

LILLIAN EVELYN MOLLER GILBRETH

(1878 - 1972)

Wife of Frank B. Gilbreth. Carried on the latter's management engineering work as President, Gilbreth Inc from 1924-1972. A psychologist and a teacher at the time of her marriage, she had always been an active collaborator in her husband's work and writings. She became widely known in her own right, and has been an active teacher and lecturer at numerous institutions in the country and abroad. A member of U. S. Government Committees on civil defense, as well as of State and local committees. In later years, much of her writings and lectures were directed at increasing the efficiency of physically handicapped women as home-makers. In addition to works on which she collaborated with her husband, her writings include PSYCHOLOGY OF MANAGEMENT, 1914 (Macmillan, New York); LIVING WITH OUR CHILDREN with Edna Yost, 1928 (rev. 1951, Norton, New York); THE FOREMEN AND MANPOWER MANAGEMENT with Alice Rice Cook, 1947 (McGraw-Hill, New York); and MANAGEMENT IN THE HOME with O. M. Thomas and Eleanor C. Clymer, 1959 (rev. ed. 1959, Dodd, New York).

THE PSYCHOLOGY OF MANAGEMENT, Lillian M. Gilbreth, Sturgis and Walton Company, New York, New York, 1914.

"The Psychology of Management, as here used, means,—the effect of the mind that is directing work upon that work which is directed, and the effect of this undirected and directed work upon the mind of the worker."

Management is divided into three types:

Traditional—the power of managing lies, theoretically at least, in the hands of one man, a capable "all-around" manager. The line of authority and of responsibility is clear, fixed and single. Each man comes in direct contact with but one man above him. A man may or may not manage more than one man beneath him, but, however this may be, he is managed by but one man above him.

Transitory—includes all management that is consciously passing into Scientific Management and embraces all stages, from management that has adopted all but one such principle.

Scientific—is a definite plane of management synthesized from scientific analysis of the data of management.

Discussion is based upon nine (9) arbitrary divisions of underlying ideas of Scientific Management:

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| 1) Individuality | 4) Analysis and Synthesis | 7) Teaching |
| 2) Functionalization | 5) Standardization | 8) Incentives |
| 3) Measurement | 6) Records and Programs | 9) Welfare |

1. The individual is the unit to be measured.
2. Functionalization is based upon utilizing the particular powers and special abilities of each man.

3. Measurement is of the individual man and his work.
4. Analysis and synthesis build up methods by which the individual can best do his work.
5. Standards are of the work of an individual, a standard man, and the task is always for an individual, being that percentage of the standard man's task that the particular individual can do.
6. Records are of individuals, and are made in order to show and reward individual effort.
7. Specific individuals are taught those things that they, individually require.
8. Incentives are individual both in the cases of rewards and punishments, and
9. It is the welfare of the individual worker that is considered, without the sacrifice of any for the good of the whole.

Each of the nine divisions are treated through discussion of the following topics:

1. Definition of the division and its underlying idea.
2. Appearance and importance of the idea in Traditional and Transitory Management.
3. Appearance and importance of the idea in Scientific Management.
4. Elements of Scientific Management which show the effects of the idea.
5. Results of the idea upon work and workers.

I. Individuality

Selection of workers	Individual instruction cards
Separating output	Individual teaching
Recording output separately	Individual incentives
Individual tasks	Individual welfare

Under Traditional Management, because of its frequent neglect of the idea of individuality, work is often unsystematized and high output is usually the result of "speeding up" only, with constant danger of a falling off in quality overbalancing men and injury to men and machinery.

Under Transitory Management, as outputs are separated, separately recorded, and as the idea of Individuality is embodied in selecting men, setting tasks, the instruction cards, periods of rest, teaching, incentives and welfare, output increases without undue pressure on the worker.

Under Scientific Management--with various elements which embody individuality fully developed, output increases, to the welfare of the worker, manager, employer and consumer and with no falling off in quality.

II. Functionalization

Separating the planning from the performing

Functionalized foremanship

The function of order of work and route clerk

The function of time and cost clerk

The function of the disciplinarian

The function of the gang boss

The function of the speed boss

The function of the repair boss

The function of the inspector

Functionalizing the worker

Functionalizing the work itself

Under Traditional Management, there is little or no definite functionalization. If the quantity of output did increase, as the result of putting a man at that work for which he seemed best fitted, there was seldom provision made for seeing that the quality of product was maintained by a method of constructive inspection that prevented downward deviations from standard quality, instead of considering large quantities of the finished product.

Under Transitory Management, the Department of Inspection is one of the first functions installed. This assures maintained quality, and provides that all increase in output shall be actual again.

Under Scientific Management, functionalization results in increased quantity of output, with maintained and usually increased quality. This results in decreased cost. The cost is sufficiently lower to allow increased wages to employees, a further profit to the employer, and a maintained or lowered, selling price. This means benefit to the consumer.

III. Measurement

Qualifications of the observer

Methods of motion study

Methods of observation

Methods of time study

Under Traditional Management, even the crudest measurement of output and cost usually resulted in an increase in output. But there was no accuracy of measurement of individual efficiency, nor was there provision made to conserve results and make them permanently useful.

Under Transitory Management and measurement of individual output, output increased and rewards for the higher output kept up the standard.

Under Scientific Management, measurement of the work itself determines

- 1) what kind of workers are needed.
- 2) how many workers are needed.
- 3) how best to use them.

Motion Study and Time Study Measurement

- 1) divide the work into units
- 2) measure each unit
- 3) study the variables, or elements, one at a time
- 4) furnish resulting timed elements to the synthesizer of methods of least waste.

IV. Analysis and Synthesis

The work of the analyst
 Determining factor in amount of analysis
 Qualifications of an analyst
 Worker's interest in analysis

Work of synthesist
 Results of synthesist's work
 The task
 Qualifications of the synthesist

Under Traditional Management analysis and synthesis are so seldom present as to be negligible.

Division of output appears early in Transitory Management, but it is usually not until the late stage that motion study and time study are conducted so successfully that scientifically determined and timed elements can be constructed into standards.

Under Scientific Management as the outcome of analysis and synthesis is standardization, so the effect of them upon work is standard work. Quantity of output can be predicted, quality of output is assured.

V. Standardization

Relation of standard to measurement
 Permanence of results
 Standard nomenclature
 Advantages of mnemonic symbols
 Standard phraseology
 The standard man
 Standard means of conveying information

Value of standard surroundings
 Necessity for proper placing of the worker
 Standard equipment, tools, devices and clothing
 Standard methods
 Rest from fatigue

Under Traditional Management, where standards are not established, the worker is constantly delayed by the necessity for decision of choice, by the lack of knowing what should be chosen, and by a dearth of standard equipment, materials, and tools from which to choose.

Under Transitory Management, with the introduction of standards, the elimination of delays and the provision for standard surroundings and supplies of all kinds, comes increased output of the desired quality.

Under Scientific Management, not only is output increased and quality assured, but results of work can be predicted.

VI. Records and Programmes

Criterion of records
 Record of work and workers
 Records of initiative
 Records of good behavior
 Records of achievement
 Records of "exceptions"

Posting of records
 Relation between records and programs
 Types of records and programs
 Interrelation of types
 Possibilities of eliminating waste
 Derivation of the program

Under Traditional Management the record that follows a program may appear very different from the program.

Under Scientific Management the record that follows a program most closely resembles the program. Improvements are not made between the program and

the following record,--they find their place between the record and the following program. Thus programs and records may be grouped in pairs, by similarity, with a likelihood of difference between any one pair (one program plus one record) and other pairs.

VII. Teaching

Importance of teaching	Training the senses
Conforming of teaching to	Forming good habits
Psychological Laws	Importance of teaching right motions
Conservation of valuable elements	first
of traditional and transitory	Stimulating attention
management	Forming associations
Scope of teaching	Educating the memory
Instruction cards as teachers	Cultivating the imagination
Systems as teachers	Developing the judgment
Drawings, Charts, plans and	Utilizing suggestions
photographs	Utilizing native reactions
Functional foremen as teachers	Developing the will
Adaptability of teaching	Measurement of teaching
Provision of places for teaching	Relation of teaching to academic
	training and vocational guidance

Under the teaching of Traditional Management, the learner may or may not improve the quantity and quality of his work. This depends entirely on the particular teacher whom the learner happens to have. There is no standard improvement to the work.

Under the teaching of Transitory Management, the work gains in quantity as the methods become standardized, and quality is maintained or improved.

Under the teaching of Scientific Management, work, the quantity of work, increases enormously through the use of standards of all kinds; quantity is oftentimes tripled. (also) When the schools and vocational guidance movement cooperate, high output required quality will be obtained at a far earlier stage of the worker's industrial life than is now possible, even under Scientific Management.

VIII. Incentives

Promotion and pay	Three rate with increased rate
Relation of wages and bonus	Other rewards
Day work	Negative and positive punishments
Piece work	Fines and their disposal
Task wage	Assignment to less pleasant work
Gain sharing	Discharge and its elimination
Premium plan	Use of direct incentives
Profit sharing	Differential bonus

All incentives in every form of management, tend, from their very nature, to increase output. When Scientific Management is introduced, there is selection of such incentives as will produce greatest amount of specified output, and the results can be predicted.

Under Traditional Management the incentives are usually such that the worker is likely to overwork himself if he allows himself to be driven by incentive.

This results in bodily exhaustion. So, also, the anxiety that accompanies an unstandardized incentive leads to mental exhaustion.

With the introduction of Transitory Management, danger from both these types of exhaustion is removed. The incentive is so modified that it is instantly subject to judgment as to its ultimate value.

Scientific management makes the incentives stronger than they are under any other type, partly by removing sources of worry, waste and hesitation, partly by determining the ratio of incentive to output. The worker under such incentives gains in bodily and mental poise and security.

IX. Welfare

Physical improvement

Mental development

Interrelation of Physical, mental and moral development

Under Traditional Management, there is not a definite physical improvement in the average worker. There is no provision for regularity in the work. The planning not being done ahead, the man has absolutely no way of knowing exactly what he will be called upon to do. There being no measure of fatigue, he has no means of knowing whether he can go to work the second part of the day, say, with anything like the efficiency with which he could go to work in the first part of the day. There being no standard, the amount of work which he can turn out must vary according as the tools, machinery and equipment are in proper conditions, and the materials supplies his needs.

There is a flaw to be found in the underlying principles of welfare work as introduced in Transitory Management, and that is that it takes on more or less the aspect of a charity, and is so regarded both by the employees and the employer. The employer, naturally, prides himself more or less upon doing something which is good, and the employee naturally resents more or less having something given to him as a sort of charity which he feels his by right.

Scientific Management enables the worker not only to lead a fuller life in his work, but also outside his work; that it furnishes him hours enough free from the work to develop such things as the work cannot develop; that it furnishes him hours enough free from the work to develop such things as the work cannot develop; that it furnishes him with health and interest enough to go into his leisure hours with a power to develop himself there; that it furnishes him with a broader outlook, and, best of all, with a capacity of judging for himself what he needs most to get. In other words, if Scientific Management is what it claims to be, it leads to the development of a fuller life in every sense of the word, enabling the man to become a better individual in himself, and a better member of his community. If it does not do this it is not truly Scientific Management

"The results thus far attained by Scientific Management justify a prediction as to its future. It will accomplish two great works.

- 1) It will educate the worker to the point where workers will be fitted to work, and to live.
- 2) It will aid the cause of Industrial Peace.