

J.W. Drukker, Arthur O. Eger & Marjolein van Velzen^[1]
Translator: Li Dan

本文献给“绿色之辨”——2010年绿色设计国际会议，中国装饰杂志社和湖南工业大学主办，2010年5月21日—5月25日。

一、概述

“绿色设计”这个术语指的是一种设计范式^[2]，它首先是在这样一种追求的驱使下应运而生的，即为人类创造一个无污染、不耗尽自然资源的物质环境。“可持续设计”和“绿色设计”之间唯一的区别，就是有没有明确说明的时间要素。从根本上来说，二者有着相同的范式，但是“可持续设计”却多了个附加条件：不仅着眼于当前，而且还关注着子孙后代。换言之，

可持续设计就是绿色设计的无限延伸。

在20世纪的后30年中，西方世界先后兴起了绿色设计运动和可持续设计运动。资本主义晚期，人类的生存环境遭到污染，典型的消费模式又造成原料和资源的过度浪费，这些运动正是对从“高度消费时代”（罗斯托）向“过度消费时代”（福格尔）转变的回应。美国当时基于“计划报废”^[3]的设计原则是产生这一浪费现象的罪魁祸首。

接下来，我们将试着讲述，在20世纪下半叶的后期，是什么样的社会发展和观念，让绿色设计和可持续设计分别从小规模的、政治上非常激进的少数派的意识形态领域，转向成为当今主流的工业设计

中最重要的设计原理之一。或者说，我们将试着回答这样一个问题：设计是何时与为何转向绿色的？

二、托马斯·罗伯特·马尔萨斯和第一次工业革命

自古以来，人们就知道，人类活动会导致自然资源的枯竭和环境的污染，甚至早在欧洲的古希腊人就开始关注这些后果了。例如，2500年前，举世闻名的希腊哲学家柏拉图在阿蒂卡亲眼目睹了正好发生在他面前的森林滥伐，^[4]他当时就对这种做法的消极后果表示担忧，所以，人们有充足的理由相信，大规模的铅中毒是导致西罗马帝国走向衰亡的因素之一。法国中

绿色之根：设计何时、为何转向绿色（1）

（荷）J. W. 德鲁克、阿瑟·奥·埃格尔、马乔林·凡·维尔森^[1] 翻译：李丹

1. Introduction

The term 'green design' refers to the design paradigm^[2] that is first and foremost driven by the quest to create a material environment for humanity that will not pollute and exhaust natural resources. The only difference between 'green design' and 'sustainable design' is an explicitly stated time element. Sustainable design encompasses basically the same paradigm as green design, but with the following additional clause: both for the current and all future generations. In other words: sustainable design is green design stretched into infinity.

The movement in favour of green design – and somewhat later: sustainable design – arose in the Western world, in the last three decades of the twentieth century. It was a reaction to the pollution of the human living environment and the excessive waste of

raw materials and resources caused by the typical consumption patterns during the era of Late Capitalism: the transition from “The Age of High Mass Consumption” (Rostow) to “The Age of Overconsumption” (Fogel). This waste was a logical consequence of the American design principles of the time, based on ‘Planned Obsolescence’.^[3]

In the following we shall attempt to relate which societal developments and ideas of the last quarter of the twentieth century have allowed green and sustainable design, respectively, to move from the ideological domain of small and, from a political point of view, strongly radical minorities into one of the most important design principles of current mainstream industrial design. In other words: we shall try and give an answer to the question when – and why – design turned green.

2. Thomas Robert Malthus and the First Industrial Revolution

Human activity can lead to exhaustion of natural resources and to pollution of the environment; this has been known since time immemorial, and even in European Antiquity, the ancient Greeks expressed concern about the consequences. To name but one example: as many as 25 centuries ago the world famous Greek philosopher Plato worried about the negative consequences of deforestation in Attica, which was taking place virtually right in front of him^[4]. There is ample reason to believe that large-scale lead poisoning was one of the factors contributing to the fall of the Western Roman Empire. The notion that exhaustion and pollution are indeed of all times is further nourished by the view of the many deserted medieval townships in central France, many of which enjoyed a

部的许多城镇在经济全盛时期采矿业很发达，但是这些中世纪的城镇最终还是被遗弃了，这就进一步说明了资源枯竭和环境污染在任何时代都存在。

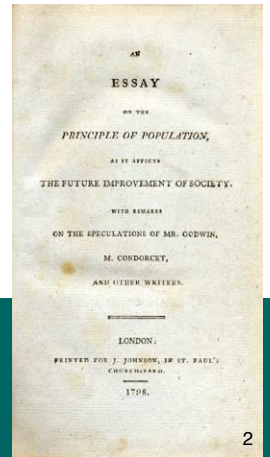
即便这样，在19世纪早期英国爆发了称之为“第一次工业革命”后，这个问题才从一个一般性的社会观点转变成一个迫在眉睫的问题。对资源枯竭和环境污染有不同的理解，也引发了对这场史无前例的巨变所导致的后果的论战，巨变在多个层面展开：无论是科技水平、经济状况，还是社会关系、人口结构都一并受到了影响。^[9]部分讨论是以这些变化是否会对人类的物质生活环境产生长期的积极或消极影响为中心的。1798年，托马斯·罗伯

特·马尔萨斯（1766年—1834年）发表的《人口论》在这次讨论中起着关键性的作用（图1、2）。

引人注目的是，尽管论战的一方是一大批科学理论的追随者，另一方是一大批政治信念的笃信者，但双方都是由具有高度异质性的群体组成的。乐观主义者看到，他们中间有许多人都是来自当时占统治地位的古典学派的经济学家，如亚当·斯密；还有数量相当可观的技术官僚，如詹姆斯·瓦特；不仅如此，还有大量的散文执笔者，如威廉·戈德温。而悲观主义者本身至少也可以算得上是一个异质的群体了，这一点可以从马尔萨斯自身的经历中看出，他本来被培养成为一名

神学家，但最终却被任命为历史经济学教授。前面我们已经提到，当时占统治地位的思想学派是古典经济学，马尔萨斯的观点几乎不被古典传统所认可，因而他只能算是一个局外人。

随着18世纪启蒙运动的开展和一些作家的宣扬，如法国的马奎斯·德·孔多塞和哲学家让·雅克·卢梭，人类对



rich mining industry during their economic heyday.

Even so, it can be argued that only after the so-called First Industrial Revolution, i.e. in early nineteenth century England, the problem became an urgent one from a general societal point of view. The perception of exhaustion of resources and of pollution led to an acrimonious debate about the consequences of the unprecedented swiftness with which developments took place on several levels: technology and economics were affected, but also social relations and demographics^[5]. Part of this discussion centred around the question whether these changes would have a positive or a negative long-term impact on mankind's material living environment. In 1798, Thomas Robert Malthus (1766-1834) published *An Essay on the Principle of Population*, which was to play a key role in

this discussion (figure 1, 2).

A remarkable fact is that the two sides of this debate were argued by highly heterogeneous groups, comprising a wide range of scientific disciplines on the one hand and of political convictions on the other. The optimists counted among their ranks a number of economists from the then dominant Classical School - e.g. Adam Smith -; a number of technocrats - such as James Watt; and a number of political pamphlet writers, like William Godwin. The pessimists themselves were at least as heterogeneous a group, as is illustrated by the fact that Malthus himself had been trained as a theologian, but was eventually appointed professor of History and Economics. In Classical Economics, which as we mentioned earlier was the dominant school of thought in his time, he is considered to be an outsider: given his

views he can hardly be seen as belonging to the classical tradition.

Malthus rebelled against the unrestrained optimism about the future of mankind, which had become quite the fashion with the 18th century Enlightenment and that had been articulated by authors such as the French Marquis de Condorcet and philosopher Jean-Jacques Rousseau. There was no ground for optimism whatsoever, Malthus posited, since humans have a natural propensity to propagate faster than the biologically limited maximum increase of available food. The famous Malthusian Growth Model says that the propagation of mankind can be expressed in terms of a geometric progression (2, 4, 8, 16, 32, etc.), whereas the totality of food made available is by nature an arithmetic sequence (2, 4, 6, 8, 10, etc.). The inevitable consequence of this divergence is that the human condition

注释:

[1] j.w. drucker@utwente.nl (责任作者); a.o. eger@utwente.nl; mrvvelzen@wxs.nl

[2] 在这里: 指的是一套设计原则(它们在特定的时间内, 构成了人们普遍接受的“工业设计”

科学原理的知识主体部分)以及在这些原则的指导下所进行的设计活动。

[3] 罗斯托(1960年)提出,“高度消费时代”是资本主义的最后阶段。罗伯特·威廉·福格尔(1993年诺贝尔经济学奖获得者)提出,“过度消费时代”是紧挨着资本主义最后阶段的下一阶段,他在1997年于慕尼黑召开的第三次世界历史计量大会上的演讲中戏谑地说道:“……当平均每个普通家庭中收音机的数量比耳朵的数目还要多的时候,那么,这个社会就已经进入过度

消费阶段……”

[4] 柏拉图指的是《克里提亚》中第110页-111页, 第1行-第5行在阿蒂卡的滥伐森林。关于西罗马帝国的铅中毒事件, See Lessler, Milton A. (1988), "Lead and Lead Poisoning from Antiquity to Modern

未来的盲目乐观主义风靡一时, 马尔萨斯对此进行了批驳。他认定, 任何乐观主义都是毫无根据的, 因为人类有一种自然的繁衍倾向, 而且, 它的速度比起受生物属性限制的食物供应的最高速度, 也是有过之而无不及。著名的马尔萨斯增长模型表明, 人类的繁衍速度呈几何增长趋势 (2, 4, 8, 16, 32……), 而食物供应的总量本质上却呈算术增长趋势 (2, 4, 6, 8,

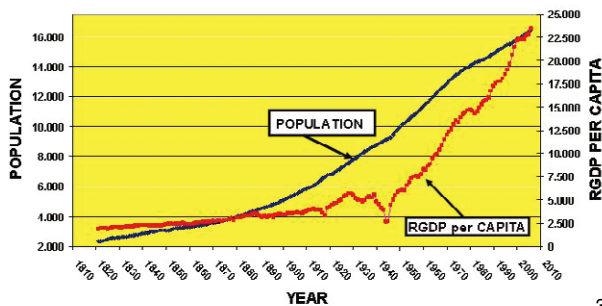
10……)。不同的增长速度所带来的必然后果就是, 人类将永远处于濒临饥饿边缘的状态。

马尔萨斯增长模型有着明显的不足: 他认为, 人类将以生理上可能的速度繁衍, 这是一个不可动摇的自然法则, 但历史已经证明, 实际的人口增长速度经常会大大低于生理上繁衍速度的最大值。^[6]而且与现实正好相反的是, 马尔萨斯在计算食物供应增长速度的时候, 暗自排除了技术在提高农业生产中的可能性, 还把这种最低的增长速度看作是无可辩驳的增长上限。尽管如此, 这也丝毫没有影响到马尔萨斯模型成为一个有着巨大影响力的理论的完美例证。

正如上文所述, 这个理论有着明显的不足, 但并没有妨碍马尔萨斯对后人产生巨大的影响, 查尔斯·达尔文和卡尔·马克思把马尔萨斯看作是他们灵感的主要来源。

当我们意识到马尔萨斯是在19世纪前夕出版《人口论》的, 他那本身就很高的知名度可能就变得更加惊人了。在西方世界, 从19世纪到20世纪是对马尔萨斯理论中预言的公然挑战。第一次工业革命开始后, 所有的西方国家都立刻体验到了人口以史无前例的速度一路飙升, 与此同时, 人均商品和服务数量 (人均实际国内生产总值 RGDP per capita) 也同样以前所未有的速度增长。部分实际国内生产总

POPULATION & REAL GDP PER CAPITA, THE NETHERLANDS
1821-2006



3

Times", Ohio Journal of Science, 3, pp. 78 - 84.

[5] 从经济史的观点看, 第一次工业革命至少是社会四个结构转型间相互影响的结果: 科技革命 (即系统地应用科学知识以解决社会中所存在的问题); 经济革命 (即从政府调控的经济体制中小规模的、劳动密集型的、像手工艺那样的产销模式, 向自由市场支配的经济体制下大规模的、资本密集型的、以分工和专业化为特征的产销模式转型); 人口结构转型 (即从以高出出生率和高死亡率为特征的前现代人口增长模式, 向以低出生率和低死亡

will be a permanent teetering on the brink of starvation.

The Malthusian Growth Model is the perfect example of a theory that has been of tremendous influence in spite of its obvious incorrectness: Malthus presents a biologically feasible propagation rate as an unshakable law of nature, whereas History has shown that the real rate of population increase is quite often considerably lower than the biological maximum^[6]. He does exactly the opposite when calculating the increase of available food: by implicitly excluding the possibility of technologically driven productivity increases in agriculture, he defines a minimum growth rate as if it were an irrefutable ceiling.

But, as stated above, the fact that the theory was so obviously flawed was no impediment to Malthus' huge influence on later authors; both Charles Darwin and Karl Marx saw

Malthus as a major source of inspiration.

Malthus' considerable popularity seems even more astonishing when we consider the era in which he published *The Principle of Population: the eve of the 19th century*. In the Western world, the 19th and 20th centuries are the blatant antithesis of the predictions in Malthusian theory. Immediately following the First Industrial Revolution all Western nations experienced an unprecedented rapid population growth, that went hand in hand with an equally unprecedented increase of the per capita number of goods and services produced (Real Gross Domestic Product - RGDP - per capita). Part of this increased RGDP was an historically unheard-of increase of agricultural output per capita. (figure3)^[7]

There is without a doubt a certain element of tragedy in Malthus' work. Before his time, not only in the Middle Ages but even

later in the pre-modern era, numerous developments suggest that at times, society did indeed seem to follow a Malthusian pattern. However, the nineteenth century, his own era, proved to be the textbook example of a society in which the so-called 'Malthusian trap' appeared to be increasingly a thing of the past.

Rather than in the correctness of Malthus' model or even in its implications for the modern world In our days, the importance of Malthus' theory rests in the fact that the Malthusian model fundamentally paves the way towards thinking in terms of unbalanced growth (disequilibrium). The population-food imbalance as postulated by Malthus was diametrically opposed to the classical and neo-classical economic models of most of his contemporaries. Seen in that light, his huge influence on Darwin and Marx is understandable and in this sense he is and

值的增长要归功于人均农业产量的空前增长。(图3)^[7]

无可否认, 马尔萨斯的著作里确实有一个遗憾。无论是在他之前的中世纪, 还是后来的前现代主义时期, 都有大量的发展证据表明, 有时候, 社会的发展似乎的确遵循了马尔萨斯模式。但是, 越来越多的人认为, 马尔萨斯所在的19世纪, 却很好地证明了, 落入所谓的“马尔萨斯陷阱”的社会只不过是过去的事情。

马尔萨斯理论的重要性不在于其模型的正确性, 甚至也不在于它对我们当今现代社会的影响, 而是在于这个理论从根本上开辟了一条通往非均衡增长(不平衡)思考的道路。马尔萨斯所假设的人口——

食物失衡与当时大部分的古典及新古典经济模型都是根本对立的。在这种思考方式的启示下, 马尔萨斯对达尔文和马克思所产生的巨大影响也就不言而喻了。下文中, 我们将从这个意义上来探讨, 马尔萨斯不仅现在, 而且将来会一直对可持续设计理念产生重大影响。

三、科姆洛什悖论: 19世纪马尔萨斯风波

讽刺的是, 在马尔萨斯的《人口论》出版后不久, 人们就经历了一股与马尔萨斯理论逆行的潮流: 在历史上, 人口和财富第一次以前所未有的速度携手并进。但是, 这并不意味着马尔萨斯风波从那以后

就成了过去式, 也不代表那个现象没有引起当时人们的重视。

所有的西方国家在现代化早期都有着相似的进程, 因此可以再次借用我们荷兰的两个案例, 来说明逃离马尔萨斯陷阱的发展的不稳定以及不平衡的本质。

尽管长期以来, 出生率和死亡率都呈跌落趋势, 而且死亡率还高于出生率, 但这种所谓的人口灾难到19世纪中期就结束了。这种人口减少的时期时有出现, 而

率为特征的现代人口增长模式转型。由于起初死亡率通常都比出生率下降得早, 因此随着转型的发生, 伴之而来的是空前的人口增长; 社会革命(即从一种社会结构向另一种社会结构转型, 其中, 前者的特征是社会流动性低, 社会组成如下: 由出身决



will continue to be, as will be discussed in the following chapters, of fundamental importance for the ideation concerning sustainable design.

3 .The Komlos Paradox: Malthusian Disturbances in the 19th Century

Ironically, shortly after the publication of Malthus' Principle, the first-ever contra-Malthusian process was to be witnessed: for the first time in history, an unprecedented population growth rate went hand in hand with an equally unprecedented increase of wealth. However, this did not mean that Malthusian disturbances were henceforth a thing of the past, or that this fact was not remarked on by a number of Malthus' contemporaries.

The brittle and unbalanced nature of the development of the escape from the Malthusian trap can be illustrated using two

examples that once again we borrow from our own country - the Netherlands -, but which once again can be said to exemplify similar processes in all Western countries in the early phases of their modernisation.

Although in the long term both birth and death rates showed a downward trend, periods of so-called demographic catastrophe continued until the middle of the 19th century; these are years in which the death rate was higher than the birth rate. Such periods of population decline had been a regular occurrence and studies have confirmed that in at least some of these catastrophes they were indeed caused by a lack of food, such as the 'Great Famine' (1845 - 1849) which left profound marks on several European countries, among which Ireland and the Netherlands. (figure 4)^[6] It is important to realise that in these years the total of a country's population showed

a demographic catastrophe from time to time, but that the results would have been even more dramatic if one had excluded the countryside from the statistical data and had considered cities only. Until way past the mid-19th century the inhabitants the new industrial cities of the Western world lived in more or less permanent demographic crisis. The death rate was virtually consistently higher than the birth rate, and massive net immigration was the only means by which the depopulation of 19th century industrial cities was avoided.^[9] In many cases, this disastrous pattern came to an end only when "modern" plumbing- which brought clean water - and sewage systems - which reduced filth - had become a part of a city's infrastructure.

A second example is to be found in anthropometric history, a recently developed specialism of quantitative economic history

定的精英分子, 数量相对较少的、类似中产阶级的手工艺者和主要以农业起家的下层阶级; 后者的特征是社会流动性高, 社会组成如下: 由经济成就决定的精英分子, 数量相对较多的、受过良好教育且行为举止得体的中产阶级和没有或很少接受教育的、构成劳工主体的、城市出身的下层阶级)。

[6] 马尔萨斯援引了美国发展的例子, 但事后我们发现, 美国当时人口的增长速度异常的高。

[7] 图3显示了荷兰的数据, 若不是总在相同的时刻进行比较, 那么, 其他西方国家都会有相似的模型。来

源: <http://www.ggd.cnet/maddison>. 表1: 人口水平, 公元元年—公元2008年; 表3: 人均国内生产总值水平, 公元元年—公元2008年。[8] Drukker, J. W. & Tassenaar, V., "Paradoxes of

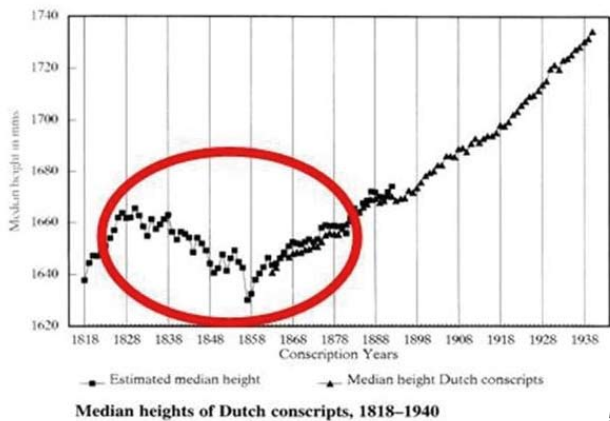
且研究表明, 其中至少有一些灾难实际上是粮食供应不足造成的, 比如说, “大饥荒”(1845年—1849年) 对一些欧洲国家产生了深远的影响, 其中就包括了爱尔兰与荷兰。(图4)^[9] 在那些年, 一个国家的总人口总是时不时地出现滑坡, 认识到这一点固然重要, 但如果人们只考虑城市人口, 把农村人口的数据排除在外, 结果将更加

耸人听闻。19世纪中期以前, 西方新工业城市中的居民基本上都面临着长期的人口滑坡, 死亡率几乎一直都高于出生率, 是大规模的城市移民才使得19世纪的工业城市免于人口消亡。^[9] 多数情况下, 只有当“现代的”卫生管道系统(它可以带来纯净水)和污水系统(它能够减少污秽物)成为城市基础设施建设的一部分, 这种灾难性的人口增长模式才会走向尽头。

另外一个例子是关于人体测量史的。人体测量史是近期才发展起来的数量经济史专业, 这门学科旨在通过分析一些随时间发生变化的具体的、和贫富相关的平均生理特征(如身高、预期寿命、婴儿死亡率 and 月经初潮年龄), 以此还原当时不同

物质环境中的波动变化。^[10] 其中, 和性别年龄相对应的平均身高体重, 是能够反映人们生活条件恶化或是改善的一个变量。当所谓的生物性的生活水平降低, 特定性别年龄的平均身高就降低了, 而生活水平提高, 平均身高自然也会增长。再次以荷兰的发展为例, 以此映射出整个西方世界的现代化进程。我们发现了一个非同寻常的现象, 直到1858年, 19世纪上半叶, 正如人均实际国内生产总值(图3)的增长所表明的那样, 物质财富有了明显的增加, 但在同一时期, 特定性别年龄的人的身高有了大幅度的降低, 正如新兵身高的中值水平(图5)^[11]所显示的那样。

换言之, “经济学铁律”并不适用于



5

Modernization and Material Well-Being in The Netherlands during the Nineteenth Century”, in Steckel and Floud (Eds.)1997, p345, figure 9.4, pp363–364, figure9A.4.

[9] 20世纪, 在非西方的发展中国家里, 有许多城市都出现了类似的人口增长模式。

[10] 关于人体测量史领域的一个简单介绍, 见: 德鲁克 2006年, 第147页—150页。

[11] Drukker, J. W. & Tassenaar, V., "Paradoxes of Modernization and Material Well-Being in The Netherlands

and a discipline attempting to reconstruct fluctuations in material circumstances using changes over time of some specific poverty/wealth related average physical characteristics, like height, life expectancy, infant mortality and age of menarche.^[10] One of the variables reflecting a deterioration or amelioration of the living conditions of a population is average height - weighted for gender and age. When the so called biological standard of living deteriorates, the average gender and age specific height goes down, whereas an improvement of the biological standard of living is reflected by an increase of the average height. Taking once again the Dutch developments as an example for the general Western modernisation pattern, we find a highly remarkable phenomenon in place until the year 1858. There was a definite increase of material wealth during the first half of the

19th century, as is illustrated by the increase of the Real Gross Domestic Product (RGDP) per Capita (see: Figure 3 on previous page), while in that same period there was a dramatic decrease of gender and age specific height as shown by the median body height of army recruits (figure5)^[11] In other words, the 'iron law of economics' positing that an increase in wealth as measured by an upwards trend of the per capita RGDP will always be accompanied by an improvement in material circumstances as expressed in, for instance, a decrease of the death rate, an increase of life expectancy and an increase of body height, turned out to be untrue during the early development stages of capitalist modernisation. This irregularity which, as stated above, was witnessed in virtually all Western countries, was deemed so highly exceptional that it is referred to as the so-

called "Komlos Paradox", taking the name of anthropometric historian John Komlos, the first one to describe this paradoxical pattern.^[12]

A number of contemporaries, however, also had noted the quite dramatic deterioration in material conditions of the large majority of the population during the early years of the capitalist system. The most famous description of the time was given by Friedrich Engels (figure6), whose work *Die Lage der arbeitenden Klasse in England. Nach eigener Anschauung und authentischen Quellen* (1845) (figure 7)^[13] is the most important empirical founding stone of Marx' Verelendungstheorie (Immiserization Theory).

However, the conviction that the capitalist development process is essentially based on exploitation was shared by more groups than just the 19th century revolutionary

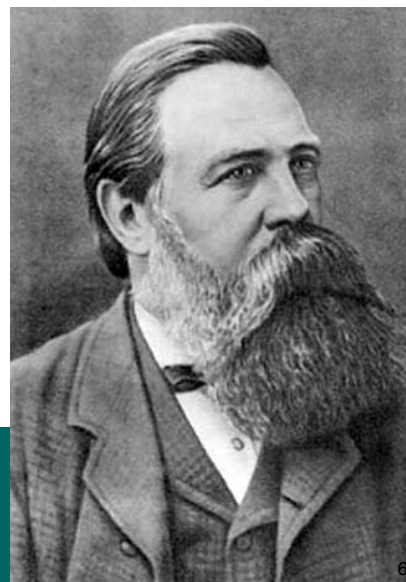
资本主义现代化的早期发展阶段。因为“经济学铁律”假定，通过呈上升趋势的人均实际国内生产总值反映出来的财富的增加，往往是与物质环境的改善（如死亡率的下降、预期寿命的增加和身高的增长）相伴而生的。几乎所有的西方国家都经历了上述非常规性的发展，因为人体测量史学家约翰·科姆洛什首次描述了这种矛盾的格局，^[12] 所以就他的名字来指称这种极端异常情况，即所谓的“科姆洛什悖论”。

其实，很多同时代的人都注意到，在资本主义前期，绝大多数人口的物质条件都出现了惊人的恶化。当时最著名的描述莫过于弗里德里希·恩格斯（图6）对这

段时期的刻画了，他的著作《英国工人阶级状况》（1845）（图7）^[13] 是马克思的贫困理论（Verelendungstheorie）最重要的经验之石。

然而，不仅是19世纪的革命社会主义者们坚信，资本主义发展过程从本质上来说就是基于剥削的发展过程，还有更多的群体对此深信不疑。但极端保守的作家们却在意识形态上和马克思持有截然相反的观点，如约翰·拉斯金。这些作家们观点比较一致，在他们看来，问题的关键并不在于对劳动者的剥削，而是在于不加节制的经济发展所招致的对自然资源的掠夺。^[14] 人们担心，社会现代化将给理想的、世外桃源般的过去带来无法挽回的损失，

这一点已经在法国哲学家让·雅各·卢梭的《回归自然》中得到诠释，并且在塞缪尔·约翰逊博士的著作中得到体现。19世纪，这种担忧在约翰·拉斯金的作品中找到共鸣。这就说明，两大学派对西



during the Nineteenth Century”, in Steckel and Flood (Eds.)1997: p341, figure 9.1, pp356–357, figure9A.1.

[12] Komlos, John (1993), “A Malthusian Episode Revisited: The Height of British and Irish Servants in Colonial America”, *Economic History Review*, 46, pp. 768 – 782. Komlos, John (1994a), “On the Significance of Anthropometric History”, *Revista di Storia*

socialists. Arch-conservative authors, ideologically spoken diametrically opposed to Marx and Engels, such as John Ruskin, had similar ideas, be it that in their view the central issue was not the exploitation of labour, but rather the exploitation of natural resources due to unrestrained economic development.^[14] The fear that modernisation of society would lead to the irreparable loss of an idealised arcadian past had already been phrased by French philosopher Jean-Jacques Rousseau in his “Retourons à la nature” and is reflected in the work of Dr. Samuel Johnson. In the 19th century, this fear was echoed in the writings of John Ruskin. This explains the great influence of both schools on the first ‘green design movement’ in the Western world: both Marx’ and Engels’ socialism and John Ruskin’s conservatism were major contributing factors to the ‘green design’ school of

thinking.

4. Arts & Crafts: A 19th Century Green Design Movement

In the second half of the 19th century, English – note: it was in England that around the same time the first-ever modern form of capitalism had come into being – designers started a countermovement, the Arts & Crafts movement. This movement may rightfully be called the first ‘green design movement’ of the world. Supporters of this movement, united in several groups around Arts & Crafts founder William Morris, turned away from industrial cities (figure8) where - see: Engels’ *Die Lage der arbeitenden Klasse* – factory workers lived in material circumstances that were worse than ever, and adulated life in the countryside. In their vision, which incidentally was not totally devoid of exaggeration – the countryside



Economica, 11, pp. 97 – 109; Komlos, John (1994b), *Stature, Living Standards and Economic Development: Essays in Anthropometric History*, University of Chicago Press, Chicago.

[13] 原德语标题用英语表述即：基于个人观察和真实资料的英国工人阶级状况。

[14] 拉斯金的代表作《威尼斯之石》基本上是一部中世纪威尼斯的建筑史。同时，它既是对拉斯金眼里当时人类文明日趋退化的公然违抗，又是对拉斯金心目中的理想社会，即中世纪后期的城邦国家纯粹的赞美。

had managed to preserve the arcadia that elsewhere had been destroyed by modern technology. (figure9)

Arts & Crafts adepts denounced the central principles of large scale production in factories: division of labour and specialisation^[15], because in their view

[15]早在1776年，资本主义之父、经济学中经典学派的创始人亚当·斯密就提出，分工和专业化是生产力提高的主要来源，因而，它是经济增长最主要的源泉。See Smith, Adam, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Strahan & Cadell, London, 1776.

[16]关于工艺美术运动中现代科技的让步，见（荷）德鲁克和凡·维尔森：“19世纪与20世纪末的

方世界第一次“绿色设计运动”产生了巨大影响：无论是马恩的社会主义，还是约翰·拉斯金的保守主义，都对“绿色设计”思想学派做出了主要的贡献。

四、工艺美术：19世纪的绿色设计运动

在19世纪下半叶的英格兰，资本主义首次以现代形式登场，而几乎与此同时，英格兰的设计师们也掀起了一场反对运动，即工艺美术运动。这场运动也许真正可以被誉世界上首次“绿色设计运动”。它的拥护者们结成若干个团体，团结在工艺美术的创始人威廉姆·莫里斯的周围，他们厌倦了物质状况江河日下的工人们所居住的工业城市（图8）（见恩格斯的《英

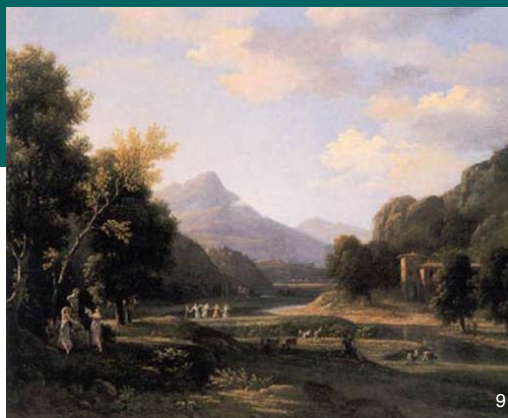
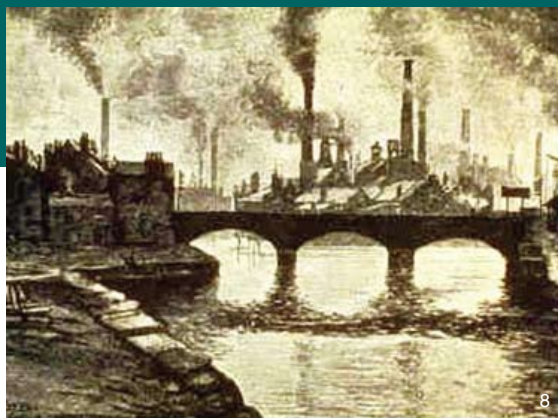
国工人阶级状况》），而歌颂农村的生活。在他们偶尔有些夸张的遐想中，其他地方都已经被现代科技所破坏，唯有农村才是真正的世外桃源。（图9）

工艺美术的行家们谴责了工厂里大规模生产的中心原则：分工和专业化。^[15]因为在他们看来，这个中心原则才是生活质量严重下降的主要原因，它有两层含义。首先，手工业者们已经习惯了体验制造一件完整的产品时的工作满足感，但是现在，生产过程被分成了一系列的分过程，这些分过程不仅看似永无休止，而且本身也只是毫无目的的重复；其次，单个的劳动者就在这千篇一律的大规模生产循环（图10）中重复着这些工作，因此，工作满足

感丧失了，手工艺水平也就下降了。正因为如此，工艺美术的设计师们才会认定，同样的发展必然会导致产品本身质量的下降：在没有灵魂的机械化生产过程中所生产出来的产品，必然是没有灵魂的。^[16]

马克思认为，如今是机器把制造者和产品连接起来了，言下之意，从今以后，制造者和产品都将被分隔开来，天各一方，而这也就是造成之后生产过程本质上都没有灵魂的根本原因。在这种体制下，以竞争为其主要动力的市场机制，将必然会导致对自然资源越来越多的掠夺和对劳动者的剥削，这是资本主义发展过程中的一个特点。

人们认为，这种不平衡发展最终将是



反技术先锋设计——艺术与手工艺运动和荷兰后现代主义”。滕晓铂译，《装饰》，2009.4.5。

this was the main contributing factor of a fatal loss of quality of life – in two senses of the word. First, there was the decline in workmanship caused by the loss of job satisfaction that craftsmen used to experience while manufacturing an entire product: the production process was now split up in a series of apparently endless and, in themselves, senseless repetitions of sub-processes performed by individual labourers in an anonymous, massive production cycle (figure 10). And thus, Arts & Crafts designers posited, the loss of quality of the product itself was an inevitable consequence of this same development: a

mechanic and therefore soulless production process can not but yield a soulless product.^[16]

Between maker and product, there now was the machine: from now on, the maker was alienated from his product – the notion is taken directly from Marx – and this was the underlying cause for the henceforth soulless nature of production processes. Within this system, the market mechanism, with competition as its prominent motivation, would inevitably lead to the ever increasing exploitation of natural resources, including labour, that is characteristic of the capitalist development process.

In order to undo this unbalanced development, which was deemed to be ultimately fatal, large factories in cities had to be replaced by small-scale artisanal workshops in the countryside. There, following the example of the brotherhoods of medieval craft guilds, production would not be based on the principles of inequality and competition, but on co-operation between master and apprentice who would, using elementary and simple tools, work together to manufacture whole and entire products. (figure11)

However saturated the Arts & Crafts philosophy was with the revolutionary marxist ideology of the day, the remedies the movement proposed in order to change capitalist large scale production processes were in essence highly conservative: modern, large scale technology was to be replaced by small scale alternatives,

毁灭性的，因此，为了消除它的消极影响，城市里大型的工厂必须代之以农村中小规模的手工艺作坊。当时，人们效仿中世纪的手工业行会进行生产，于是，这种生产不再以不公平和竞争为原则，而是基于师徒间的合作关系，他们使用基本的简单工具，共同协作，制造出完整的产品。（图11）

无论工艺美术哲学中充斥了多少当时具有革命性的马克思主义意识形态，为了改变资本主义大规模生产过程从而提出改善办法的这场运动，从本质上来说，是极其保守的：因为它要用本质上是中世纪小规模的手工业技术，来代替现代大规模的工业科技。与现代技术官僚们分析推理

的世界观截然相反的，是莫里斯提出的一种整体性的世界观，他主张从分工和专业化走向一定程度的统一。作为对资本主义及其无限扩张趋势的抵制，他提议，要建立起带有独具特色的生产传统的小城市中心。现代技术官僚们看到，他们未来的乌托邦将在那时的现代科技中现身，而莫里斯却忧心忡忡，他担心如果科技体制成为了中心原则，那么人类的生存环境将遭到毁灭性的打击。在他们看来，唯有抛弃现代科技，并且回到那简单的、理想的、世外桃源般的过去，才能使生活环境免遭毫无节制的科技化所带来的完全毁灭的必然恶果。

下面，我们将会发现，20世纪第一次

“绿色设计运动”所立足的世界观，几乎和19世纪的工艺美术哲学如出一辙。那么，这些抗议运动中所提出来的解决办法，和19世纪的先驱者们所提出的解决方案有着明显的相似之处，也就不足为奇了。

为了说明这一点，我们需要穿越时间的隧道，来到西方世界资本主义发展过程中的鼎盛时期（20世纪下半叶前夕的美国），简单地思考一下支配当时设计界的原则。（待续）

J. W. 德鲁克、阿瑟·奥·埃格尔、
马乔林·凡·维尔森
荷兰特温特大学

based on essentially medieval manual labour methods. Morris cum suis proposed a holistic world view as opposed to the analytical reasoning of the modern technocrats, and favoured a turnaround from the division of labour and specialisation, into a certain measure of autarchy. As opposed to capitalism and its tendency toward unrestrained expansion, Morris cum suis proposed small country hubs with specific, characteristic production traditions. Modern technocrats saw their utopia – to be realised by that very same modern technology - in the future, whereas Morris cum suis feared that the human living environment would be irreparably damaged if the technological system were to be made the central principle. In their eyes, nothing but the renunciation of modern technology, paired with a return to a simple, idealised, arcadian past, could prevent the total destruction of



the living environment that would be the inevitable consequence of unrestrained technologisation.

In the following we shall see that the world vision on which the first 'green design movements' of the 20th century were based was almost a carbon copy of the 19th century Arts & Crafts philosophy. Small wonder that the solutions these protest movements proposed showed a marked similarity with the solutions that their 19th century precursors had suggested.

In order to illustrate this, we need to take a large leap in time and briefly consider the



principles that dominated the design world in the heyday of the capitalist development process in the Western world: the United States on the eve of the second half of the 20th century.

J.W. Drukker, Arthur O. Eger
& Marjolein van Velzen
University of Twente, The Netherlands