

Homo Economicus



Educational Solutions Worldwide Inc.

Caleb Gattegno

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Author: Caleb Gattegno

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Educational Solutions Worldwide Inc.

2nd Floor 99 University Place, New York, N.Y. 10003-4555

www.EducationalSolutions.com

Education is a much more comprehensive field than school people realize. In fact, it is co-extensive to the whole human life.

In this Newsletter we consider a universal challenge which deserves much more attention than it has received so far. But to do it within education, we needed to understand much better what it is and how to talk of it. Since economics is already a science and many people call themselves economists and earn their living as experts of different kinds and with various statuses, it was challenging to enter into that field through the disciplines of the Science of Education. After more than ten years of study of this challenge, we can offer some of our progress to the readers of this Newsletter hoping it will become theirs too.

Much work needs to be done in order to meet the universal challenge represented by the fact that everyone on our planet is linked to all the others in a dual relationship as consumer and as contributor. The haphazard historical development of awareness in the collectivity is challenging us now on our spaceship earth, as it never has, not even twenty-five years ago.

Everyone wants to live, and live well, if possible. Is it possible? Or must we look forward to a Malthusian disaster in a few decades? To answer these questions we need to make everyone understand what is within everyone's reach so that together we take care of ourselves and do that properly.

Can the awareness of Homo Economicus in each of us help? The News Items follow the articles.

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1 Introducing Homo Economicus

A long examination of what Man did with himself over millennia has led some people to give him some attributes summarized in two words *Homo Sapiens*, which have been accepted very widely. A hundred years ago or so, Bergson proposed a less widely accepted definition of Man as *Homo Faber*, which stressed the further step in his evolution when he became not only knowledgeable but also capable of transmuting knowledge into complex actions called machines. These covered simple ones (which some animals were able to invent too, in order to extract their food from hidden places) and complex ones like electric motors and excavators. Man not only became aware of his awareness (*Homo Sapiens*) but aware of a whole host of its manifestations which extended his powers over the environment and made possible the replacement of a natural environment by a man-made one (*Homo Faber*). Our present environment is so much man-made that we have great difficulty on earth in finding spots untouched by Man's interference.

Homo Faber integrates *Homo Sapiens*. This means that "Man cannot do unless he knows" but *that* knowing does not necessarily imply changing knowledge into action or objects (thoughts, which can be considered objectifications if not objects, must be excepted).

More recently, *Homo Faber* became aware of some aspect of his actions, which we can call *the generation of wealthy*, and when he engaged in it he separated a universe of awareness from all previous

ones. To give this reality its singularity and its originality, we can suggest that Man became aware of himself as *HOMO ECONOMICUS*.

More than two hundred years of study of this aspect of Man has led to Economics, the “dismal science,” which seeks to gain the status of an exact science but cannot yet achieve it, in spite of the creation of a Nobel prize to underscore its importance and achievements. If it is not an exact science it is because of the nature of the awarenesses it calls in and on. Maybe to pursue that status is unnecessary in order to increase its significance for our times and its contributions to a new leap in evolution on earth.

We already know that Man can only make the science of his awarenesses and that not only are there as many sciences as there are universes of awarenesses, but that new sciences are added every year because of new awarenesses.

Therefore, it is proper to ask the questions: which awarenesses follow from one’s recognition of oneself as *Homo Economicus*? If this question leads to new awarenesses, it becomes possible then to conceive of a universal education of the *Homo Economicus* in each of us, analogous to earlier educations, those of *Homo Sapiens* and *Homo Faber* proposed for each of us and known to all those who attend schools.

* * *

It is clear that in the above statement the temporal hierarchy is as follows: first, one or more men allow an awareness of themselves to occupy their attention and they recognize as facts of awareness some of its attributes which they can hold in themselves as distinct from all the others they know as theirs, and then attempt to know them better and more deeply for what they are. Once these facts of awareness gain their autonomy and can be objectified, the second phase begins: their recognition of it as belonging to more people than oneself. A third phase will follow when these awarenesses are seen as endowments of everybody, as functions of time (age, history, evolution) and as objective as any other attribute of man that nobody questions anymore.

Homo Economicus generates the new layer of temporal manifestations which integrate the past and propose a platform for the creation of a new future for mankind.

We therefore have to be concerned with these phases in terms of awareness and find out what this adds to our grasp of ourselves as beings of our time. Since *Homo Economicus* did not appear as awareness before *Homo Sapiens* and *Homo Faber*, we must understand the aspect in this case of the evolutionary law of integration and subordination and how the earlier evolutions are serving the newer one. Since both *Homo Sapiens* and *Homo Faber* stress ways of being rather than require to be known through the list of what they achieved, we must approach *Homo Economicus* as transcending the actual economic acts of men, and reach its reality in that transcendence. We want to know the powers in us which specifically belong to *Homo Economicus* in the way awareness of our thinking powers — the generation of ideas — and of our engineering powers — our alterations of the environment — revealed to us *Homo Sapiens* first and *Homo Faber* later.

In each of us, in order to become aware of anything at all, we need to call in first the powers of *Homo Sapiens*. When we acknowledge that these powers yielded knowledge, we can take a second step which is to blend knowledge and action and produce new material entities recognizable as “objects with functions” and as transformers of cosmic energies at different levels of manifestation (mechanical, caloric or electromagnetic, chemical or nuclear). *Homo Economicus* will have a role, a place in the workings of the first two *Homo*’s when new criteria are at work and other questions are asked by Man. These should differ essentially from those used in the realms of knowing and of doing. Among them we find the notions of yield, of efficiency, of generation of wealth, of avoidance of crises, of organization of labor, of control, of production, of cybernetic integrative systems which can serve as dynamic models for complex economics and so on.

Clearly a productive *Homo Economicus* can think and act, and must know how to subordinate his thoughts and actions to let the contents of his awarenesses reach their sui generis characters and be recognized

by the person concerned as of the realm of economics (not the science but the universe). He can, for instance, know that he is “thinking of economics” because of some attributes of his thoughts, belonging specifically to this field. But he can also be concerned with “the economics of his thinking” or of thinking in general.

This is a very new concern and perhaps still on the frontier of the awareness of his awareness. He can act and be concerned with finding those actions which have the properties which make them “the most adequate” for the purpose, “the least wasteful” in terms of energy, those in which one can insert feedback mechanisms capable of adjusting the functionings to their “best” yields. He can polarize his mind so that when working on energy he sees “energy” as “energies,” the plural which indicates a deeper and more varied approach to a recently discovered entity (about 100 years old) whose presence in men’s minds has transformed his outer and inner environments. This deeper approach may lead him to see the whole of evolution as the story of the evolution of energy over time, allowing successive increases in yield to result from smaller expenditures (a clear economic viewpoint) ending with “the dynamics of nothings,” seen as the present day stage of that enquiry.

But if such reflective *Homo Economicus* exist, are they sufficiently numerous to indicate that we have arrived at the stages two or three mentioned above? Have we collectively left the preliminary stages of that evolution and reached a more sophisticated stage which shows us that we can foresee a radical transformation of our earthian environment and this not in a too distant future? Will that transformation take place spontaneously on a large scale because enough people are asking — also spontaneously — the same questions and finding answers which are compatible? Or will it require the setting up of a universal education which will make every person on earth become aware of being an active *Homo Economicus*?

To be able to answer these questions, and not only numerically, we need to delve more deeply into that awareness which makes one certain of being one of the fertile *Homo Economicus* which spring up in one’s way as one meets more people and involves oneself more widely in that

universe. To do so (delve more deeply) it is necessary to have come to terms with the enormous complexity specialists in economics dangle in front of the public and scare them with because of their number, variety, groupings and problematics.

Adults hear of interest rates, of inflation, of balance of payments, of deficits, of unemployment, of money supplies, of devaluations, of exports and imports, of strikes, of regulation and deregulation, of supply and demand, of taxations of different kinds, of stocks and bonds, of capital gains, of different ways of going bankrupt, of basic industries and high technology, of subsidies to farmers, of Euro-dollars etc. etc.

Correlating some of these components and coming up with forecasts and with advice to the public, are seen to be expert operations requiring extensive training and sophisticated uses of equipment which includes mainframe and other computers and peripherals or various utilities. Enough to discourage most lay people.

Is there some relief on the horizon so that the general public gets a glimpse of hope that understanding that area is for them too, and not only reserved to the experts? We think so, and mainly because the science of education — which is co-extensive with the field of awareness of one's awareness — tells us how to proceed to open up all fields to anyone who can become aware of himself, involved in any one of the numerous activities which fill our lives. By becoming aware of *Homo Economicus* in me, I can learn to operate as experts do in that field, just as mathematicians can be made out of all our school populations by letting them mathematize rather than memorize mathematics; or writers by making them write consciously.

The next articles sketch such an answer.

2 The Generation Of Wealth

Over millennia Man has had much he could become aware of which made him capable of saving his energy and become more efficient in what he was doing. Thus, he domesticated some animals which freed him from some labor; and he could use the time and energy thus saved for experimenting on what mattered to him. Gradually, he became adept at exploiting the environment for his own benefit, which meant being a better user of his energy and time. *Homo Sapiens* was needed all the time to note and remember what he was looking at and *Homo Faber* was also needed to use his findings when these required him to create substitutes for what he could reach by self-awareness. *Homo Faber* is the creator of instruments and tools. Instruments inform him, tools give him greater powers. The first may be material, like a surface of hide hanging on branches to tell how the wind blows (and with which relative strengths). But they may also be mental, like for instance noting the effect of heat of fires upon natural materials to soften them or even to produce charcoal, which can be used in future fires. The second, tools, make some actions less demanding in terms of human energy, like cutting hides, branches or digging the ground. At first, tools were made of stones, later they were made of worked metals, treated with fire to make possible their getting some shapes stones had been given by nature; later still, as varied and complex as robots are.

Homo Economicus was only occasionally called in in the past, and then it was working in the shadows of *Homo Sapiens* and *Homo Faber*

every time savings of time and of energy were noticed and managed to improve yields. This can be seen when —

- 1 Man the hunter became also Man the farmer and took over the process of plant production in the case of certain vegetable species which he recognized to be sources of energy for him when selected as food;
- 2 when he used his hands to draw from female animals some milk for his own use after calves stopped needing to be fed by their mothers;
- 3 when he sheared fleeces to make woolen fabrics to replace stiffer hides for his bodily protection, and so on.

Exceptionally too, did Man invent steady special jobs for some of his progeny or for people he fed against their making available to him their time or their energy: as shepherds, guards, servants, and the like.

No special awareness was needed beyond those reachable to *Homo Sapiens* and *Homo Faber* for that to be started, continued, perfected in agreement with the environment and the prevailing circumstances.

But a new awareness was needed (beyond those needed for knowing and doing) when someone noticed that *wealth* could be generated. In fact this is what we can say today but could probably never have been made clear to others through actions or words, since it is possible to reach the awareness of the reality of wealth and then stop there. Wealth is not simply the availability of reserves but mainly the means of going beyond where one is to produce still more wealth.

It became possible to know what wealth actually is, when it had been produced in sufficient quantity and for a sufficiently long period so that its existence could be noted by the existing instruments of *Homo Sapiens* and *Homo Faber*, and its significance known through what could be done with it.

Today these instruments are known and they are made public by economists, though it is still not clear what can be done with them in a

world as politically unstable as the present one, whether in the short term or long term strategies.

An individual can easily become sure that his wealth has increased or decreased on a particular day. There is no doubt about it. It is a matter of looking at any one of existing indicators like bank accounts, stock exchange prices, number of shares one can call his own and their market values, inventories of products which are selling, announcement of lottery draws, etc. etc. There is no doubt too, that many people engage themselves in activities whose functions are specifically to increase their wealth; from buying a lottery ticket, to spending years training themselves as professionals in sports, show biz, or in writing best sellers.

Today, and perhaps only through the few recent decades, a field has opened up to those who not only attempt to generate wealth for themselves, but advise others on how to do it. Through the regular publication of newsletters, through books and seminars they open it to all. Today “entrepreneurship” seems far less left to the truly daring and imaginative people, it is made accessible to everyone who sees one or more ideas as marketable. Generating wealth seems to have become a common intuition, a worthy path to engage oneself in and it is being disseminated and advertised as such. The public is easily alerted, drawn in, even if only to find out on occasion, that one has let one’s greed serve as a good financial adviser, and instead of generating wealth, generates losses.

Such widespread interest in the generation of wealth for oneself may be a justification for our spending some time in the study of this phenomenon and of its place in the emergence of *Homo Economicus* among us.

* * *

Animals attempt to keep alive by feeding themselves. They are seen by modern zoologists as having essentially two functions, both serving the perpetuation of their species: to mate in order to produce offspring and to ensure that their numbers remain at least constant in a hostile

environment. But, of course, animals do a lot more than survive and slowly we are shedding our prejudices and seeing each animal species as an “experiment” in living one of the innumerable lives compatible with the cosmic conditions on earth so as to find them all and know the whole spectrum of life. As a viable experiment, each animal species teaches us one of the many ways of being. The individuals of each species in their individual lives test that viability in the concreteness of their experience in their circumstances.

Man has reached another relationship to mankind. He has studied survival in order to cancel as many of its demands as he can; so as to see his life as very little concerned with producing offspring and keeping them alive, although he still does that to a certain degree. In particular, in some regions of earth where the demands of survival remain.

When Man separated himself from the domination of survival by seeing it as an inevitable by-product of some of his other activities, he gave himself a freedom which specified his level of evolution. Man freed himself from survival by making his survival be a consequence of the work of his creative powers and therefore no longer requiring his attention which can then be placed somewhere else.

Rather than using his time and energies to renew his store of energy, which economists of two hundred years ago considered to be the basis of human living on earth (and is rather the definition of the proletariat), Man put his mind on generating wealth in indefinite quantities. Since this was found to be possible, at least in the case of certain humans (of which Craesus was a legendary example), the notion of being “rich” came into existence. By contrast the non-rich became the class of the “poor.” This concept covers a spectrum from the totally destitute to those just able to renew their energies to keep them going.

So long as the rich were relatively few, the observers noted the behaviors of the successful and found no need for a universal attribute of Man to make wealth the by-product of just being humanly engaged in any field. No need yet to invoke an active *Homo Economicus* in all of

us. Instead, the numerous thinkers in the fields of politics, history, sociology, ethics, economics, looked for attributes of man which were capable of creating the category of the rich at the expenses of the non-rich. (This is all so well known that we do not need to dwell on it here.) One hundred and fifty years after the emergence of such Utopian or socialist concepts — which poured contempt on the bourgeois and on the wealthy merchants and landlords — we acknowledge as a right for everyone to do more than survive. And the war on hunger, the wars on poverty, gain momentum and supporters at the levels of the individuals, the institutions and the governments, to the point that many see elimination of poverty, not only as possible and correct, but as round the corner in this generation i.e. reachable before the year 2000 A.D.

What is not yet clearly seen is that the awareness of the generation of wealth could by itself make all this possible, as a thought for *Homo Sapiens* and as an action for *Homo Faber*. In other words, for most people to surrender in their consciousness to the acceptance that we can remedy the process which creates hunger and poverty not in taking from the rich to give it to the poor (which does not make sense arithmetically) but by reaching a universal source of wealth which can generate more and more of it to meet the eradication of poverty and beyond that to make the poor capable of living as if they were rich. This spiritual or human attribute of Man — the awareness of each of us as *Homo Economicus* — is transforming radically our world on the basis of fact rather than ideal.

In the remote past, wealth meant property and once the territories available were subdivided among a certain number of people who defended them, no one could generate wealth for himself except by conquest and by replacing the previous owners. Wars were the means of transferring wealth, not generating it. Wars were justified by the excuse of there being no other way of becoming proprietor. The suppression of the present wealthy and their replacement by others did not produce real changes in the world.

When property expanded beyond territory and included goods which people wanted and were ready to acquire by giving either other goods,

also wanted, or their energy for them, commerce emerged, took roots, expanded and was found worthy of being perpetuated. *Homo Sapiens* who studied the challenges and *Homo Faber* who produced their solutions to those challenges, acquired the name of merchants. Their properties were far less immobile than territories and territory became a sub-concept of property which now extended over mobile goods, passable for hand to hand. If land on earth could not be extended, goods could be accumulated, expanded in quantities, stored indefinitely (if non-perishable) and made as visible a property as land.

More and more people found it possible to generate wealth and the class of the rich grew bigger and bigger. Each generation found new ways of adding to the existing goods, and commerce, in itself, generated wealth, new wealth. By creating new markets for old goods, by creating the means of transportation of the goods to the distant markets, by discovering in mines, wealth underground (which renewed the value of territories above it), the old rich could become new rich in conjunction with those whose wealth was mobile. *Homo Sapiens* at once found more to study and more to know while various sciences developed a number of technologies. *Homo Faber* generated the means to exploit the new riches, making that factories and their products became the new valuable properties. Since they became as visible as land, the serfs of the land and the proletariat on the factories became also a visible component of the process of generating new wealth and essential for it.

So long as *Homo Sapiens* (in ivory towers) could do the studies to meet progressively the reality of what was generated by *Homo Faber*, there was no need for new awarenesses. Those who found themselves as irreplaceable continued to relate to wealth as due to them, while the replaceable ones were counted as part of the mechanical, soulless components of the property. The objects of the sciences of *Homo Sapiens cum Homo Faber* were not human, in that all their components were things. The new concepts of supply and demand and their various connections and vicissitudes were handled in the manner things were in the natural sciences. Economics started as a science looking for laws resembling natural laws: with few concepts and abstract relations between them, and formal deductions from axioms.

By adding axioms and definitions, more economic phenomena were being noted and integrated within the means developed by the same *Homo Sapiens* and *Homo Faber* who were creating the goods through chemistry and physics. More and more man-made products became the goods which merchants manufactured, transported and sold.

Very early in this transformation of the nature of wealth from concrete land to inventories of goods, both perishable and durable, *Homo Sapiens* could discover the place of the mind in the generation of wealth. Engineers and scientists considered that they were entitled to a part of the wealth and government by merchants acknowledged the legitimacy of such claims but which needed to be regulated by the establishment of patent offices. Intellectual property was born in the midst of the other acknowledged properties. What unified all properties had to transcend old exclusive criteria. *Money* became the unifier. Now it was possible to exchange valuable ideas (i.e. transformable in the ancient wealth of goods) for money and some engineers became part of the class of the rich. Scientists were not allowed to patent their ideas. Only objects could become property. Scientists remain among the poor unless they saw how their ideas became objects and took steps to do just that. Some of them created industries around their understanding of either new processes creating new goods (like soaps, dyes, alloys, etc.) or improvements of preservation of perishables (in the form of preserves) or of transportation or of facilities at the sending or receiving points and so on.

It took the insights of *Homo Sapiens* like Marx and Engels to identify labor as a concrete component of goods. Seen first as energy — and much later as the more abstract time — subtracted from some people's life to be given to the products manufactured in the factories or in any of the components forming the distribution of goods, it became possible to claim a new kind of property for one's energy and later, for one's time. Both were to become visible components — as much as earlier ones had done — before there was any chance for the established proprietors to accept the new ones among them. Workers and office employees had a role in the production and distribution of goods but unless it was stressed, it could be ignored by those who only

stressed their part in the generation of wealth, which then had to remain their own. To stress these components took many revolutions and class wars over the last 150 years. Today workers can be shown by their unions that without them there is no production of goods and its resulting generation of wealth. But it is not as yet the clear consciousness it must become in order to show that work or time also generates wealth, as it was possible to do in the case of (technological) ideas. When people became rich through “services” and not goods, the provision of services gained the status of a generator of wealth. Today services are becoming more important than goods and pose new problems to those who attempt to see economics for what it is, in its complexity and reality, so as to treat all parts as they deserve. For example, if robots replace human workers in factories, since they cannot claim, like workers, to have rights upon the wealth they help to generate, there will be need for new ways of thinking on these matters in order to be true to the challenges posed to the public in general. These ways of thinking may result from the realization of *Homo Economicus* in each of us.

Although it has been known for about a century that it is possible to become wealthy by the mass production and mass distribution of goods — selling at a small margin of profit per unit — the generation of wealth requires that we reconcile the multiple competition of many claimants to the available liquid money in the public and the finiteness of the overall amount. So long as the number of those competing remains within bounds and the growth of the public capable of spending is not reversed by unemployment and new poverty, it is conceivable that more wealth will be generated by the dynamics already grasped and seen at work.

But until the generation of wealth is based on the actual factors which have always been in it — invisible for a long time and made to work now on all the known components — we shall have a truncated grasp of a very important field of human endeavors which today can be considered accessible because of the spiritual evolution of Man.

Economics is the manifestation of the *Homo Economicus* side of Man as much as the sciences are those of the *Homo Sapiens* and objects

which fill Man's world are those of the *Homo Faber*. If until now economics has been mainly conceived as referring to money matters it simply is because only money has been considered to be wealth. But we are beginning to know better, and time and energy — which integrate money while going far beyond it — are becoming the objects of our attention. He who has reached both can clearly claim to have reached a grasp of a truly human generation of wealth.

3 Educating *Homo Economicus* In Each Of Us

We can educate *Homo Economicus* in each of us, simply because —

- 1 education is only of awareness, and
- 2 we see *Homo Economicus* as the emergence of a new awareness in Man.

We already indicated that *Homo Economicus* is compatible with *Homo Sapiens* and *Homo Faber*, that it integrates some of the functioning of both, having come universally into being now and following on both of them, in relation with them, benefiting from both while letting both benefit from its acknowledged existence. A vague awareness over thousands of years, it is now better focused and gaining its legitimacy because of its contributions in our modern planet earth. But it is not the sign of a new level of collective awareness transcending both.

The education we are concerned with here must begin with the grownups of the world. First, because they are already acting as *Homo Economicus* in a number of their manifestations, even if they are rarely aware of this, and second, because if we know how to trigger that awareness, grownups can do the rest of the work on their own.

If we succeed with the grownups then it will be much easier to take that education to those growing up. Easier, because of the assistance the

grownups will be ready to give those with less experience than them but who, one day soon, will be joining their ranks.

* * *

Is there a first awareness available to all of us which will, better than any other, put us on the road of such an education? The answer is obviously *yes*, for we are all consumers in all societies on earth and through our consumption alone we make contact with so many aspects of the economy.

We cannot remain alive and not consume. Hence, we cannot make people aware of that by the method of depriving them totally of the contribution to their lives of the running economy. They will have to do it by working on themselves and by asking special questions like those which follow.

* * *

Looking at myself in the world at the present time, don't I notice that every day I act as a consumer? Don't I see —

- that I do not turn to mother nature to obtain my food and the reconstitution of my energy?
- that, if I have a job, I am not being paid for nothing, but for something which justified, to begin with, my being given that job?
- that I feel my pay is somehow equivalent to my contribution to who pays me?
- that I have some criteria which let me know whether I am overpaid or underpaid?
- that I understand that these criteria have an objective significance reachable by others as well as by myself?
- that I do not have to know the history of labor, the reasons for the present form of commercial transactions, the

role played by local, state and federal government (or other forms of governments in other nations) to justify the existence of jobs and in particular for the one I hold?

- that I can understand what my employer expects of me by examining my work environment and determines what there is to do to make it function, and which part of that falls on, me?
- that I can learn from that examination the reasons for some of the many components that constitute my work environment and which link this to larger entities which contain my job such as —
 - (the *inner* items) management, accounts, inventories, storage, distribution, dispatching, advertising, customers and customer service, taxation, promotion, bonuses, and so on, and
 - (the *outer* items) competition, markets, marketing, export manager, insurance, unions, strikes, regulations, lawsuits, loans and stocks, incorporation, shareholders, and so on?

Clearly both *Homo Sapiens* and *Homo Faber* in me are called in to formulate these questions as well as to answer them somehow.

But because they are clustered around me in relation to my environment reduced to what I select to stress (with a complement of ignored items), they induce in me knowledge of my self which can function as (what will be labeled) *Homo Economicus* from now on.

Because we can stress and ignore we can pass through life noticing some things and completely overlooking others. It is these dual movements which generate the enormous variety in human lives. Being in the same surroundings, one of us can be struck by something and all the others see nothing of it. To remain struck and go on entertaining an impact will give access to a large number of fields of study.

Hence, so long as we have not put our mind on any one of the aspects of our involvements in our economic life we may simply go through them and only feel their existence when we are shocked. This may

happen when we lose our job, or get an unexpected inheritance or face a sudden need for money which we cannot find and so on.

Since familiarity breeds contempt, it is exceptional that someone be struck by the familiar. In fact, it should be obvious and seen as at everyone's reach. This is also the case with awareness and in particular awareness of ourselves as part of the fabric of local, state, national and world economics. The education of *Homo Economicus* in each of us is therefore education of that awareness through a number of exercises which give us the sight of the attributes lost to our perception.

We shall know that we have recuperated that sight when, from our experience, we get feedbacks which hold our attention on those attributes which, in turn, affect our behavior.

Every reader can test himself or herself by asking such questions and searching for the most adequate and hence precise, answers. If these answers come readily, the feedback goes with them, if on the contrary they are not coming, or are slow at coming, more time and attention should be given to them. A further task can be added to that one which is to attempt to ascertain whether other people around oneself can find *Homo Economicus* in themselves.

The validity of the questions is to be found in their capacity to stir a research in those who receive them. Their fertility is found in generating an alertness about these matters from then on, and later in generating the feeling that it *costs nothing* to remain with them; of making them second nature. Then only am I really *Homo Economicus*.

* * *

A. Do I have needs? How do I take care of them?

Do I count on other people to take care of them? Why do they do it?

Do all of them have the same motives?

Are there people who meet my needs but do not think of me personally? What do they get for that? Who gives it to them?

Since I have a number of needs, which ones are the most essential? And which ones can be less urgently met?

Can I turn to the same people to help me meet them?

If not, which criteria do I use to know where to turn to?

B. My needs are like those of others: is this true of all needs or essential ones only? Those who have the same needs not only turn to the same sources but constitute a tangible group that these sources want to serve: they become the customers and the sources, the suppliers. Is it easier *today* to define needs or to define sources of products and customers?

If I look at myself as a customer (because I have essential and non-essential needs) can I see to what extent sources depend on me for their existence? Customers are anonymous and this makes it easier to think of them than when one thinks of individual people.

Does leaving the personality of people out and concentrating on them as customers make the work of suppliers any easier? How?

Do many consequences follow from the fact that abstractions have replaced actual people in thinking of production and of services for numbers of customers? Can I state some? and classify these consequences in order of importance for my thinking on these matters?

C. I can start with my needs and my means and find out if the latter can make me meet the first. Are needs and means of the same nature so as to match one with the other? Or must I find common attributes, common denominators to generate that correspondence in a manner which will make it possible for me to work on them? What did I do to my awareness of my needs to make it capable of being related to that of my means? In what terms do I consider my means?

Money is currently used for that by almost all the inhabitants of the earth. Can I conceive of other ways of entertaining means? Do I think of needs also in terms of money or do I only do this for means? How did it happen that we quantified needs? Or are there still needs we cannot quantify? How do we handle these?

D. Am I only a consumer having needs, or am I also a producer of goods or services?

Do I know what goes into a product? Is there only matter? What else?

How does one find the cost of a product, from the list just found? Are there more components than on the list above? How would one know?

If I make lists of goods found in my kitchen, my bathroom, my dining room, my living room, my bedrooms, would I find in all of them the same list of components for the goods in them?

Have I forgotten that for example, they all came wrapped up?

Have they been delivered or fetched? Does one count such items when looking at costs?

Do such items belong to goods or services?

Make a list of services which are not goods. Another of services involving goods. A third one in which goods do the services.

How could one quantify services?

Which ones are quantifiable using energy units? Find examples.

Which ones by duration?

Can both be used at the same time?

How does money relate to services? Is there a price for everything?

E. There is the price I pay and the price the supplier pays for the same goods.

Are they the same? Why not? Why should there be a difference?

In whose favor is that difference counted?

The supplier too has a price to pay for he too has suppliers. But not only suppliers. Can you think of what must be counted in computing the price of any item? to oneself first and then to someone to whom that item is made available for purchase?

Do you know whether that list is exhaustive?

If you forgot to count a component belonging to such a list — but not in the one you produced — does it tell you something about the way you relate to such a study? Do you stop short because you do not know the “anatomy of a price” or because your thinking is hampered by your interests (or lack of them) for such studies?

Can you make yourself work deliberately on the “anatomy of *one* price” accessible to you? (any item of clothing or footwear would do.)

Looking at your life and that of others (not only alive today and around you) do you see that many people have contributed to the confection of all items you carry on you, you surround yourself by, you use constantly or occasionally? Can you let the complexity this represents dwell in your mind? And can you recall it at will?

If you do, can you tell yourself “I am using one of the aspects of my self we are considering here under the name of *Homo Economicus*?”

If you don't, is it the case all the time and about all Items of the environment you use? Where do you find exceptions?

Can you entertain one of them? Would it help you to suspect the existence in you of *Homo Economicus*?

Can you cultivate that presence deliberately? If you do, then you can say: "I am educating in me the *Homo Economicus*."

If you do such searches deliberately, systematically and often, you may find in you the bases for *Homo Economicus* to become the economist in you and perhaps also for others.

F. We shall assume in what follows that it is your case at least as far as yourself is concerned. This will represent a further stage in the education of *Homo Economicus* in all of us.

Is it true that in modern societies anything one is engaged in ends up to include a question about *funding* that activity?

Any project, if it is to become a reality, will consume at least time. One's own time and that of others. Can one give it away? or somehow must one be able to "afford" to give it away? This "afford" is equivalent to funding.

Sometimes we can't afford it and still we give it away. Then someone else is made to pay for it. Do you have examples of that in your life or that of people around you? Time given away cannot be recreated. The consumption of time is irreversible. If we become aware of time and its Irreversibility we can begin to "measure" our activities one against the other and qualify some as *essential*, others as *futile*, others as *costly* or *too costly* and structure our activities accordingly.

When we know how to do that, we are ready to run our lives "economically."

We then keep an eye on the cost to us in time and energy and therefore meaning, of every one of our involvements. Although it is easy to say the above, it is much more demanding of us to actually run our lives economically. In fact, preoccupation with such matters comes late in

life and only at present to a small minority of mankind. This is due to the fact that mankind as a whole is barely waking up to the aspect *Homo Economicus* in each of us. And it is doing it in the empirical, experiential way which requires time. Simultaneously, it is creating a favorable climate for an education of these awarenesses.

G. Education of other aspects of Man — in particular of his intellectual side — tells us that the entry into it is slow and uncertain, i.e. full of errors and mistakes, until enough criteria exist to guide one's moves and movements more knowingly and thus leads to mastery and the integration of that aspect in one's life as second nature. The intellect makes virtual actions as effective as actions, but the first are much more economical than the second and mankind has enthusiastically adopted the education of the intellect as the backbone of the public schools. Only the very daring would want to drop mathematics as a school subject and most retain it. The reason is simply because mathematics came to Man as the method *par excellence* of generating virtual actions and their relationships where earlier there were only actual actions. In fact, mathematics has historically been a stacking of intellectual handlings one on top of the other in order to perform economies in previous thought processes. Philosophers talk of greater abstractions, meaning precisely that their preoccupation is with starting one's thinking with the most economical entities, those which can be used in the largest number of circumstances. That is the unconscious way in which *Homo Economicus* has affected mankind over millennia in the persons of its mathematicians. Also in making mathematics part and parcel of all the sciences.

H. Another interesting example of a change in awareness which can serve us to understand how mankind has educated itself — in the widest sense — while using its *Homo Economicus* side, even though not quite consciously, is the relation of modern men to work stoppages, called "strikes" in some cases. The social side of modern man was developed during the last two hundred years. Its sciences are not yet 150 years old. Passion was needed to put one's life on the line to obtain redresses for newly perceived injustices. Violence accompanied the claims of people to their right to the fruit of their labor, as if its

obviousness had to be proved again and again. The refusal of one's labor to one's employer requires a climb in awareness in both the worker and the owner or manager, so that it is accepted as a sign of difference in outlook at different places in a relationship. Now workers can strike legally in almost all social contexts including hospitals and cemeteries. But whether they strike or turn to arbitration, is the result of another growth in awareness almost entirely decided by the *Homo Economicus* in the workers and the employers. Workers have learned to leave passion aside and calculate the ultimate loss or benefit to themselves of a strike they may call. Employers now turn to their workers as if they could understand more complex economic situations than the fluctuation of their take-home envelopes or checks, and even ask them to save their institutions by loaning them their pension funds. *Homo Economicus* is at work now in thousands of settlements in plants and offices where until recently only antagonistic groups fought for their interest against that of the other. Even if it is not yet recognized as such by the participants in negotiations, when they suspect it they perceive it at work. A kind of common sense approach is becoming more and more acceptable to the various components which constitute the inevitable structure of any corporation. This only happens when passion subsides i.e. when the people involved have grown enough in awareness to see things as matters of fact and be tolerant enough to start negotiations believing the other party will take their interest into account without undue prompting. Our world is full of shifts of this kind when those involved have acknowledged in their own evolution that they have passed from one level of awareness to the next. Now that most adults live their conscious lives at the social level of awareness, they take for granted that the intellect, action and perception are instruments for solving problems between them. *Homo Economicus* is that aspect of social man, which integrates those components in favor of social harmony implying that a number of rights of all the concerned individuals must be respected.

I. Social equality is one of them. But it is no longer the flat intellectual concept which ignores a multitude of human possibilities. Equal opportunities is no longer seen as a leveling process but as giving everyone his chance to get into the race for economic betterment, leaving untouched how far each will go. Thus, ideals become realities which can no longer be disputed as ideals can.

To the extent freedom in one's life is equated with the removal of obstacles, men become freer when they see part of their fate or destiny as of one order with nature and no longer ruled by the supernatural. Poverty is no longer seen as a virtue needed to get into the kingdom of heaven. It is a social challenge which *Homo Economicus* feels capable of handling and eradicating. Charity was a virtue when fate placed us in our place in a structure we were not equipped to perceive. Socialism taught us to replace it by welfare and the anonymity of the giver (the State) to which one does not need to show gratitude. To live at a level above poverty, which has been a privilege for so long, has been transformed into a birthright when the majority of the adults in some societies reached their social level of awareness.

This welfare state, in the eyes of *Homo Economicus* could only happen because of a real understanding of the generation of wealth rather than from taking from the rich to give it to the poor. Hence, we see the mutual impacts of a number of awarenesses upon each other in this actual transformation of our social world. People in generations before two hundred years ago had absolutely no access to such projections because all the awarenesses which are needed to make that reality perceptible needed first to become part of the overall awareness of Man. Western modern Man in his history did that actually. The rest of the inhabitants of the earth inherited it as a fact of nature and have worked to integrate it in their cultures and civilizations. *Homo Economicus* is more neutral than other aspects of man still unable to be separated from identifications and participations, as we still find them in our psyches seeped in religious rituals and symbolisms. The whole world is ready to share wealth and get rid of poverty and the more so when they understand how the generation of wealth can be done by themselves. The sudden outward changes in a number of countries where petrol was found can be cited as examples of

- 1 the neutrality of *Homo Economicus*,
- 2 its capacity to be blended with traditions which have divided nations in the past,
- 3 its capacity to become alive and effective in people independently of their "spiritual" and historic backgrounds,

- 4 its capacity to vivify some other components of the mind: stimulating the intellects; organizing social orders for the benefits of many more people than before; altering the environments and therefore the cultures if not the civilizations.

New roles were found for the members of communities as a natural response to a vastly increased number of economic opportunities non-existent until a very recent past.

J. No one can now deny that the reality of *Homo Economicus* transcends cultures and civilizations even if it does not transcend the true spiritual reality of Man. The first is a tangible evolution. The second remains to become accessible to more humans who need to reach in them evolution and relativity per se.

The evolution which makes *Homo Economicus* real is of course, part of one's general evolution, but there is no need to become aware of this when becoming aware of the other. This is the state of affairs today. There are exercises — like the ones given above — which lead to one without touching the other. Moreover, since we have evidence of the universal acceptance of *Homo Economicus* but almost none of a universal acceptance of evolution and relativity, we can work towards a freeing of more and more time for more and more people through the education of *Homo Economicus* in all, while not reducing the chances of such an education by blurring it through association with what is yet for the future.

It is the cumulative effect of freeing more people which will increase the chances of their having time and perhaps the desire to extend the education of awareness to its full spectrum. Indirectly, we have increased those chances by becoming more sensitive to the need of enhancing the *Homo Economicus* aspects of all through strictly economic awarenesses and not confusing them through ambiguous questions and enquiries.

4 *Homo Economicus* As Artist, Scientist & Citizen

There are more people thinking about matters which are the province of *Homo Economicus* than there are thinking up new knowledge on behalf of mankind (*Homo Sapiens*) or producing works of art — from architects to miniaturists — or generating patentable machines or gadgets (*Homo Faber*). These are the millions and millions who are in business all over the world.

Because *Homo Economicus* has not quite yet come onto its own, most of the contributions of those millions of people are simply experiments in one or other of its manifestations.

Experiments don't necessarily lead to a lasting result. In fact, many more lead to dead ends and warnings not to tread on such paths, than succeed. That implies no blame for those who fail, it only tells us to what extent we are there in contact with the unknown. Because of that, all that is tried out in the field presents some risks.

Success stories are collated and studied and a suggestion is made that *they* should become models to be followed by others. Business schools specialize in that. But often models do not serve that purpose. We rarely learn from that which works and, if we ever learn, it is from what does *not* work.

Recent years have seen the rise and fall of many businesses, the flowering of entrepreneurship and the bafflement of economists, some famous enough to receive a Nobel prize. The glamour in that field is comparable to that known to movie stars or great actors.

Homo Economicus is often an artist, but he also needs to be a scientist. The artist tries out what he believes in and must mainly satisfy himself first and only then submit his works to the public for acceptance or rejection. The scientist plods to find what cannot be doubted, what people must accept willy nilly. If there is glamour in that plodding it comes from a property of some finding which makes this at once perceptible to many as desirable.

If *Homo Economicus* is simultaneously an artist and a scientist, he becomes rich. He has generated wealth, originally and even elegantly, and this wealth can visibly help generate more and more, the rich become richer.

There are many ways of becoming rich but some of them do not bring out the *Homo Economicus* in the people concerned. To inherit wealth is one. To win a lottery by purchasing an inexpensive ticket, is another. To bet on a horse or to play Russian roulette and win, yet another. To rob a bank and not be caught; to let a broker select a stock which soars on the Exchange; to receive a large compensation at a jury trial; to find oil under one's property etc. etc. are yet other examples of wealth produced on one's behalf without much personal participation. Once that wealth is in one's hands something else may happen and one's *Homo Economicus* may be involved; then wealth is generated rather than received.

That is why we must separate those people who deliberately create institutions to affect society's wealth from those who exchange their time and energy for a salary which will leave them amounts they can invest in savings, bonds or stocks, which in turn produce returns. The first are the artists who create works of art appreciated by *Homo Economicus* and called "fortunes." The second create nothing and perhaps do not even suspect the existence of *Homo Economicus* in themselves mainly because it is not consciously at work.

Public accountants, bank tellers, bookkeepers, cash register attendants, Ft. Knox vault guards, all concern themselves with money in amounts which can be small, large, or very large, but no one can say that *Homo Economicus* must be active in them because of that.

Small business managers on the other hand, must operate as if *Homo Sapiens* in them is subordinated to their *Homo Economicus*. In some businesses, it may be *Homo Faber* as well. They must blend the artist and the scientist in them and even that may not be enough. They must understand people, trends in life styles, the vague but important notion of the market place; they have to broaden their minds to include the numerous components handled by lawyers, accountants, bankers, various taxation people, investors, planners, competitors, customers, and components as varied as inventories, supplies, packing, dispatching, insurance and understand the significance of profit for the survival of their business and its renewal and expansion.

Large corporation executives, in addition to all the above, must be sensitive to the role of size and the special vulnerability resulting from it. The political components become more vital for them as they move up the scale of command. By “political” we understand the involvement with large numbers of people anxious to protect their turf and possessions, their future and their powers, as well as the formal political forces met in government at various levels.

The scientist in *Homo Economicus* must not only learn to use *Homo Sapiens* in him in order to acquire as much knowledge as is needed to be comfortable with the many facets of his work, but accept to sense the role of psychology, of sociology, anthropology, ethnology, history, etc. in helping him understand the opportunities and obstacles found in the present moment. Knowledge which is not academic, not memorized, but precise enough in its essentials to guide him in decisions which may have tremendous consequences for the corporation and the environment.

Artists and scientists generally involve mainly their person and close relatives in their responsibility for the consequences of their actions and proposals. Chief executives of large or even medium-sized

corporations, may be responsible for armies of men and women and their well being and often for their countries and even some others. Hence, their *Homo Economicus* spills over the field of politics for which neither *Homo Sapiens* nor *Homo Faber* can offer a proper preparation.

In the universe created by *Homo Economicus* we can find works of art *sui generis* which require a special sensitivity in the people capable of perceiving them. This sensitivity is the one which is vulnerable to impacts that words like: “This was a beautiful merger” or “the launching of that corporation was a masterpiece,” convey. There is room for admiration, for subtle appreciation, for being inspired to emulate in that field like in all fields of art.

In that same universe there are studies of the reality it encloses which are as rigorous, as controlled as in any of the sciences. For, what they aim at is knowledge of truth which needs to be unveiled in that field of study. It is not an idle, academic curiosity which requires to know how much gold, or coal, or uranium etc. can be mined from such a geological region? Or at which depths must one dig to strike oil on land or sea? What must one do to protect a forest from being devastated by such or such a plague?

Of course, the information obtained, the experiments performed are the work of *Homo Sapiens* or *Homo Faber* but the motivation for knowing is injected by *Homo Economicus*.

It is easy to see examples of the unconscious, indirect effect of the presence of *Homo Economicus* in purely scientific studies as we find them in mathematics and the exact sciences, which only aim at acquiring knowledge. Economy of thought; an estimate of the exact number of axioms and definitions capable of producing a theory; the notion of fertility of a theory measured by the number of consequences deduced from it; certainly indicate use of the notion of yield so important to *Homo Economicus*, though not necessarily to *Homo Sapiens* or *Homo Faber*. Thus, for a long time before Man became aware of *Homo Economicus* it was at work in him.

When Man could reach *Homo Economicus* in himself, he had to find its domain. And in a few generations it has become a huge field now dominating most lives on earth, even of those who refuse its existence.

The metamorphoses of *Homo Economicus* can now become the object of science which tries to describe it at its various stages and to reach its evolution so as to use its forecasts to solve human problems even at the scale of the planet. It becomes then possible to outline an effective general education of mankind so that *Homo Economicus* takes its place in everybody's life in the way *Homo Faber* did and *Homo Sapiens* is still doing in the educational systems of the world. But this education can quickly be given the scope and quality which the other two rarely attained. Where chance, good luck and the exploitation of accident create progress, we can now generate progress deliberately and through the mass media give it momentum and scope. Adults need that education since they all are active members of commercial societies (whatever their political system). Children need to know it as well as possible to reach the right insights that will help them find a place for themselves when they grow up. But more important still, to know this environment as a dynamic entity that will involve them while letting them have margins of choice for an individual life.

In fact, the greatest personal gain each of us can get from becoming as fully aware as possible of *Homo Economicus* in each of us, is to construct one's life in harmony with the economic strands in all thoughts and actions, managing their domination by integrating them consciously for one's good and that of others. Mastery alone has made *Homo Sapiens* and *Homo Faber* free, and only mastery will make *Homo Economicus* free. When free, Man can create a free humanity in so far as freedom depends on this triplet of aspects made obvious by awareness.

Instead of counting on the chance contribution of some lucky discoverer who will bring us good news, we can see each of us making a deliberate contribution to collective evolution by doing consciously what falls on us within our clearer understanding of what makes social

progress. Knowing is not enough! doing is not enough! doing while knowing what for, may be sufficient.

That is the contribution of *Homo Economicus* in us.

News Items

1 *An Outline Of The Story So Far At One Place That Uses “The Silent Way”*

I first came across *The Silent Way* , after five years of “mainstream” teaching, when I attended a one-day session given by Dr. Gattegno in London in the summer 1976. While I did not understand everything he said I was certainly very struck by it, feeling even then that this could provide solutions to problems I was facing. I managed to procure rods and a pointer which I began to use the very next day in my lessons. These two instruments, plus a feeling of direction that I seemed to have acquired from the previous day, had an immediate effect on the quality of my “mainstream” teaching. Over the next few months I began to experiment with the word charts, fidels and pictures and this experience, along with that gained from attending *Silent Way* seminars, gradually enabled me to understand something of the spirit of *The Silent Way*.

Before long, other teachers in the school became interested and began to observe my classes just as I would observe theirs. I began to notice that I didn’t mind observers in my class, in fact I welcomed them, the more the better. This clearly indicated to me that the emphasis of my lessons had changed fundamentally even though I still faced many problems. In fact the more problems I solved the more I seemed to face. During this time, over two or three years I watched my style of teaching gradually change from “mainstream with a hint of *Silent Way* discipline” to “full time explorer of what *The Silent Way* could offer

me.” It quickly became clear that in my job as in-service trainer, the most effective way of helping teachers to become more aware of their ways, to question what they had taken for granted, and to develop a way of teaching more true to themselves was through working with *The Silent Way*, which enables them to throw everything up in the air and start again.

What we did was to establish with the school the possibility to operate a sort of mini apprenticeship system, through which anyone interested in reevaluating their own teaching would observe one of those working with *The Silent Way* (initially just me). Each “apprenticeship” lasted several weeks, during which time the observer would probably begin to take a more active part in the running of the lesson, and to experiment with what they were learning, perhaps with another class. This system benefited all involved, and the daily discussions outside the class were open to other interested teachers. As a result, over several years some teachers emerged who found themselves dedicated to the study and practice of the subordination of teaching to learning, while others were satisfied, at least for the time being, to develop what they had learned from *The Silent Way* within the existing framework of their teaching.

José Santos, one of our teachers who had adopted *The Silent Way* during his several years here, left in 1981 to start his own school, the International School of English in Majorca. After the usual difficulties of getting a new school off the ground, he now has six teachers and is still expanding. His aim is to have a school entirely devoted to *The Silent Way* and so he is on the lookout for teachers who would like to work there. As his school faces stiff competition from other local schools he has adopted the ploy of offering free to any potential students a two-hour *Silent Way* class, with no obligation to enroll. In fact, directors from other local schools, including Berlitz, have even come along pretending to be interested students, to see what was going on.

Another teacher from here, Geoff Seale, who would describe himself as a mainstream teacher with a strong element of *Silent Way* precision and discipline, started work last year at the local College of Further Education, where he teaches Arab students the English they need to

follow various three-year engineering courses. His employer is particularly impressed by *The Silent Way*, noting that the rate of progress and degree of engagement of these students has greatly increased.

Within our staff of twenty permanent teachers, and our temporary summer staff of an extra thirty teachers there is always interest, activity and discussion revolving around the subordination of teaching to learning and many of our teachers who I will not name here have been affected by what it has to offer. Some of these are now at schools abroad (Egypt, France, Spain, Italy, Japan, China, Brazil, Turkey, to mention a few) where in most cases they have, through their activities, stirred up interest in *The Silent Way* amongst some of the local staff. Of the permanent teachers here in Hastings it is safe to say that all have been touched in some way of *The Silent Way*, that everybody has learned something from it which they make use of daily in their teaching in all departments, the Executive School, the International School, Special Programmes and Initial Teacher Training.

As a result of work here this summer, two teachers have returned to International House, San Sebastian, ready to experiment with *The Silent Way* this autumn.

I find myself increasingly asked by course organizers to give seminars introducing *The Silent Way* to teacher-trainees, and I regularly oblige, as this helps my own development and understanding. Such seminars are usually on University M.A. Applied Linguistics courses; R.S.A. TEFL exam courses at various polytechnics and colleges; and in-service training diploma courses for foreign teachers of English. My approach to these sessions is severely constrained by the short time available, usually two or three hours. I keep trying out different things, and often though not always there are a number of participants who seem particularly moved and affected by their experience — but of course what happens to them afterwards I don't know.

As a student of learning there are many things I need to work on, and at different times different ones come to the fore and engage more of my attention. At the moment I'm trying to be more available to

problems, how to spot them, and how to disentangle them so that the solution may become clearer. I'm also working on what it means to "educate awareness," how to recognize it in myself and how to bring it about in myself and others.

Finally, I should say that in all of this the Newsletter has been very important to us here in Hastings as a source of inspiration, and guidance, as well as bewilderment and surprise.

Adrian Underhill September '83

2 We have received a certain number of positive responses to our item in the December '83 Newsletter, asking for expression of interest in cooperating with the Besançon group in acquiring copies of what will be produced by them. If more readers want to participate, let us know so that we can alert the proposers.

3 Expolangues '84, held at the Grand Palais in Paris during the last days of January, attracted as much interest as last year's exhibition. In our next issue, we hope to include a report which will be of interest to our readers who are *Silent Way* teachers.



About Caleb Gattegno

Caleb Gattegno is the teacher every student dreams of; he doesn't require his students to memorize anything, he doesn't shout or at times even say a word, and his students learn at an accelerated rate because they are truly interested. In a world where memorization, recitation, and standardized tests are still the norm, Gattegno was truly ahead of his time.

Born in Alexandria, Egypt in 1911, Gattegno was a scholar of many fields. He held a doctorate of mathematics, a doctorate of arts in psychology, a master of arts in education, and a bachelor of science in physics and chemistry. He held a scientific view of education, and believed illiteracy was a problem that could be solved. He questioned the role of time and algebra in the process of learning to read, and, most importantly, questioned the role of the teacher. The focus in all subjects, he insisted, should always be placed on learning, not on teaching. He called this principle the Subordination of Teaching to Learning.

Gattegno travelled around the world 10 times conducting seminars on his teaching methods, and had himself learned about 40 languages. He wrote more than 120 books during his career, and from 1971 until his death in 1988 he published the Educational Solutions newsletter five times a year. He was survived by his second wife Shakti Gattegno and his four children.