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The first assumption is that the purpose of the Business School is to develop a coordinated study with the various fields of the biological, economic & ethical aspects of business studies.

Memorandum to Dr. D. L. Edsall, Chairman

The situation at the Business School is something as

follows: Henderson and Mayo have been collaborating for two years in an effort to begin a careful investigation of the empirical facts with respect to the human situation in industry. Henderson's study of organic equilibrium is well known and needs no description here. Mayo's study of situations in industry has had to include studies of changes in production, studies of mental attitudes in workers, and studies of social situations. Two things have occurred recently which no one concerned in the work expected to happen within so short a period as two years.

I. The first is that the principles of organic equilibrium enunciated by Henderson have been found to possess high value as directive of industrial investigations of changed organic equilibrium in the worker. This must not be understood to mean that the laboratory methods of the Henderson group can be directly applied in industrial situations, for this cannot be done without considerable further elaboration of method. That is to say, one cannot arrange to collect a worker's expired air and to take blood samples while he is actively engaged upon some factory job. Furthermore, it seems improbable that the kind of work demanded of the average employee is of a character that involves heavy muscular effort. Direct investigations, therefore, of physiological muscular fatigue are not immediately relevant. Methods of making short cuts and getting rough and ready approximations of sufficient reliability must be worked out.

These fatigue investigations will inevitably find their sphere of importance in the industrial situation. In the meantime the indirect value of the Henderson approach has been shown to be immensely significant for industry. This can be put in several ways. One might say that high production (De Mar in Marathon running) occurs in those individuals who can increase their muscular activity without any significant change in the character of their organic equilibrium. In the factory this implies that any measure, however unsatisfactory, of organic equilibrium, should show a significant difference to exist between the worker who is producing well and easily and the worker whose production is low and accomplished with difficulty. This has been found to be the case.

Those who work under specially suitable conditions in the "test rooms" of the Western Electric Company or elsewhere show a "pulse product" which is definitely lower and steadier than that of workers in other industrial situations. Their production, also, is from 30% to 50% higher than under former conditions. On the other hand, one might indicate the indirect value of Henderson's work by asserting that any factor that tends to disturb organic equilibrium will necessarily result in deteriorated morale and diminished production. The value of this assertion (or question) as a directive principle in industrial investigation has been demonstrated in the Philadelphia Mills and in the Western Electric Company's Works in Chicago many times over. Worker #5 in the mica-splitting rooms at the Western Electric Works for several months showed a low and exceedingly irregular production. Her home situ-

ation was unsatisfactory; she was constantly in difficulties with her foreign-born mother. Recently, she has left her home and gone to live with some other girls who are friends and fellow-workers. the emotional relief from constant preoccupation with her home situation has shown itself in a remarkable rise in her productive capacity; at present this rise is well sustained and she makes far fewer mistakes and does less "poor work" than before.

II. The other event unanticipated after two years of work, that is of immediate importance is that the Western Electric Company's Works in Chicago with 40,000 employees has been thrown open to this department of the Business School as in industrial laboratory for human experiment. This is important because the executives of the company are well qualified by reason of their scientific training and unusual intelligence to collaborate with the investigators of this School. Within the last few months the company, feeling that it has already derived benefit from the researches of two years past, has instituted a new Division of Industrial Research whose sole duty will be to press forward and critically develop both the researches in the plant itself and the active collaboration with the researches of this School. This constitutes at once an opportunity of the first order of magnitude for industrial research here; it constitutes also a heavy demand upon the thinking and activity of this department.

So much for the situation as it is at this moment in the Graduate Business School. The question arises as to what should now be done in order to insure, first, the fullest development of these researches that is consistent with careful and critical work;

second, the development of such subsidiary or complementary research as shall from time to time become obviously necessary; and, third, the communication of anything of value (in respect of inquiry instituted or results achieved) to the business world at large and to the students of this Graduate School in particular. It is the latter two of these questions that demand some consideration lest in the interest of developing existing inquiries, their importance and value should be lost sight of.

First, with respect to complementary researches. Mayo has already asked for the development of a sociological inquiry into the general conditions of living, both in areas adjacent to the factory and in the modern city as a whole. This form of inquiry in addition to its direct sociological and anthropological interest possesses an undoubted relevance to psychiatric inquiry (see writings of Dr. J. S. Plant, in the American Journal of Psychiatry). It possesses also an unquestioned relevance to criminal investigation, (see the investigations of Dr. Clifford H. Shaw, Institute of Juvenile Delinquency, or Ruth Cavan, Department of Sociology, Chicago.) The ~~general~~ interest and value of a sociological inquiry in these general directions is already in process of demonstration by the writers named above. This does not, however, guarantee that the industrial-sociological inquiry will be undertaken. There is no question that conditions of work in a particular department in a factory, or the general conditions of work within a factory, may do

much to exaggerate or to mitigate the conditions described by the sociologists. In asking for sociological investigation Mayo (as a specialized worker) had this in mind. That is to say, he was thinking not merely of the general inquiry conducted by Plant or Shaw, but of its immediate relation to the conditions he is himself investigating within the factory. The sociological inquiry anticipated by this School is, therefore, already clearly specified and distinctive. It is to be an investigation of empirical facts no less than the work of the Fatigue Laboratory and the Industrial Research Department. It has, nevertheless, an aspect which might be described either as experimental or ethical. As ethical, it is bound to consider the responsibility of industry in this general regard. As experimental, it is committed to watching the effect of changed conditions of work within the factory upon the worker's life outside. In connection with industrial research such changes in the life of the worker outside the factory can be already demonstrated. A social inquiry such as this has a practical as well as a theoretical importance. It will demand careful economic as well as direct social investigation. In undertaking such inquiries the School believes that they are important and necessary. It also realizes that its commitment in respect of development is large and, at present, indefinable. The need for carefully controlled investigation in an area of high importance and, at present, indefinable extent constitutes a grave responsibility for those who direct the fortunes of the School.

Secondly, with respect to the communication of the methods of inquiry pursued, and the significance of results obtained. It is clearly unwise to permit a major development of research to take place without ^{providing} in a relatively short time means of communication as between the inquiry itself, the workers in other fields, and the general public affected. If such channels of communication are not secured, then both the critical reconsideration of what is done and the perpetuation of the research are thereby imperiled. One obvious duty of the School in this respect is to insure that its students shall understand what is being done and why. If this is not assured then, for all one knows to the contrary, the inquiry itself might diminish with the retirement from the scene of various workers at present involved in it. The work might also fail to give rise to other such inquiries elsewhere. And in such event the community would remain ignorant of the interrelation and significance of certain industrial and social situations that are at present, to put it mildly, imperfectly understood.

Beyond this obligation to students, it is also clear from the attitude of significant groups of business men that the School must also undertake to follow and advise with reference to current practical applications and industrial extensions of its own work. The Western Electric case is in point. This will in the near future require considerable extension of our staff.

In asking for support for certain lines of inquiry which probably cannot be undertaken without endowment the School has to

remember that its commitment in respect of the institution and maintenance of complementary research and of the communication of work done is at the moment incalculable. The School has already appointed a professor of Economics and a professor of Business Ethics to work in their fields and allied fields. It must appoint shortly a professor to conduct social research. In so far as these men are to take part in the teaching work of the School their financial support will be provided out of our current budgets. These appointments have been and will be made, not only in order that these men may teach, but, in fact, principally, that they may begin the important work of seeing what can be done in respect of the complementary researches and the assurance of communication specified above. Research must precede effective instruction. While it is easy to state and to provide for the financial obligation involved in the work of giving certain classes in the School schedule, it is quite impossible at the moment to specify clearly what will be needed as the work of complementary inquiry and communication develops and without endowment the research organization cannot be built up.

Dr. Mayo's work has to date been mainly financed by the Rockefeller Foundations. It is hoped that this will continue to be covered by endowment with provision for very moderate expansion. The School has been spending substantial further sums on his work and expects

to continue this. The School has just added two professors on its regular budget to work in this field. Counting Mayo's work, it needs critically an endowment equal to \$50,000 a year if it is to approach its future large obligations and opportunities with any assurance. Not even a beginning can be made with our present resources.

All of this work is directly allied to the most fundamental objects of this School. The attached article, reprinted from the Harvard Business Review, will by easy inference give the reader my own conception of the importance of this work.

~~F. B. Donham~~
~~Dean~~

HARVARD BUSINESS SCHOOL
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Table I

DEPARTMENT	SOURCES OF FUNDS IN USE					TOTAL EXPENDITURE
	University			Affiliated Institutions	Temporary Outside Sources	
	Permanent Budget	Temporary Grants	Temporary Gifts			
Industrial Research (Mayo)		3,000.00			12,924.50	15,924.50
Fatigue Laboratory (Henderson)	9,500.00			500.00	30,632.14	40,632.14
Industrial Hygiene (C.K. & P.Drinker)	52,254.00		1,500.00		3,864.89	57,618.89
Physiology (Cannon)	30,342.80	5,250.00	7,040.00		5,000.00	47,632.80
Physical Chemistry (Cohn)	15,781.80	16,770.00			7,800.00	40,351.80
Neurology (Cobb)	28,924.20		23,810.00			52,734.20
Psychiatry (Campbell)	15,400.00			35,030.00	15,000.00	65,430.00
Special Psychiatric Research (Hoskins)					20,000.00	20,000.00
Neurology of Children (Crothers)				25,000.00	20,000.00	45,000.00
Abnormal Psychology (Murray)	6,961.29					6,961.29
TOTALS	159,164.09	25,020.00	32,350.00	60,530.00	115,221.53	392,285.62

Table II

DEPARTMENT	SOURCES OF FUNDS IN USE					TOTAL EXPENDITURE
	Departments cooperating, but less intensively, in these problems.					
	Permanent Budget	University		Affiliated Institutions	Temporary Outside Sources	
		Temporary Grants	Temporary Gifts			
Medicine (B.C.H.) (Minot)	17,800.00			62,280.00		80,080.00
Medicine (H.M.H.) (Aub)	20,700.00	1,500.00				22,200.00
Infantile Paralysis Research (Aycock)	2,500.00		9,300.00		10,000.00	21,800.00
Vital Statistics (E.B.Wilson)	23,416.00					23,416.00
TOTALS	64,416.00	1,500.00	9,300.00	62,280.00	10,000.00	147,496.00