


人文社科经典名著选读

Selections from Classics of Western Management

西方管理学经典名著选读

张初愚 选编 / 导读



 中国人民大学出版社

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前 言

管理学在当今的经济发展和 社会生活中发挥着十分重要的作用。学习研究管理学是当前的热门方向。众所周知,管理学是从西方,特别是从美国发源并发展的,因此学习研读管理学原著就显得十分重要,十分有益。本书节选了七位在管理学发展史上占有举足轻重地位的管理学学者的著作。其中有泰罗的《科学管理原理》,法约尔的《工业管理和一般管理》,韦伯的《社会和经济组织的理论》,巴纳德的《经理人员的职能》,梅奥的《工业文明的社会问题》,马斯洛的《动机与人格》,德鲁克的《管理实践》。全部为英文版。除去法约尔的书译自法文,韦伯的书译自德文,其余为英文原著。学习研读原著可以帮助我们更准确、更完整地了解和领会管理学前辈的论述,培养严谨、扎实的研究习惯。同时通过研读原著可以很好地提高我们应用英语的能力,为我国管理学与国际接轨打下更坚实的基础。

西方的经济管理理论有不同的学派,对于各学派的划分,各国学者的观点也不尽相同。但是对于系统的管理理论的形成时间,则公认是在 19 世纪末到 20 世纪初。管理学的发展具体可分为三个阶段。第一个阶段是 20 世纪初形成的“古典管理理论”。共有三位主要代表人物:美国的泰罗、法国的法约尔和德国的韦伯,他们的主要著作全选入我们的选读本。第二个阶段是 20 世纪 30 年代和 40 年代形成的“近代管理理论”。共有两位主要代表人物:美国的巴纳德和原籍澳大利亚后加入美籍的梅奥,二人都选入我们的选读本。第三个阶段是 40 年代后期直至现在,管理学进入蓬勃发展阶段,百花齐放,百树丛生,形成“当代管理理论”的丛林。在众多管理大师中,我们选择了有“人本心理学之父”之称的美国的马斯洛和有“大师中的大师”之称的美国的德鲁克。

我们所选的七位管理学专家都对世界管理学的发展做出了重大贡献,并在管理学的总体框架中占有重要地位。他们分别从不同的角度回答了不同历史时期管理实践中提出的各种难题。七位大师各有千秋,自成特色,又互相补充,互相推进。因此我们研读这七位大师的原著,既可以看到管理学发展的历史轨迹,又可以了解管理学涉及的各个层面,以及管理学的发展趋势。

泰罗是管理学的先驱,他的贡献是开创性的——把管理学发展成为一门新兴的独立学科。这为后来科学管理理论的发展奠定了基础。泰罗年轻时便开始在工厂当学徒,以后在生产企业的各个层面都工作过,对企业的运行过程及各种矛盾关系十分熟悉。同时他潜心钻研,发现工厂里的许多管理机制存在不足,不能充分发挥工人劳动的热

情，阻碍了劳动生产率的提高。他认为资方想尽可能降低劳动力成本和工人想尽可能多挣钱的矛盾不是不可克服的。答案就是科学管理。事实证明泰罗 30 多年推行科学管理的活动非常成功。泰罗身居生产活动第一线，注重理论与实践相结合的研究风格，使得管理学由以前的纯理论发展成为可操作的、实用的管理理论。著名的“泰罗制”是管理理论与管理制度紧密结合的典范。

法约尔长期从事高层管理工作，对全面管理工作有深入的研究。他大学毕业后在法国的高芸特里—福尔尚布采矿冶金公司担任工程师和矿长，以后在这里度过了他的职业生涯，其中担任总经理职务达 30 年。与泰罗研究工人的具体工作效率不同，法约尔是从总经理的角度出发，以企业整体作为研究对象。他的代表作《工业管理与一般管理》提出了一般管理理论，包括著名的管理五大职能和管理的 14 项原则。这对西方管理学的发展产生巨大影响，为管理过程学派提供了理论基础，也使法约尔本人成为管理过程学派的代表人物。一般管理理论的系统性和理论性很强，不仅适用于企业，也适用于军政机关和社会团体。一般管理理论得到普遍承认，成为管理理论发展的一个里程碑。

韦伯是同泰罗和法约尔处于同一历史时期的德国著名社会学家和哲学家。他在大学攻读经济学和法律，入伍服役的经历帮助他对德国军队的管理制度有了较多的了解。获得博士学位后，他先后在柏林大学、弗莱堡大学、海德堡大学、维也纳大学和慕尼黑大学执教，讲授过法律、政治经济学、社会学等课程。他的研究兴趣十分广泛，涉及多种领域，并都提出过深刻独到的见解。他在管理思想史上的最大贡献是提出了“理想的行政组织体系理论”。韦伯创新理论的时代，正是德国企业从小规模世袭管理，到大规模专业管理转变的关键时期。他提出的通常称作“官僚制”、“科层制”或“行政组织”的理论对后世产生了深远的影响，演化形成了组织管理学派，并为现代大型企业广泛采用，来建立企业组织管理体系。韦伯被誉为“组织理论之父”。

巴纳德是西方管理理论中社会系统学派的创始人。他在哈佛大学读完了经济学全部课程。巴纳德 1909 年进美国电话电报公司工作，1927 年起担任新泽西贝尔电话公司总经理，直至退休。他通过长期的管理工作经历积累了丰富的管理经验，经过深入的分析研究，形成了自成一派的管理理论。《经理人员的职能》一书是其系统组织理论的代表作之一，被誉为美国现代管理科学的经典著作。巴纳德将社会学概念应用于分析经理人员的职能和工作过程，他把组织看作是一个社会系统，从分析组织结构上，提出一套协作和组织的理论。巴纳德的思想在古典管理理论和现代人力资源理论之间架起了桥梁，为建立和发展现代管理科学做出了重要贡献。

梅奥是美国行为科学家，人际关系学研究的先驱。他出生于澳大利亚，毕业于澳大利亚阿福雷德大学，曾受聘在昆士兰大学讲授逻辑学和哲学，以后赴苏格兰爱丁堡研究精神病理学。后来在洛克菲勒基金会的资助下，移居美国。梅奥从事工业研究的一项重要活动是作为哈佛大学的心理学教授参加了在美国芝加哥西方电器公司所属的霍桑工厂进行的霍桑试验。试验分为照明试验，福利试验，访谈试验，群体试验四阶段。试验说明人的积极性产生于和谐有益的社会关系之中。据此梅奥提出了工人是有社会方面的感情需求的“社会人”，而不是单纯追求金钱物质的“经济人”。这对古典管理理论做了修正和补充，开辟了管理研究的新理论，并且为现代行为科学的发展奠定了基础。

马斯洛是美国著名的行为科学家和心理学家。1934年在威斯康星大学获得博士学位，后在多所大学任教，1967—1970年任美国心理学学会主席。他对传统心理学的批评具有深度，他的论著使人本心理学的观点更加丰富和清晰。马斯洛开创性地提出需求层次论和自我实现论，为企业的人力资源管理提供了分析的依据。这一理论被世界管理界普遍接受，广为流传。马斯洛的思想具有极大的启发性，在管理学、经济学、教育学、社会学、哲学、美学等多种学科中激起了再创造。

德鲁克是经验主义管理学派的代表人物，强调经验对管理的作用。他于1909年出生于奥地利首都维也纳，先后在德国和英国边工作边学习。1943年加入美国国籍。移居美国之后，他终身以教书、著书和咨询为业。他曾任美国通用汽车公司、克莱斯勒公司、IBM公司等大企业的顾问。1945年德鲁克创办了德鲁克管理咨询公司，自任董事长。他提出了目标管理理论，推动了管理学的发展。他对管理问题的研究总是从实际出发，以大企业的管理经验为主要研究对象。《管理实践》是德鲁克基于深厚的学术功底和多年的企业咨询实践之上的一部力作，它奠定了德鲁克在企业管理学界的地位。这是第一本把管理作为整体看待的关于企业管理的论著，出版50年来，深受欢迎，经久不衰。

由于篇幅所限，本选读本只是节选了以上七位大师管理学英文原著的一部分章节，以为读者通过英文原著学习管理提供一条既可深入重点，又能兼顾全面的通道。我们为每位作者的节选书写了导读，一方面介绍作者，另一方面概述其书的要旨。我们尽可能地多介绍书中的具体内容，以帮助读者能够更好地研读原著。我们衷心希望导读和注释能对读者的阅读有所助益。若有疏漏差错，欢迎读者及时相告，以利改进。

张初愚
2004年6月

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弗雷德里克·温斯洛·泰罗《科学管理原理》导读



泰罗 (Frederick Winslow Taylor) 是美国著名的管理学家, 管理实践家, 被誉为“科学管理之父”。泰罗于 1856 年出生在美国费拉德尔菲亚一个富裕的律师家庭。1872 年就读于埃克塞特学校, 1875 年进入一个小机械厂当学徒, 1878 年起进入费城的米德维尔钢铁厂当机械工人, 先后升任车间管理员、技师、工长、设计室主任、工程师等职, 直至总工程师。1890 年在一家投资公司任总经理。1893 年从事管理咨询工作。1906 年任美国机械工程师学会主席, 并获宾夕法尼亚大学和霍巴特学院的荣誉博士学位。

泰罗是管理学的先驱, 他的贡献是开创性的——把管理学发展成为一门新兴的独立学科。这为后来科学管理理论的发展奠定了基础。泰罗身居生产活动第一线, 注重理论与实践相结合的研究风格, 使得管理学由以前的纯理论发展成为可操作的、实用的管理理论。著名的“泰罗制”是管理理论与管理制度紧密结合的典范。

泰罗在管理学方面的主要著作有:《计件工资制》、《效率的福音》、《工厂管理》、《科学管理原理》、《在美国国会的证词》。

泰罗在大量的实践经验基础上, 总结出了科学管理理论。他把有关这一理论所写的四本书结集出版, 定名为《科学管理》, 本书,《科学管理原理》, 是其中的第三本。选读本全书选用。

本书主题明确, 结构简洁。作者通过对大量的调查研究的描述, 论证科学管理的合理性、可行性和基本的原则。泰罗试图通过科学的管理方法提高劳动生产率, 协调劳资双方的利益, 在实践中被证明是十分有效的。科学管理从理论到实践的变革, 反映了当时大机器工业发展的客观要求。但是泰罗并不能解决劳资双方根本的利害冲突, 不能保障所有的资方永远有改进劳资关系的善良愿望, 因此, 科学管理又被很多企业用作压榨工人血汗的十分有效的工具, 而并未改善企业的劳资关系。实际上这种片面利用科学管理增加劳动强度, 损害工人利益的做法完全违背了科学管理的原则与泰罗的初衷。

泰罗认为衡量管理质量的标准是能否解决好雇主与工人之间的矛盾。雇主追求的是低成本，工人追求的是高工资，而工人的工资是雇主投入的成本的一部分，显然二者存在着冲突。泰罗具体描述了当年工人工作的状态和工作量。每当一个美国工人玩棒球或一个英国工人玩板球时，他总是要尽最大的能力以得到最高的得分。如果他这样做，群众会反映强烈，称他为“懦夫”，加以鄙视。然而同一个工人，上班时却有意地琢磨着尽可能少干活，比他能干的要少得多，只干一个正常工作日活计的三分之一到二分之一。如果他尽量做足一个最高限度的活计的工作日，他会遭到同伙的辱骂，其程度比球场上充当“懦夫”还严重。这种“磨洋工”的现象普遍存在。

管理的真正目的是使劳资双方都得到最大程度的利益，科学管理是建立在劳资双方利益一致的基础上的，它要求企业的每一个成员充分发挥最高的效率，争取最高的产量，实现最大的利益。科学管理的实质是在工人中实行彻底的思想变革，也就是工人对待他们的工作责任，对待他们的同事，对待他们的雇主的一次完全的思想革命。同时也是工长、厂长、雇主、董事会的一次彻底的思想变革，也就是在对待他们的同事、他们的工人和日常工作责任上的一次完全的思想革命。科学管理要实现由低效率管理向高效率管理的转变，实现由重视盈余的分配向重视增加更多盈余的转变，以此来实现劳资双方的共同利益。新的科学管理有以下四个要素：1. 对工人操作的每一个动作进行科学研究，用以代替旧的，单凭经验的劳动操作。2. 科学地挑选工人，并进行培训和教育，使之成长，以代替允许工人凭自己爱好选择工作的做法。3. 管理人员与工人之间亲密协作，以保证一切工作都按建立起来的规章制度去办。4. 管理人员和工人在工作和职责上要有分工，各自承担最适合的工作，以代替所有的工作和大部分责任都推卸给工人的办法。

泰罗曾做过大量调查，对工人操作进行研究。铁锹的使用是其中的一项。经调查发现，一个头等铲掘工完成一天最大的操作量时，每锹重量大致为 21 磅。每锹铲 21 磅，比每锹 24 磅或 18 磅能掘出更多吨位的东西来。根据这一研究，统一发给不同工人不同的铁锹，使他们能把任何种类的物料每锹铲 21 磅。例如铲矿石给把小锹，铲灰土给把大锹，而不像以前工人从 30 磅到 5 磅的锹随使用。结果效率大大提高了。书中还介绍了一个砌砖的例子。吉尔布雷斯先生对科学管理原理很感兴趣，他依照原理对自古以来数代相传不变的砌砖工艺做了研究。他仔细研究并总结了在所有标准情况下砌砖的动作，把砌每块砖的动作从 18 个压缩为 5 个。吉尔布雷斯先生的砌砖方法为真正有效的协作提供了一个简明的例证。这已不是以一群工人一方和资方进行协作，而是资方对每个工人进行帮助。吉尔布雷斯的成功，就在于运用了构成科学管理本质的四个要素：1. 砌砖科学的形成（在于资方而非工人）包括每个人每个动作的严格规则，以及所有工具和操作条件的完善和标准化。2. 精心挑选砌砖工人，并把他们培养成头等工人，剔除一切不愿或不采用新方法的人。3. 通过资方的经常关注和帮助，通过每天付给工人一大笔奖金，把头等的砌砖工和砌砖的科学结合起来。4. 工人和资方之间在工作和责任上几乎是均分的。资方几乎整日和工人在一起进行操作，帮助工人，鼓励工人，为他们提供方便。

科学管理相信劳资双方的利益是一致的。除非雇员一样富裕起来，雇主的富裕是不会长久的，反之亦然。给工人以他们最需要的高工资和给雇主以他所需要的产品的低劳工费用，也是完全可能的。工人和管理人员双方最重要的目的应该是培训和发掘

企业中每一个工人的才干，使每个人尽他天赋之所能，干出最高档的工作——以最快的速度达到最高的效率。

资方和工人的紧密、亲切和个人之间的协作是现代科学或责任管理的精髓。通过双方友好的协作，即平均分担每天的负担，那么就可以使企业中每个人和每部机器获得最高产量的一切大障碍得到排除。工人们可以拿到比他们在旧的管理体制下所能获得的高出 30%~100% 的工资。加上能和资方每天肩并肩地亲密接触，就完全消除了“磨洋工”的一切原因。

精确的工时研究是一种强有力的工具，在许多情况下可以用来促进工人们和资方之间的协调。那就是逐步地教育、培训和引导工人们用新的更好的办法干活。然而不幸的是，有的管理人员没有付出所需的时间和辛劳，来培训日后能领导和教育工人們的领班或老师。他们违反工人們的意愿，驱赶工人們去干更艰苦的活，却又不增加多少工资。科学管理虽然意味着工人多少要更艰苦地干活，但也意味着带来更多的利益。所以无视这种根本原则的结局就是一系列的罢工，随之而来的是管理人员的垮台。

引介科学管理工作的 30 年间，即使处在从老办法到新办法更替的危急时刻，凡按照科学管理原则办事的，都不曾发生一次罢工。随着科学管理模式而来的工资的大量增长，使工资作为纷争的一个缘由被基本排除。

Selections from Frederick Winslow Taylor's *The Principles of Scientific Management*

INTRODUCTION

PRESIDENT ROOSEVELT, in his address to the Governors at the White House, prophetically remarked that "The conservation of our national resources is only preliminary to the larger question of national efficiency."

The whole country at once recognized the importance of conserving our material resources and a large movement has been started which will be effective in accomplishing this object. As yet, however, we have but vaguely appreciated the importance of "the larger question of increasing our national efficiency."

We can see our forests vanishing, our water-powers going to waste, our soil being carried by floods into the sea; and the end of our coal and our iron is in sight. But our larger wastes of human effort, which go on every day through such of our acts as are blundering, ill-directed, or inefficient, and which Mr. Roosevelt refers to as a lack of "national efficiency," are less visible, less tangible, and are but vaguely appreciated.

We can see and feel the waste of material things. Awkward, inefficient, or ill-directed movements of men, however, leave nothing visible or tangible behind them. Their appreciation calls for an act of memory, an effort of the imagination. And for this reason, even though our daily loss from this source is greater than from our waste of material things, the one has stirred us deeply, while the other has moved us but little.

As yet there has been no public agitation for "greater national efficiency," no meetings have been called to consider how this is to be brought about. And still there are signs that the need for greater efficiency is widely felt.

The search for better, for more competent men, from the presidents of our great companies down to our household servants, was never more vigorous than it is now. And more

than ever before is the demand for competent men in excess of the supply.

What we are all looking for, however, is the readymade, competent man; the man whom some one else has trained. It is only when we fully realize that our duty, as well as our opportunity, lies in systematically cooperating to train and to make this competent man, instead of in hunting for a man whom some one else has trained, that we shall be on the road to national efficiency.

In the past the prevailing idea has been well expressed in the saying that "Captains of industry are born, not made"; and the theory has been that if one could get the right man, methods could be safely left to him. In the future it will be appreciated that our leaders must be trained right as well as born right, and that no great man can (with the old system of personal management) hope to compete with a number of ordinary men who have been properly organized so as efficiently to cooperate.

In the past the man has been first; in the future the system must be first. This in no sense, however, implies that great men are not needed. On the contrary, the first object of any good system must be that of developing first-class men; and under systematic management the best man rises to the top more certainly and more rapidly than ever before.

This paper has been written:

First. To point out, through a series of simple illustrations, the great loss which the whole country is suffering through inefficiency in almost all of our daily acts.

Second. To try to convince the reader that the remedy for this inefficiency lies in systematic management, rather than in searching for some unusual or extraordinary man.

Third. To prove that the best management is a true science, resting upon clearly defined laws, rules, and principles, as a foundation. And further to show that the fundamental principles of scientific management are applicable to all kinds of human activities, from our simplest individual acts to the work of our great corporations, which call for the most elaborate cooperation. And, briefly, through a series of illustrations, to convince the reader that whenever these principles are correctly applied, results must follow which are truly astounding.

This paper was originally prepared for presentation to The American Society of Mechanical Engineers. The illustrations chosen are such as, it is believed, will especially appeal to engineers and to managers of industrial and manufacturing establishments, and also quite as much to all of the men who are working in these establishments. It is hoped, however, that it will be clear to other readers that the same principles can be applied with equal force to all social activities: to the management of our homes; the management of our farms; the management of the business of our tradesmen, large and small; of our churches, our philanthropic institutions, our universities, and our governmental departments.

CHAPTER I

FUNDAMENTALS OF SCIENTIFIC MANAGEMENT

The principal object of management should be to secure the maximum prosperity for the employer, coupled with the maximum prosperity for each employé.

The words "maximum prosperity" are used, in their broad sense, to mean not only large dividends for the company or owner, but the development of every branch of the business to its highest state of excellence, so that the prosperity may be permanent.

In the same way maximum prosperity for each employé means not only higher wages than are usually received by men of his class, but, of more importance still, it also means the development of each man to his state of maximum efficiency, so that he may be able to do, generally speaking, the highest grade of work for which his natural abilities fit him, and it further means giving him, when possible, this class of work to do.

It would seem to be so self-evident that maximum prosperity for the employer, coupled with maximum prosperity for the employé, ought to be the two leading objects of management, that even to state this fact should be unnecessary. And yet there is no question that, throughout the industrial world, a large part of the organization of employers, as well as employés, is for war rather than for peace, and that perhaps the majority on either side do not believe that it is possible so to arrange their mutual relations that their interests become identical.

The majority of these men believe that the fundamental interests of employés and employers are necessarily antagonistic. Scientific management, on the contrary, has for its very foundation the firm conviction that the true interests of the two are one and the same; that prosperity for the employer cannot exist through a long term of years unless it is accompanied by prosperity for the employé, and *vice versa*; and that it is possible to give the workman what he most wants—high wages—and the employer what he wants—a low labor cost—for his manufactures.

It is hoped that some at least of those who do not sympathize with each of these objects may be led to modify their views; that some employers, whose attitude toward their workmen has been that of trying to get the largest amount of work out of them for the smallest possible wages, may be led to see that a more liberal policy toward their men will pay them better; and that some of those workmen who begrudge a fair and even a large profit to their employers, and who feel that all of the fruits of their labor should belong to them, and that those for whom they work and the capital invested in the business are entitled to little or

nothing, may be led to modify these views.

No one can be found who will deny that in the case of any single individual the greatest prosperity can exist only when that individual has reached his highest state of efficiency; that is, when he is turning out his largest daily output.

The truth of this fact is also perfectly clear in the case of two men working together. To illustrate: if you and your workman have become so skilful that you and he together are making two pairs of shoes in a day, while your competitor and his workman are making only one pair, it is clear that after selling your two pairs of shoes you can pay your workman much higher wages than your competitor who produces only one pair of shoes is able to pay his man, and that there will still be enough money left over for you to have a larger profit than your competitor.

In the case of a more complicated manufacturing establishment, it should also be perfectly clear that the greatest permanent prosperity for the workman, coupled with the greatest prosperity for the employer, can be brought about only when the work of the establishment is done with the smallest combined expenditure of human effort, plus nature's resources, plus the cost for the use of capital in the shape of machines, buildings, etc. Or, to state the same thing in a different way: that the greatest prosperity can exist only as the result of the greatest possible productivity of the men and machines of the establishment—that is, when each man and each machine are turning out the largest possible output; because unless your men and your machines are daily turning out more work than others around you, it is clear that competition will prevent your paying higher wages to your workmen than are paid to those of your competitor. And what is true as to the possibility of paying high wages in the case of two companies competing close beside one another is also true as to whole districts of the country and even as to nations which are in competition. In a word, that maximum prosperity can exist only as the result of maximum productivity. Later in this paper illustrations will be given of several companies which are earning large dividends and at the same time paying from 30 per cent. to 100 per cent. higher wages to their men than are paid to similar men immediately around them, and with whose employers they are in competition. These illustrations will cover different types of work, from the most elementary to the most complicated.

If the above reasoning is correct, it follows that the most important object of both the workmen and the management should be the training and development of each individual in the establishment, so that he can do (at his fastest pace and with the maximum of efficiency) the highest class of work for which his natural abilities fit him.

These principles appear to be so self-evident that many men may think it almost childish to state them. Let us, however, turn to the facts, as they actually exist in this country and in England. The English and American peoples are the greatest sportsmen in the world. Whenever an American workman plays baseball, or an English workman plays cricket, it is safe to say that he strains every nerve to secure victory for his side. He does his very best to make the largest possible number of runs. The universal sentiment is so strong that any man

who fails to give out all there is in him in sport is branded as a “quitter,” and treated with contempt by those who are around him.

When the same workman returns to work on the following day, instead of using every effort to turn out the largest possible amount of work, in a majority of the cases this man deliberately plans to do as little as he safely can—to turn out far less work than he is well able to do—in many instances to do not more than one-third to one-half of a proper day’s work. And in fact if he were to do his best to turn out his largest possible day’s work, he would be abused by his fellow-workers for so doing, even more than if he had proved himself a “quitter” in sport. Underworking, that is, deliberately working slowly so as to avoid doing a full day’s work, “soldiering,” as it is called in this country, “hanging it out,” as it is called in England, “ca canae,”^① as it is called in Scotland, is almost universal in industrial establishments, and prevails also to a large extent in the building trades; and the writer asserts without fear of contradiction that this constitutes the greatest evil with which the working-people of both England and America are now afflicted.

It will be shown later in this paper that doing away with slow working and “soldiering” in all its forms and so arranging the relations between employer and employé that each workman will work to his very best advantage and at his best speed, accompanied by the intimate cooperation with the management and the help (which the workman should receive) from the management, would result on the average in nearly doubling the output of each man and each machine. What other reforms, among those which are being discussed by these two nations, could do as much toward promoting prosperity, toward the diminution of poverty, and the alleviation of suffering? America and England have been recently agitated over such subjects as the tariff, the control of the large corporations on the one hand, and of hereditary power on the other hand, and over various more or less socialistic proposals for taxation, etc. On these subjects both peoples have been profoundly stirred, and yet hardly a voice has been raised to call attention to this vastly greater and more important subject of “soldiering,” which directly and powerfully affects the wages, the prosperity, and the life of almost every working-man, and also quite as much the prosperity of every industrial establishment in the nation.

The elimination of “soldiering” and of the several causes of slow working would so lower the cost of production that both our home and foreign markets would be greatly enlarged, and we could compete on more than even terms with our rivals. It would remove one of the fundamental causes for dull times, for lack of employment, and for poverty, and therefore would have a more permanent and far-reaching effect upon these misfortunes than any of the curative remedies that are now being used to soften their consequences. It would insure higher wages and make shorter working hours and better working and home conditions possible.

Why is it, then, in the face of the self-evident fact that maximum prosperity can exist

① ca canae, 苏格兰语, 磨洋工、慢行。

only as the result of the determined effort of each workman to turn out each day his largest possible day's work, that the great majority of our men are deliberately doing just the opposite, and that even when the men have the best of intentions their work is in most cases far from efficient?

There are three causes for this condition, which may be briefly summarized as:

First. The fallacy, which has from time immemorial been almost universal among workmen, that a material increase in the output of each man of each machine in the trade would result in the end in throwing a large number of men out of work.

Second. The defective systems of management which are in common use, and which make it necessary for each workman to soldier, or work slowly, in order that he may protect his own best interests.

Third. The inefficient rule-of-thumb^① methods, which are still almost universal in all trades, and in practising which our workmen waste a large part of their effort.

This paper will attempt to show the enormous gains which would result from the substitution by our workmen of scientific for rule-of-thumb methods.

To explain a little more fully these three causes:

First. The great majority of workmen still believe that if they were to work at their best speed they would be doing a great injustice to the whole trade by throwing a lot of men out of work, and yet the history of the development of each trade shows that each improvement, whether it be the invention of a new machine or the introduction of a better method, which results in increasing the productive capacity of the men in the trade and cheapening the costs, instead of throwing men out of work make in the end work for more men.

The cheapening of any article in common use almost immediately results in a largely increased demand for that article. Take the case of shoes, for instance. The introduction of machinery for doing every element of the work which was formerly done by hand has resulted in making shoes at a fraction of their former labor cost, and in selling them so cheap that now almost every man, woman, and child in the working-classes buys one or two pairs of shoes per year, and wears shoes all the time, whereas formerly each workman bought perhaps one pair of shoes every five years, and went barefoot most of the time, wearing shoes only as a luxury or as a matter of the sternest necessity. In spite of the enormously increased output of shoes per workman, which has come with shoe machinery, the demand for shoes has so increased that there are relatively more men working in the shoe industry now than ever before.

The workmen in almost every trade have before them an object lesson of this kind, and yet, because they are ignorant of the history of their own trade even, they still firmly believe, as their fathers did before them, that it is against their best interests for each man to turn out each day as much work as possible.

Under this fallacious idea a large proportion of the workmen of both countries each day

① rule-of-thumb, 单凭经验行事。