

Causes and consequences of population growth: the Benjamin Franklin's *Observations*

ROBERTO IMPICCIATORE
Università di Milano

1. Introduction. In the middle of 18th century, Benjamin Franklin (1706-1790) wrote a pioneering work about the causes and consequences of population growth in England and in the North American colonies. Although Franklin was best known for his contribution in other fields, the short essay, *Observations concerning the increase of mankind and the peopling of countries* (written in 1751) was not published until 1755, and was reprinted in 1760 and 1769. It has been cited by many authors and greatly influenced Malthus in the preparation of the second edition of his *Essay on the Principle of Population*.

In England at that time, some apprehensions were emerging regarding the changing situation of the colonies in the North American continent. The colonies were useful, primarily as markets for British manufacturers, and their growth was appreciated – but not without misgivings. Firstly, the emigration to America had reduced Britain's strength, while it had enhanced the strength of the colonies. Secondly, the extension of the North American settlement, especially in the areas away from the coasts, were seen to be too large because the additional costs of supervision and defense were hardly covered by the potential profits from trade. Many believed that Canada should remain in French hands in order to check the growth of her colonial population. However, more importantly, there was fear that the rapid population increase in the colonies would propel the desire for independence.

The *Observations* were directed at two, specific political issues that were linked to the increased regulations on colonial trade (Franklin 1985). Firstly, Franklin argued the merit of a liberal policy in the trade between England and the American colonies. Secondly, he urged England to acquire as much land as possible in the negotiations with France over territorial boundaries in North America. All his thoughts concerning causes and consequences of population growth support these two positions.

Franklin claimed that in America, the easy access to the *means of subsistence* encouraged early marriage and, hence, high fertility and rapid population growth. In Europe, on the contrary, lands were fully settled and many were forced to delay marriage, or never wed at all. Franklin argued that England did not need to be afraid of the expansion of the colonies because American enterprises would not be able to compete with English enterprises, since the abundance of land permits maintained relatively high labor costs in the colonies for «*many ages*». Also, the rapid population growth in America ensured a growing demand for English goods

and, contrary to widespread opinion, Franklin reckoned that slave labor was not capable of producing cheaper manufacturing goods in America.

This paper investigates both the content of the *Observations* and the underlying reasons that led Franklin to write it. After the presentation of demographic figures and predictions made by Franklin, we explain the underlying arguments he used to link the economic context with the population growth. In particular, we highlight the role of migrations and slavery (section 3), urbanization (section 4), liberal trade policies (section 5), and luxury (section 6). In the last two sections, we draw a comparison between Franklin and Malthus and give some final remarks and reflections.

2. The demographic figures. The *Observations* is derived from a series of works analyzing tables of vital statistics that were occasionally published during the preparation of official censuses. These tables induced Franklin to underline the differences in the demographic patterns between the populations on the two sides of the Atlantic. In particular, he publicized widely the rapid growth of the America population in comparison with the growth of the population in England. Franklin observed that in America, land was plentiful and people got married early and more often, in contrast to European trends:

And if it is reckoned there, that there is but one marriage per annum among hundred persons, perhaps we may here reckon two.¹

This trend had a direct effect on the birth rate:

if in Europe they have but four births to a marriage (many of their marriages being late) we may here reckon eight.

If half the children were to reach the age of marriage (i.e. the beginning of the reproductive period), which he estimated was 20 years of age, «our people must at least be doubled every twenty years».

With these figures, Franklin estimated the annual growth rate for colonies was more than 3%. The same rate for England, according to statistics from Sir William Petty in 1682, was 0.2%, with a doubling within the next 360 years (Aldridge 1949).

It is noteworthy that in the determining the doubling time, Franklin considered the colonies to be a closed population, given that the growth was only due to births and deaths. As we will see in the next section, Franklin dismissed immigration as an unimportant influence on population growth. This becomes clear when we consider another of Franklin's estimates: he asserted that the population of Englishmen in the colonies was, at that time, about one million. Very likely he underestimated the contribution of immigration when he asserted that the population was generated from the offspring of no more than 80,000 immigrants (Wells 1992). Franklin (1751) wrote:

Thus there are supposed to be now upwards of one million English souls in North America, (though it is thought scarce eighty thousand has been brought over sea).

At this point, combining his previous figures, he forecasted the 1850 population level in the North American colonies and in England. Then, he added:

This million doubling, suppose but once in twenty-five years, will in another century be more than the people of England, and the greatest number of Englishmen will be on this side the water.

Considering the prediction that more Englishmen would be in America than in England in one hundred years, we see that the 1851 census in Great Britain showed a population of 17,900,000 individuals for England and Wales whereas the U.S. census of 1850 counted 19,553,068 white individuals. Since the excess of 1,600,000 people is probably enough to take care of the non-English whites (Germans, Irish, etc.), Franklin seems to have been right (Zirkle 1957).

A systematic study, written by Wells (1992), recomposes empirical data to evaluate differences between England and the American colonies and then, Franklin's estimations. Inadequate sources do not permit to trace a history of the population in America, as Wrigley and Schofield (1981) did for England, however, there are a growing number of family reconstitutions for several colonies, which make comparisons possible.

England's population, given intermittent growth, some plagues, and bad harvests, doubled during the period 1607-1800, rising from 4.3 to 8.6 million. In the same period, American colonies increased from 300 inhabitants to 5.3 million (almost as many who were living in England in 1750). Although there were some fluctuations from decade to decade, after 1670, the colonial population seems to have come close to Franklin's estimate of doubling every 25 years.

During the 18th century, the different growth rates in England and in North America were effectively due to the low age at marriages. In New England, in the Middle Colonies, and in the South of British North America, women married between the ages of 19 and 22; in England, the mean age of marriage was between 25 and 26 years. However, in the second half of the century, the mean age of marriage rose in America and lowered in England, so that by the end of the century, women got married at approximately the same age on both side of Atlantic. For men, the picture was much more varied and in several cases, men in the colonies married at a similar age to men in England. This is quite close to Franklin's perspective: in some colonies men tended to marry late, not because resources were scarce, but because they faced an imbalance in the sex ratio, which could delay marriage, given the scarcity of brides.

Lotka (1927) estimated that in 1790 «the average number of children born, on an average, per fertile married woman, was 7.76, about 7 per cent of marriages being sterile». Wells (1992) showed that during the 18th century in the colonies, total fertility seldom fell below six, and often reached eight or more. In general, data on family size and total fertility show that American families were larger and colonial women more fertile, compared with similar data in England. There is also evidence that colonial wives had more children than English wives because of their earlier marriages and a more rapid childbearing. These results fully confirm Franklin's estimation for America. Nevertheless, Franklin underestimated the total fertility in England (i.e. that it would be half of that of America) but, according to Wells (1992), it varied little, at around 7.2 births per woman.

3. Migrations and slavery. Franklin suggested that in the colonies there were a substantial balance between demand and supply of labor force and an adequate level of subsistence for all workers. He claimed that in such situation the immigration of large number of people would not result in a population increase because higher levels of immigration increases competition in the labor market and lowers wages. Thus, marriages are postponed and fertility is reduced. This is true unless immigrants are more laborious and frugal than the natives: in this case, they provide more subsistence than the natives ensuring the population growth. However, even in this second situation, the consequences would not be desirable because immigrants «will gradually eat the natives out». In other words, it seems that Benjamin Franklin reasoned in terms of a self-regulating, or homeostatic, demographic-economic system (Smith 1999). Indeed, he also reckoned that immigration was unnecessary, even if occasional population voids in a country are produced by plague, wars, epidemics, or emigration because they would be filled by a natural increase in the population. To support this idea Franklin asked:

Who can now find the vacancy made in Sweden, France or other warlike nations, by the plague of heroism forty years ago; in France, by the expulsion of the Protestants; in England, by the settlement of her colonies; or in Guinea, by one hundred years' exportation of slaves, that has blackened half America?

Franklin's idea that the growth in a population is almost totally driven by natural increases and only marginally driven by migrations was later supported by Malthus.

As far as slavery is concerned, Franklin, with his usual rationality, argued that slavery does not increase a population because it decreases the ranks of freemen: slaves deprive native, poor people of employment who, without means of subsistence, become unable to form a family. At the same time, the richer families:

spend on foreign luxuries, and educating their children in the habit of those luxuries; the same income is needed for the support of one that might have maintained one hundred. The whites who have slaves, not laboring, are enfeebled, and therefore not so generally prolific.

Moreover, Franklin was sensitive to the fact that:

the slaves being worked too hard, and ill fed, their constitutions are broken, and the deaths among them are more than the births; so that a continual supply is needed from Africa.

In his *Observations*, Franklin tried to convince his readers that slavery did not provide economic advantages, since products that were manufactured by slaves were more expensive than those made in England:

The labor of slaves can never be so cheap here as the labor of working men is in Britain. Any one may compute it. Interest of money is in the colonies from six to ten per cent. Slaves, one with another, cost thirty pounds sterling per head. Reckon then the interest of the first purchase of a slave, the insurance or risk on his life, his clothing and diet, expenses in his sickness and loss of time, loss by his neglect of business (neglect is natural to the

man who is not to be benefited by his own care or diligence), expense of a driver to keep him at work, and his pilfering from time to time, almost every slave being by nature a thief, and compare the whole amount with the wages of a manufacturer of iron or wool in England, you will see that labor is much cheaper there than it ever can be by negroes here.

Following this perspective Franklin then asked the question:

Why then will Americans purchase slaves? Because slaves may be kept as long as a man pleases, or has occasion for their labor; while hired men are continually leaving their master (often in the midst of his business) and setting up for themselves.

This explanation calls attention to the very high mobility of free labor in North America where workers were encouraged by the abundance of lands to leave their employer and create their own business elsewhere. Franklin retained that in the territory of North America:

no man continues long a laborer for others, but gets a plantation of his own, no man continues long a journeyman to a trade, but goes among those new settlers, and sets up for himself.

The underlying idea in the Franklin thought was very similar to the one suggested more recently by agrarian economists such as Chayanov (1986): the slave economic unit, from the private economic viewpoint, can appear advantageous only as slave production yields a net product that does not amount to less than the slave rent, i.e. the cost of maintaining slaves. In other words, the slave work is paid as stock and not as flow. This perspective provides a direct implication that Franklin did not consider. During period characterized by a low demand of goods and low product prices, it is more convenient for the owner of slaves to keep the production level high because the slave rent has been already paid. This might represent an advantage in comparison with business that use paid work because it is not worth for them to hire workers in the same situation.

Most probably, Franklin was firmly opposed to slavery because he felt that the presence of foreigners could change the American character (Hodgson 1991b). With this, he voiced a widespread fear, which existed during this period, as well as in future centuries. In the *Observations* he railed against German immigration into Pennsylvania, fearing that «Palatine Boors» would «Germanize us instead of our Anglifying them». Similarly, relating to the importation of slaves, he asked:

Why increase the sons of Africa, by planting them in America, where we have so fair an opportunity, by excluding all blacks and tawneys, of increasing the lovely white and red?

Franklin was probably aware of the harshness of his language: the *Observations* were initially published without the last two paragraphs, which contain the above consideration. Nevertheless, copies of the original survived and were reprinted by his political enemies during the Assembly election some years later. Many scholars tried to interpret Franklin's words. Some of them suggested that he was ironic or that these sentences did not reflect his true enduring view, while others argued that he was a racist (for a review of this debate see Houston 2003).

4. Luxury and its effect on population growth. Three sections of Franklin's essay are devoted to tracing the negative effect of certain types of luxury and two sections recommend the virtue of frugality. In particular, he considered luxury as one of the most important factors in the regulation of population growth, given its effect on marriage postponement. The Franklin's idea is that luxury reduces the desire to marry and then causes a decline in the population growth. Whereas the opposite virtues – simple tastes, frugality, laboriousness, increase the number of individuals in a population (Aldridge 1949).

This idea was not original at that time. The consumption of goods on an excessive scale has been condemned in all ages, but the idea that “luxury” was a relative term and was to be related to social classes clearly emerged in the middle of the eighteenth century (cfr. Eversley 1959). By that time, many authors correlated luxury of aristocracy with infertility, asserting that poor people were better able to reproduce than the wealthy class. Adam Smith, for example, in his *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776) argued that

poverty [...] seems even to be favorable to generation. A half-starved Highland woman frequently bears more than twenty children, while a pampered fine lady is often incapable of bearing any, and is generally exhausted by two or three. Barrenness, so frequent among women of fashion, is very rare among those of inferior station. Luxury in the fair sex, while it enflames perhaps the passion for enjoyment, seems always to weaken, and frequently to destroy altogether, the powers of generation. (ed. R.H. Campbell et al., Oxford, 1976, I, VIII, p. 96-7).

Enlightenment philosophers condemned luxury and living in the cities by relating it to laze, unmoral behaviors, and unwillingness to have children. Montesquieu and Mirabeau, among others, argued for example that unproductive life and unequal distribution of wealth and resources (which gave the poor little incentive to labor thus contrasting the population expansion) stood against fertility and reproduction: the decadence within the ruling class tended, in their opinion, to cause the population as a whole to become debased and a depopulation trend to occur in Europe (and in France in particular).

Franklin anticipated nineteenth century theories on elites' need to continuously rejuvenate the capacity of their material goods to serve as status symbols and to maintain social distinctions. He foresaw that lower classes emulate elite's behavior in urban life and that standards of living in big cities are higher than in rural areas and are transmitted from higher to lower classes. Franklin's comment is:

The greater the common fashionable expense of any rank of people, the more cautious they are of marriage. Therefore luxury should never be suffered to become common.

Actually, Franklin accepted that the consumption of domestic products (home luxury) may have a positive effect but only if it is experienced by only a few families. In this case, home luxury could increase the national rate of employment and would have a limited negative effect on fertility, an idea that he expressed in the previous sentence:

Home luxury in the great, increases the nation's manufacturers employed by it, who are many, and only tends to diminish the families that indulge in it, who are few.

In other words, the nation may benefit as long as luxuries prevail among a small privileged class that will patronize industry, whereas, for the common people, these same luxuries are available only by sacrificing marriage (Aldridge 1949).

Although economic well-being was the key factor of Franklin's explanation for rapid population increase, he also believed that families could be an «example of industry». He meant that families who educated their children were better able to help their own sons and daughters marry early, with a consequent population growth that was positive and should be encouraged:

The great increase of offspring in particular families, is not always owing to greater fecundity of nature, but sometimes to examples of industry in the heads, and industrious education; by which the children are enabled to provide better for themselves, and their marrying early is encouraged from the prospect of good subsistence.

5. Differences between urban and rural populations. One of the essential elements in any comparison of English and American populations in the 18th century is that the latter was overwhelmingly rural compared to the former: until about 1730, the population of London was larger than the population of all the colonies put together; in America, from 1700 until after 1820, fewer than 5% of the total population lived in towns of at least 8,000 inhabitants (Wells 1992). Franklin grasped the importance of this difference. In order to emphasize the trends in the American colonies, he used the information given by John Graunt in his *Natural and Political Observations Made upon the Bills of Mortality published in 1662*, concerning the different demographic behaviors between cities and rural areas. In the explanation of the greater fertility of rural areas, Graunt claimed that in the cities, there were people who had left their children behind them in other places (i.e. transients and mariners), that the air was unhealthy, and that apprentices remained (generally) unmarried. The latter point was emphasized by Franklin (1751), who asserted that many citizens, living in cities, remained single because of the prevailing high standards of living in the cities (where «luxury is more common») meaning there were greater financial burdens in starting a family.

Capital cities were the target of speculations about depopulation trends in wealthier countries. This argument was supported even in the entry «Population» in prestigious Diderot's *Encyclopédie*, where d'Amilaville wrote:

Ceux qui jouissent dans ces villes de l'opulence qu'elles annoncent, & qui en abusent, y dépérissent, & ne peuvent se reproduire, par l'intempérance, la mollesse, l'évaporation, l'abnégation de tous les devoirs; par l'éloignement des occupations utiles, par l'indifférence de toutes les choses honnêtes, par les nourritures somptueuses & recherchées, enfin par l'abandon à tous les plaisirs & la révolte de toutes les passions dans lesquels ils vivent. Les autres, par les travaux périlleux qu'ils entreprennent, par la paresse, l'indigence & la mauvaise nourriture, qui ont un effet également contraire à la population. (d'Amilaville, 1765, p. 102)

Luxury in urban life was given a great attention by many influent theorists during the Eighteenth as well as Nineteenth century. By combining inequality and

social mobility, cities in early capitalist societies were the focus of social theorists on luxury consumption, since they are seen as stimulating lower social strata to aspire to imitate elite's way of life by appropriating their material culture (cfr. De Vries 2008). Thus, by focusing on the changing standards of living in the cities, Franklin anticipated theories about luxury consumption, fashion and emulative behavior in modern capitalist societies. Consequently, it is not surprising that Franklin condemned life in cities by arguing that:

Cities do not by, natural generation, supply themselves with inhabitants; the deaths are more than the births.

On the country «the case must be nearly the same» if it is «full settled» and «all the lands being occupied and improved to the height» as in England. In such cases, Franklin added:

those who cannot get land, must labor for others that have it; when laborers are plenty their wages will be low; by low wages a family is supported with difficulty; this difficulty deters many from marriage, who therefore long continue servants and single.

This chain of logic, which finally produces a lower population growth, does not operate when there is «a little more room in the country». In America, where free lands were still available «marriage is a little more encouraged there, and the births exceed the deaths». It is noteworthy that Franklin's opinion was confirmed, as there was general agreement that deaths exceeded births, not only in London in the 18th century, but also in American cities like Philadelphia (Wells 1992).

6. The wealth of nations: trade and population growth. Throughout his pamphlet, Franklin adopted the mercantile assumption that a large population was the main factor in the development of a wealthy economy. This view is summarized in Biblical injunction «In the multitude of people, is the king's honor, but in the lack of people is the destruction of the prince» (World English Bible; Proverbs 14:28). It is not surprising that the rapid population growth of the colonies made Franklin enthusiastic:

What an accession of power to the British empire by sea as well as land! What increase of trade and navigation! What numbers of ships and seamen! We have been here but little more than one hundred years, and yet the force of our privateers in the late war, united, was greater, both in men and guns, than that of the whole British navy in Queen Elizabeth's time.

From a mercantile perspective, a nation's strength is determined by a positive balance of trade, especially one based on exporting manufacturers; the growth of one's own population enhances strength, while that of other nations detracts from it (Hodgson 1991a). Moreover, Franklin thought that a British free-trade policy with the colonies would increase the American population and benefit both parties. According to Franklin, the expansion of markets was undoubtedly an important resource for Britain:

But in proportion to the increase of the colonies, a vast demand is growing for British manufactures, a glorious market wholly in the power of Britain, in which foreigners cannot interfere, which will increase in a short time even beyond her power of supplying, though her whole trade should be to her colonies; therefore Britain should not too much restrain manufactures in her colonies. A wise and good mother will not do it. To distress, is to weaken, and weakening the children, weakens the whole family.

Franklin considered nuptiality as the key variable in the population dynamic, given that «the increase of people depends on the encouragement of marriages». Every mechanism able to influence the propensity to marriage has an effect on population levels. Here, good policies are crucial: «when family can be easily supported, more persons marry and earlier in life». However, in order to give growth a chance, Franklin felt that the economic context counterbalances the social context. He was conscious that politics influenced population size by affecting employment opportunities (Hodgson 1991a) and that firmly securing property rights under a good government, was an advantage to population growth (Aldridge 1949). Therefore, the legislation had to promote trade and employment:

Hence the prince that acquires new territory, if he finds it vacant, or removes the natives to give his own people room; the legislator that makes effectual laws for promoting of trade, increasing employment, improving land by more or better tillage, providing more food by fisheries, securing property, &c. And the men that invents new trades, arts or manufactures, or new improvements in husbandry, may be properly called fathers of their nation, as they are the cause of the generation of multitudes, by the encouragement they afford to marriage.

Otherwise, in the case of bad government and insecure property:

People not only leave such a country, and, settling abroad, incorporate with other nations, lose their native language, and become foreigners, but, the industry of those that remain being discouraged, the quantity of subsistence in the country is lessened, and the support of a family becomes more difficult. So heavy taxes tend to diminish a people.

Franklin considered the possibility of giving specific privileges to promote marriage instead of promoting trade and employment. However, he thought that in this case family policies would not increase the level of subsistence and, then, the limit of growth:

As to privileges granted to the married, (such as the *jus trium liberorum* among the romans²), they may hasten the filling of a country that has been thinned by war or pestilence, or that has otherwise vacant territory; but cannot increase a people beyond the means provided for their subsistence.

7. Benjamin Franklin and Thomas R. Malthus. Malthus, in his *Essay on the principle of population*, written in 1798, pointed out that human kind, as well as animals and plants, has the potential to increase in number in an unlimited way. In particular, any population, which grows unchecked, would increase in a geometric progression sequence. Today, this proposition is well accepted: every population that is growing at a constant rate, no matter what the rate may be, is increasing exponentially. Malthus highlighted that population size and growth, were, ultimately, deter-

mined by the availability of subsistence, which would increase in arithmetic progression (linearly). He was not the first to make these observations. Other authors like Giovanni Botero (1588) and Gianmaria Ortes (1790) had similar insights. However, Malthus was also influenced by Franklin's *Observations* during the preparation of the second edition of his essay on population. In the first chapter of the second and all subsequent editions Malthus wrote:

It is observed by Dr. Franklin, that there is no bound to the prolific nature of plants or animals but what is made by their crowding and interfering with each other's means of subsistence. Were the face of the earth, he says, vacant of other plants, it might be gradually sowed and overspread, with one kind only as, for instance, with fennel; and were it empty or other inhabitants, it might in a few ages be replenished from one nation only, as, for instance, with Englishmen. [...] The germs of existence contained in this earth, if they could freely develop themselves, would fill millions of worlds in the course of a few thousand years. Necessity, that imperious, all pervading law of nature, restraints them within the prescribed bounds. The race of plants and the race of animals shrink under this great restrictive law; and man cannot by any efforts of reason escape from it.

In plants and irrational animals, the view of the subject is simple. They are all impelled by a powerful instinct to the increase of their species, and this instinct is interrupted by no doubts about providing for their offspring. Whenever, therefore, there is liberty, the power of increase is exerted, and the superabundant effects are repressed afterwards by want of room and nourishment.

The effects of this check on man are more complicated. Impelled to the increase of his species by an equally powerful instinct, reason interrupts his career, and asks him whether he may not bring beings into the world for whom he cannot provide the means of support. If he attends to this natural suggestion, the restriction too frequently produces vice. If he hears it not, the human race will be constantly endeavouring to increase beyond the means of subsistence. But as, by that law of our nature which makes food necessary to the life of man, population can never actually increase beyond the lowest nourishment capable of supporting it, a strong check on population, from the difficulty of acquiring food, must be constantly in operation. (Malthus 1803, p. 5-6)

Franklin's original idea, reported in the *Observations*, underlines the competitive struggle for survival of all forms of existence:

There is, in short, no bound to the prolific nature of plants or animals, but what is made by their crowding and interfering with each other's means of subsistence. Was the face of the earth vacant of other plants, it might be gradually sowed and overspread with one kind only; as, for instance, with fennel; and were it empty of other inhabitants, it might in a few ages be replenished from one nation only; as, for instance, with Englishmen.

It is interesting to note that Charles Darwin's concept of «natural selection» was gleaned from the fact that Malthus had followed Franklin's idea, which was the tendency for people to breed beyond the capacity of what nature's resources could offer; an idea that had originally been applied to animals and plants (Zirkle 1957).

Malthus (1803) also referred to the Franklin estimation of the doubling time, when he tried to explain how fast a human population can increase without checks:

We endeavour to ascertain what would be the natural increase of population, if left to exert itself with perfect freedom; and what might be expected to be the rate of increase of productions of the hearth, under the most favourable circumstances of human industry [...].

In the northern states of America, where means of subsistence have been more ample, the manners of the people more pure, and the checks to early marriages fewer, than in any of the modern states of Europe, the population has been found to double itself, for above a century and a half successively, in less than twenty-five years. (Malthus 1803, p. 7)

In fact, Malthus was faced with a lack of information when he tried to evaluate the growth of the American population. When he published the first edition of his *Essay* (1798), the United States had taken only one census (held in 1790); one census is not enough to provide the rate of population growth. By the time of his second edition (1803), a second census was available (1800) that permitted him to calculate a rate of increase of 3.05% years, a rate that indicated that the population doubled in 23 years. However, a single decade increase is not sufficient information for the estimation of the doubling time and we have no evidence that Malthus ever based any calculations on the two censuses of the United States. Zirkle (1957) argues that, most probably, Malthus accepted the more conservative guess made by Franklin, concerning America's population growth.

However, when comparing the two authors, the differences appear more visible than the similarities; this is mostly due to the different political contexts within which each lived. On one hand, Malthus lived in England at the beginning of the Industrial Revolution, where population growth was accompanied by the worsening of living conditions and diminishing returns. At the end of 18th century, lands in Europe were fully settled and the European population had almost reached subsistence level. Further increases in the population represented a strong challenge to the equilibrium in relation to subsistence. On the other side of the Atlantic, Franklin lived in a territory, which was in a process of colonization with high availability of lands and manpower. The large amount of unexploited lands allowed, according to Franklin, the economy to maintain wages at a high level; a situation where population growth can be seen as a blessing:

But notwithstanding this increase, so vast is the territory of North America, that it will require many ages to settle it fully; and, till it is fully settled, labor will never be cheap here

Franklin was conscious of the differences between Europe and America:

Europe is generally full settled with husbandmen, manufacturers, &c., and therefore cannot now much increase in people.

Unlike Malthus, Franklin did not express any natural law concerning the limits of population growth, nor did he suggest the advantages of a stationary population (zero growth caused by the equilibrium between deaths and births). Moreover, Franklin totally omitted the long-term economic and social implications of the New World's population expansion. If the one million Americans, in the middle of the 18th century, doubled every 25 years, there would have been over four billion in 300 years. As Hodgson (1991a) remarks, it is difficult to believe that his silence on this matter was due to inattention or shortsightedness.

For both the authors, nuptiality represented the key factor in population growth control. However, Franklin suggested policies that aimed to keep the number of

marriages high and the age of marriage low. Whereas Malthus, who was worried about population growth, wished for the adoption of virtuous behaviors, like moral restraint and the diffusion of individual consciousness, in order to raise the number of never married people and to increase the mean age at first marriage. Another common idea was that financial restraints made people more cautious about marrying. Franklin thought people feared not being able to maintain their new family at their accustomed standard of living and social standing. In a different way, the Malthus' doctrine of moral restraint, adds to economic wariness an imperative from classical and Christian morality to condemn every act that gives immediate pleasure at the expense of ultimate pain (Aldridge 1949). Moreover, Malthus, unlike Franklin, did not consider luxury as a cause of population decline.

In conclusion, an accurate interpretation of differences between Franklin's writings on population and Malthus theories requires situating them in their historical contexts. Although they started from similar arguments, the different socio-economic situations led them to emphasize different perspectives in their analyses, of the causes and consequences of population growth. Aldridge (1949) reckons that Franklin and Malthus, as writers on population, naturally discussed some common concepts but that their similarities were not remarkable. The level of analysis was definitely different and, to some extent, it may be misleading to compare the scientific (or at least a pre-scientific) study composed of several essays (written by Malthus) and the political pamphlet of three pages (written by Franklin).

8. Pre-scientific or prescient essay? What kind of reaction did the *Observations* receive in Britain? Few accepted Franklin's assessment that the rapid colonial population increase would strengthen the British Empire. Many in Britain expressed the apprehension that the growing number of people settling in the colonies would facilitate independence. Many thought it imprudent for the superior state to allow the inferior one to become equal or superior in power. Aldridge cites, among others, the words of Oliver Goldsmith:

It is the political as in the human constitution; if the limbs grow too large for the body, their size, instead of improving, will diminish the vigour of the whole. The colonies should always bear an exact proportion to the mother country when they grow populous, they grow powerful; and by becoming powerful, they become independent also; thus subordination is destroyed, and a country swallowed up in the extent of its own dominion. (Oliver Goldsmith, Letter XVII of the *Citizen of the World*, 1762, cited by Aldridge 1949, p. 40)

Since his desire and his theory permitted a speedy colonial expansion, Franklin tried to diminish such fears, explaining that Britain, as well as her colonies, had a strong potential for population growth. Firstly, he returned to some of the themes covered in the *Observations*, in *A plan for setting two western colonies* (1754) where he argued that colonial expansion was an urgent necessity to prevent foreign adversaries filling America's empty spaces. However, only in the *Canada pamphlet* (1760) did he dismiss all natural restraints to British population growth and explained that as the demand for British manufacturers increased (due to the colonies' population growth), the British population would rise (Hodgson 1991a). He repeated that the

growth of the number of Englishmen in America was good for the mother country because it would stimulate manufacturing in England. This perspective came from one of the most important of Franklin's ideas, which was different to the prevailing, dominant thoughts of the time: Franklin maintained that both production and population were not fixed and that the level of subsistence could grow. For example, agricultural technology – brought by Europeans to the New World – could expand the carrying capacity of a continent inhabited by hunters (Hodgson 1991a). This concept became widespread in Europe, only at a mature stage of demographic transition and industrial revolution, i.e. when, at the end of 19th century in many European countries, the demographic pressure lowered after decades of emigration and fertility reduction. Franklin's insightful prediction has been confirmed throughout the following centuries: in Europe, technological progress, skill specialization, trade, and capital growth has enabled a positive relation to develop between population increase and economic growth, so avoiding the reduction of real wages (Livi Bacci 2007).

According to Franklin (1760), the possibility of raising subsistence meant that, not only were colonies capable of supporting «ten times their present population», but also the population of England could increase, driven by the rise in the demands of goods from the colonies. Thus:

as the demand increases for the manufacturers of Britain, by the increase of people in her colonies, the number of her people at home will increase, and with them the strength as well as the wealth of the nation. (Franklin 1760, p. 79).

To sum up, Britain had no need to worry about the population growth in the American colonies given that this trend ensured a growing demand for English goods. The abundance of lands in America kept the relative costs of labor up, whereas the expansion of trade in the Atlantic Ocean provided the possibility of sustaining an even larger population.

There are at least two points that remain unclear. Firstly, given the persistent wage differences between the two countries, why did the British not migrate to the colonies? Is this why Franklin proposed to discourage migrations? Secondly, the issue of luxury, which is considered an important factor in population decline. Franklin considered the continuation of high levels of importations from England, a desirable outcome. This would be possible only if the affluence in the American colonies had increased over time. Is it not a condition for the diffusion of luxury? Besides, if more luxury means population decline, or at least a decrease in population growth, how can the demand for goods from Britain be maintained in the long term? This contradiction was not resolved, even when Franklin promoted a restrictive legislation, which aimed to prevent foreign importation of needless goods that encouraged luxury and promoted the exportation of such goods to be consumed in foreign countries. These regulations:

may be called (with respect to the people that make them) *generative laws*, as, by increasing subsistence they encourage marriage. Such laws likewise strengthen a country, doubly, by increasing its own people and diminishing its neighbours.

In other words, the hindrance to the growth of the population due to luxury could be used to strengthen one country and weaken another. However, it remains unclear how England could obtain advantages from these laws.

In conclusion, it is suggested that Franklin's pamphlet, written with a political purpose, is neither scientific nor pre-scientific – unlike the Malthus essay. Cassedy (1969) notes that the *Observations* «was not intended as a scholarly demographic study». However, it is undoubtedly true that the brief essay, which was written by an author that was devoted to a very different field of knowledge, contained many interesting insights and became very influential in the following decades (Aldridge 1949). It is remarkable that these insights, inspired guesses, and predictions were made by Franklin with almost no data to guide him (Zirkle 1957). Therefore, we may consider the *Observations* to be more of a prescient than a pre-scientific essay. This aspect is evident in this brief description of the Godwin-Franklin controversy. As Godwin (1820) stated: «Dr. Franklin, born at Boston, was eminently an American patriot; and the paper from which extract are taken, was expressly written to exalt the importance and glory of his country». He criticized Franklin's assertion that in America, the number of marriages and births was twice the number than those in Europe and that this was due to the fact that «many of the European marriages are late». Firstly, Godwin refuted that the mean number of births per marriage was more than 7.5. Using some of the same statistics that had supported Franklin's principle, and developing independent calculations, he found there to be 4.3 births to a marriage. Secondly, according to Godwin, in Europe, only men postponed marriage because they were waiting to choose younger wives. Godwin concluded that a man, married to a much younger woman, had the same chance of offspring «as if he had been himself as young as the woman he leads to the altar». However, history vindicates Franklin as we have already seen in section 2.

Apart from the demographic figures, the pioneering work, written by Franklin, shows a relatively modern view when it asserts:

1. the independent influence exerted by economic, political, and social institutions;
2. the effect of urbanization and luxury in the reduction of the birth rate;
3. the principle that population growth depends primarily upon the means of subsistence and that these means can be raised.

All these thoughts are now generally accepted. However, once again, it must be stressed that they are intuitions, written with specific political objectives and not systematic theories. Hodgson (1991a) expresses this point when speaking about the *Observation*, he says that

treating it as an unbiased attempt to understand demographic trends leads to an unfairly low assessment of Franklin's scientific prowess. Yet treating it as a simple propaganda, ignores Franklin's use of logic and deductive reasoning, the social scientific method of his day, and belittles the quality of its demographic insights.

Benjamin Franklin was a multi-faceted man with a strong ability to adapt himself to a specific situation and to a listener: he did not speak to politicians in the same way as he spoke to farmers. However, most importantly, he was a man with

enormous diplomatic abilities and strong, practical characteristics that drove all his beliefs. Living in a pre-independence environment, in which the colonies' economic and demographic interests were becoming increasingly distinct from those of the mother country, Franklin had few means, other than his intellect and his pen, to influence colonial policymakers: British governors, Parliament, and colonial officials. In general, the *Observations concerning the increase of mankind and the peopling of countries* remain a remarkable example of the art of political writing and the final notes clearly highlight this view:

a nation well regulated is like a polypus; take away a limb, its place is soon supplied; cut it in two, and each deficient part shall speedily grow out of the part remaining. Thus, if you have room and subsistence enough, as you may by dividing, make ten polypuses out of one, you may of one make ten nations, equally populous and powerful; or rather, increase a nation ten fold in numbers and strength.

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¹ Direct quotes in this essay are taken from Franklin (1751) (attached as appendix) unless otherwise noted.

² In the Roman Law the social legislation called

Jus trium liberorum, or “right of three children” granted specific privileges to parents with three or more children with the aim to increase the numbers of larger families (AN).

Appendix

Observations concerning the increase of mankind and the peopling of countries

Benjamin Franklin

Written in Pennsylvania, 1751

*The version reproduced below is taken from pages 311 to 321 of Jared Sparks, *The Works of Benjamin Franklin*, volume II (Whittemore, Nilens, and Hall, Boston, 1856)*

1. Tables of the proportion of marriages to births, of deaths to births, of marriages to the numbers of inhabitants, &c. formed on observations made upon the bills of mortality, christenings, &c. of populous cities, will not suit countries; nor will tables formed on observations made on full settled old countries, as Europe, suit new countries, as America.
2. For people increase in proportion to the number of marriages, and that is greater in proportion to the ease and convenience of supporting a family. When families can be easily supported, more persons marry, and earlier in life.
3. In cities, where all trades, occupations and offices are full, many delay marrying, till they can see how to bear the charges of a family; which charges are greater in cities, as luxury is more common; many live single during life, and continue servants to families, journeymen to trades, &c. hence cities do not, by natural generation, supply themselves with inhabitants; the deaths are more than the births.
4. In countries full settled, the case must be nearly the same; all lands being occupied and improved to the height, those who cannot get land must labor for others that have it; when laborers are plenty their wages will be low; by low wages a family is supported with difficulty; this difficulty deters many from marriage, who therefore long continue servants and single. Only as the cities take supplies of people from the country, and thereby make a little more room in the country, marriage is a little more encouraged there, and the births exceed the deaths.
5. Europe is generally full settled with husbandmen, manufacturers, &c., and therefore cannot now much increase in people. America is chiefly occupied by Indians, who subsist mostly by hunting. But as the hunter, of all men, requires the greatest quantity of land from whence to draw his subsistence, (the husbandman subsisting on much less, the gardener on still less, and the manufacturer requiring least of all), the Europeans found America as fully settled as it well could be by hunters; yet these having large tracks, were easily prevailed on to part with portions of territory to the new comers, who did not much interfere with the natives in hunting, and furnished them with many things they wanted.
6. Land being thus plenty in America, and so cheap as that a laboring man, that understands husbandry, can in a short time save money enough to purchase a piece of new land sufficient for a plantation, whereon he may subsist a family; such are not afraid to marry; for, if they even look far enough forward to consider how their children when grown up, are to be provided for, they see that more land is to be had at rates equally easy, all circumstances considered.
7. Hence marriages in America are more general, and more generally early, than in Europe. And if it is reckoned there, that there is but one marriage per annum among hundred persons, perhaps we may here reckon two; and if in Europe they have but four births to a mar-

riage (many of their marriages being late) we may here reckon eight, of which if one half grow up, and our marriages are made, reckoning one with another, at twenty years of age, our people must at least be doubled every twenty years.

8. But notwithstanding this increase, so vast is the territory of North America, that it will require many ages to settle it fully; and, till it is fully settled, labor will never be cheap here, where no man continues long a laborer for others, but gets a plantation of his own, no man continues long a journeyman to a trade, but goes among those new settlers, and sets up for himself, &c. Hence labor is no cheaper now, in Pennsylvania, than it was thirty years ago, though so many thousand laboring people have been imported.

9. The danger therefore of these colonies interfering with their mother country in trades that depend on labor, manufactures, &c. is too remote to require the attention of Great Britain.

10. But in proportion to the increase of the colonies, a vast demand is growing for British manufactures, a glorious market wholly in the power of Britain, in which foreigners cannot interfere, which will increase in a short time even beyond her power of supplying, though her whole trade should be to her colonies; therefore Britain should not too much restrain manufactures in her colonies. A wise and good mother will not do it. To distress, is to weaken, and weakening the children, weakens the whole family.

11. Besides if the manufactures of Britain (by reason of the American demands) should rise too high in price, foreigners who can sell cheaper will drive her merchants out of foreign markets; foreign manufactures will thereby be encouraged and increased, and consequently foreign nations, perhaps her rivals in power, grow more populous and more powerful; while her own colonies, kept too low, are unable to assist her, or add to her strength.

12. It is an ill-grounded opinion that by the labor of slaves, America may possibly vie in cheapness of manufactures with Britain. The labor of slaves can never be so cheap here as the labor of working men is in Britain. Any one may compute it. Interest of money is in the colonies from six to ten per cent. Slaves, one with another, cost thirty pounds sterling per head. Reckon then the interest of the first purchase of a slave, the insurance or risk on his life, his clothing and diet, expenses in his sickness and loss of time, loss by his neglect of business (neglect is natural to the man who is not to be benefited by his own care or diligence), expense of a driver to keep him at work, and his pilfering from time to time, almost every slave being by nature a thief, and compare the whole amount with the wages of a manufacturer of iron or wool in England, you will see that labor is much cheaper there than it ever can be by negroes here. Why then will Americans purchase slaves? Because slaves may be kept as long as a man pleases, or has occasion for their labor; while hired men are continually leaving their master (often in the midst of his business) and setting up for themselves. § 8.

13. As the increase of people depends on the encouragement of marriages, the following things must diminish a nation, viz. 1. *The being conquered*; for the conquerors will engross as many offices, and exact as much tribute or profit on the labor of the conquered, as will maintain them in their new establishment; and this, diminishing the subsistence of the natives, discourages their marriages, and so gradually diminishes them, while the foreigners increase. 2. *Loss of territory*. Thus, the Britons being driven into Wales, and crowded together in a barren country insufficient to support such great numbers, diminished till the people bore a proportion to the produce, while the Saxons increased on their abandoned lands, till the island became full of English. And were the English now driven into Wales by some foreign nation, there would in a few years, be no more Englishmen in Britain, than there are now people in

Wales. 3. *Loss of trade*. Manufactures exported draw subsistence from foreign countries for numbers; who are thereby enabled to marry and raise families. If the nation be deprived of any branch of trade, and no new employment is found for the people occupied in that branch, it will also be soon deprived of so many people. 4. *Loss of food*. Suppose a nation has a fishery, which not only employs great numbers, but makes the food and subsistence of the people cheaper. If another nation becomes master of the seas, and prevents the fishery, the people will diminish in proportion as the loss of employ and dearness of provision make it more difficult to subsist a family. 5. *Bad government and insecure property*. People not only leave such a country, and, settling abroad, incorporate with other nations, lose their native language, and become foreigners, but, the industry of those that remain being discouraged, the quantity of subsistence in the country is lessened, and the support of a family becomes more difficult. So heavy taxes tend to diminish a people. 6. *The introduction of slaves*. The negroes brought into the English sugar islands have greatly diminished the whites there; the poor are by this means deprived of employment, while a few families acquire vast estates, which they spend on foreign luxuries, and educating their children in the habit of those luxuries; the same income is needed for the support of one that might have maintained one hundred. The whites who have slaves, not laboring, are enfeebled, and therefore not so generally prolific; the slaves being worked too hard, and ill fed, their constitutions are broken, and the deaths among them are more than the births; so that a continual supply is needed from Africa. The northern colonies having few slaves increase in whites. Slaves also pejorate the families that use them; the white children become proud, disgusted with labor, and, being educated in idleness, are rendered unfit to get a living by industry.

14. Hence the prince that acquires new territory, if he finds it vacant, or removes the natives to give his own people room; the legislator that makes effectual laws for promoting of trade, increasing employment, improving land by more or better tillage, providing more food by fisheries, securing property, &c. And the man that invents new trades, arts or manufactures, or new improvements in husbandry, may be properly called fathers of their nation, as they are the cause of the generation of multitudes, by the encouragement they afford to marriage.

15. As to privileges granted to the married, (such as the *jus trium liberorum* among the romans), they may hasten the filling of a country that has been thinned by war or pestilence, or that has otherwise vacant territory; but cannot increase a people beyond the means provided for their subsistence.

16. Foreign luxuries and needless manufactures imported and used in a nation, do, by the same reasoning, increase the people of the nation that furnishes them, and diminish the people of the nation that uses them. Laws therefore that prevent such importations, and on the contrary promote the exportation of manufactures to be consumed in foreign countries, may be called (with respect to the people that make them) *generative laws*, as, by increasing subsistence they encourage marriage. Such laws likewise strengthen a country, doubly, by increasing its own people and diminishing its neighbors.

17. Some European nations prudently refuse to consume the manufactures of East India. They should likewise forbid them to their colonies; for the gain to the merchant is not to be compared with the loss, by this means, of people to the nation.

18. Home luxury in the great, increases the nation's manufacturers employed by it, who are many, and only tends to diminish the families that indulge in it, who are few. The greater the common fashionable expense of any rank of people, the more cautious they are of marriage. Therefore luxury should never be suffered to become common.

19. The great increase of offspring in particular families, is not always owing to greater fecundity of nature, but sometimes to examples of industry in the heads, and industrious education; by which the children are enabled to provide better for themselves, and their marrying early is encouraged from the prospect of good subsistence.

20. If there be a sect, therefore, in our nation, that regard frugality and industry as religious duties, and educate their children therein, more than others commonly do; such sect must consequently increase more by natural generation, than any other sect in Britain.

21. The importation of foreigners into a country, that has as many inhabitants as the present employments and provisions for subsistence will bear, will be in the end no increase of people, unless the new comers have more industry and frugality than the natives, and then they will provide more subsistence, and increase in the country; but they will gradually eat the natives out. Nor is it necessary to bring in foreigners to fill up any occasional vacancy in a country; for such vacancy (if the laws are good, § 14, 16) will soon be filled by natural generation. Who can now find the vacancy made in Sweden, France or other warlike nations, by the plague of heroism forty years ago; in France, by the expulsion of the Protestants; in England, by the settlement of her colonies; or in Guinea, by one hundred years' exportation of slaves, that has blackened half America? The thinness of inhabitants in Spain is owing to national pride and idleness, and other causes, rather than to the expulsion of the Moors, or to the making of new settlements.

22. There is, in short, no bound to the prolific nature of plants or animals, but what is made by their crowding and interfering with each other's means of subsistence. Was the face of the earth vacant of other plants, it might be gradually sowed and overspread with one kind only; as, for instance, with fennel; and were it empty of other inhabitants, it might in a few ages be replenished from one nation only; as, for instance, with Englishmen. Thus there are supposed to be now upwards of one million English souls in North-America, (though it is thought scarce eighty thousand has been brought over sea) and yet perhaps there is not one the fewer in Britain, but rather many more, on account of the employment the colonies afford to manufacturers at home. This million doubling, suppose but once in twenty-five years, will in another century be more than the people of England, and the greatest number of Englishmen will be on this side the water. What an accession of power to the British empire by sea as well as land! What increase of trade and navigation! What numbers of ships and seamen! We have been here but little more than one hundred years, and yet the force of our privateers in the late war, united, was greater, both in men and guns, than that of the whole British navy in Queen Elizabeth's time. How important an affair then to Britain, is the present treaty for settling the bounds between her colonies and the French, and how careful should she be to secure room enough, since on the room depends so much the increase of her people?

23. In fine, a nation well regulated is like a polypus; take away a limb, its place is soon supplied; cut it in two, and each deficient part shall speedily grow out of the part remaining. Thus, if you have room and subsistence enough, as you may by dividing, make ten polypuses out of one, you may of one make ten nations, equally populous and powerful; or rather, increase a nation ten fold in numbers and strength.

And since detachments of English from Britain sent to America, will have their places at home so soon supplied and increase so largely here; why should the Palatine boors be suffered to swarm into our settlements, and, by herding together establish their language and manners to the exclusion of ours? Why should Pennsylvania, founded by the English,

become a colony of aliens, who will shortly be so numerous as to Germanize us instead of our Anglifying them, and will never adopt our language or customs, any more than they can acquire our complexion?

24. Which leads me to add one remark: that the number of purely white people in the world is proportionably very small. All Africa is black or tawny; Asia chiefly tawny; America (exclusive of the new comers) wholly so. And in Europe, the Spaniards, Italians, French, Russians, and Swedes, are generally of what we call a swarthy complexion; as are the Germans also, the Saxons only excepted, who with the English, make the principal body of white people on the face of the earth. I could wish their numbers were increased. And while we are, as I may call it, scouring our planet, by clearing America of woods, and so making this side of our globe reflect a brighter light to the eyes of inhabitants in Mars or Venus, why should we, in the sight of superior beings, darken its people? Why increase the sons of Africa, by planting them in America, where we have so fair an opportunity, by excluding all blacks and tawneys, of increasing the lovely white and red? But perhaps I am partial to the complexion of my country, for such kind of partiality is natural to mankind.

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Summary

Causes and consequences of population growth: the Benjamin Franklin's Observations

The short essay entitled *Observations concerning the increase of mankind and the peopling of countries*, written by Benjamin Franklin in 1751, traced some interesting and innovative insights relating to the causes and consequences of population growth. This pioneering work has been cited by many authors and has greatly influenced Malthus in the preparation of the second edition of his *An Essay on the Principle of Population*. This paper investigates Franklin's *Observations*, and considers both its content (focusing on its demographic figures), and the underlying motivations that led Franklin to write it. The main message that emerges is that England should not be afraid of the population growth in the American colonies given that it ensures a growing demand for English goods. The *Observations* were written with only a political purpose in mind and can be considered neither scientific nor pre-scientific. However, this essay contains several insights and some accurate predictions, highlighting Franklin's ability to use his logic and deductive reasoning.

Riassunto

Cause e conseguenze dello sviluppo della popolazione: le Observations di Benjamin Franklin

Il breve saggio intitolato *Observations concerning the increase of mankind and the peopling of countries*, scritto da Benjamin Franklin nel 1751, contiene alcune interessanti e innovative intuizioni relative alle cause e alle conseguenze della crescita della popolazione. Si tratta di un lavoro pionieristico che è stato citato da molti autori nei decenni successivi, influenzando fortemente Malthus nella preparazione della seconda edizione del *An Essay on the Principle of Population*. Il presente articolo esamina nel dettaglio le *Observations* di Franklin considerando sia il loro contenuto (concentrandosi in particolar modo sugli aspetti demografici) sia le motivazioni che hanno spinto Franklin a scriverle. Il messaggio principale che emerge è che l'Inghilterra non deve preoccuparsi della crescita della popolazione nelle colonie americane, dato che questa dinamica garantisce un aumento della domanda dei beni importati dalla madre patria. Le *Observations* sono state scritte con uno scopo meramente politico e non possono essere considerate né un'opera scientifica né pre-scientifica. Tuttavia, il saggio in questione contiene diversi spunti interessanti ed alcune previsioni accurate, mettendo in evidenza le eccezionali capacità di Franklin di usare la logica e il ragionamento deduttivo.