the change has been in the nature of monopoly itself. At any rate, it is no longer accurate to think of monopoly only as meaning one seller (mono-one), the power possessed by one business unit, even though that one may be a combination. Such would be monopolies, of course, if the single firm or the combination possessed such control over the supply as to be able to exert appreciable control over the price. But today we have many industries in which we are confident monopoly power exists and is being exerted, even though there may be a number of producers in the industry and they, so far as we can judge, are making no conscious effort to act as one. Other terms have been used to designate this use of monopoly power, perhaps the best of them being oligopoly.

The point would seem to be that we need to recognize more fully that monopoly is a power—a power that may be possessed by one business organization, by a combination of units formally combined, or by a number of business organizations in a given industry not formally combined or consciously cooperating with one another. We should recognize, also, that monopoly power is relative, that there are degrees of monopoly. Following the older meaning of monopoly we would have to say that we have no monopoly today, except that under control in the public utility field or that permitted by patent and copyright laws. Yet there is abundant evidence that we are not witnessing what we would expect to find as the consequences of full and free competition.

Thus we must conclude that whenever a firm or group of firms, acting together or independently, is able to exert any appreciable control over the supply and therefore, through the supply, the price of a commodity or service, so that the returns are appreciably above what truly free competition would afford over a period of a year, it may be said correctly that such firm or firms possess monopoly power.¹⁰

Thus, it is seen that monopoly means a power of control over the supply of a product. The power is relative. And a

¹⁰R. H. Mundhenke, "Monopoly, 1948 Version" (Paper read at the annual convention of The Southwestern Social Science Association before the Economics Section, Dallas, March 26, 1948).
number of monopoly business units may co-exist and not necessarily be formally combined—but may cooperate because of an implicit understanding of each other's relative power and the goals to which they are working.

The meaning of the term waste is quite diffuse. Some twenty-one definitions are given for the term by the ordinary dictionary.11 Moreover, the theory of waste in economic literature has remained, for the most part, implicit. Any valid attempt to define waste leads one into the heart of resource theory. Consequently, one is found in the intellectual crossfire of opposing schools of thought as to the definition of resources. This entire problem is in such a confused and irrelevant condition as to necessitate a very brief theoretical treatment at this juncture.

The relation of the waste concept and the resource concept is readily seen in the following conventional definition of waste. The conventional concept of waste is that of destruction or wanton failure to utilize available resources.12 The entire meaning of this definition is seen to be dependent upon how resources are defined. The celebrated Brookings study assumed existing plants and techniques to constitute13


the available resources for production. Dewhurst et al., in the Twentieth Century Fund survey, give this same concept of capacity in juxtaposition to what they term as a utilitarian view of available resources. This "utilitarian view might regard as submarginal and therefore not a part of an industry's capacity all plant and equipment that are idle at the price and market conditions of the moment."14

The Twentieth Century Fund writers hold that the valid concept of capacity probably lies between the Brookings [engineering] definition and this utilitarian definition. The utter irrelevancy of the utilitarian concept of capacity is seen in the light of this question: What, then, if it can be proved that the "price and market conditions of the moment" are consciously "administered?" In other words, what if it can be shown that a monopoly condition determines the market price? And, moreover, the Brookings concept of resources is vulnerable to the same question. What if the existing plant capacity and techniques can be shown as resultants of a long term monopoly condition? It goes without saying that this probability leaves Dewhurst et al., as well as the Brookings group, without any substantial footing.

The question arises as to whether or not there exists any objective criteria of resources. And it is here that the instrumental thinking of science is increasingly focused. Veblen was one of the early thinkers to perceive the "break"

between technological behavior and institutional behavior. Consequently, Veblen answers, "yes," to the relevant question.

Writing on the nature of capital, Veblen maintains that knowledge and tools constitute the basic resources of a community. "Knowledge of ways and means" constitute the definitive limits of resources. Under the Veblenian concept, resources are technologically defined. This technological definition of resources appears to be the only alternative to an institutionally defined concept of resources such as that defined above by "market price." Thus, under the Veblenian theory of resources, waste may be seen as the differential between existing modes and rates of productivity and the technologically feasible modes and rates of productivity. In other words, waste obtains whenever and wherever the knowledge of more efficient means co-exist with less efficient means.

Thus, scientific or instrumental thinking defines the concepts of both waste and resources in terms of technology. And failure to think consistently in instrumental terms is tantamount to becoming immured in the meaningless plethora of institutional fictions.

Organization of Chapters

Chapter II of this study includes material covering the development of two major points. The first major developmental point to be attempted will be a documentation of the

existence of a general monopoly condition in the steel industry. The second major point to be developed in Chapter II of this study will be an attempt to document the existence of a general waste condition as a concomitant of the monopoly condition.

Chapter III of this study develops three major points. The first major point will be an attempt to develop criteria from which to study the waste due to "dissipation of the creative power of workers." The second major point to be developed will be an attempt to document this dissipation of creative power. The third major point will be an analytical attempt to bring into focus the origin of waste of the creative powers of workers.

Chapter IV of this study undertakes the development of three major points. The first major point will be an attempt to document organized waste of human resources due to a monopoly condition in labor unions. The second major point to be developed will be an attempt to document the potential efficiency in human resources. The third major point to be developed will be an attempt to spotlight the dominant area of responsibility of waste in human resources.

Chapter V includes a summary, the conclusions, and the recommendations stemming from this study.
Review of Previous Related Studies

Economic literature is pregnant with studies and attempts to deal with the monopoly problem. This relation of monopoly to economic science is common knowledge of every competent economist. Monopoly in the steel industry has also received considerable attention. Of prime importance to this study is the T. N. E. C. investigation on the monopoly condition in the steel industry. Other studies on the monopoly in steel will receive attention in the succeeding chapter.

The problem of waste, however, has received far less attention. A brief review of the significance of these studies, relative to this study, is given below.

The first serious study of the problem of waste was made shortly after World War I. The study was launched by Herbert Hoover, president of the American Engineering Council in 1921. The study was conducted by the American Society of Mechanical Engineers and was completed in 1921. Some of the significant conclusions of this study have already been given above. General conclusions were that various types of wastes were very widespread and that they were the results of practiced long standing in industry. The engineers conducting the study attempted to assess the per cent of responsibility of groups involved. Management was charged as being responsible for 68 per cent of the waste involved, labor was assessed as being responsible for 16 per cent, and other influences were assessed as being responsible for 16 per cent
of the waste. Evidently the latter 16 per cent was viewed as a sort of aggregate frictional waste due to the more impersonal aspects of the system, itself.

The second major study of waste was made by the Brookings Institute during the depression of the 1930's. This study was not intended as a study of waste per se. However, it was a study of waste by inference. The Brookings group set out to measure America's capacity to produce and the capacity to consume as parts of a larger study which was published under the title of *The Distribution of Income in Relation to Economic Progress*. In this study the gap between productive capacity and the actual production at that time constituted a measure of waste from the standpoint of economic well-being of the community.

General findings of this study were expressed as follows:

In summary, it is evident from the data which have been presented that the economic system works very imperfectly at best. Figured on a conservative basis, that takes account of the practical considerations with which business is inevitably confronted, we estimate that the economic machine operates at best around 80 per cent of capacity and at the worst a little more than 50 per cent. As a general average, over the fourteen-year period from 1922 through 1935, the productive mechanism by which our wants are supplied may be said to have run at little more than two-thirds efficiency.17

The above performance obtained at a time when there was (1) an abundance of raw materials, (2) excess manufacturing

16 Person, *op. cit.*, p. 368.
capacity, (3) the transportation system was adequate, (4) marketing and merchandising establishments were "abundantly adequate for storing, handling, and selling of goods . . .", (5) no shortage of fuel or power, (6) the supply of labor was adequate, (7) and the supply of money credit was adequate.\textsuperscript{18} Moreover, the above waste obtained under the resource concept of existing plants and techniques.\textsuperscript{19}

The Columbia University Commission on Economic Reconstruction concluded that there were two major types of waste. One type of waste is that which is associated with the productive process itself. The second type is that waste which is inherent in the economic conditions which control the general volume of productive output.\textsuperscript{20} The Commission's report was so vague and general as to be of little use.

Veblen gave fleeting attention to one aspect of waste in The Theory of the Leisure Class.\textsuperscript{21} And he gave rather lengthy attention to the waste problem in The Engineers and the Price System. However, Veblen's attention to the waste problem was more of a conceptual treatment rather than a documentary or quantitative treatment of the problem. Veblen's attention was directed toward the waste element in

\textsuperscript{18}Ibid., p. 33 et sqq.
\textsuperscript{19}Cf. above.
\textsuperscript{20}Columbia University Commission, Economic Reconstruction, p. 7.
\textsuperscript{21}See Chapters II and III.
industrial sabotage which he characterized as the "conscien-
tious withdrawal of efficiency."\textsuperscript{22} Chapters II and IV of
this study will be seen as related to Veblen's concept.
However, these chapters will present a documentary approach.

A few other works on waste such as David Goyle's \textit{Waste}
and Stuart Chase's \textit{The Tragedy of Waste}, and \textit{Waste and the}
\textit{Machine Age} have appeared on the general subject of waste.
However, these works have been primarily descriptive of
various types of waste and have added little new to the
traditional concept of waste. Most of the above studies in
waste have somewhat of a tenuous relation to the present
study inasmuch as this study purports to bring into focus a
form of waste in human resources which has hitherto received
little attention. More specifically, this study attempts to
show that the destruction of morale of workers is a practice
of waste. In addition, this study brings into focus the con-
textual origin of low worker morale. The development of
these two points presents a relatively fresh approach to the
problem of waste.

\textbf{Method of Procedure and Sources of Data}

The general method of procedure of this study shall be
(1) documentary and (2) analytical.

There are three chief sources of data for this study
available. One source is found in the Public Documents

\textsuperscript{22}Thorstein Veblen, \textit{The Engineers and the Price System},
p. 1.
available. More specifically the data used are found in the Monographs issued by, and the Hearings held before, the Temporary National Economic Committee of the 76th and 77th United States Congresses.

The second chief source of data is the series of industrial research studies popularly known as the "Hawthorne Studies."

The third source of data is found in the general reference material such as studies by scholars and writers under the auspices of The Twentieth Century Fund, and The Labor Research Association, the work of academic specialists, periodical data, etc.

Effort was made to obtain some data from recognized experts in the field of study involved. However, the chief result was some references to potential sources of data. A later reference will be given on the existence of some corroborative material which the writer hopes to obtain before this study is transmitted for final approval. Data on the waste of human resources in the form of actual case histories are admittedly limited. However, data of this type are emerging in an increasing volume. It is hoped that this study will effect a provisional interpretation of this emerging data on waste in human resources.
CHAPTER II

MONOPOLY AND WASTE IN THE STEEL INDUSTRY

Introduction

The relation of this chapter to the over-all study comes into focus when it is viewed as a brief documentary background for the general theme of study.

The specific problem of this chapter is twofold. First, there will be an attempt to document a general monopoly condition in the steel industry. Second, there will be an attempt to document a general waste condition—as a concomitant of the general monopoly condition.

The materials used in this chapter are drawn primarily from the T. N. E. C. monopoly investigation and Fetter's study, The Masquerade of Monopoly.

Monopoly in the Steel Industry

The historical development of monopoly in the steel industry has been admirably traced by a number of students of steel economics. Among the notable studies in this field are J. H. Bridge's Inside History of the Carnegie Steel Company and F. A. Fetter's Masquerade of Monopoly. Other excellent works substantiating the development of monopoly are H. N. Casson's The Romance of Steel, The Story of a
Thousand Millionaires, and Harvey O'Connor's Steel--Dictator.

Fetter shows quite convincingly in The Masquerade of Monopoly that a monopoly condition has prevailed in the steel industry since the formation of the United States Steel Corporation in 1901. At that time 180 concerns were merged financially by J. P. Morgan. The merger brought under one business control more than 80 per cent of the entire steel productive capacity in the United States at that time.\(^2\) An obvious monopoly prevailed for several years. However, anti-trust action against the steel monopoly was delayed pending the outcome of the government's case against the Standard Oil Company.\(^3\) A dissolution decree was finally handed down on the Standard Oil case in 1911.\(^4\) Shortly thereafter the government filed suit against the U. S. Steel Corporation as being a monopoly in restraint of trade.\(^5\)

Judge Woolley, of the Circuit Court through which the U. S. Steel case passed on its way to the Supreme Court, held that the original purpose of the U. S. Steel merger was illegal. He expressed his view as follows: "It is the irresistible conclusion from these premises that great


\(^2\)Loc. cit.

\(^3\)Fetter, op. cit., p. 62.

\(^4\)Loc. cit.

\(^5\)Fetter, op. cit., p. 63.
profits to be derived from unified control were the object of the organizations.\textsuperscript{6} The dissenting minority of the Supreme Court agreed with this view.\textsuperscript{7}

"The immediate, as well as the normal effect of such combinations, was in all instances a complete elimination of competition between the concerns absorbed, and a corresponding restraint of trade."\textsuperscript{8}

Judge Woolley indignantly summarized his views as follows:

By the proceedings at the Gary Dinners, and at the meetings of the dinner committees, the fixing and maintaining of prices were as successfully accomplished as by meetings called for that purpose during the period from 1904 to 1907, and by the pools created for that purpose from 1901 to 1904. It therefore appears that from the organization of the corporation in 1901 until the Gary Dinners were discontinued in January, 1911, the corporation, first by one method, and then by a second method, and then by a third method, employed means to procure the establishment and maintenance of uniform prices for its diversified products, and by these means the Steel Corporation, with its competitors, did combine and control prices, and in controlling prices restrained trade. If by the three methods pursued, in the three periods named, prices were not artificially and successfully maintained, as shown by the history governing those three periods, I am at a loss to know by what means it would be possible to fix and maintain prices what would unduly restrain trade in the sense of violating the Anti-Trust Law.\textsuperscript{9}

On this part the plurality of the Supreme Court and the dissenting minority concurred. And at least one of the


\textsuperscript{7}Loc. cit.


\textsuperscript{9}Ibid., p. 67-8; Ibid., p. 175-6.
abstaining Justices had already openly expressed his opinion before becoming a member of the Supreme Court that U. S. Steel was in effect a monopoly.\textsuperscript{10} Thus, on this point seven of the nine Supreme Court Justices openly agreed that the U. S. Steel Corporation did in effect achieve a monopoly—prior to 1911. The Gary Dinners were discontinued after 1911, and the monopoly condition subsequently prevailed via implicit understanding.\textsuperscript{11} The implicit status of a monopoly in restraint of trade apparently confused the learned Justices. For after nine years of judicial delay the Court handed down one of the most paradoxical and closest decisions in its history.\textsuperscript{12} Fetter aptly traces the gist of legal reasoning in the case as follows:

The Corporation [U. S. Steel] together with its fellow conspirators did, even on the Court's own statement, achieve a monopoly before 1911, but the Court makes everything hang on the verbal technicality that the Corporation was not "a" monopoly (that is, did not have unlimited power), and although it entered into combination in violation of the Anti-Trust Laws, it did not achieve a monopoly "in and of itself," but only by persuading the independents to conspire with it.\textsuperscript{13}

Notwithstanding the legal fictions involved Fetter goes on to say,

Looking at realities and not at abstractions, would any one for a moment maintain that an ironclad agreement

\textsuperscript{10}Ibid., p. 60 et sqq.

\textsuperscript{11}Loc. cit.

\textsuperscript{12}Fetter, op. cit., p. 63.

\textsuperscript{13}Ibid., p. 135.
among either these several hundred concerns or these
twelve groups to act as one as to prices would not have
given them collectively far more power over prices than
could possibly be exerted by any one of them or by all
of them acting as separate units? Would not such an
agreement and conspiracy, so long as it continued in
force, have been flagrantly illegal and a continuing
violation of the Anti-Trust Act?

Mr. Gary admitted after some hesitation that the
ultimate power as to price policies for all subsidiaries
was vested in one central management. Can any one doubt
then that the unified power of the United States Steel
Corporation in restraint of trade was far more effective
and continuous in its operation than any mere pool or
secret conspiracy of the constituent parts could have
been—always unstable and difficult to maintain? Look-
ing at the realities rather than at legal formalities,
did not the very creation of the Corporation therefore
put under a single control a power over price policies
far greater than any that had or ever could come before
the Court in the form of a complaint against a group of
independents for conspiracy in restraint of trade? The
patient ultimate purchaser of steel may here see the
highest Court perform the mathematical and economic
miracle of showing in the light of reason that in
matters monopolistic the whole is less than any of its
parts. Learned judges will demonstrate to their own
satisfaction that while it was grossly illegal for
independent corporation to have a merely partial agree-
ment to control prices, it became perfectly legal for
the same hundred-or-more once independent companies to
follow absolutely unified price policies after they had
been financially merged into one. Such to the legalis-
tic mind is the mystic power of legal incorporation to
transform into a single "person," incapable of conspir-
acy with himself, scores of separate corporations which
in turn control hundreds of separate plants and comprise
thousands of individual owners and a billion of capital.
Could any more effective means have been taken to make
impossible over a large part of the industrial field the
continued existence of truly independent industries of
moderate size? Surely, here too is some explanation of
the quick growth of a new swarm of mergers after the
remarkable decision in the Steel Dissolution suit.14

Nor has the U. S. Steel Case been the only one of its
kind. Several Steel Corporations have been found guilty and

14 Ibid., p. 77-8.
fined under the Anti-Trust laws.\textsuperscript{15} Criminal proceedings have been instituted in cases of U. S. v. Ironite, U. S. v. National Malleable & Steel Castings Company, and U. S. v. Sheet Metal Association.\textsuperscript{16} Equity proceedings under the Anti-Trust laws have been instituted in the cases of U. S. v. Republic Steel, U. S. v. Mather, and U. S. v. Sheet Metal Association.\textsuperscript{17} Numerous other cases depict the monopoly condition in subsidiary and allied branches of the steel industry. The outcome of each specific case above appear as irrelevant for the general point being developed here. There is no effort to prove here that a single company now has a complete monopoly in the steel industry. The relevant point is that these cases are cited as additional proof of a monopoly condition—as defined by Mundhenke above—does exist in the steel industry.

A cumbersome plethora of case evidence is brought into relief when one views the interrelated pattern of production that prevails. The Steel industry appears to be an almost wholly integrated economic system in itself. Interlocking directorships prevail between investment banks, railroads, mining companies, shipping companies, coal and coking companies, chemical companies, cement companies, etc. Most of the larger steel companies own subsidiary companies operating in

\textsuperscript{15} T. N. E. C. Monograph No. 16, Appendix G.

\textsuperscript{16} Loc. cit.

\textsuperscript{17} Loc. cit.
nearly all of these fields.\textsuperscript{18} Ore, railroads, limestone, coal, and banks, are inseparable from the standpoint of modern mass produced steel and iron.

That this interrelated pattern exists is a matter of common knowledge to all economists. And in view of this interrelated contest it is extremely difficult to discern where steel production begins and ends. And, consequently, it is equally as difficult to accurately discern the proper point at which to cease citing cases in substantiation of the monopoly condition that prevails. For example, cement is made primarily from the slag of the iron and steel furnaces. Almost all cement companies are owned directly or indirectly by steel companies. And the cement industry is one of the most notorious of all monopolized industries.\textsuperscript{19} The minute details appear practically irrelevant in the substantiation of the general condition.

The N. R. A. program of the New Deal era gave governmental sanction to monopolistic practice in the steel industry.\textsuperscript{20} The most authoritative data available on this point are the T. N. E. C. Hearings on Cartels. The most authoritative testimony on the particular point being developed was given by Doctor Clair Wilcox, economist, former director of

\textsuperscript{18}Fetter, \textit{op. cit.}, Chap. VI et passim.
Harvey O'Connor, \textit{Steel--Dictator}, et passim.

\textsuperscript{19}Loc. cit., see also T. N. E. C., Hearings, et passim.

\textsuperscript{20}O'Connor, \textit{op. cit.}, p. 134.
research for the National Commission on Law Observance and Enforcement, special advisor to the Consumer Advisory Board of the N. R. A., member of the General Code Authority, member of the Advisory Council, and, later, Director of the Code Research Studies in the Division of Review. Excerpts from Doctor Wilcox's testimony on the subject of "Compulsory Cartelization under the N. R. A." are very revealing. Of special import is the relation of trade associations to the development of the N. R. A. Code. Wilcox's testimony, in part, reads as follows:

DR. WILCOX. Trade associations played an important part in the initiation and administration of codes under the N. R. A. In general, they took the initiative in drafting and presenting the codes. This caused in many cases a consolidation of existing trade associations. It called moribund associations into life and created new associations, and these associations dominated the administration of most codes.

In some codes, the trade association itself was the code authority. In others, it selected the majority of the code authority. In general, or in a majority of cases, trade association and code authority officers and executives were the same.

MR. HENDERSON. Dr. Wilcox, you have some familiarity with the submission of codes and code provisions. I know that over a period of years it seems to be increasingly the superstition that a group of wild-haired youngsters representing the Government in N. R. A. created most of the code provisions. Isn't it a fact that the code provisions were actually submitted by the industries themselves through their trade associations?

DR. WILCOX. The origin of many of the code provisions can be clearly traced in the published codes of ethics of the trade associations, in the trade practice submittals before the Federal Trade Commission, and in the earlier practices of the associations themselves. These things were not all invented overnight in 1933.

There was published by the Department of Commerce, Bureau of Foreign and Domestic Commerce, Market Research

Series No. 4, a document called Code Sponsoring Trade Associations. An examination of this document indicates that in about 600 out of 850 codes, the secretary of the code authority and the chief executive of the trade association had the same name and did business at the same address.\footnote{Ibid., p. 13319-20.}

The following excerpt substantiates a monopoly condition in the steel industry under the N. R. A. The above excerpt should substantiate, in conjunction with the court cases cited above, at least a near monopoly condition prior to the N. R. A. Wilcox testifies further to the following effect:

The final comment that I should like to make is that about as complete a cartel picture as one can find anywhere is to be obtained by a reading of the N. R. A. Code for the iron and steel industry, which outlawed 12 practices as unfair and provided that any other practices which the board of directors by a three-quarters vote declared to be unfair should constitute a violation of the code, which in effect gave them the power of legislation; regulated terms of sale; contained detailed regulations of the pricing system; required the filing of base prices with a waiting period; gave the code authority power to reject a filed price as unfair, established uniform deductions and required uniform extras; required sale on the basis of delivered prices calculated from common basing points according to a specified formula, and that sale be made only through distributors selected according to standards established by the code authority; maintained resale prices; prohibited the introduction of new productive capacity; provided for the later establishment of a quota system; and was enforced by a system of reports and audits, by provisions for liquidated damages which penalized violation, and by a Federal statute which carried the penalty of fine and imprisonment.

That I submit is about as strong a cartel set-up as one could ask to find.

MR. PIKE. Was it ever approved by the authority?

DR. WILCOX. That was approved by the N. R. A. It was later amended in many of these respects, but it is the original form in which the code of the industry was approved.
Acting Chairman O'CONNELL. And that code was prepared in the first instance by the industry?
DR. WILCOX. By the Iron and Steel Institute.23

Writing on "Organized Scarcity and Public Policy,"
Gideonse says, "In the N. R. A. days the steel people defined competition as 'unfair' if the producer secured trade by initiation of a reduction in price. In other words, the competitor is unfair if he competes."24

Another aspect of the monopoly pattern in the steel industry is seen in its participation in the second international steel cartel of 1933.25 The membership of the American steel industry was effected through the Steel Export Association which had been formed by U. S. Steel and Bethlehem Steel—but which represented numerous independent exporters of steel as well.26 A member of the Export Association testified before the T. N. E. C. hearings that the Association entered the cartel in order to "not have to sell at ridiculous prices brought about by competition."27 Article XII of the agreement established national export quotas. Article XIV prohibited a reduction in prices.

23Ibid., p. 13320, et sqq.
24Harry D. Gideonse, Organized Scarcity and Public Policy, p. 15.
26Stocking, op. cit., p. 199.
Article XV allowed cut-throat prices in areas outside the cartel jurisdiction in order to beat down competition.\textsuperscript{28} The control was maintained by a system of fines, market withdrawals, shunting of orders, etc.\textsuperscript{29} The forces working towards monopoly were external as well as internal—domestic and international. The pressure of the international group, as well as the dominant domestic exporters of steel, upon the non-members of the cartel in America is very aptly depicted by Stocking and Watkins.

The Association had guaranteed that total American exports of specific steel products would not exceed American quotas. As prices mounted during the second half of the thirties, Association members confined their exports to their quotas. Nonmembers, however, increased greatly their share of American foreign trade. Since the cartel required Association members to pay heavy penalties on sales in excess of American quotas, even though the excess might have resulted from an increase in sales by nonmembers, they urged their European colleagues to cut prices in certain export markets to eliminate American nonmembers from the trade. As one Association member expressed it, "the sooner these mills are eliminated from taking [export] business the better our chances will be of bringing them under control in our own group."\textsuperscript{30}

The second international steel cartel was in effect until it was disrupted by World War II. However fragments of the cartel continued to operate for some time after the war started.\textsuperscript{31} Under the cartel agreement the fines paid

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{28} Stocking, \textit{op. cit.}, p. 190.
\item \textsuperscript{29} Loc. cit.
\item \textsuperscript{30} Stocking, \textit{op. cit.}, p. 201-2; cites T. N. E. C. Hearings, Part XX, p. 1020, S. M. Bash in testimony.
\item \textsuperscript{31} Stocking, \textit{op. cit.}, p. 215.
\end{itemize}
\end{footnotesize}
were distributed to other members as a sort of bonus for underselling their quotas. In 1938 and 1939, the German members hunted all of their production into their war program and demanded bonuses for their export restrictions. In these years the American cartel members paid bonuses to the German national groups and thus, in effect subsidized the German war machine during two years of its early war production program.\textsuperscript{32}

More concrete evidence of the monopoly pattern in steel is found in the basing point system of quoting delivered prices. This aspect of monopoly—basing point price system—has been the subject of extensive study by the Federal Trade Commission. The simplest illustration of the "basing point system" is commonly known as the "Pittsburg-plus" plan. In essence, it means that every buyer, regardless of his location and the location of the mill from which he buys, pays a quoted price plus freight from Pittsburg. Under this program, a buyer may be only fifty miles from a steel mill in Chicago and he still must pay freight charges from Pittsburg on the steel he buys from the mill fifty miles away from his plant. The present basing point system is considerably more complex in that it has several basing points. However, the Pittsburg plan gives the simplest and most important feature of the basing point system.

\textsuperscript{32}Ibid., p. 214.
The Pittsburg plan originated with the Carnegie Company and three others in 1880. The Pittsburg plan was so obviously discriminatory that it was finally relaxed under vigorous pressure from buyers of steel and the F. T. C. in 1924. Since that time the Steel industry has been using a multiple basing point system which achieves essentially the same effects. In its T. N. E. C. exhibit, "Monopoly and Competition in Steel," the F. T. C. study reads, in part, as follows:

If the concept of price adopted in the Pittsburg plus case in 1924 is sound under the present law, the basing point practice may be regarded as one of systematic price discrimination designed to serve the interests of sellers, as a group, against the interests of such buyers as desire price competition and of consumers in general . . . to sanction private controls such as those in the steel industry . . . is to establish monopoly by agreement . . . .

The identical delivered price system in steel preserves the shadow of competition by giving up the substance.

The Temporary National Economic Committee concludes in its Final Report that, "Extensive hearings on basing-point systems showed that they are used in many industries as an effective device for eliminating price competition." And

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33. Fetter, op. cit., p. 147.
34. Ibid., p. 158.
36. T. N. E. C. Monograph No. 42, p. 3-4.
the iron and steel industries are listed as one in which this practice is more or less typical. 38

Additional prima facie evidence of monopoly in the steel industry is found in the pattern of "price leadership" that obtains in the steel industry. Explicit proof of the practice of price leadership is found in the testimony of Mr. W. A. Irvin, then president of the U. S. Steel Corporation, before a Senate Committee in 1936. Excerpts of this testimony read as follows:

The Chairman. You generally make the prices?
Mr. Irvin. Yes, sir; we generally make the prices unless some of the other members of the industry think that that price is too high and they make the price.
Mr. Chairman. You lead off, then, with a price changed, either up or down, at Gary? Is that correct?
Mr. Irvin. Yes, sir.

..."...

The Chairman. Then the rest of them follow that?
Mr. Irvin. I think they do. That is, I say they generally do. 39

Further testimony before the Senate Committee showed that Mr. Eugene Grace, President of Bethlehem Steel (the nearest rival of U. S. Steel), always followed the price quotations of U. S. Steel either up or down. Mr. Grace could not think of a single occasion in which Bethlehem had failed to "follow the leader." 40

38 Loc. cit.
39 T. N. E. C. Monograph No. 21, p. 124.
40 Ibid., p. 125.
"Price leadership" stems from the implicit understanding that prevails between the larger and smaller producers of steel. One company or small group quotes or advises on practically all price changes that occur. Constant communication via phone and telegraph, both public and private, is carried on between the smaller and larger steel producing concerns. The T. N. E. C. Hearings on general price policies of the iron and steel industry brought some evidence of this highly revealing collaboration to light. The following T. N. E. C. exhibits are typical ones taken from the files of the United States Steel Corporation. The first exhibit presented below is from the Mr. W. A. Ross, vice-president in charge of sales, for Columbia Steel Company. It was sent to Mr. Robert Gregg, who was at that time vice-president of U. S. Steel in charge of coordination of sales.

EXHIBIT NO. 1385

Western Union Telegram

1937 Feb. 19 PM 2 29

Received at CXDA58 Gco 19
ROBT. GREGG
USS NYK:
Our price for foundry pig iron now effective is $13.50 base furnace Ironton Utah Stop We have made careful survey and have concluded this price should be advanced one dollar per ton and unless you instruct to contrary will make this advance effective for 2nd quarter Pls advise.

W. A. ROSS

$13.50 2.

Divested of its ceremonial aspect this exhibit is a request from a small producer to the largest producer, U. S. Steel, for permission to raise the price of pig iron. It should be noted also that there is an implicit willingness to comply with instructions to the contrary.

The reply to this request is herewith given below:

EXHIBIT NO. 138642

Telegram
Via Private Wire System

UNITED STATES STEEL CORPORATION
AND SUBSIDIARY COMPANIES

Sent February 20, 1937

W A ROSS Columbia Steel Co
Russ Bldg San Francisco Cal Via XD Chgo

Your wire Pig iron price Why not make advance two dollars instead of one Advise

ROBERT GREGG
USS

Mr. Gregg's own testimony before the T. N. E. C. confirms the dutiful compliance with this fatherly advice to double the figure for the requested price raise.43 Further proof of such "coordination of sales" is available in the form of similar exhibits presented to the T. N. E. C.44 Astute economists have long believed that such conditions

42Loc. cit.
44Ibid., see appendix.
existed. Fetter's analysis [supra] takes into account this type of behavior from the discontinuance of the Gary Dinners. Evidence of this type obviously brings into focus the contrast of economic realities with legalistic fictions such as those with which the Supreme Court wrestled in the case of U. S. v. U. S. Steel.

The following table shows the spread between the percentage of the price level and output. "According to laissez-faire principles, prices should go down when demand drops off."45

TABLE 1
DECLINE IN PRICES AND IN PRODUCTION,
FROM 1929 TO SPRING OF 1933*

<table>
<thead>
<tr>
<th>Product</th>
<th>Percent Drop in Wholesale Prices</th>
<th>Percent Drop in Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture Implements..</td>
<td>15</td>
<td>80</td>
</tr>
<tr>
<td>Motor Vehicles...........</td>
<td>16</td>
<td>80</td>
</tr>
<tr>
<td>Cement....................</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>Iron and Steel............</td>
<td>20</td>
<td>83</td>
</tr>
<tr>
<td>Auto Tires.................</td>
<td>33</td>
<td>70</td>
</tr>
<tr>
<td>Textile Products..........</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>Food Products.............</td>
<td>49</td>
<td>14</td>
</tr>
<tr>
<td>Leather....................</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>Petroleum..................</td>
<td>56</td>
<td>20</td>
</tr>
<tr>
<td>Agriculture Commodities.</td>
<td>63</td>
<td>6</td>
</tr>
</tbody>
</table>


But the table shows the reverse situation. . . . The attempt to meet a drop in business by raising prices is the exact opposite of price adjustments of

the old economy. It grows out of the fact that prices are largely determined in the offices of corporations.\textsuperscript{46}

This type of price rigidity is generally accepted as an indication of a monopoly condition. When considered in conjunction with the plethora of corroborative testimony above, few doubts appear logically tenable.

The economic demerits of the basing point price system are implicit throughout the arguments of the Federal Trade Commission on the effects of such a pricing system.\textsuperscript{47}

In addition to the monopolistic pattern of business \textit{per se} in the steel industry, labor monopolies obtain in the processes of production and distribution of steel.\textsuperscript{48} However, notwithstanding the monopoly angle in steel labor unions it is felt that the plethora of evidence presented thus far clearly substantiates a monopoly condition in the steel industry which more than fulfills Mundhenke's definition given in Chapter I above.\textsuperscript{49}

\begin{itemize}
\item \textsuperscript{46} \textit{Ibid.}, p. 23-4.
\item \textsuperscript{47} T. N. E. C. Monographs Nos. 41 and 42.
\item \textsuperscript{48} See Chapter IV below.
\item \textsuperscript{49} Additional material on monopoly in steel became available too late to be integrated throughout the chapter. This material is found in Chap. 10 of V. A. Mund's recent book, \textit{Open Markets}. Mund cites numerous sources not available to me, which substantiate the general monopoly condition in steel. Two outstanding points of Mund's material deserve notation. The first point is the effectiveness of the merger as a monopoly device. Mund shows that between 1898 and 1900, some 448 plants in the steel industry were merged into ten companies. And this action took place prior to the formation of U. S. Steel. The second point is that after the formation
Consequently, this study is sufficiently well along to warrant consideration of the next question within the framework of the general theme set forth above.

The General Waste Condition

The question now arises as to whether or not a general waste condition exists in the steel industry as a concomitant of the monopoly condition shown above. The writers of the Federal Trade Commission's study leave no doubt as to their conclusions on this point. The report reads, in part, as follows:

To summarize the effects which we have reason to believe follow from the system of identically delivered prices; the wastes of cross-hauling and of excess capacity and high capital overhead are saddled on the consumer as if they were legitimate costs. 50

[Italics, C.H.L.]

Concerning the wastes of cross hauling, in particular, the Commission's report, at another point, says,

Studies of actual sales of steel show that mills deliver steel in the neighborhood of other mills that are producing steel of the same kind, and these in turn ship their product to the neighborhood of their rivals, or even beyond. Physically this cross-hauling is a pure waste; it could be justified only if some other form of economy were to be obtained by means of an interchange of identical products.

of U. S. Steel the middlemen in iron and steel were eliminated by the new policy of selling direct to the consumer. This practice is called "fencing in." This "fencing in" strengthened monopoly by allowing the steel producers to produce on order from consumers and thereby keep down storage of steel by middlemen. This practice gave tighter control over market prices since the middlemen had been dumping stored steel on the market when the producers restricted production.

50 T. N. E. C. Monograph No. 42, p.4.
Between two interconnected power systems, for example, power may flow in one direction at one time and back at another, because of differences in the timing of peak loads. But no such excuse can be found for cross-hauling in steel. Occasionally an abnormal demand for steel may appear first in one place and then in another, so as to overload the nearest producing plants and require importation from others. The constant cross-hauling of steel, however, is a different matter. It is a continual and simultaneous process. It unquestionably shows that mills do not ordinarily supply the nearest customers before looking to more distant ones. The cost of the wasted freight must be borne in the first instance by the injured communities and in the last analysis by the general public in one form or another. The cost is actually covered by maintaining base prices so high that a producer can ship steel for long distances past another producing mill and still find the business worth taking.\footnote{Italics. C.H.L.}

Studies similar to this one made by the F. T. C. also have been made by the Anti-Trust Division of the Department of Justice.\footnote{Ibid., p. 2.}

Concerning the wastes of excess capacity stemming from the basing point price system, the Commission's report reads:

The pricing system in steel is often called an "umbrella," the implication being that it holds up a price level under which mills of all degrees of efficiency or obsolescence find shelter. There appears to be a tendency for obsolete mills to survive after new and more efficient plants have entered the field, resulting in excess capacity and a low average percentage of operation. ... Overequipment in the

\footnote{The correspondence seeking additional data for this study, cf. Chap. I, contains references to another study of the monopoly aspect and possible wastes of cross-hauling. This study was made by the Anti-Trust Division of the Department of Justice. Effort was made to obtain access to this study. However, this effort has proved fruitless, to date. It is believed that this study was not made available because of its confidential relation to Anti-Trust suits which are known to be now pending.}
industry, with failure to eliminate the least efficient plants tends to discourage technological progress, but its chief effect appears to have been to accustom the industry to the idea of a low ratio of production to capacity. The industry has felt entitled to a price level that will allow it to make a profit when operating at less than 40 percent of capacity ... .53 [Italics, O.E.I.

The Commission's analysis is in substantial agreement with Chamberlain who holds that excess capacity becomes a permanent and normal characteristic whenever price competition fails to function.54

In addition to the above types of waste, the Commission depicts another and more far-reaching type of waste. It is a type of waste of the community's resources that results from the effect of exorbitant monopoly prices upon the economy as a whole with reference to income distribution and trade in general.

The ability to decide on a price and hold to it regardless of demand, which is the essence of monopoly, is a prime factor in establishing the vicious circle of high prices, restricted production, and reduced employment so widely condemned as "Scarcity economics." Starting with a price level designed to protect obsolete and unnecessary plants, and therefore having long periods of part-time operation and high overhead, the steel industry has established a habit of low production and high cost that seems to justify high prices. The demand is thereby restricted, and the vicious circle is completed by the continuance of high costs based on restricted output.

Moreover, in a product like steel which serves as raw material for other products, and for the machines with which other products are made, any unnecessary

53 T. N. E. C. Monograph No. 42, p. 3.

cost will be multiplied from step to step throughout industry so far as the influence of steel extends. The consumer is burdened with monopoly costs of steel multiplied several fold.
Unwilling and until this vicious circle of scarcity and unemployment can be broken, it is clear that it will act to grip the business world in paralysis. The practices of the steel industry alone may not ruin the capitalist system, but if they are reinforced by monopolistic practices in other industries, the total effect may come to be a strangulation of the blood stream of trade. Monopoly, like counterfeiting, is a profitable business for the first comer, but is subject to diminishing returns when it is more widely practiced.\(^{56}\) [Italics. C.H.L.]

Gideonse supports the above analysis when he says, "The costs of monopoly are, therefore most sharply registered in branches of economic activity which are not themselves under monopolistic control."\(^{56}\)

Following this line of thought in extenso one is entitled to inquire as to the probable magnification of waste throughout the economy. Such a line of thought could not fail to take into account the possible wastes in the economy stemming from the accretion of monopoly profits tending to mal-distribute the flow of income and thereby reduce purchasing power. In an economy like ours, which uses an expansible monetary credit in which the volume of money depends upon the ratio of new loans being made to old loans being repaid, the mal-distribution of the income flow, due to monopoly, may and does accelerate the destruction of money in the economic system. This specific type of waste has

\(^{55}\) Ibid., pp. 5-6. \(^{56}\) Gideonse, op. cit., p. 7.
ramifications that extend far beyond the scope of this study. However, this type of waste cannot completely escape notice in passing.

Summary and Conclusions

In summary of the above data, it may be said that the history of the steel industry is a history of monopoly development. Monopoly patterns existed at least as early as 1880. Fetter shows that the creation of the U. S. Steel Corporation was, in effect, almost a complete monopoly. Stocking shows that Steel industry was a partner to the second International Steel Cartel via the Steel Export Association. Authoritative testimony before the Temporary National Economic Committee show the industry's initiation and control of the Steel Code under the N. R. A. which was governmental sanction of monopoly practices. The Federal Trade Commission forced some relaxation of the Pittsburg plus system because of the monopoly effect. However, the same effect is still achieved via multiple basing points. Evidence on the price leadership aspect shows implicit understanding between large and small concerns. And the price rigidity in the face of curtailed production is additional evidence substantiating a monopoly condition. However cautious one may be in drawing his conclusions, it is obvious from a synthesis of the above data that a monopoly condition exists which more than fulfills Mundhenke's definition of the concept.
On the basis of the extensive studies of the Federal Trade Commission on the nature and effects of the basing point problem, there is abundant evidence of various types of waste as concomitants of monopolistic practices. The wastes of cross-hauling and excess plant capacity are noteworthy. In addition, the presence of obsolete and inefficient plants are direct results of the rigidity of the artificial price level maintained on steel products. It will be recalled that the Federal Trade Commission's study concludes that the chief effect of the monopoly price policies has been to "accustom the industry to the idea of a low ratio of production to capacity." [supra]. The possible ramifications of the rigidity and extensiveness of this idea in the minds of the producers of steel can never be accurately measured. But the logical consequences are inescapable.

As for the possible wastes from destroyed purchasing power and income for the system as a whole, there are no adequate quantitative techniques available. Yet sufficient basis exists to render the conceptual evidence irrefutable. As to the second major point documented in this study, evidence presented validates the conclusion that a general waste condition does exist as a concomitant of the general monopoly condition that was shown to exist.

This chapter may be viewed as a documentation of monopoly and waste in the general business pattern that prevails in the steel industry. In the following chapters
an attempt will be made to show that a similar condition prevails in the human resources that are employed in the steel industry.
CHAPTER III

MONOPOLY AND WASTE IN HUMAN RESOURCES

Introduction

Whereas the above chapter dealt primarily with the aspect of business efficiency, this and the following chapter will deal primarily with what Slichter calls human or social efficiency.

Various types of waste of human resources have been, heretofore, a speculative problem among social scientists concerned with the general problem of waste. However, little, if anything at all, has been done in the way of grappling with the origin and nature of these types of waste. Since man's basic resource of resources is man himself, the problem of waste in human resources is fundamental to the entire problem of waste. No scientific inquiry into the problem of waste could long ignore the primary relation of wasted human resources to all other types of waste. This chapter is designed to bring into focus the nature and causal origin of the major types of waste that prevail in industrial relations as reflected in the efficiency or productivity of workers.

In trying to orient himself in an instrumental relation to the problem, one must consciously or unconsciously possess
or construct a frame-of-reference which effects a tentative approach to the problem at hand. Consequently, the first step is the establishment of a criterion as the basic gestalt which functions as a conceptual guide for subsequent orientation and experimentation. The first major point of relevancy is the nature of the major determinants of high productivity as contrasted with those of low productivity. The second major point of relevancy is that of bringing into focus the casual origins of high and low productive efficiency. For the first point, the answer is found, if at all, in the scientific studies on the nature of the factors of high productivity. For the second major point, it is necessary to relate the criterion developed to the reality of interacting human relations during the processes of production—in this case, steel production and manufacture.

The most extensive and most remunerative series of studies in the field of industrial relations are those which were conducted by Western Electric Company at its Hawthorne plant from 1927 to 1932. Although the general results of these experiments had been a part of sociological data for years, the rigid scientific methods employed on such a scale of investigation serve to give still additional validity and concreteness to the total sociological data of secondary group relations.

The limits of this study preclude a detailed treatment of the Hawthorne studies. However, a digest of the more
significant experiments and their findings appear desirable. It is believed that a brief sketch of the developmental sequence of the Hawthorne studies together with the most significant findings provide the needed tool with which to approach the problem of waste of technology and creative powers from labor. With the results of the Hawthorne studies as a criterion, an attempt will then be made to bring into focus the contextual origin of such waste in human resources.

Except where otherwise footnoted, this digest is drawn from the description given by the Committee on Work in Industry of the National Research Council in their book, *Fatigue of Workers: Its Relation to Industrial Production*.¹

The Hawthorne Studies

The aim of the first experiment was to determine the relation between intensity of illumination and efficiency of workers, measured in output. Two groups were chosen which were doing similar work under similar conditions. In one group the intensity of illumination was held constant while in the other group the intensity of illumination was varied. The experiment failed. There was no simple relation between intensity of illumination and the rate of output. It was obvious that there were other variables entering into the determination of productive efficiency. The investigators concluded that there were psychological factors involved.

An experiment was designed to prove this point. The employees were told that the illuminative intensity was being increased while the bulbs were replaced with others of the same power. Workers commented on increased illumination and production increased. Thus it was proved that workers were reacting in the way in which they assumed they were expected to react. In spite of the significance of the discovery, the experimenters thought of the psychological factors as disturbing influences. Consequently they continued experiments attempting in each one to eliminate the psychological factors. They next turned to the problem of fatigue.

Five girls were isolated in a test room. Elaborate records were kept on all phases of work, routine habits, health condition of workers, food, hours of rest, rest periods, shorter hours, methods of payment, etc. Records on this experiment were kept for five years. Production gradually rose over a period of several years until it reached a high plateau. There was no decline even when the girls were put back under original working conditions as a check test period. The changes in output had no simple correlation with the experimental changes in working conditions. The experimenters were stumped—until they began interviewing the girls.

It was from the statements of the girls themselves that the "tough-minded" experimenters, as they called themselves, began to achieve intellectual illumination on their unknown variables. The girls thought "it was fun" to work in the test
room. They knew they were producing more, but they were doing it without any conscious effort. It seemed easier to produce at a faster rate in the test room than at a slower rate in the regular department. They were conscious of the special attention being paid to them and their work. New patterns of interaction formed between them. They began to pal around together after working hours. They knew that they were the center of attention. They knew they were making a contribution to the future welfare of their fellow employees. The whole social development of the group changed. They developed a common purpose and leadership within the group. The common purpose was increased output. And in essence, the girls felt themselves to be participating in something important.

In January of 1931, the Company made a report on all research up to that date. The report was more or less summarized as follows:

Upon analysis, only one thing seemed to show a continuous relationship with this improved output. This was the mental attitude of the operators. From their conversations with each other and their comments to test observers, it was not only clear that their attitudes were improving but that this area of employee reactions and feelings was a fruitful field for industrial research.2 [Italics. C.H.L.]

The investigators next set out to study the human relations existing in the regular shop department outside the test room. Here the interview method was expanded and  

2Ibid., p. 65.
perfected. The interviews were designed to let the employee unload his mind of all grievances, ideas and sentiments toward management and his fellow workers. The interviewing method was so very successful that it was made a regular function of the operating branch before the last experiments were completed. Between 1928 and 1930, more than 21,000 employees were interviewed. One of the first significant discoveries of the interviews was that the mere expression of a petty grievance was sufficient to deflate the sentiment accruing because of a previous lack of opportunity for expression. Both supervisors and employees received the interviewing program with enthusiasm. Typical comments were: "This is the best thing the Company ever did," and "The Company ought to have done this long ago." The 1931 report of the interviewing program states:

... employees who express their thought and feeling to a critical listener discharge emotional and irrational elements from their minds. Many personal and individual problems and attitudes have been improved by verbal expression which the interview affords. Taking account of the employee expressions recorded in twenty thousand interviews, we feel that this value in interviewing cannot be lightly overlooked.

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3 Ibid., p. 68.
4 The nature of these irrational elements will be very briefly analyzed later in terms of Freud and Mayo's theory of obsessive thinking and also in terms of Durkheim's concept of the anomia.
5 Fatigue of Workers, p. 68.
In addition to the immediate and obvious results, the interviewing program revealed some very fundamental data on the nature of our industrial culture. These interviews showed a characteristic of preoccupation in the thinking of many workers. This type of thinking is called obsession by Janet and the French School of Sociology. It is called compulsion neurosis by Freud and his followers. This fact stunned the investigators because very few of the employees were candidates for a mental hospital--yet the interview records showed that many of them were elaborating their thinking in a typically obsessive manner. In some cases this obsessive thinking could be traced directly to the work situation at the plant. Something in their industrial life caused these workers to have a feeling of personal inadequacy.

The next direction that the experiments took was that of studying the social relations between the people actually at work on the job. The suggestion that gave this direction to the studies came from W. L. Warner, Associate Professor of Anthropology at Harvard. The investigators became so engrossed in this aspect of the studies that they lost interest in the individual interviews just as they had lost interest in some of the earlier experiments. The interviews on the social relations prevailing between employees at work in the productive process revealed that there exists a certain amount of informal organization. This informal organization
of workers was designed to protect themselves against practices which they interpreted as a menace to their welfare. Consequently this type of behavior showed (a) a "straight-line" output, or a sort of norm which was felt to be a proper standard not to be exceeded; (b) resentment to the wage incentive system under which they worked; (c) informal practices by which "rate-killers" were punished and forced by opinion of the group to conform to the group norm; (d) informal leadership by individuals who kept the group together and helped to enforce its rules; (e) preoccupations of futility concerning promotion; (f) extreme likes and dislikes toward immediate superiors, according to their attitude toward the behavior of the operators.

Further studies along this line revealed some very interesting data upon informal leadership within the group. One type of leader usually "fronted" for the group when supervisory personnel were present. He did all the talking for the group. Another type of leader usually served as a "watchdog" over the group norm of production. If a new man entered the group and began to exceed or fall below the group norm, this second leader usually dealt with him in such a way as to get him to normalize his production in harmony with that of the group. They developed names such as "Rate Buster," "Speed King," "The Slave," "Squealer," "Chiseler," for those who deviated from the group norm. In addition, the group tended to put a fence around certain
types of work. They made it appear much more difficult than it was. And they took pride in telling how they were pulling the wool over the eyes of engineers and managerial personnel. Often they took pride in telling how equipment needing only minor repairs had to be sent in from the field for repair—and that they themselves were the only ones who knew how to do it.

Eventually, the interviews began to show that the group was vaguely dissatisfied with its own activities controlling output. Members of the group were dissatisfied with a division of loyalties between the company and the working group.

One of the most important general findings of the Western Electric researches was that such informal groups are constantly being formed among industrial workers, and that the groups develop codes and loyalties which govern the relations of members within the group. Next to this finding was a logical deduction which was even more important. It was that, constant interference with such codes is bound to lead to feelings of frustration, to an irrational exasperation with technical change in any form, and ultimately to the formation of a . . . system of practices and beliefs in opposition to the technical organization.6

Spectacular confirmation of this analysis was furnished by one of the experiments in the Bank Wiring Room. This experiment was designed to determine the relation of

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6 Ibid., p. 85.
intelligence and dexterity to individual productivity. The results found in this experiment were that the most intelligent worker was lowest in productivity and the least intelligent was the highest in productivity. Moreover, the worker with the highest dexterity rating was not in his logical productivity range. This experiment suggests that management was utilizing the talents of its workers in an inverse ratio to their intelligence and dexterity. Mayo points out how these informal organizations resemble formally organized labor unions, although the employees would not have recognized the fact.

In the Relay Assembly Test Room experiments, the girls were informed of each technical change. Their opinions were canvassed and in some cases they were allowed to veto proposed changes. They were far more closely supervised than in the regular shop work. Yet they felt no apprehension about supervision. In the Bank Wiring Room Tests the men were not consulted about technical innovations. They were not closely supervised. Yet they were apprehensive of supervision. The results of the intensive study of small groups is summarized by Roethlisberger and Dickson as follows:

According to our analysis the uniformity of behavior manifested by these groups was the outcome of a disparity in the rates of change possible in technical organization, on the one hand, and in the social organization, on the other. The social sentiments and customs of work of the employees were unable to accommodate themselves to the rapid technical innovations introduced. The result was to incite a blind resistance
to all innovations and to provoke the formation of a social organization at a lower level in opposition to technical organization.\(^7\)

The contrast of the methods used and the results obtained in the Relay Test Assembly Room and the Bank Wiring Observation Room are the most instructive of lessons for management. Both groups developed informal organization. The girls were participators. They were told of the "why" of experimental changes. Their suggestions were welcomed. They were closely supervised but did not feel themselves to be closely supervised. They were a part of the experiments which they felt were interesting and important. Their cooperation was enlisted. The men were not told of the "why" of experimental changes. They did not know what technical innovation would hit them next. They did not know but what the evidence of production under one set of circumstances would be used to reduce their piece rate wages later. Both groups developed informal organization. With one group, the girls who were participators in the experimental changes, production steadily rose. In the other group, the men who were non-participators, production was restricted.

Perhaps it is well to give an interpretation of important findings in the words of the Company's report and then follow up with some additional interpretations by the most qualified observers before attempting a concise digest to be

\(^7\text{Ibid., p. 66; cites Roethlisberger and Dickson, "Management and the Worker."} \)
used as criteria for the human relations in the production of steel.

The most revealing indictment of the Company's past practices comes from the Company's objectives of its new Industrial Relations Branch which admittedly grew out of the findings of the five years of research. For the Company's remedial objectives are quite obviously accurate reflectors of the findings of the elaborate, painstaking, and expensive studies which it financed. The first objective was to meet the need for an impartial counseling branch. In words of the Company's report.

There is a very real need for an impartial, non-authoritative agency whose function is that of interviewing employees, diagnosing their problems, and where necessary counseling with the supervisor regarding his method of supervising these people. 8

The second objective was related broadly to the communication of the actual work situation to upper levels of management as well as accurate communication from the top down. The Interviewing Program and the Bank Wiring Room studies had shown that the picture of the work situation which was held and acted upon by upper levels of management was quite unlike the actual work situation. The exact words of the National Research Council report are very apt.

The methods of payment and supervision were not working as they would have worked if management's assumptions had been correct. The employees had many strong sentiments in regard to such things as seniority, age, sex,

8 *Fatigue of Workers*, p. 88.
workmanship, nationality, social responsibility, occupation, and position in the group. Many of the objects of the physical environment were symbolic of the status the individual had achieved. For instance, a certain sort of desk became associated with a certain position in the hierarchy of supervision, and a supervisor of that grade would feel uncomfortable if he did not have a desk of the appropriate type. The behavior of the employees was influenced by these factors even more than by sheer monetary incentive, although in the logic of management money was assumed to be the leading motive. [Italics. O.H.L.]

The second objective was the effort to integrate the informal organizations into the formal relations of the Company. The Company report states that,

The function of these informal organizations seemed to be twofold. The first was that of providing the work group with a certain feeling of security. It appeared as though the employees were rather unconsciously attempting to protect themselves from real or fancied consequences of supervisory practices and technical innovations. Group restriction of output was one of the chief protective devices thus elaborated. The second function of these informal organizations appeared to be that of providing the work group with those intangible social satisfactions which come from being an integral member of a closely knit group. Various kinds of leadership were also provided for by these informal groupings which were not defined in the formal organization of their work situation. ¹⁰

H. W. Wright of the Western Electric Company testified the discovery of these informal groupings and their function was the most important one made in the studies.

The third objective was the statement of willingness to conduct further intensive studies of any new problems unearthed in the course of effecting the two broad objectives stated above. This third objective is, in substance, an admission

of the paramount importance of further knowledge in this field.

Roethlisberger and Dickson place great emphasis on the interpretation that the worker, "is always in the position of having to accommodate himself to the changes which he does not initiate."\[11\] [Italics. O.H.L.] And in addition, most of the changes so initiated deprive the worker of those very things which give meaning and significance to his work. The worker's established routines of work, his cultural traditions of craftsmanship, and his personal relations with co-workers are all at the mercy of technical specialists.\[12\] For example, the change in seating arrangements of operators in the Relay Assembly Test Room had more significance for the social situation in the room than any other similar change.\[13\] The worker is "neither allowed to retain his former traditions and codes nor evolve new ones of any duration."\[14\] The social codes and customs which define the worker's relation to his work are based on deeply rooted sentiments, they evolve slowly over long periods of time, and they are incapable of rapid change.\[15\] "Consequently, the constant interference with such codes leads to frustration, irrational exasperation

\[11\] F. J. Roethlisberger and W. J. Dickson, *Management and the Worker*, p. 16.

\[12\] Loc. cit.

\[13\] Loc. cit.


\[15\] Loc. cit.
with technical change in any form, and ultimately to the informal organizations with a system of practices and beliefs in opposition to technical organization." [Supra]. Roethlisberger and Dickson conclude their analysis by saying that any technological advance must presuppose to make use of the social codes which regulate the behavior and attitudes to each other.16

Management is in error when it takes the workers' position in the technical set-up to represent their actual situation. The technical organization represents workers as primarily motivated by economic interest and as acting in a more or less logical way. It tends to disregard the subordinate position of the workers in the social organization and the sentiments which such a position is likely to engender. It tends to view them merely as individuals and their work as dissociated from any social function. In consequence it fails to treat as relevant those very things—the workers' collective customs and beliefs—which give meaning and significance to their work and which make effective collaboration possible.17

While Roethlisberger and Dickson are concerned primarily with the relation of the individual to the micro-social-organism, Mayo, LeFlay, Durkheim, and Halbwachs have extended the essential idea to the relation of the individual and the macro-social-organism. As a matter of fact, Roethlisberger and Dickson's analysis stems from the scientific validation of Durkheim's concept of the anomie. Mayo interprets Durkheim as meaning a planlessness of living stemming from the shattering of traditional collective beliefs and codes of

16 Loc. cit. 17 Loc. cit.
group life by the innovations of technology. The Western Electric Researches give scientific validity to the interpretation that one of the strongest desires of human beings is one of continuous and intimate association in work with others. Mayo holds that the very strength of this desire, when frustrated, causes the individual to overthink his problem and failing in readjustment, he collapses in depression which leads to obsessive thinking. The work-life of the industrial worker is the major associational pattern of his life. The shattering of his personal relations and social satisfactions by technological changes causes him to critically search his entire life pattern for some immediate security and significance. It is the failure in this effort which determines the extent of obsessiveness in the worker's thought. Here lie the causes of irrationality and obsessiveness that continuously emerged in the interviewing records in the Hawthorne studies.

If Mayo and Durkheim are correct, not only the set of personal relations in the work situation but also those relations of the individual to the larger social context are a part of the total gestalt which frames and moulds the sentiments and attitudes of the workers. This over-all social context derives much of its meaning from the work situation. There is a continuity between the work situation and the

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total gestalt of the worker's social relations. The work situation is a pivotal area. And management is traditionally the initiator of technical changes which keep the pivotal area of social relations of the worker in constant flux. Consequently, management possesses the traditional prerogatives that determine the nature and duration of the worker's social relations which give the meaning and significance to his work which, in turn, is the basic condition of morale. And morale is the single most important factor in output.

Although the methodology and extensiveness of a unit of scientific research do much to enhance the validity of the findings, it is quite often necessary to reduce such results to their briefest form for use in further studies. The over-all study now requires such a concise expression of the results of the Hawthorne researches. They are:

1. Worker morale is the greatest single determinant of productivity.

2. Workers develop informal groups with leadership and codes of behavior which control output.

3. The informal groups develop as a protective device in opposition to technical innovations which they have no part in initiating.

4. The informal group development gives intangible social satisfactions to its members and significance and meaning to their work.

5. High morale and high productivity are results of collaboration which recognize and utilize these meaningful group relations and values.

6. "Management is in error when it takes worker's position in the technical set-up to represent their actual situation." [Supra]. The technical organization represents
workers as primarily motivated by economic interest and acting in a logical way in accordance with this assumption. The essence of the findings refute this managerial assumption.

(7) Workers are amazingly conscious of status relationships. For the "tough-minded" experimentors, this was one of the most astounding revelations of all.

Since the Hawthorne studies have been the most elaborate scientific studies made in industry, these findings logically constitute the valid definitive limits of knowledge for relevant problems. The problem treated herein is fundamentally one of resource utilization. And the concept of a wasted resource derives its meaning from the knowledge of more efficient resource utilization than that method which is currently used. Consequently, the findings of the Hawthorne studies logically form the instrumental gestalt through which the utilization of human resources in steel production should be viewed.

Since the Hawthorne studies revealed that management initiates the technical innovations which keep the pivotal area of the workers social life in constant flux, we are compelled to take into account the traditional prerogatives of management.

The Nature of Managerial Prerogatives and the Structure of Social Organization

For a concise expression of the nature of managerial prerogatives we turn to Hoxie who exhibited such a penetrating and profound grasp of employer-employee relations that his analysis still serves as something of a model and guide
for contemporary students. According to Hoxie, managerial prerogatives stem from a "social philosophy of God-given, inalienable and absolute rights." Concomitantly, there are assumptions of a natural harmony of interests which means that the employers' interests are always identical with those of society. Consequently, the "employer has an absolute right to manage his own business . . . " The business is his property in the absolute sense and the initiation of production, hiring, firing, wage payments, work conditions, etc., are God-given inalienable rights of management. These and many other similar assumptions by management have been clearly brought into relief in the long and bitter history of industrial warfare which has characterized the rise of unionism. Although many employers are consciously unaware of the nature of their basic philosophy, further analysis of their activities validates the accuracy and aptness of Hoxie's insight. The immediate point to be developed concerns managerial ideas and attitudes toward labor and its relation to, and status in, the productive process. The value of Hoxie's analysis lies in his "spot-lighting" the fundamental philosophical attributes which form the historical background of management's


21 *Loc. cit.*  

22 *Loc. cit.*
customary beliefs, opinions, and sentiments about itself and labor and what constitutes their proper relations in the economic processes.

These customary managerial prerogatives have little relevancy in the abstract. They must be viewed in their functional context. The significance of this particular phase has been studied and seen very clearly by Burleigh B. Gardner, who was in charge of employee relations research for five years at Hawthorne. It will be recalled that one of the significant findings in the Hawthorne studies was the explicit and implicit hypersensitivity regarding status. From a very general point of view, this finding may be considered as one of the most important findings. For when the individual worker feels secure in his status relationship to his fellow workers as well as to the significance of his status in the productive process, it is then that his morale is highest, he is most cooperative, and his productivity is at its highest. Gardner seems to be more aware of this particular aspect than his colleagues. And, consequently, he has made it the cornerstone of his publication, Human Relations in Industry. It is here that he depicts the social structure of industry as a hierarchial pyramid of status relationships.23 As was emphasized by Roethlisberger and Dickson, management has traditionally followed the logic of

technical organization. The logic of technical organization functioning in the status context is aptly depicted by Gardner as follows:

Just as the lines of authority converge toward the top of the structure, the lines of interest and attention converge too. In fact, everyone seems to be looking upward with his attention focused upon the people above him and especially upon his boss. His boss in the man who hands out the orders, assigns him to his work, gives him a pat on the back for a good job, and passes on a good word for him to the "higher-ups." And his boss is the man who can give him a dirty job to do, criticize him for doing it poorly, and give him a bad name up the line. His boss is his link with those above him in the structure. Thus the likes and dislikes of the boss, his moods and opinions, his comings and goings, his least comment and gesture, or the way he is distracted by that cute little redhead from the next department, all these are subjects of interest to his subordinates. Each subordinate is concerned over just how his boss feels about him. He wonders if his work is satisfactory, if he makes a good appearance, if his boss thinks he talks too much or not enough, or if he knows just what his boss does expect.

While each boss is thus the center of attention from his subordinates, he in turn is busy watching his own boss and wondering about him. As a result he tends to look upon his subordinates in quite a different way. He rarely worries about their opinions of him; he does not lie awake at night wondering if he acted like a fool in front of them; he does not treasure their words of wisdom or of praise to be retold at the dinner table. He does not even remember that he is the center of their attention, and he is likely to be annoyed with them if they are upset by his indifference or demand a lot of his time.

Thus we have a series of man-boss relationships in which each person is intensely concerned with how his boss judges him and at the same time is busy judging his subordinates. Each is constantly looking at his subordinates, trying to determine how well they are doing their jobs, and how they might do better work, and each is constantly being irritated and disturbed when they fall short of what he thinks they should be doing. At the same time his concept of the job is constantly being mixed up with what his boss will think and what he expects, until "doing a job" often becomes a matter of "doing what the boss thinks is good." Often this concern is not merely with what the boss expects in terms of the
work itself, but also with what he thinks is "proper" behavior. As a result each level is constantly judging his subordinates not merely in terms of the work accomplished but in terms of "what would my boss think if he saw them?"

The supervisory structure is, then, a status system in which it is accepted as a matter of course that each level has more status and prestige than the ones below it. In fact, the words used in discussing it show this status factor. We speak of superiors and subordinates, of higher and lower levels, of up and down, of above and below, all of which imply differences in rank in such a structure. The problem of status or prestige does not end with this simple supervisory hierarchy, however, but intrudes itself into all sorts of situations and in innumerable guises. In fact, the matters of relative status, of where each person fits in terms of it, of how each compares with others, present some of the most interesting, and to those involved some of the most annoying and painful, problems of people at work.24

[Italics. C.H.L.]

Thus it is easy to see why Gardner holds that "the heart of the social organization of industry is the relationship between the individual and his direct boss."25 The logic of technical organization functioning within the status context has the tendency to force the worker's attention away from the immediate socially satisfying relations of the work group to those highly dynamic relations that prevail between the worker and his boss.

Negative Human Efficiency in the Functional Context

With the significant findings of the Hawthorne experiments in mind as a criterion, coupled with the logic of technical organization and the customary prerogatives of

management, we shall examine some typical effects of managerial prerogatives functioning in the actual production of steel. All of the following cases are actual case histories that have prevailed within the process of production on manufacture—except one. This one exception is a short one-act play "presented and acted by steel workers at one of their summer recreational and educational camps." This play is the joint product of several score of steel workers from a number of plants and mills. The Steel Workers' Union which publishes this maintains that this play is representative of the common experience of the man who jointly wrote it. These are the justifications given by the union for presenting the play. However, in addition to the union's claims, this play has far more significance as will be seen later.

The title of the drama is The Innocent Upsetter. The characters are the upsetter (who is a new employee), the foreman, the plant manager, the company president, and an invisible board of directors. The play is presented in Our Town fashion.

"I discovered a way to hook up three of these machines so a fellow can operate them and get out three times the number of bolts that he can now produce on one machine," the upsetter observes to his foreman just a few weeks after he enters the shop.

"Nuts," the foreman replies; "you're paid to run one upsetting machine, not to do the thinking around here."

A few hours pass.

The foreman to the plant manager: "Boss, I think I've got a way to treble the production of our upsetters."

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Listening patiently, the manager answers, "Doesn't sound practical to me. You see that the men produce on the one machine they've got—that's your job."...

Next morning in the president's office.

"Chief," the manager begins, almost out of breath, "I've been in the shop almost all night, and I got a great idea in the upsetting department," etc., etc.

The president cuts him off short and sends him out of his office thoroughly chastised.

Pulling his hair, wringing his hands, and pacing the floor, the president suddenly grabs his hat and coat and rushes out—almost knocking over the commentator, who is returning to the stage.

"Well, folks," the commentator drawls, "you'd think he is going to have a baby, I mean his wife is; but no, that's not the case. You see, it's like this. He's running off to a meeting of the board of directors to sell them the idea of giving one man three upsetting machines instead of just one. He's going to tell them it's all his idea, that he worked on it for months and only figured it out because of his long years of practical experience and great technical training. I bet he's even going to get a big bonus for showing the directors how efficient he is in running their shop."

... And on he drawls...

The following Monday morning in the president's office. Boy's, I've done it. Got the money for a dozen more upsetting machines from the board. They're already on the way from the factory, and will be here late tonight. You [pointing to the manager] see that they are unpacked carefully, and you [pointing to the foreman] see that room's made for them in the department."

Heads bowed, they leave the office. The president calls them back. "And, yes, we won't need all the upsetters. Better let half of them go tonight. That's all. Get a move on ya."...

Last scene, back in the department.

Foreman to the new upsetting: "Guess they're going to get three machines for each man all right. But they won't be needin' you round here no more. This is your last day. Your pay will be waitin' for you at quittin' time."

The drawling commentator returns.

"Well, folks, you see it's like this. A new fellow's gotta learn his way around these parts. He can't afford to be so free with his ideas. Never can tell when one will swing right back and knock him plumb outta his job. A fellow's gotta learn to keep his mouth shut at the right time. Yes, sir!"
In addition to the dual significance of this play, there is an interesting and substantiating sequel.

One of the authors of Dynamics of Industrial Democracy recited this play at a conference on management and defense. A company president said the theme of the play was not typical, and denounced its recitation as the kind of thing that breaks down confidence in management. A personal talk between him and the author afterward developed the fact that he seldom went into his plant and was dependent upon his subordinates almost entirely for information on what happens there. He was sure a free interchange of ideas went on daily between his employees and their supervisors, but admitted that he did not know this of his own knowledge. When he returned home, apparently he found the play fairly typical of his shop—a few weeks later one of his subordinates ordered a dozen copies of SWOC's handbook Production Problems, which sets forth a program to achieve what he mistakenly thought existed in his shop.28

[Italics. O.H.L.]

As hinted earlier this little drama has dual significance. Assuming, momentarily, the play accurately depicts the common experience of steel workers, as the union maintains that it does, there is an additional—and very revealing—point of view depicted. It is the explicit sanction of technological restriction by the union. The alert reader cannot fail to recognize it. And the social scientist cannot fail to take it into account. This play presented by the steel workers at one of the summer recreational and educational camps is highly significant in that it clearly brings into relief a basic pattern of action in both groups—management and labor. Nevertheless, if this play is an accurate description of common experiences of steel workers, it is

28Ibid., pp. 235-6.
obvious that the managerial prerogatives exercised were causal forces of the retaliatory practices which emerge from a feeling of insecurity on the part of the workers.

We shall now scrutinize some typical case histories that have occurred at one time or another in the recent history of steel production and manufacture. If the following case histories reveal functioning of a similar vein of prerogatives as initiators of insecurity, restricted production, low morale, etc., we shall have established an important link in the over-all hypothesis set forth.

The case of Joe O'Toole is a significant case in point.

In the operation of an open-hearth furnace, a heat will sometimes develop a "boil." Unless it can be worked out or guided to the rear of the furnace, it breaks through the front and the molten metal pours out on the floor. This is costly and dangerous. Every effort is made to prevent it. At the time an epidemic of "boils" had been plaguing the department and the superintendent, a graduate of an outstanding university in metallurgy, had applied all his knowledge to solve the problem, but it was beyond him. For weeks Joe, a charging-machine operator, tried to tell him how to kill a "boil." The superintendent would not listen. During a shift when the superintendent was out of the mill a "boil" developed and threatened to break out through the front of the furnace. Joe decided to put his idea to practical use. He loaded a four-thousand-pound box of ore on his charging machine and drew it up before the door of the furnace. Just then the superintendent arrived on the scene. He ordered Joe away, told him that he was a fool and would get "burnt to a crisp." The first melter in charge of the furnace favored trying Joe's idea. The superintendent said nothing doing. Finally, as the "boil" was almost at a head, the melter ordered the super off the floor. The super could fire him later, he said; but he was in charge at the moment and, come what may, Joe was going to get a chance to see what he could do, because "We've been losin' too many heats and my pay envelope has been showin' it."

The infuriated super returned to his office. Joe brought back the box of ore. A man was stationed over
the furnace with a cold-water hose. At the split second
the metal started for the door, Joe dropped the box of
ore in the mouth of the furnace and speedily withdrew
his machine. The man above poured cold water on the box,
"freezing" it so tight that the metal could not get by
and had to reverse its direction. The "boil" was broken;
the heat continued and was tapped without the loss of a
minute's working time or an ounce of steel. 29

In the above case one sees that Joe had tried for weeks
to tell the superintendent, the graduate of an outstanding
university in metallurgy, how to kill a "boil." The epidemic
of "boils" was not only costly but dangerous. And it was
only when the first melter and Joe, after weeks of frustration
and decreased pay, took charge of the problem—at the risk of
losing their jobs—that the problem was solved. And it is
quite obvious in this case that the managerial prerogatives
of determining plant policy was the cause of wasted metal,
danger to the workers, decreased purchasing power for the
workers, and delay in solution of the problem. This case,
too, has a very revealing sequel. "For a month the super
would not talk to Joe, who had so humiliated him. They are
good friends today and, though they meet frequently, this
incident is never discussed." 30 [Italics. O.H.L.]

The author presenting this case goes on to observe that
the trouble in this case was not with the super but with his
elders. Because somewhere in the shaping of his attitudes
he had "acquired the idea that he was intellectually superior
to those who had neither college degree nor a position on

management's side.\textsuperscript{31} [Italics. O.H.L.] This case clearly depicts waste of metal, delay of time, frustration of workers, etc., as being caused by management's prerogatives. However, the waste metal, loss of purchasing powers, etc., are not the major types of waste involved. A far more significant type of waste is concomitant with management's traditional prerogatives. It is the frustration of other ideas like the one Joe O'Toole fought to justify. One has valid grounds for wondering how many other Joe O'Toolens have been successfully frustrated by management's traditional prerogatives. Golden and Ruttenberg maintain that few workers have the courage of Joe O'Toole--they just keep their ideas bottled up inside.\textsuperscript{32} "Management has no monopoly on knowledge, except as it wields its power to frustrate the use of knowledge of workers."\textsuperscript{33} [Italics. O.H.L.] In such cases one readily sees the concomitant relation of monopoly and waste of human resources. Management holds, by custom, a monopoly power like that defined by Mundhenke. In the O'Toole case and the Upsetter case, this set of traditional prerogatives functions as causal forces of several types of waste ranging from wasted metal and loss of pay to the frustration of labor technology and, what Veblen terms, the "conscientious withdrawal of efficiency."

\textsuperscript{31} Loc. cit.
\textsuperscript{33} Ibid., p. 239.
Additional effects of managerial prerogatives come into focus in O'Connor's treatment of the management-labor controversy in the steel industry. The particular context from which these prerogatives are thrown into prominence is that of union recognition in the steel industry.

In 1919, a union contract was signed in New York which pertained to the use of union men in steel construction in the New York City area. The large steel companies were bitterly fighting unionization in the steel mills at that time. Consequently, the large steel producers boycotted the New York area. They refused to ship iron and steel into the New York area. In 1922, the Lockwood Committee of the New York Legislature began to focus its attention upon the labor tangle in New York construction. Eugene Grace, president of Bethlehem Steel, was summoned to testify. Grace testified that he would never recognize the right of employees to act jointly with employees of other concerns. As if this unequivocal position is not sufficiently clear, he testifies that, "If 90 per cent of my men belonged to a union, I would not recognize them as union men or members of the union." Grace said, "I think that is better for the men!"\textsuperscript{34} \textsuperscript{35} [Italics. O.H.] This unequivocal position is what Hoxie is referring to when he depicts management's basic philosophy as being one of

\textsuperscript{34}Harvey O'Connor, \textit{Steel--Dictator}, p. 180.

\textsuperscript{35}Ibid., pp. 180-1.
Divinely ordained absolutes. The superiority attitude that existed in the O'Toole case is also clearly evident here. Kallen holds that the machine age inherited the master-servant relationship of medieval life.\textsuperscript{36} Golden and Ruttenberg depict the employer-employee relationship as essentially that which existed during medieval times.\textsuperscript{37} In view of Mr. Grace's testimony this point takes on added interest.

The Lockwood investigation took note of some effects of managerial prerogatives in a little different way—though still related to the point of study involved here. The Lockwood Committee report condemned the pernicious results of the "spy system."\textsuperscript{38} Just how pernicious the "spy system" is can be seen by its effect upon worker morale. The problem cannot be treated in detail here. However a very brief notice of the "spy system" suffices to substantiate the point that destruction of morale is waste. O'Connor aptly depicts the conditions which initiate this particular type of waste.

Spies work in the unions as bona fide members. They are employed in the mills as regular workers and circulate among the men. "The spy may be my best friend," as one unionist put it. They spread malicious propaganda against union leaders; they circulate the philosophy of despair; they urge unionists to strike at times when a strike would play into the company's hands. They spread confusion in strategy, try to demoralize union meetings.

\textsuperscript{36} Horace M. Kallen, \textit{The Decline and Rise of the Consumer}, p. 62.

\textsuperscript{37} Golden, op. cit., p. 119.

\textsuperscript{38} O'Connor, op. cit., p. 181.
Whispers can be more devastating than brazen announcements. For a year Duquesne has been told that the mill will not operate at a higher capacity until the union is kicked out of town. The rumor floats around anonymously, permeating the ranks of the business men, building up hostility to the union. No one can be called to account.\textsuperscript{39} [Italics. O.M.L.]

Case histories of "spy exposure" by workers are documented in the 1920's and 1930's by Davis.\textsuperscript{40} The black list is affected and maintained by the "spy system." And until very recently spy systems operated continuously as parts of the personnel program of all major steel companies.\textsuperscript{41} Mass firing has been a rather common result of the spy system.\textsuperscript{42} Steel workers in applying for new jobs have been met with the reminder of their past attitudes and sentiments and rejected.\textsuperscript{43} In view of the Hawthorne findings, this type of personnel relations can hardly be conducive to high morale. The extensiveness of this managerial pattern is seen in the following case.

In the 1919 strike, Illinois Steel sent operatives into Gary "with special instructions to stir up hatred between Italian and Yugoslav workers on the basis of the Fiume incident."\textsuperscript{44}

The following case is one in which a new president was appointed by the directors to fight the union and operate the

\begin{footnotesize}
\begin{enumerate}
\item Ibid., p. 277.
\item Horace B. Davis, Labor and Steel, pp. 166-7.
\item Ibid., p. 167. \hspace{1cm} Ibid., p. 164.
\item Ibid., p. 167. \hspace{1cm} Ibid., p. 278.
\end{enumerate}
\end{footnotesize}
plant at any cost. Finally this new president approached the union leaders and asked for a conference in preparation for recognizing the union. The following statements were made by the president of the company as he lunched with the regional union director.

"My plant is in a helluva [he talks this way] shape," Burt began. "I raised wages over thirty per cent fighting you fellows. My costs are out of line competitively and the efficiency in the plant is bad. I lost five good accounts during the strike, and cannot get them back because they are afraid I won't be able to make scheduled deliveries. Everybody is suspicious of everyone else; that is, they are spy-crazy, thinking the next fellow is a stool pigeon. My foremen are nervous wrecks, I am at my wit's end personally. A nasty situation exists in Number One Shop, where half of the men call the other 'scabs.' ..."  

Behind the union recognition facade, one sees suspicious, spy-crazy workers, low efficiency, nervous wrecks as the foremen, a new president at his wit's end, and an organized group of hostile workers. The president of the company admits the efficiency is bad. To one who comprehends the significance of the Hawthorne findings, the admitted data above indicate only a few fragments of the actual waste obtaining in this plant. In this case, the spy system is seen in its most demoralizing aspects. And managerial prerogatives are seen in their most destructive aspects.

Under no stretch of the imagination can such activity be construed as conducive to high morale and high productivity. Yet as late as November 4, 1934, Mr. Harry Saxer,

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general superintendent of the Aliquippa Mills of Jones and Laughlin gave the following testimony before the Steel Labor Relations Board in answer to the question put to him: "You have an excellent espionage system at your plant, haven't you?" "Yes, we think we have." In view of the demoralizing effect of the "spy system" it certainly becomes questionable whether any such activity can be termed excellent—except in a negative sense.

Another significant demoralizing activity stemming from a set of managerial prerogatives is shown in the use of company unions and concomitant pressure in combatting non-company unionization. The following case took place during an effort to administer the N. R. A. Ostensibly, the workers were to obtain representation through an election. This case demonstrates the managerial sabotage of the N. R. A. code which the leaders of the steel industry themselves were supposed to administer. This last point is incidental to the point involved in this study, but it is necessary in order to clarify the context of the case without quoting excessive supporting material. The case is as follows:

In Weirton, the company officials used the two months between the strike settlement and the election scheduled for December 15th to build up the company union. Liquor parties at the company's country club were open to all who cared to come. The company union held three dances.

"It really made you sick," said a mill worker, "clothesbaskets full of pork and cheese sandwiches and

\[46\] O'Connor, op. cit., p. 279.
lots of beer. They got fighting, throwing sandwiches. And you think of the hungry kids at home. Sunday, exactly when the union mass meeting was scheduled, they told us to come in to the 43-inch cold mill to a meeting. 'We will have lots of beer, and you'll be paid for three hours,' the foreman said. 'Better be there, or you may find you have no job!'

"Our union doesn't cost you anything," foremen told workers. "But in the outside union, you pay $1.25 and it puts you out of work entirely. The government is not so strong as the steel company. If the union wins, we'll shut down and the grass will grow here for five years." 47

The sequel to this case was that General Johnson, N. R. A. Administrator, called E. T. Weir, President of Weirton Steel, and stated the following caustic remarks which Weir's stenographer transcribed from another phone.

General Johnson swung into the picture with a phone call to his friend, E. T. Weir, in Pittsburgh. Weir cannily had a stenographer take down the conversation on another phone. Johnson was scornful.

"Anyone who knows anything about how such things are done, knows very well that when an election is held under company auspices, the relations between the worker and the boss are such that just intrinsically the worker is going to vote with his eyes on the boss. It always has been that way and it always will be." 48

The point of study at hand is not the union-management controversy over union recognition. The point of study is that management customarily possesses a set of prerogatives which--because of the status organizational pattern--are the basic determinants of high worker morale. And high worker morale is the basic determinant of high productivity. When managerial prerogatives take the form of bribing workers with

47 Ibid., p. 189. 48 Ibid., p. 190.
food, dance, and drink in exchange for allegiance to an idea which the workers deeply feel is contrary to the eventual welfare of their "hungry kids" at home, morale, if it exists, must of necessity be negative. This point in addition to the threat of losing jobs completely—in the midst of the worst depression in modern history—cannot conceivably make for high morale and high productivity. Obviously, the sickness to which the worker refers is morale sickness. And this sickness, according to the Hawthorne findings, is the major determinant of low productivity—or wasted human resources. General Johnson's caustic remarks to E. T. Weir are explicit recognition by a high Governmental official of the enormous power wielded by management over the workers.

Shortly after World War I the American Society of Mechanical Engineers made one of the serious studies of waste in industry. This group slowly realized that output was affected by the method of wage payment. It goes without saying that the method of payment has traditionally been a managerial prerogative.

One of the most devastating prerogatives of management is that of the right to arbitrarily promote and lay-off workers. The background of sentiment of workers is an equalitarian one. "A group of workers, as a rule, will tolerate almost any kind of reasonable situation, as long as it is felt

everyone is getting his share of the 'breaks' and all are getting equal treatment. The keenness of this equalitarian feeling is evident when someone of the group gets a "break" that the group feels is due to favoritism or discrimination. In such cases dissension develops in the group. Workers feel that seniority preference is basically equalitarian in that it gives equal opportunity for advancement in terms of length of service. One of the strongest appeals of the union organizer is that of holding forth a chance for all the workers to get a square deal in the way of an even "break" in job advancement. And yet management's arbitrary prerogative of advancement, lay-off, etc., has caused more dissension, frustration, strikes, etc., than any other prerogative. Golden and Ruttenberg hold that in seniority controversies with management, the typical reply of management is,

We are responsible for the efficiency of this plant, and we have got to see that the best employees are taken care of. We cannot give up our right to use our working forces to the best interests of the company as a whole. The union isn't going to tell us whom we can place on a job, or whom we must lay off when work is slack.

Here, again, is found the same tenacious prerogatives functioning. And as mentioned above, the right to arbitrarily

50 Golden, op. cit., p. 128
51 Loc. cit.
53 Ibid., pp. 128-9.
54 Ibid., p. 130.
55 Loc. cit.
promote, lay-off, etc., has caused more strikes and dissen-
sion among workers than almost any other factor. If Golden
and Ruttenberg are right on this point, this is, then,
another type of waste caused by a managerial prerogative.
Moreover, in the light of the Hawthorne findings and the
deep-seated convictions of workers on seniority questions, the
comment on the responsibility for efficiency is seen to be a
boomerang. A little glimpse of the magnitude of prevailing
inefficiency will be developed in the succeeding chapter.
The point being developed here is admirably stated by Golden
and Ruttenberg.

Morale is recognized universally as being invaluable to
the attainment of optimum efficiency in industry. Sen-
iority, properly administered, builds morale; it gives
workers, as individuals and part of a group, a real
sense of security and job protection. The suspicion
emngered among a group of workers by arbitrary acts of
management, the confusion growing out of the lack of
specific rules governing promotions and layoffs, and
the worry and insecurity caused by management's unre-
stricted power to discharge a worker peremptorily
hardly contribute to a wholesome spirit.56 [Italics.
C.H.L.]

Moreover, "... savings accruing from a lower labor
turnover and the development of a stable working force are
tangible, and this direct result of seniority—tying of a
worker to his job—of course, has a positive relationship
to productive efficiency."57

The relevant point is so obvious that further substan-
tiation would appear redundant. A few more cases give an

even more interesting perspective of the functioning of management's traditional prerogatives. Another interesting way in which managerial prerogatives function is seen in the use of the "speed-up." The following case is recorded by women workers at the McKeesport Tinplate Company in December, 1930.

Girls that can't keep up with the speed-up get hell from the floor-lady. She tells them: "You are getting old; you worked here too long. You ought to quit working." That's the answer we girls get for slaving 15 to 20 years in the mill. Many are forced to quit their jobs. Many can't finish their turn. Those that don't have fear from the bosses or for their jobs go home sick and stay a few days, then back to the slave house they go.58

[Italics. 0.H.L.]

Such use of managerial prerogatives is very obviously completely devoid of the most elementary psychology. Every connotation that might be interpreted from the floor-lady's statements are devastatingly contrary to the Hawthorne findings. In view of the fear, low morale, feigned sickness or fatigue that results from such a managerial activity, it is highly dubious whether or not any short range gain is achieved in the "speed-up." Most certainly, nothing is gained in the long run. And the destruction of morale is amazingly obvious in the case cited above.

Several other cases similar to the one above are available.59 All clearly show the specter of a managerial prerogative in the background. An additional particular point is revealed in the above case. That point is the way in which

58 Davis, op. cit., p. 34. 59 Loc. cit.
certain managerial prerogatives function to re-inforce other prerogatives. The right of the employer to arbitrarily deny work to the individual worker constitute the ultra vires of management when all other prerogatives have failed.

The point of study involved apparently could be substantiated in every facet of management-labor relations. However, the limits of this study do not permit such extensive development. One additional case brings the problem so clearly into focus that further substantiation on this general point seems superfluous within the limits of this study. The following case developed during World War II at a time when the wartime needs demanded every unit of production possible.

During the war the Steel Workers Organizing Committee had the following experience which clearly points out the waste that occurs from the institutional prerogatives of management.

The S. W. O. C. was interested in obtaining union shop recognition in the defense plant involved. Management was fighting unionization, morale was low among the workers, approximately one hundred individuals were given individual pay adjustments every two weeks which kept the plant in an uproar, and one out of every four propellers were scrapped per month. The union was offering to help its utmost to remedy waste in its union-management cooperation plan. The S. W. O. C. appointed a research committee and tendered its recommendations in the form of a letter to the vice-president
company. The vice-president, violently anti-union, declared the letter to be "damnable." Notwithstanding the fact that, . . . management immediately farmed out the heat treating of a large portion of its output to the company mentioned in the letter. The suggestion on welding rod was adopted. In our collective-bargaining conferences, of course, the wage inequalities and wholesale pay-period wage adjustments were corrected, but management made it plain that its employees were hired to work and not to tell it how to produce propellers. Except for the immediate suggestions contained in the letter, all of which came from men in the plant, the technical knowledge of this plant's thousand workers has gone unused . . . . and the idea of workers participating in operating problems so infuriated the management that it was blinded to the possibilities of union-management co-operation. 60 [Italics. C.H.L.]

Just what the possibilities of union management cooperation are will be developed further in this study. The immediate point of significance is that "the idea of workers participating in operating problems . . . infuriated . . . management" [Supra]. This case is a perfect example of management's assertion of one of its divine prerogatives and the waste stemming therefrom. In the above case productivity was so low and the per cent of scrapped propellers so high that there was suspicion on the part of some governmental officials and some of managerial officials that foreign saboteurs were at work in the plant. 61 It will be recalled that the method of wage adjustments kept the plant in an uproar among other things. After the labor relations at the plant were improved, production spurted ahead. Amazingly

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enough, the sabotage seems to have had its origin in the dogmatic assertion of the traditional prerogatives of management. Gardner calls this type of management autocratic. And of the autocratic type he has this to say:

These are the ones who say mightily, "I do the thinking around here. You do what you're told!" These are the ones whose work groups yield too many disturbed individuals. . . . Work groups with this sort of supervision usually respond either by very close cooperation among the members against the boss or by general group disintegration and lack of unity. . . . The boss's constant criticism and authoritarian attitude create anxieties and irritations among the workers, and they take it out in complaining and quarreling with one another.62

In the S. W. O. C. case a vast reservoir of unused technical knowledge existed in conjunction with the low morale and low productivity. And the idea of workers participating in operating problems so infuriated management that it was blinded to the possibilities of higher productivity. This was at a time when wartime demands were excessive and high productivity was more essential than ever before. The inescapable conclusion on the S. W. O. C. case is that the tenacious adherence by management to its traditional prerogatives was the causal factor in the waste involved. Both the waste in destroyed morale and low productivity and the unused technical knowledge of the workers are forms of waste attributable to managerial prerogatives.

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Summary and Conclusions

This case in conjunction with the others cited above show the customary managerial prerogatives as forming the contextual origin of various forms of waste in human resources.

The general point of relevancy is that we are dealing with a complex set of ideas that have, by custom, come to be regarded as fitting and proper to the superior status of management. And it is this set of ideas functioning in logic of technical organization that are contrary to the basically equalitarian pattern of human relations that is emergent among organized workers.

Unquestionably, all astute social scientists would support Gardner when he says that,

. . . the social organization of an industry just cannot be "got rid of;" it cannot even be ignored without danger of disrupting or even destroying the organization. The least one can do is try to understand it so that he can act intelligently in it and about it.63

Yet the only impartial conclusion tenable in the light of the Hawthorne findings and the cases cited above is that management via its traditional prerogatives has flagrantly ignored or attempted to "get rid of" the prevailing or emerging structure of human relations. The consequences have been waste—either through the destruction of worker morale or disregarding the technical potential of labor.

63 Ibid., p. 291.
In conclusion it may be said that monopoly and a concomitant waste condition exists in human resources not unlike that shown in Chapter II. The monopoly in this area of study is a monopoly power in the form of a set of prerogatives which management holds by the "cake of custom." The forms of waste range from non-utilization of labor's technical knowledge to the destruction of worker morale.

The basic reality underlying waste of human resources is primarily a traditional cluster of interrelated ideas. These ideas can hardly be separated from their context. They form an ideological nexus. And they must be treated as such. The facets of this ideological nexus are multiform. The above documentation has merely brought into focus the waste stemming from a few dominant facets of this ideological nexus.
CHAPTER IV

MONOPOLY AND WASTE IN UNIONS AND THE CONDITIONS OF HIGH PRODUCTIVITY

Introduction

This chapter is designed to develop three major points which were implied in the preceding chapter. The points to be developed are: (1) the existence of wastes via restricted production by labor monopolies, (2) the possibilities of increased efficiency when labor and management are consciously cooperating toward the same ends, and (3) the point that management still holds the position of major responsibility for initiating the elimination of waste.

Wastes Stemming from Labor Monopolies

As primary evidence it is quite easy to show waste of this type in all of the major cases cited in the preceding chapter. The last few sentences spoken by the commentator in the Upsetter case reads as follows:

Well, folks, you see it's like this. A new fellow's gotta learn his way around these parts. He can't afford to be so free with his ideas.... A fellow's gotta learn to keep his mouth shut at the right time. Yes sir!1

Here is one form of technological restriction that is sanctioned by the union educational and recreational committee. To the

extent that this advice is effected it must be concluded that waste of human resources occurs.

The S. W. O. C. case is again a perfect example for this type of analysis. A portion of this case which was not cited earlier is relevant at this point. "Except for the immediate suggestions contained in the letter, all of which came from men in the plant, the technical knowledge of this plant's thousand workers has gone unused."²

That this unused technical knowledge constitutes waste is unquestionable. Now, here is the pay-off. Golden and Ruttenberg go on to say that, "The price for this knowledge, naturally, was the union shop."³ Here the "conscientious withdrawal of efficiency" is shown to be a bargaining instrument. In other words, the threat of waste and restricted production is part of an over-all policy to help force union recognition. This pattern of action is effected through a monopoly power. It would probably be very difficult to find a more clear-cut case of the conscious use of waste as a bargaining instrument.

Another form of waste practiced by workers is seen in the use of the "slow-down." This practice may set in motion various actions on the part of management to speed-up production. Although it is commonly recognized that management has frequently used the "speed-up" without any such provocation

²Ibid., p. 243. ³Loc. cit.
from labor, the particular point here is that the "slow-down" may be a factor in initiating the "speed-up." Thus, there is created a vicious circle of opposition which increases disrespect and hatred on both sides. This process is aptly described by Davis in the following manner:

Against the driving tactics of the bosses the workers can put up a certain defense. In particular cases they have sometimes managed to hold down the output to an established schedule by tacit agreement. But changed technique has made the establishment of anything like a customary standard in most departments of the industry very difficult if not impossible. And in the economic crisis, when the boss is in a position to play off one gang of men against the gang that has the other half of the job, informal and unorganized restriction is not likely to be effective.\footnote{Horace B. Davis, \textit{Labor and Steel}, pp. 89–90.} \[Italics: \textit{O.N.L.}\]

It should be noted in this case that the opinion is expressed that informal and unorganized restriction is not likely to prove effective. There is a strong implication that organized formal restriction would be effective.

It will be recalled that several references have been made to the S. W. O. C. \textit{Handbook on Production Problems}.

The official advice given in this handbook is very revealing.

Do not begin to try anything described in this handbook until the position of the union is secure, and it has permanent and satisfactory contractual relations with the employer....Nobody is to lose his job as a result of any improvement that is installed. HOW TO BEGIN WASTE ELIMINATION....METHODS FOR INDUCING TEAM PLAY AMONG THE MILL EXECUTIVES. COORDINATING SALES, PRODUCTION, FINANCING AND LABOR SCHEDULES....PRODUCTION STANDARDS....SPEEDUP AND OVERSTRAIN....SLACK SEASON UNEMPLOYMENT. One method of getting the executives genuinely concerned is to make them realize....how much
the company loses by having idle equipment... DANGEROUS
WORK... DO'S AND DON'T'S... PROPOSED SET-UP OF JOINT
RESEARCH... 5

When considered in conjunction with the cases cited above, it appears that certain types of waste are practiced by labor as standard operating procedures for forcing union recognition. It should not be overlooked that this datum carries the clear implication of featherbedding. And featherbedding is obviously a form of waste.

The waste stemming from the restriction of production by labor can never be accurately measured because of the multitudinous facets through which it may function. Neither can the extent of waste stemming from managerial prerogatives contrary to the worker sentiments be accurately measured—and for the same obvious reason. However, a rough estimation of such waste can be approximated by contrasting the typical cases of productive efficiency stemming from conscious and deliberate cooperation with those cases in which labor and management were working together under an armed truce.

The cases cited in the last half of the previous chapter and additional ones cited in the above parts of this chapter on restriction of production serve very well as a group of cases in which management and labor were either openly pitted against each other or were working together under an armed truce. The next point is found in the cases in which

5 Golden, op. cit., p. 245.
management and labor are consciously trying to achieve the same goal—the maximum efficiency of production. Such efficiency obviously entails the abrogation of some of management's traditional prerogatives plus abandonment of labor's conscientious withdrawal of efficiency.

This point is clear from the contrast of the two outstanding cases given below. The first case concerns a small steel company in eastern Pennsylvania which faced liquidation due to gross inefficiencies that had developed in the years prior to 1941. The company, which employed 650 persons, announced that on February 20, 1941, the stockholders would vote on whether or not to liquidate the concern to prevent "additional losses."\(^6\)

A director of the steelworkers union wrote the chairman of the Board of Directors of the steel company, in part, as follows:

> On behalf of your employees I wish to offer your company the services of our organization and the accumulated knowledge and experience of your employees . . . to save your company from liquidation. . . .

> Our chief concern is the welfare of your employees, who are members of our organization, most of whom will suffer if the plant is abandoned, and many of whom are advanced in years beyond the age that they can reasonably expect to secure other gainful employment in private industry.

> In regard to the feasibility and practicality of this union-management cooperation program to save your firm from going out of business, we shall be glad to refer you to the presidents of several other firms in the steel industry, firms with similar problems as your company. These firms have found the program successful,

\(^6\)See cit.
and in three particular instances the companies were saved from bankruptcy.

As evidence of our good faith and the ability of a union-management cooperation program to produce tangible results in your plant, I am enclosing a list of several practical suggestions, emanating from your employees, showing how productive efficiency can be improved, wastes can be eliminated, and the costs of production otherwise reduced.7

Some of the suggestions and comments of the workers were as follows:

On the sixteen inch mill the hot bed is in poor shape. As bars cool they come out wavy. The bed was originally ruined by the practice of piling stock on it when the mill wasn't operating. . . . Because of the condition of the hot bed "wavy" bars have to be run through the straightening machine twice instead of once.

. . . Various stock sizes are piled on top of each other instead of being placed into proper bins ready for delivery. As a result orders have to be "dug out" and special gangs are hired for this purpose.

One inefficiency leads to another. We used to have thirty-five men in the shipping department. Now we have over ninety. Fifty men could do the work if it were properly directed. . . .

Steel from scrap, such as axles and shaftings, is supposed to be classed as "B" steel. They mix it with fresh billet steel in filling orders that call for "A" [open-hearth] steel. Customers complain, and business is lost.

When we are working steel on the machines we never know when we will run into hard [scrap] steel. As a result dies made for working soft steel break. In one day about two hundred dollars' worth of dies were destroyed. . . .

The heads on an order of rivets were cracked. We said they were no good. We were told to "send them anyway." They came back. The company paid the freight both ways.

Several truck loads of navy rivets were sent to Philadelphia. The men said they were cracked. They came back.

The management won't listen to our suggestions. . . . This report is only an indication of what could be done to increase efficiency if we had a chance to help out.8

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7Loc. cit.
The Company refused the offer of help from the union and it went broke. This means, in effect, that the management of this company preferred to liquidate rather than to give up some of its traditional prerogatives and attempt to eliminate the inefficiencies that brought the company to bankruptcy.

**Magnitudes and Conditions of High Productivity**

The above case is in contrast with the case below. The following case is that of the Federal Steel Company which was on the verge of bankruptcy in August, 1933. At that time, the management accepted the union’s plan of union-management cooperation. The record was summarized by Golden and Ruttenberg as follows:

At the end of the first year the company spent $6,900 for new equipment, but saved $173,100 as a result of suggestions, sponsored by the union’s research committee—a net gain of $166,200. These savings, in addition to other and, no doubt, more substantial ones resulting from improved morale and other factors that cannot be measured in dollars and cents so easily, carried the company through the 1933 depression and enabled it to restore the old wage scale when World War II upped steel production. The results in this case are remarkable in view of the precarious position of the company at the outset. Its existence still threatened by the continuous-strip mills, this company’s life has been prolonged by union-management co-operation. Unlike the McKeesport Tinplate Corporation (three thousand employees), whose problem was the same, yet was permanently abandoned in the fall of 1940, this steel firm is serving the armament program and stands an even chance of survival in the postwar period for several more years.

Having begun with their fingers crossed, the executives of this company, frankly amazed by the results of

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9 Loc. cit.
the first year, are now staunch supporters of union-management co-operation.10 [Italics. C.H.L.]

These savings accrued only after management's traditional prerogatives had been compromised. Thus, these prerogatives function as monopoly powers that must be removed or mitigated before such efficient techniques can be employed. Where these techniques of efficiency exist side by side with the far less efficient techniques, the failure to use these more efficient techniques must be considered as a form of waste. The extensiveness of this waste can be surmised from the limited use of these more efficient techniques. According to Brooks, "The actual application of the techniques outlined in "Production Problems" has been limited thus far to about a dozen relatively small concerns."\(^{11}\) These small concerns probably produce no more than two percent of the entire steel output. Moreover, there were additional intangible and immeasurable benefits which, in the light of the Hawthorne findings, are none the less real. These additional benefits are aptly depicted by Golden and Ruttenberg.

But, aside from these economic benefits, union-management co-operation added stature to the individual workers in this mill. Henry Sawyer, who cut fuel costs eighteen thousand dollars a year in the soaking pits and saved the company thirty-two thousand and one hundred dollars in capital expenditures, did not receive his share in the gain of the group of workers as a whole. Henry got more personal satisfaction out of his contribution than he could have bought with a year's wages.


11 Brooks, op. cit., p. 213.
He is a highly paid heater and always had commanded the respect of his fellow workers. But this contribution increased his social prestige. In the mill the men, almost as one, told Henry, "You sure showed them fancy engineers that a workin' stiff knows more about the steel business than they do."

"They ain't seen nothin' yet," Henry replied, obviously inspired by this reception. He is working now on a way to cut costs further by creating a more uniform heat on ingots.\footnote{Golden, op. cit., pp. 273-4.}

The comments of Henry Sawyer reveal the opposite attitude towards his work than those attitudes shown to exist in the preceding chapter. This case is tangible proof of the potential efficiency of high morale. The record of Federal Steel cannot but cause speculation as to the limits of production efficiency—once the creative flow of technology from labor is consciously and fully utilized.

The next case gives an example of technological potential inherent in one skilled steelworker as well as the expense which management incurred in ignoring the technological potential of its workers.

In 1936, previous to the advent of our current president, our Company found itself beset by an exasperating problem. There was an epidemic of what we called "alligator hide" on our finished sheets. This imperfection ended in a scrap of 60% of our production. Every resource of the Company was used to solve this distressing condition. Finally a firm of consultant metallurgists was contacted. They sent one of the country's finest metallurgists here. His fee was $500, per day. After a ten day stay and a painstaking survey of all operations, this expert recommended many changes in our practices; but these changes did not reduce the incidence of "alligator hide." In desperation, I urged the president, who at the time was fearful that the
Board would order the plant closed, to call upon the union for assistance.

The union responded and immediately appointed a committee composed of members who were experienced and who represented every department. This committee met with us. Each one examined the finished sheets which were afflicted with "alligator hide." Then each member rendered an opinion. One member of the committee, an old experienced hot mill man, stated that he had seen such a rough surface many times. He claimed that it was caused by the pairs soaking too long in the pair furnace. When asked why the pairs soaked too long, he replied that it was because the pickler was working short-handed and couldn't get them back fast enough to keep the furnace going. We scoffed at this explanation until he offered to wager his pay that he could correct the condition if given the opportunity.

We finally agreed to try the plan out. A trial was made, the condition was remedied, and three additional men were placed on the pickling crew. Since the introduction of union-management cooperation perplexing problems such as that are solved in short order and many thousands of dollars saved.13

The above cases are so vivid and the point being developed so obvious—that there is little need for comment on the potential resources involved. However, lest the few cases cited in the steel industry appear inconclusive, still more amazing results became a matter of record during World War II. This is true of the steel industry during the war as well as other industries—particularly those aided by the War Manpower Commission's Training Within Industry program.

Insight into the vast potential horizon of productivity is found in the case of U. S. Steel during World War II. In its publication "Steel in the War," the U. S. Steel Corporation states that 5,000 new production records were set as a result.

13 Loc. cit.
of union-management cooperation on production problems.\textsuperscript{14} In the light of such evidence, it becomes a legitimate question to ask, "Why hasn't this been done before?" This question is particularly relevant since the industry spokesmen claimed that industry was producing at full capacity in 1941.\textsuperscript{15} The World War II record makes all such statements by industry spokesmen pure gibberish! The results of the union-management committees and the worker suggestion boxes during the war meant that the steel spokesmen are either ignorant of the real capacity or else they are not concerned with increasing the capacity.

In view of the practicality and profitableness of utilizing the technological potential of skilled workmen, it becomes a legitimate question to ask why management has so consistently ignored this reservoir of human and technical resources. One obvious answer to this question is to be found in the growth of monopoly. This growth of monopoly is a partial explanation of why the number of patents per technological worker has been declining since 1870.\textsuperscript{16} However, a still more intelligible answer is found in the penetrating institutional analysis of Veblen. Writing on industrial sabotage, Veblen says:

\begin{itemize}
  \item \textsuperscript{14}Douglas A. Fisher, \textit{Steel in the War}, pp. 146-7.
  \item \textsuperscript{15}"Monopoly: Hitler's Ally," \textit{The Nation}, 155:124-5.
  \item \textsuperscript{16}G. E. Folk, \textit{Patents and Industrial Progress}, p. 123; cites Commissioner of Patents before T. N. E. C.
\end{itemize}
Sabotage commonly works within the law, although it may often be within the letter rather than the spirit of the law. It is used to secure some special advantage of preference, usually of a businesslike sort. It commonly has to do with something in the nature of a vested right, which one or another of the parties in the case aims to secure or defend, or to defeat or diminish; some preferential right or special advantage in respect of income or privilege, something in the way of a vested interest. Workmen have resorted to such measures to secure improved conditions of work, or increased wages, or shorter hours, or to maintain their habitual standards, to all of which they have claimed to have some sort of a vested right. . . . By virtue of his ownership the owner-employer has a vested right to do as he will with his own property, to deal or not to deal with any person that offers, to withhold or withdraw any part or all of his industrial equipment and natural resources from active use for the time being, to run on half time or to shut down his plant and to lock out all those persons for whom he has no present use on his own premises. . . . It should not be difficult to show that the common welfare in any community which is organized on the price system cannot be maintained without the salutary use of sabotage. . . . "17

This analysis seems to cut into the heart of the problem. An additional analysis of the general labor policy of the steel industry clarifies another portion of the general problem. Parker analyses the labor policy of the steel trust in the following manner:

The crux of the labor policy of the [steel] trust is to place the workmen on an absolute par with a machine as possible and to organize the human element out of important consideration.18

16 G. E. Folk, Patents and Industrial Progress, p. 123; cites Commissioner of Patents before T. N. E. C.

17 Thorstein Veblen, The Engineers and the Price System, p. 4 et sqq.

18 Harvey O'Connor, Steel—Dictator, p. 299, quoting Carleton Parker.
The scientific findings of the Hawthorne studies provide an
indicting array of facts which testify as to the lack of
intelligence in such a program. The record, thus far,
shows that management has consistently violated Reilly's
law of intelligent action. The rise of organized labor is
trenchant testimony of management's incompetency to handle
the human relations involved. The functioning of the insti-
tutions of price, property, and profit coupled with a large
measure of ignorance of human relations seem to render the
problem of waste of human resources more intelligible.

The extensiveness of waste in what Slichter calls
business and human efficiency is best seen in the report of
the War Manpower Commission's report on its Training Within
Industry program. In brief, this was a program designed to
increase efficiency, reduce grievances. The astounding
records achieved in this program established the potential
of a managerial revolution. By 1945, 86 per cent of the
businesses participating in the program increased production
by more than 25 per cent. Training time was reduced more than
25 per cent in 100 per cent of those companies that took part

19 In its simplest terms, the law of intelligent action
may be expressed as follows:
When a person is confronted with a problem, the intelli-
gen of his action is dependent on three primary factors:
1. His desire to solve the problem,
2. His ability to solve it,
3. His capacity for handling human relations involved.
W. J. Reilly, The Law of Intelligent Action, Applied in
Business Relations, p. 17.
in the program. It should be noted that much of the training
time was spent on workers who had never before been in indus-
try--such as several million women who went into war indus-
tries. In saved manpower, 88 per cent of the companies saved
more than 25 per cent. Scrap loss was reduced more than 25
per cent in 55 per cent of the cases. And grievances were
reduced more than 25 per cent in 100 per cent of the cases. 20
These are general over-all statistics which were so spectac-
ular that they were not considered mentionable if the savings
reported did not exceed 25 per cent. The W. M. C. report
clarifies the statistical report by giving the following
details concerning a few individual cases:

This, of course, does not give any picture of the
individual results from which the summary was made, of
occasional production increases which ran over 500
percent, or virtual elimination of grievances. 21

That such inefficiencies could exist in twentieth century
American industry is astounding, indeed. This point leads
one to ask the question, "Who is responsible for eliminating
such inefficiencies?"

The Position of Major Responsibility

Concerning some of the above revealing conditions, one
company president said:

20. War Manpower Commission, Bureau of Training, "Training
Within Industry Service," p. 92.

Under no circumstances do I want you to make public my name or that of my company. While I want you to know what this program has done for us, still I must not have it known to some of my stockholders, who would immediately ask "What have you, Mr. President, been doing all these years to overlook such a possible reduction in expenses which would have meant increased dividends to us?"

Who would ever have guessed that such appalling inefficiencies have and do exist in this—the most efficient and competitive of all economic systems—and that they exist to such a degree that some company presidents are fearful of the consequences of the stockholders obtaining such knowledge! It is quite obvious that this spokesman of management clearly recognizes that management is the seat of responsibility for the elimination of such types of inefficiencies.

Due to the dominant hierarchial pattern of social organization, management still holds the position of responsibility, and business leaders are proof of the fact. Speaking before the Academy of Political Science in 1932, Mr. Sam A. Lewisohn, a very prominent business leader, said, "The employer is, after all, the man who has got the administrative responsibility and thus the administrative power. . . . To use an analogy from the field of politics, the labor leaders are in the position of the opposition party rather than that of the responsible party." [% Italics. O.H.L. %] And at another

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22 loc. cit.

point he said, "Understanding the human element is the acid test of the competency of management today."\textsuperscript{24} Golden and Ruttenberg say that in the bargaining controversies, particularly over seniority, etc., "Management's consistent comeback is, 'We are responsible for the efficiency of this plant..."\textsuperscript{25} In view of such constant assertions, it is no surprise that the Federated Engineers in their study held management responsible for 58 per cent of the waste.\textsuperscript{26} Especially when it is seen that only 10 to 25 per cent of employers are using modern methods of handling their employee problems.\textsuperscript{27}

This indictment of the behavior of businessmen is valid on the basis of their own admissions of what constitutes their proper role. For example, H. W. Prentiss, Jr., president of the National Association of Manufacturers, in his speech to the Forty-fourth Congress of American Industry on December 8, 1939, said:

\textit{... they [businessmen] must be good stewards of the responsibilities with which individual freedom has entrusted them; they must constantly endeavor to create better conditions of employment by the elimination of health and accident hazards; they must steadily seek ways and means of regularizing employment and cushioning the effect of advancing technology on the lives and fortunes of their workers; they must raise the standard of living by passing along the benefits of improved}

\textsuperscript{24} Loc. cit. \textsuperscript{25} Golden, op. cit., p. 130.
\textsuperscript{26} Cf. Chap. I. \textsuperscript{27} Lewisohn, op. cit., p. 543.
techniques and quantity production through lower prices and higher wages; they must seek to be industrial statesmen rather than mere businessmen. 28 [Italics. O.H.L.]

This is candid admission by business spokesmen concerning the responsibility and function of businessmen in the community. Very similar opinions have been widely circulated by the U. S. Chamber of Commerce. 29 Moreover, there is a growing list of managerial confessions which admit (1) the responsibility of management, (2) the necessity for high morale, and (3) the necessity for compromising some of management's traditional prerogatives. 30 The case of U. S. Steel during the war also substantiates this point.

Summary and Conclusions

There has been shown to exist a practice of waste by labor. This waste took the form of industrial sabotage via the "slow-down," the withholding of technical knowledge, and the conscious use of other forms of waste as bargaining instruments. These types of waste were shown to have explicit sanction of the labor unions. By contrast, the prerequisites of high productivity were documented and some horizons of productivity were shown in order to bring into focus the magnitude of waste involved. The last major point developed was

29 Ibid., p. 2.
30 See Ward's The Personnel Program of Jack and Heintz. See also McCormick's Multiple Management.
that management still holds the position of major responsibility for initiating the elimination of such wastes of human resources.

The data of this chapter show that labor unions hold a monopoly power over a portion of the productive process. And, in addition, the traditional prerogatives of management are essentially monopoly powers. However, if the Hawthorne findings are valid, the development of monopoly among workers is a direct result of the abuse of managerial monopoly powers inherent in the traditional prerogatives of management. In other words, the management, via its traditional prerogatives, has so consistently ignored the human and social elements of the productive process that labor monopolies have developed as a defense of what workers hold to be basic social values. These values give meaning and significance to the lives of those workers who have been appropriated by the machine process. Consequently, the initial cause of these labor monopolies can be traced to the unintelligent use of prerogatives by management. And the mitigation of the monopoly power of managerial prerogatives has become a basic prerequisite of high morale and high productivity. The efficiencies of the union-management cooperative patterns constitute irrefutable evidence on this point. And management, by its own admission, still holds the position of responsibility for initiating the elimination of these wastes.

The fact that the conditions of high morale and high productivity have not been initiated earlier is indicting
evidence of ignorance on the part of those who hold the position of responsibility. Such a conclusion seems to be the only tenable explanation for the existence of such a vast gap between potential capacity and the normal level of output.
CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

This study may be summarized briefly by restating the major points that have been developed. These points are as follows: (1) a general monopoly condition exists in the business pattern of the steel industry, (2) a general waste condition exists as a concomitant of the monopoly condition, (3) monopoly over human resources exists in the form of managements traditional prerogatives, (4) waste of human resources exists in the form of destroyed worker morale and unused worker skills, (5) monopoly exists among unionized workers, (6) waste exists in the form of restriction of output by unions, (7) the abrogation of managerial prerogatives and the abandonment of restrictions by labor are conditions of high efficiency in human resources, and (8) management still holds the position of responsibility for initiating the elimination of waste.

This study has documented two forms of monopoly that are not usually included in the monopoly concept. They are: (1) the monopoly power of management's traditional prerogatives, and (2) the monopoly power of unions over human resources. The traditional monopoly concept has been
concerned with production and prices. Consequently, this study develops two additional aspects of monopoly which should be included in the general monopoly concept.

The monopoly of managerial prerogatives is seen to stem from the status system of social organization. Consequently, the relation of waste to these traditional prerogatives runs deep into the heart of human culture. However, adequate analysis of this relationship is far beyond the scope of this study. It appears sufficient that this study bring into focus such a fundamental problem.

The forms of waste documented in this study fall into three categories. They are: (1) the forms of waste found inherent in the general monopoly condition of business, (2) the types of waste found in the form of low worker morale and non-utilization of worker skills, and (3) the forms of waste practiced by labor unions to force various concessions from management.

The forms of waste in both categories one and three come under industrial sabotage as analyzed by Veblen. They are by-products of our economic institutions. Consequently, they are normal results of the price system and the property system. They are a part of the standard operating procedure of business enterprise. These forms of waste are profitable to the vested interests which dominate the system.

The forms of waste in category two are decidedly unique. The destruction of worker morale was shown to stem largely
from businessmen's ignorance of the human and social structure of the society which they dominate. The persistent non-utilization of worker skills probably is due to three things: (1) management is not interested in utilizing human potential for the same reasons that lead to restricting of technological potential, (2) the existence of institutional barriers stemming from the status system, or (3) the prevalence of ignorance of businessmen. Any one or any combination of the above three conditions are possible explanations of this type of waste.

The general conclusion drawn from this study is that waste is a concomitant of a monopoly condition with monopoly defined in the broad sense used in this study. The elimination of waste is dependent upon four conditions, namely: (1) the enlightenment of businessmen as to the human and social structure of society, (2) the abrogation of management's traditional prerogatives, (3) the abandonment of restriction of output by labor, and (4) the sincere desire on the part of businessmen to utilize fully the technical and human potential over which they exert control.

Recommendations

It is recommended that the monopoly concept as used in economic theory be studied further with a view to broadening it so as to include: (1) the monopoly powers of management's traditional prerogatives stemming from the status system, and (2) the monopoly powers of labor unions.
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