We live in an era of prodigious material abundance, which is accessible, at least in the western world, through much less effort than what was required say a century ago. Most work requires mental effort rather than physical exertion.

Through the application of Science and Technology many humans live comfortably, toiling less than two days out of seven, eating to their heart’s content, availing themselves of huge amounts of leisure time and disposing of a virtually limitless inventory of goods.

Indeed life is good for this portion of humanity. That is not to say that problems do not continually arise, real problems…not whether we should content ourselves with four dishes and not six when two would suffice. Let’s take our food supply as an example. Cloning technologies offer a possible solution for world hunger: creating meat and other protein sources in a factory, but lack of sufficient sustenance is not the only problem, on the other swing of the pendulum the gastronomic delights presented to us by our western way of life sometimes lead us to our death.

Our species has already augmented our natural lifespan through our technology. More is yet to come.

As we learn the operating principles of the human body and brain, we will soon be in a position to design vastly superior systems that will last longer and perform better, without susceptibility to breakdown, disease and aging. It is a fallacy to suppose that Nature knows best, evolution never operates at an optimum but always at the lowest denominator. We can do even better.

We already have a comprehensive picture of the components of the food we eat. We know how to enable people who cannot eat to survive, using intravenous nutrition.

The next phase of improvement in this area will be largely bio-chemical, in the form of drugs and supplements that will prevent excess caloric absorption and otherwise reprogramme metabolic pathways for optimal health.

Eventually nanobots in the digestive tract and bloodstream will intelligently extract the precise nutrients we need, order additional nutrients and supplements through our personal Wi-Fi networks, and send the rest of the matter on to be eliminated.

Ultimately we will be able to determine the precise nutrients necessary for the optimal health of each individual. These will be freely and inexpensively available, so we won’t need to bother with extracting nutrients from food at all.

It will certainly be a gourmet’s paradise.

It is a fallacy to suppose that Nature knows best, evolution never operates at an optimum but always at the lowest denominator. We can do even better.
Relinquishment is not the answer, irrational fear leads to irrational solutions

However we do need to take seriously the misguided and increasingly strident (and often disguised) Luddite voices that advocate the relinquishment of technological progress to avoid presumed dangers of GNR (Genetics, Nanotechnology, Robotics). Relinquishment is not the answer, irrational fear leads to irrational solutions. Delays in overcoming human suffering in all its aspects, are still of great consequence – for example the worsening of famine in several regions in Africa due to opposition to aid from food using GMOs – genetically modified organisms.

The main theme for this fifth issue of Welcome is Food. It is tackled from all aspects, scientific, historical, and geographical. It also brings to light one of the many applied research initiatives the Institute of Tourism Studies has embarked upon through its research centres, in an effort to further empower its students through the provision of a broader, more eclectic and profounder formation during their programme of study.

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The views expressed in Welcome do not reflect the views of the Board of Governors or of the Management of the Institute of Tourism Studies but only that of the individual authors.

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Bartholomeus van der Helst, Banquet of the Amsterdam Civic Guard in Celebration of the Peace of Münster

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Eating through time: The culture of food in the Mediterranean 45
The Genetically Modified (GM) food controversy recently reached our shores and confronted our very own recently appointed European Commission for Health and Consumer Policy Mr. John Dalli, who was heavily criticized for approving the cultivation of a strain of genetically modified potato and the use of three types of altered maize in food and feed production.

The incident revealed how vociferous NGO environment groups can be in their opposition towards certain ‘pet’ issues even though there has not been a new GM food approved in 12 long years. The extreme reaction to introducing a new GM potato gives the impression that GM crops are being dumped onto the market everyday and their effects are killing people by droves, when scientific evidence shows otherwise.

Is this resistance to GM food and organisms justified? What are the truths behind these new biotechnological products? How will such technology affect food production? Is it really so dangerous?

These are only a few questions that plague the GM controversy.

DAVID PACE

David Pace is a Lecturer in Tourism Sustainability and Food Science at the Institute of Tourism Studies. He has been involved with the environmental lobby since 1986 and is particularly interested in the development of alternative forms of tourism in Malta. He is also a qualified Laboratory Scientist and a journalist specialising in science popularisation.
In the beginning

Although today, James D. Watson and Francis Crick are names indelibly associated with the discovery of the DNA (Deoxyribonucleic Acid) double-helix, many fail to realise that they would not have uncovered the shape of the universal blueprint of life without the discoveries of many scientists that preceded them. Among these, the most important were Swiss chemist Friedrich Miescher who identified the molecule in the 1860s and Phoebus Levene and Erwin Chargaff who determined the molecule’s primary chemical components and the way they joined together.

The story of the discovery of DNA is a spectacular example of the logical way science works by observing evidence derived from specific experiments and constructing new hypothesis to discard insufficient old ones. This procedure eventually leads to the discovery of new knowledge that has to be checked by rival scientists to be verified and accepted by the scientific community. When the majority of scientists are satisfied that the research agrees, then the new discovery is accepted.

The uncovering of the shape of DNA in 1953 led to the beginning of the genetic revolution, as human beings started to finally understand how life developed at the most basic level - the molecular level.

It took scientists 20 years to start applying the lessons learnt from DNA research to living things. This led to the dawn of genetic engineering. Two scientists, Herb Boyer and Stanley Cohen removed DNA from a single cell of a bacterium that expressed antibiotic resistance and inserted it into the common intestinal bacterium, E. coli. When the bacterium divided, the daughter cells were found to contain the foreign DNA.

A year later in 1974, Rudolf Jaenisch created the world’s first transgenic animals by introducing foreign DNA into mice embryos and proving that the resulting
Animals had the modified gene in their tissues. This was an extremely important milestone in the development of genetic engineering and biotechnology as scientists now had a tool to study genes and the way they were expressed in embryonic development. Eventually, the discovery also led to the development of ‘Oncomice’ – specifically designed to be susceptible to cancer for the study of the killer disease; and transgenic pigs that may provide organs for transplantation into the human body in the future.

In 1976, the same Herb Boyer who had genetically modified the first bacterium three years before founded the first genetic engineering company Genentech. This led to the production of the very first human protein (somatostatin) in a microbe (E.coli) – a development that paved the way for the production of human insulin in 1978 and its commercial use in 1982.

Although millions have benefited and continue to benefit from this invention, few can really appreciate its monumental importance. For a long time, diabetics depended on insulin milked from animals such as pigs and sheep. Although this form of insulin is quite similar to the human equivalent, it was still different enough to cause serious complications and there were added dangers of dangerous viruses and infective protein particles called prions crossing over to the human body and causing deadly diseases. The use of human insulin solved all these problems.

Fortunately, the use of insulin and many important pharmaceuticals produced by inserting human genes into bacteria and animals such as pigs and sheep has become an accepted practice, whose rewards are reaped by millions of people around the world including those who had protested so vehemently against them.

The Human Genome Revolution

After the successful conclusion of the Human Genome Project in 2005, the “Age of Genetic Engineering” was finally overtaken by the “Age of Biotechnology”.

The Human Genome is the body’s instruction book made of thousands of genes each consisting of strands of DNA that encode specific characteristics. On these are written all the instructions for making a human being and each gene stores a different characteristic (or characteristics) - the colour of hair and eyes, the person’s height, tongue length, susceptibility to diseases and so many more.

The unravelling of the Human Genome has also allowed the mapping of human DNA pinpointing the location of specific genes. This is crucial in the treatment of genetically
The most sought after plant traits are natural immunity to pests, and the ability to resist harsh conditions and subsist in tough environments. In the case of animals, increases in body weight, reduction in fat, resistance to disease and the ability to withstand harsh conditions are all important characteristics.

Today, we are also witnessing the development of chimeras produced artificially by mixing cells from two different organisms to study the expression of specific traits. This promises to be another controversial technique that is already eliciting strong reactions from both religious and environmental groups.

Inherited diseases as it provides geneticists the ability to identify and target inheritable defects using viruses loaded with instructions to repair the defective genes. This so-called gene therapy led to the correction of colour-blindness in Squirrel monkeys last September and will be available to cure human beings in a few years. The tremendous potential of this type of therapy lies in the treatment of more serious debilitating genetic diseases such as cystic fibrosis, muscle dystrophy, sickle-cell anemia and haemophilia among many others.

The mapping of the human genome has enabled researchers to find specific genes that express important traits and transplant them into animals’ or plants’ genetic codes. One of the most recent examples is the production of Atryn, in goat’s milk - an anticoagulant that reduces the formation of blood clots during surgery or childbirth. Other examples include transgenic pigs that have pieces of human DNA inserted in their genomes making their immune system more compatible with ours to decrease organ rejection, a process called xenotransplantation.

Techniques used in the Human Genome Project have been adapted and are being used in the production of GMOS or Genetically Modified Organisms. These are plants and animals that were altered genetically to develop useful traits that natural creatures do not have. By genetically modifying them, specific traits that produce stronger plants and animals than the naturally grown ones can be inserted. The most sought after plant traits are natural immunity to pests, and
Genetically Modified Organisms

Genetically Modified animals have already been made, the most famous being the GloFish®, sold as luminescent aquarium fish. Other examples include the Oncomouse®, cloned transgenic pigs and GM chickens that produce eggs rich in human antibodies.

A well-known example of GM plant is the FrankenCotton®, specially designed to be immune to pests, it is also a source of oil used as an important food preservative. The soybean is another example of a food plant of which 85% is genetically modified.

One of the main advantages of GM plants is pest resistance and although the reduction in pesticide use is not as drastic as predicted, it is still considerable. According to the International Service for the Acquisition of Agri-biotech Applications ISAAA Brief 39-2008 Executive Summary: “The accumulative reduction in pesticides for the period 1996 to 2007 was estimated at 359,000 metric tons of active ingredient (a.i.), a saving of 9% in pesticides.”

The main preoccupation concerning GM plants concerns their long-term effects on the environment (due to the fact they are still relatively new – less than 20 years old). Although this should not be taken lightly, many technologies have much worse scientifically documented negative long-term effects.

Gene therapy is attempting to cure Factor VIII deficiency or haemophilia, a potentially fatal condition in which the subject lacks a specific gene to produce the important blood coagulant.

Chimaeras are made of a mixture of different animal cells and their value lies in the study of the transmission of different genetic traits. This depiction is just a fanciful representation as chimaeras are rarely allowed to grow beyond the multi-cellular stage.
on the environment and are still allowed. Examples include pesticide and fertiliser use, and pollution from vehicles and industries, and the effects of tobacco consumption. Their use does not excuse the illegal use or the quick introduction of GM foods on the market; but the criticism levelled against them should be balanced by scientific facts and not just anecdotal evidence supplied by many NGOs quoting each other!

Another advantage is the increase in plant yield. Unfortunately, this aspect of GM food has been the centre of controversy that was manufactured by the anti-GM food lobby and was one of the reasons the British Food and Farming Minister Jeff Rooker launched a scathing attack on opponents of genetically modified (GM) crops, declaring that: “they were on a ‘messianic mission’ to halt the technology. He accused the anti-GM lobby of ‘ignorance’ and warned that opposition to the technology was jeopardising the UK’s scientific base.”

According to the Food Standards of Australia and New Zealand (FSANZ), “there’s no scientific evidence that any of the GM foods now on the supermarket shelves are harmful. Nor is there evidence to suggest GM reduces the nutritional value of food, or that feeding GM plant material to animals affects the nutritional quality or safety of the meat, milk or eggs.”

Although Friends of the Earth and Greenpeace, two of the largest NGOs anti-GM lobby groups have been correct in raising the issue of the lack of independent studies, free from industry bias, they fail to mention the hundreds of studies that can be easily found on the Internet and the fact that some GM crops have had their approval withheld as was that of Monsanto and Cargill. These are the world’s biggest developers of GM crops and regarding their application for approval of LY038 corn, the European Food Safety Authority questioned the quality of their safety studies and the product was withdrawn. The Indian government also halted the release of a GM variety of eggplant due to doubts about its safety and Australian research on a GM pea was discontinued after it was found to elicit an immune reaction in mice.

Unfortunately, different countries use different yardsticks and the same GM foods have been accepted in countries such as Australia and the US.

The case of the Amflora potato that is currently plaguing Mr. John Dalli, the European Commissioner for Health and Consumer Policy, is a case in point. Environmental lobby groups are arguing that it is dangerous due to a gene that offers antibiotic resistance and although the potato will not be used as a food source but in the commercial production of amylpectin (starch), there are no guarantees that some hungry critter will not take a bite out of it. If this happens, the gene expressing antibiotic resistance may be incorporated into the bacterial genome. Considering the billions that live in animal’s gut this is quite a possible scenario that could make the bacteria resistant to antibiotics. This seems to be the main criticism and at face value, it is correct.

The problem is that antibiotics have been added to domestic animal feed for decades and this is a real danger as huge amounts of antibiotics are entering the guts of cows and sheep were billions of bacteria that break down plant matter are found. The chance of the development of strains of antibiotic resistant bacteria is much greater in this case. So, can we say that the vehemence of the anti-GM lobby group outcry against the Amflora potato is equivalent to their outcry regarding antibiotics added to animal feed!
Very little scientific evidence exists highlighting the dangers of GM food even though lobby groups continue to be extremely vocal in their protests. Some animal studies have reported negative effects on mice and rats including the famous “studies” of Dr. Irina Ermakova of the Institute of Higher Nervous Activity and Neurophysiology of the Russian Academy of Sciences in Moscow who found that 55.6% of the offspring of rats fed GM soy died, compared to only 9% of the offspring of rats fed non-GM soy. This study has been challenged by many and Dr. Irina Ermakova has been accused of having an anti-GM bias and agenda.

Another study in November 2008 by Prof. Dr. Jürgen Zentek, Professor of Veterinary Medicine at the University of Vienna and his team seemed to vindicate Dr. Ermakova’s worries as the: “Austrian scientists performed several long-term feeding trials with laboratory mice over a course of 20 weeks. One test - the so-called “reproductive assessment by continuous breeding” showed that mouse parents fed on a diet containing 33 percent of a Monsanto owned GE maize variety (NK 603 x MON 810) experienced a decrease in litter size and weight by the time they gave birth to their third and fourth litters. Mice fed on a closely-related non-GE maize had normal reproduction cycles.

Both studies have been criticised as they are not the first multi-generational animal study conducted by feeding animals GM foods. Contrary to what many believe, many existing studies from different laboratories, including multi-generation animal feeding studies, have been conducted on biotech crops. These studies support their safety and showed no adverse effects on animal health. They have also been thoroughly reviewed by hundreds of independent scientists on behalf of regulatory authorities all around the world and have completed regulatory review by a number of countries globally. The overwhelming opinion of expert authorities around the world is that MON 810 x NK603, the GM strains involved in the Austrian work, are safe to consume and that Dr. Ermakova’s findings have not been independently reproduced.

“We must stress again that GM soy has been thoroughly studied in the peer-reviewed literature, by regulators around the globe and by the cruel testing place of the real world. More than 500 million hectares were cultivated over the past decade. Much of this has been fed at high concentration to domestic animals, poultry and fish. There have been no reports of stunted growth or reproductive failure as one might expect if Ermakova were correct.”

A GM pea project in Australia was stopped when it was found to induce an immunological reaction in mice and so, yes, GM foods may give rise to new allergies. This actually disproves one of the main criticisms levelled at GM foods: that there are not enough scientific studies regarding their safety. A casual look at the Internet will reveal an enormous amount of scientific literature, most of it peer-reviewed that reflects a wide body of research concerning every aspect of GM food.

Possibly, the strongest and most obvious form of evidence against the extreme danger of GM crops portrayed by NGOs is the fact that millions of people worldwide have been eating GM foods for more than 20 years with no discernible adverse effects.

There may be environmental risks, and although overall, GM crops have decreased pesticide use, some evidence exists that farmers are using more pesticides and herbicides when cultivating GM soybeans to control the growth of weeds.

Another real problem is the risk of the accidental transfer of genes to other crops or weed species - the main controversy surrounding the Amflora potato. There are also ethical issues concerning the possibility of multinational corporations getting too much power over important food crops.
from many different studies around the world, the following increases were found:

<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>Yield increases with herbicide tolerant soybean of 9 percent</td>
</tr>
<tr>
<td>Romania</td>
<td>Yield increases with herbicide tolerant soybeans have averaged 31 percent</td>
</tr>
<tr>
<td>Philippines</td>
<td>Average yield increase of 15 percent with herbicide tolerant corn</td>
</tr>
<tr>
<td>Philippines</td>
<td>Average yield increase of 24 percent with insect resistant corn</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Virus resistant papaya has increased yields by an average of 40 percent and revitalised the Papaya industry on the island which was on the verge of collapse due to the deadly virus</td>
</tr>
<tr>
<td>India</td>
<td>Insect resistant cotton has led to yield increases on average more than 50 percent</td>
</tr>
</tbody>
</table>

Some GM crops were also found to decrease pesticide and fuel use, facilitate conservation tillage practices that reduce soil erosion, improve carbon retention and lower greenhouse gas emission. PG Economics calculated that the amount of carbon dioxide absorbed by GM crops in 2006 was equal to removing half a million cars from the road.

Lobby groups are right in some of their pesticide criticism. According to “Genetically Engineered Crops and Pesticide Use in the United States: The First Nine Years”, “While the discovery and adoption of GE crop technology has changed American agriculture in many ways, reducing overall pesticide use is not among them. Bt transgenic crops have reduced overall insecticide use, but HT crops have increased it by a far greater margin.”

The findings of this six year old document are very specific and have been eclipsed by a number of more recent studies by PG Economics Ltd, the most important of which is a critique of the Friends of the Earth (FoE) report: “The so-called ‘fully referenced, fact-based’ FOE document includes many press releases from anti GM activist groups and press articles. There is a fundamental lack of credible data drawn from peer reviewed analysis.”

The PG Economics report continues to critique each point of the FoE report scientifically. Regarding increases in yield the FoE report concludes that: “it is widely accepted that GM crops do not increase yield, and in some cases yield less than conventional crops”. The problem here is the ‘widely accepted’ criterion. Widely accepted by whom? By the lobby groups who are against GM foods? Fortunately, when critisizing new technology the facts count and it is a fact that: “across the countries using insect resistant biotech crops, the average positive yield impact of the technology (1996-2006) has been +5.7% and +11.1% respectively for insect resistant maize and cotton.”

The same report accuses FoE of using misleading information insisting that most GM crops are used to provide fodder for livestock whose produce goes to developed countries rather than helping the poor. This is totally misleading as: over 90% of farmers using GM traits are resource poor farmers in developing countries. Also half of the $33.8 billion increase in farm income derived from biotech crops (1996-2006) has been by farmers in developing countries, with farmers using GM cotton in China and India obtaining the highest levels of income benefit on a per hectare basis.

Another worrying criticism against FoE is the use of inappropriate and unrepresentative data. For example according to FoE: “official data from major producer countries – US, Argentina and Brazil – confirms that pesticide use increases with GM crops. Whilst official data on the total volume of herbicides used on crops like soybeans, in the US, Argentina and Brazil has increased in the last ten years, this largely reflects the substantial increase (nearly +60% 1996-2007) in the total areas planted to these crops. Across the area planted to biotech crops, total pesticide use fell by 7.8% (1996-2006) compared with what it otherwise would have been if GM technology had not been used.”

Considering FoE criticism of insect resistant cotton in Asia, this is an example of unrepresentative data that is providing the wrong picture concerning GM cotton by applying what happened in a small area that is not representative of what is happening in much larger areas. Actually, the facts speak for themselves considering that GM insect resistant total cotton plantings increased from zero to 77% from 2002 to 2008(29). If there were no advantages the crop would not have been chosen.

NGO environment groups such as FoE and Greenpeace then go to accuse multinational companies of having an agenda and push GM crops because they are a cash cow and they may be right. Unfortunately, NGO environment groups although mostly well meaning, also have agendas that are flawed as those of multinational companies. Consider FoE insistence on organic farming as a viable agricultural alternative. On pg 4 of their leaflet “Food and Farming”
they state that: “Intensive farming methods are the product of Government farming policies of the past 50 years. We need a new system that supports farmers who protect wildlife and gives them a fair price for the food they produce. The best way to do this is to support sustainable farming (like organic farming) and localised food production”.

The quote is without doubt a spectacular example of an agenda propelled by the organic food lobby using false premises based on a lack of scientific evidence and built upon a flimsy structure of emotional advertising. All NGOs associated with the environment or sustainable agriculture like to paint the organic food agenda as some kind of ecological panacea. For years, we’ve been told that organic food is tastier, safer and more ecologically sound than normally grown food. “Organic food is no healthier than conventional food, according to the world’s biggest research project into the issue.

“The Food Standards Agency commissioned the research to discover whether Britain’s £2bn organic industry could claim higher health benefits for its products. Of 162 scientific papers, researchers found 55 that were high quality and checked them for different minerals and vitamins such as Vitamin C and iron. In “satisfactory quality studies” there was no difference between the organic and non-organic farming in 20 of 23 nutritional categories. Organic was better satisfactory studies, organic food had “statistically higher levels” of phosphorous and acidity, but conventional was higher in nitrates.”

Dr Alan Dangour, who led the study, said: “A small number of differences in nutrient content were found to exist between organically and conventionally-produced crops and livestock, but these are unlikely to be of any public health relevance.
"We found broadly that there was no important difference between organic and conventional produce."

Myths of an Organic Nature

If environmental NGOs have been vilifying GM foods as being anti-environmental, they have always insisted that organic food is pro-environment. On a small scale, this may be true. Organic substitutes do not contaminate the soil and groundwater with pesticides and chemicals; neither do they indiscriminately kill the beneficial bugs like chemical poisons do. On a larger scale, organic farming is extremely wasteful and uneconomical, both from an economic and an environmental point of view.

According to Dennis Avery of the Hudson Institute’s Center for Global Food Issues, organic farming has less than half the productivity of a conventional farm and needs far more land to produce the same amount of food. He estimates that modern high-yield farming has saved 25 million square kilometres of wildlife habitat, and that if the world switched to organic farming, 16 million square kilometres of forest will have to be cut down. Organic farming will negatively affect mostly people from less developed countries that such NGOs set out to protect.

Another point regarded as cardinal when extolling the virtues of organic farming is that they contain more nutrients. Again, studies are not conclusive and NGOs bias in regarding organic produce as more nutritious can be thought as misleading advertising. Some studies have found more vitamins in organic tomatoes or more cancer-fighting flavonoids in organic corn. Other studies found no difference and attribute the nutritional edge to organic produce being fresher. For instance, Luke LaBorde and graduate student Srilatha Pandrangi of Penn State “found spinach stored at 4 C may lose much of its nutrients after eight days.”

Surely, some may argue that the taste of organic produce must be better. Again shelf life plays a very important part especially when dealing with fruit. Once again, scientific studies have been inconclusive and only in one study of apples did organic produce prove tastier.

What About Hygiene?

Organic produce must be safer and cleaner not having been contaminated with poisonous pesticides and fungicides, right? All produce is contaminated with soil bacteria such as Acinetobacter baumanii, Bordetella sp, Brucella sp, and Escherichia coli – all of which can cause serious diseases.

In the case of organic produce, there is a much greater chance of it being contaminated with E. coli as animal manure is used as a fertiliser instead of the chemical variety. So organic produce must be thoroughly washed just like normal produce.

One of the biggest myths surrounding organic farming is that it supports small farms or eco-companies instead of evil multinational companies where all the profits go to the head glutton residing abroad in some skyscraper counting the profits.

Actually, the largest organic food companies are all multinationals. Kraft owns Back to Nature and Boca Burger, and Kellogg’s owns Morningstar Farms. Another organic giant, Whole Foods sold over a billion dollars in produce last year and the organic ingredients are imported as cheaply as possible mostly from poor countries. If one factors in the carbon dioxide (CO₂) produced by transportation and the low prices derived from the exploitation of cheap labour from less-developed countries, one quickly gets an idea how ecological this sort of organic farming is.

The organic farming debate is dominated by misinformation, exaggeration and misleading advertising and it shares a lot of similarity with the GM food debate. Just as the organic farming debate has been shaped by gross misinformation, the same has muddled the GM issue beyond recognition. Multinational corporations are hijacking organic food production just like multinational industries have hijacked the production of GM food to the extent that most people from less developed countries that were promised cheaper produce never saw the prices drop. On the other hand, people from the more developed countries believed the negative hype describing GM crops as the latest incarnation of evil biotechnology spearheaded by greedy multinational.
companies that sacrifice people and the environment for the sake of money. To increasingly complicate the issue, the entire debate has been usurped by those who firmly believe that GM crops are a threat to human health and the Earth’s ecosphere, while scientists are convinced that bioengineering plants is the only way to guarantee a steady supply of food for the future.

More serious than all the complications described above, is the lack of trust in the industry and regulatory agencies that are regarded as the lapdogs of the chemical industry and biotechnology companies by environmental NGOs. This is the direct result of repetitive and fanatically inaccurate propaganda characterised by irresponsible journalism that has led to a serious deterioration of public confidence in scientists and governmental regulation institutions.

The Future

The next decade promises an exponential increase in the manufacture of new GM products as more powerful computers help researchers unravel the genetic codes of more and more animals and plants.

Among the most exciting applications of GMOs is the inclusion of drugs in genetically engineered bananas, potatoes or tomatoes to produce human vaccines against Hepatitis B[^46].

This will result in a price drop from €10 per injectable dose to a few cents allowing much wider distribution of the vaccine and ultimately eradication of the disease.

Another avenue of research is the production of new plastics from plants with unique properties and the development of salt-resistant trees in areas where it is currently impossible to grow forests due to highly saline soils. This affects large areas of North Africa and many deserts ranging from the Sahara to the Kalahari and the Gobi. Such trees and new types of genetically modified rice and maize will play an important part in mitigating climate change being capable of fixing 35% more carbon dioxide from the air than their normal counterparts[^47].

Further advances on the horizon include cotton plants that are safe to eat. This means that the entire plant can be harvested for protein. Soya plants that concentrate omega-3 lipoproteins - a form of beneficial fat; plants and bacteria that concentrate precious metals such as gold and silver, pain-free animals to decrease suffering from farming, metabolically engineered fish that mature more quickly, fruit and nut trees that yield years earlier and crops without allergens or poisons.

Safety testing of these products is paramount and political pressure from different lobby groups will make sure that there
According to the influential journal, *Trends in Biotechnology* 7 a standard safety test for biotech food should include the following ④:

1. Study of the introduced DNA and the new proteins or metabolites that it produces;
2. Analysis of the chemical composition of the relevant plant parts, measuring nutrients, anti-nutrients as well as any natural toxins or known allergens;
3. Assess the risk of gene transfer from the food to microorganisms in the human gut;  
4. Study the possibility that any new components in the food might be allergens;  
5. Estimate how much of a normal diet the food will make up;  
6. Estimate any toxicological or nutritional problems revealed by this data.

Such guidelines ensure that future GM products must be as safe as science allows. On the other hand, the extreme reaction of NGO environmental groups is counter-productive, especially when it is clear that there is no evidence that any of the licensed GM products are dangerous to human beings. The backlash of such actions includes increased distrust of science and panic-mongering, both of which are dangerous social constructs, particularly when considering that plant scientists and geneticists have pointed out that crops modified using GM techniques are less likely to have unintended changes than conventionally bred crops. W
Malta depended so heavily on Sicily that it had no strategic value and became, “no more than an auxiliary base, as a Sicilian overlord had no interest in doing anything with Malta, other than keeping it out of the hands of a hostile power”.¹

In striking contrast with this isolation, an accidental change of rule in the sixteenth century brought to Malta’s shores an entirely different civilization and way of life. Malta became integrated into the shipping routes of the central Mediterranean and even its culture was transformed.

Nevertheless Sicily still played a fundamental role in Malta’s political, economical and cultural life, in view of the fact that Sicily was an important supplier of grain, the principal commodity at the time.

**Naval and Commercial Activities**

Due to the scarcity of resources, practically everything in the Maltese Islands had to be imported.² Moreover, geographical isolation compelled merchants to direct their attention towards maritime communication for commercial development.

It seems that towards the end of the Middle Ages all sorts of commercial transactions were carried out in Malta. There is evidence that 600 chiramidi or roof tiles (ciaramiti in modern Sicilian, Italian tegole) had to be imported from Licata for the rebuilding of the Santo Spirito Hospital in Rabat, the suburb of the old capital, Mdina. Stanley Fiorini asserts that the bulk of the tiles required were obtained locally from individuals who presumably had no further need for them. Fiorini also claims that the Sicilian style roof tiling was fairly widespread in the Mdina/Rabat area during the 15th century.³ It is presumed that whilst encouraging a spirit of entrepreneurship amongst part of the Maltese population, Malta’s scarcity of resources might have also attracted foreigners to settle there.

It was probably for this reason that from the early days of their stay in Malta, the Hospitallers decided to confide some of their most important missions in the hands of padroni (sea-captains) of small sailing vessels. These were commissioned to perform all sorts of services, and were employed in the ferrying of provisions of all sorts from Sicily. In 1599 Vincentio Rispolo was sent to Licata entrusted with a large sum of money pertaining to the Comun Tesoro (the Order’s Treasury) to buy grain from there. Grand Master Garzes (1595-1601) ensured that Rispolo’s frigate was well protected and for this purpose he ordered two galleys to accompany the vessel for its safe conduct to Licata.⁴ These closely knit ties with Sicily, particularly with Licata, must be seen in the context of the conditions of the 17th century. One must bear in mind that the Maltese people were considered as inhabitants of a kingdom which meant they belonged entirely to the domain of the Kingdom of Sicily.
It should be remembered that the Maltese islanders were deemed regnici, that is, they belonged integrally to the royal domain of the Sicilian Kingdom. This made them eligible for duty-free food provisions from Sicily, a fact which explains why since 1526, the mastro segreto, or Chief Fiscal Officer of that Kingdom, had ordered all Secreti of the Sicilian towns, particularly the one of Licata, to supply Malta with duty-free food merchandise.  

Malta imported most of its grain from Sciacca, Girgenti (now Agrigento), Terranova (now Gela) and Licata, but the latter was considered ‘the granary of Malta’.  

Infact on the 14th July 1468 the Viceroy of Sicily ordered the royal officials of Licata to allow the export of 400 tratte of grain to Malta.  

At the end of the 16th century Malta is reported to have extracted between 16,000 and 20,000 salme of grain per year from Licata alone.  

The special bond between Malta and Licata might owe to the fact that as Incorvaia explains, the route to Malta – seventy nautical miles – is direct.  

Throughout the 16th and the early 17th centuries, Malta continued to be administratively organized in line with the rest of Sicily. From existing yet often fragmented records, it transpires that Malta was so closely knit to neighbouring Sicily that four-fifths of the total amount of sailing vessels registered between 1564 and 1600 (or 80 per cent) travelled towards this island, and 18 per cent of this shipping was directed towards Licata.  

Until the later seventeenth century, the importation of grain continued to be the principal activity of the Maltese economy. Malta had an active shipping fleet which frequented the coasts of Sicily. In the winter of 1590/91, four vessels were sent to Licata by the Università to fetch 3,000 salme of grain that had been promised by the Sicilian Viceroy. But the weather was so exceptionally furious, that two of them were caught up in the raging floods of Licata, the third was driven off course, and the fourth returned to Malta “without a single ear of corn”.  

Malta possessed an active fleet which sailed the Sicilian coasts, the West and even more frequently to neighbouring Tunisia. So until 1664, part of the considerable amount of silver which the fleet transported was left to circulate in Sicily.  

The Maltese Università (the Town Council) usually preferred to buy grano forte (durum wheat) also known as grano di Rocella. This was mostly shipped from Licata, although smaller amounts arrived from other carricatori (grain centres), particularly Girgenti and Terranova. If the grain was loaded in Licata, hiring costs in 1536 amounted to 2 tarì per salma (see table at the end of this article) for every trip to Malta and 10 grani less if it was transported from Terranova.  

Yet the Università had established such close ties with Licata that towards the end of the century the price of grain was fixed according to the dry measures of Licata. Sometimes the harbour Università (the one representing the cities in the harbour area which included Valletta, Vittoriosa, Senglea and Cospicua) used Maltese measures; however Mdina strictly applied the measures of Licata. The salma of Licata consisted of 16 tumuli (225 kg); the Maltese salma measured 14 tumuli and 4 mondelli (206 kg) as established by the harbour Università on the 18th October 1564.  

Although the tumulo of Licata continued to be the normal measure for grain transactions on the Maltese market, the weights varied with time.  

In Sicily, the most active figure was the Consul of Licata, whose primary role was to settle bills and to accommodate the Università in all its needs, particularly to ensure all necessary guarantees for the vessels that transported grain to Malta. Similarly the consumption and importation of wine was of such vital importance that it came second only to the transaction of grain. This might explain the reason why the Order of St. John insisted and did its utmost to import 350 tax-free barrels of wine per year from Sicily.  

Further evidence of the wine trade in the 16th century is found in the records of the Customs arrival for the years between 1588-89 and 1595-96. Although scanty and probably incomplete, these two lists throw light on the passengers and their place of origin. This is possible since they were obliged to declare the purpose of their visit to Malta. Among them wine merchants form the largest group of tradesmen in the lists. All wine merchants in the 1588-9 list, with the exception of Pietro Zupello, declared that their wine came from Syracuse. Zupello, who embarked at Licata, did not mention the provenience of his wine.  

Although Malta depended heavily on the importation of a large array of goods from Sicily it also exported bulky merchandise to the nearby Sicilian ports. These exports apparently consisted mainly of cotton and beasts of burden. Scattered information regarding the mule and donkey trade available for the late 16th and early 17th centuries includes information on bulky merchandies which was intended to be embarked to one of the nearby Sicilian ports, Italy or Marseilles. Beasts of burden were treated as bulky merchandise and great care was taken to describe their colour, sex and whether they were donkeys, mules, or more rarely horses. Between 1589 and 1611, a total of 146 trips made by vessels which departed from Malta transported 957 beasts of burden. The destination was usually indicated though somewhat in a vague manner. In all, 58 traders stated their intention of going to the Kingdom of Sicily while 65 mentioned a specific port of call. Forty four of these indicated Licata followed by Terranova 15; Girgenti and
Sciìli 8 each; Pozzallo 6; Mazara 2; Syracuse and Spaccafurro one each.\textsuperscript{22} Even in the trade of beasts of burden Licata was preferred to other Sicilian towns on the south coast.

**The Role of Emigration**

Malta’s geographical position, coupled with dependence on Sicily for its grain, led to the creation of very strong bonds between the populations of the two islands. The oldest reference to these bonds is given by Cicero, who in his indictment of Caius Verres refers to Diodorus Melitensis, an inhabitant of Malta, who migrated to Lilybaeum (modern Marsala), where he enjoyed great fame.\textsuperscript{23}

In the Verrine orations we hear time and time again of people moving from one Sicilian town to another. Thus people in the Roman province were in the habit of travelling from one part to another without let or hindrance in search of better job opportunities or otherwise. According to J. Buuuttil,

Cicero relates a story of a person who like other Sicilians had a Greek name. Like other Sicilians he could move from one part of the province of Sicily to another. He was, like other Sicilians, under the patronage of powerful individuals in Rome.\textsuperscript{24}

In later times, Malta retained its ties with Sicily. Hence the island formed part of Muslim Sicily, was conquered by the Normans together with Sicily, and in 1398 Malta and Gozo came to form part of the royal domain or regio demanio, thus passing to the direct administration of the crown.\textsuperscript{25}

Furthermore, fear of Muslim invasions often led to mass evacuations from Malta to the detriment of the local defence system. Large scale migration to Sicily was such a great worry to Palermo that, in May 1437, the Maltese residents of Sicily were compelled to return to Malta. In such circumstances, it should come as no surprise that the Maltese found it so natural to settle in the various Sicilian communes and fuse with ease with the inhabitants of mainland Sicily.

For most of the sixteenth century, under the Order’s rule, the Maltese islands lived in constant fear of some sudden descent of the Ottoman fleet, or of its more energetic allies on the Barbary coast. After the Gozo razzia of 1551, a gradual drift to Sicily commenced, abetted by the various bandi of 1552, 1561 and 1565 - all urging the evacuation of gente inhabile. The Order’s sixteenth century historian, Giacomo Bosio, assures that after the Siege of 1565, the population of Malta was reduced to 20,000, if one were to exclude the members of the Order. Fear of a return of a larger Turkish Armada in the following spring compelled the well-off to migrate to Sicily. These were, “led by almost all the leading families of the island, including the noblest and the wealthiest”.\textsuperscript{26} These families, together with the descendants of the Greeks and Rhodiotes who followed the Order to Malta, settled mostly in Syracuse, Modica, Licata and Grgentí.\textsuperscript{27}

After the Siege of 1565 there was such a multitude of Maltese settlers in Licata that these set up a new quarter which came to be known as the Borgo dei Maltesi or Borgo di San Paolo after the newly founded parish of St Paul in that area.\textsuperscript{28} The tightly-knit family bonds which existed between Malta and Licata during the years following the Siege of 1565, may be observed thanks to the existence of two passenger lists, the first dated 1588-89 and the other dated 1595-96, mentioned above.\textsuperscript{29}

Amongst the passengers there were a number of “Maltese” who claimed to be residents of Licata. In November 1588, Joanni Debono and Bernardo Muscato claimed to hail from Licata, Mattruccio Dimegh from Licata arrived on 31 January to meet a relative; and so did Raimundo Muscato of Licata who declared his intention to meet a relative.

In between the two lists of passengers Malta was visited by famine which was followed by plague. During the plague of 1592-1593 the Harbour and island of Malta were effectively sealed off from the outside world contributing to a staggering death rate, especially in the Harbour towns. In his Aggiunta agli avvertimenti sopra la peste, published in 1603, Pietro Parisi points out that 3,000 souls had died of famine in the year preceding the plague. During the two years of the plague a further 3,600, including 40 members of the Order, lost their lives.\textsuperscript{30} The harbour was once again officially opened to traffic in January 1594 but it must have taken some time for news to travel.

One gets the feeling that most passengers in 1595-6 were anxious to find out about the welfare of their relatives. On 11 September, 1595, Petro Sant declared that he visited Malta to take his children abroad; Antonia Falzon of Licata came to meet her daughter; Brandano Cuschierti of Catania to see his son; and Matteo Borg from Licata to meet his relatives.

How is such a behaviour explained? When the Order of St. John settled in Malta, it found a population that considered the Sicilian communes as sister-entities in which it was natural for a Maltese to set up home in any of them if the person was so inclined. Thus Antonio Consiglio alias Fenech, a Maltese resident of Licata, who dictated his will to Notary Antonio Sfragaro on 21 December 1630, declared himself fedelissimo cristiano, cittadino di questa città… della Licata (most faithful
Christian, citizen of this city of Licata). In Coniglio’s will reference is made to:

…[his universal heirs who are still resident in Malta: the descendent of Giovanni Zebbug, Mattia and Giovannina Camilleri daughters of the late Laurencu Camilleri of Casal Nasciar, and Marianu, Simuni and Antonia Fenech alias Caniglio Ziani of Casal Zebbug].

On the other hand in 1600 the 35 year-old Antonio Cavaleri from Licata, informed the Inquisitor of Malta Monsignor Antonio Ortenso (1598-1600), that he had settled in Valletta, married a local girl and served as clerk of the Civil Law Courts (the Magna Curia Castellania) for around five years.

Declarations like those of Cavaleri indicate how at the end of the 16th century, the prevalent attitude of the individual towards the commune was based on a transferable sense of loyalty which facilitated the movement of people to and from Sicily. Malta had its consuls in the principal Sicilian towns, Sicilian businessmen had their representatives in Malta, and artisans worked side by side in all activities.

Nevertheless the strong ties with the Sicilian cities, particularly with Licata and other cities of the Val di Noto, seem to have weakened in the 18th century since only two Maltese men who had migrated to that town - out of a total of 135 - applied for permission to marry Maltese girls between 1750-1798. The number of applicants is particularly low especially if compared to applications by Maltese from Sicily. Malta had its consuls in the principal Sicilian towns, Sicilian businessmen had their representatives in Malta, and artisans worked side by side in all activities.

In the mid-nineteenth century - at a time when Malta as a British colony became a refuge for Italian exiles - the large number of Sicilian exiles hailed mainly from the large cities of Palermo, Catania, Messina, and to a lesser extent Syracuse. An official list of foreign residents in Malta - compiled by the Police Office and published on 17 November 1849 - lists 544 men, 164 women and 183 children mostly Sicilian, and practically all Italian. Yet only two men hailed from Licata. These were Emanuele Ferreri, a tailor aged 33, who came to Malta on 25 September 1843; and Giuseppe Damanti, a cobbler aged 28, who arrived in Malta on 10 March 1849.

Judging by these records one gets the impression that in the mid-nineteenth century ties with nearby Sicily were still close, but that they were stronger with the major cities at the expense of the nearby, yet less important, southern coastal urban centres. Nevertheless other sources portray a rather different picture. The autobiography of Matteo Vecchio Verderame from Licata, a patriot of the Italian Risorgimento, frequently refers to the contacts between Malta and Licata during that turbulent period of the 19th century. Vecchio Verderame explains how as early as 1847 he had established business contacts with Malta. In 1848 Vecchio Verderame travelled to Malta, via Syracuse, to meet some friends. But he also made new contacts among the elite community of Malta especially businessmen, professional men, politicians, and other Sicilian exiles. Some of his new friends were active free-masons and he was soon introduced to the activities of the Lodge of San Giovanni. Vecchio Verderame soon became a fervent free-mason and on obtaining a position high enough to allow him to set up lodges he returned to Sicily accompanied by another free-mason of similar rank. Their mission was to establish new masonic lodges in Sicilian towns and cities, like Licata, where until then masonic lodges did not exist.

One of the citizens of Licata who decided to emigrate to Malta and avoid persecution by the Bourbon police, was the merchant Angelo Corvaia who, however, returned to Licata barely a month later. Vecchio Verderame declared that his ties with the Italian exiles in Malta and the ‘liberals’ of Licata and the neighbouring towns of the Val di Noto were very close. His frequent trips between Malta and Licata were carried out under cover of commercial activity. In reality Vecchio Verderame held numerous meetings and other activities that had nothing to do with business.

In 1856 Vecchio Verderame helped a patriot of the neighbouring town of Canicarti, Gaetano Antinori, to flee the persecutions of the Bourbon regime and to find refuge in Malta. He explains that at the time, Licata had no port and its commercial activities were rather limited. Besides, few sailing boats ventured there and steamers were rarely sighted. It was therefore easy for the Bourbon authorities to inspect all those who arrived or left the small port. How could Antinori elude vigilance? To his dismay Vecchio Verderame waited all through January and up to the first week of February but he could still not find a way to elude the strict Bourbon vigilance. He had exposed himself to danger and the situation was only getting worse until at last he decided to embark the refugee Antinori on a fishing boat to Malta. Vecchio Verderame sought the services of two brothers, the boat owners Angelo and Giuseppe Incorviaza Mazzuone. He assured them that he was ready to pay all necessary expenses promptly and generously. Vecchio Verderame managed to convince the two brothers well enough because a few days later Antinori left for Malta where he stayed for one month before leaving for Alexandria in Egypt.

The Vecchio Verderame description confirms that ties between Malta and Southern Sicily, particularly with the cities of the Val di Noto like Licata, Gela, Scicli, Modica and Ragusa, had remained strong in the 19th century and possibly even later perhaps into the early 20th Century. Surely things changed drastically in the 1920s and 1930s when the Italian
Fascist government declared Malta an "unredeemable land" of the Kingdom of Italy. Assertions of this kind were little appreciated by the British colonial administration under whose domain Malta had been subjected since 1800.

During that period the British Imperial Government did its utmost to interrupt the old ties between Malta and Sicily. But the real break with Italy only came about in the Second World War when Italy formed part of the Axis Powers together with Germany and thus an enemy of the British Empire. The Maltese early disgust for the Italians eventually soured into a pent-up hysterical hate which was further increased by the anti-Italian propaganda campaign waged in the Maltese press and on the radio. The old British dream to alienate the Maltese completely from their Italian neighbours had finally been achieved. A thorough campaign by the British against Malta's pro-Italian sentiments only came to an end after Malta's political independence in 1964. Notwithstanding such a difficult period, the weakened ties with Sicily were still present, at least on a human level in the post-war period, and a number of Maltese still continued to marry Sicilian men or women. Yet several decades had to pass before old ties based on geographical proximity and close resemblances especially on a socio-cultural level, were finally restored.

### Abbreviations used

### Early Modern Currency in Malta

6 dini 
5 grani 
1 cinquina
2 cinquine 
1 carlini (or 10 grani)
2 carlini 
1 tari (or 20 grani)
12 tari 
1 scudo
30 tari 
1 oncia (or 2 ½ scudi)

### Grain Measurements

1 monello 
4 canestrini
1 tumulo 
4 monelli
1 bisaccia 
4 tumoli
1 salma 
4 bisaccie

### Salma of Licata

225 kilogrammes

### Salma of Malta

206 kilogrammes

### Grain Measurements

- 1 tumulo: 4 mondelli (or 40 grani)
- 1 carlini: 2 dini (or 20 grani)
- 1 tari: 3 grani (or 10 grani)
- 1 scudo: 6 grani
- 1 oncia: 1 dini (or 2 ½ scudi)

### Endnotes

3 S. Formosa, "Rabat and its People in the Late Middle Ages", J. Angiospath (ed), St. Paul's Grano, Church and Museum at Rabat, Progress Press, Malta 1990, p. 15.
4 Padre Rispoli was treated by the Order and his services continued to be much appreciated by the Order of St. John. For further information about the role of the British in the family see C. Cassar, Society, Culture and Identity in the Early Modern Malta, Mimes, Malta, 2000, pp.84-91.
5 NLM Lib. no. 1222, pp.191, 195.6.
8 L. Vitic, Licata cit., p. 135.
10 A more extensive discussion on the incomplete material is found in Cassar, Society, cit., p. 75.
13 After the arrival of the Hospitaller Order of St. John there were two Local Councils in Malta, the old Council of Mdina and the one of the new harbour area. The latter had been initially set up in Birgu (Vittoriosa) after the Great Siege of Malta of 1565, but after 1711 it was transferred to the new capital of Valletta.
15 NLM Univ. vol. 3, l. 124; 21 October, 1536.
16 Further details on the trading of food supplies in Malta between 1530-1630 may be found in A. Gentile, "Fonti documentarie della storia dei Malta negli archivi privati", in Archivio Storico di Malta, Rome, vol. v-xiv (1883), pp.1-80. The list of the Sicilian towns includes Malta and Gozo,see p. 78.
17 NLM Univ. vol. 17, f. 140v.
18 Further details on the incomplete material is found in Cassar, S, 1996, pp.29-30. For a detailed analysis of the trading of Sicilian grain see O. Cancila, "Le nostre relazione di Malta sulla fine del Cinquecento", in Archivio Storico di Malta, 1996, pp.20-21.
34 The number of applicants is particularly low especially if compared to the applications made by the Maltese from Pachino (12) and Terranova (93). F. Ciappara, Marriage in Malta, in the late eighteenth century, Associated News, Malta 1998, p. 94.
39 ...
BREAD IN EARLY MODERN MALTA

THE VOICE WITHIN

Food matters. It is the source of energy that sustains our body. Food is more than just consumption; it is a fascination that grappled the attention of several individuals through time.

NOEL BUTTIGIEG

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It has played a part in religion, defining one creed from another by means of dietary taboos; in science, the cook laid the foundations of early chemistry; in technology, the windmill employed for milling grain became an early symbol of industrialization; in medicine, until the eighteenth century based largely on dietary principles; in class distinctions, where a person’s quality and status was judged by the food on his table or the size of his waist.

It would be almost impossible today for anyone to escape the influence of nutritional science. The media today bombards us with dietary guidelines, with detailed information promulgated on every item of packaged food. It would probably come as a surprise, though, to learn that through history humans were equally concerned with eating right even if their daily consumption was made mainly, if not solely, of bread.

**The Context**

Probably, one of the best reflections on the significance of bread in the history of mankind comes down to us through the work of one of the earliest of modern nutritionists, the Frenchman Antoine-Augustin Parmentier. In his *Expériences et reflexions sur le blé et les farines*, the army apothecary (1736-1812) wrote:

“Bread is a generous gift of nature that can be replaced by no other. When we fall sick, our appetite for bread deserts us last of all; and the moment we recover the appetite we have shown a symptom of recovery. Bread is suitable for every time of the day, every age of life, and every temperament. It improves other foods, is the father of good and bad digestion. Eaten with meat or other foods, it loses none of its delight. It is so perfectly adapted to men that we turn our hearts to it almost as soon as we are born and never tire of it to the hour of our death.”

Parmentier’s emphasis on bread as a staple of human nourishment was echoed by Maltese scientist, Sir Temi Zammit, in 1902. In one of the earliest, if not the only published scientific treatise on bread, Zammit admitted that:

“There is nothing else that is eaten more than bread…it’s the first need for human beings and I don’t know what we would have done without it.”

These well informed testimonial were just reinstating the important history of bread and, indirectly, its importance in cultural identity.

Similar to several other cultures, bread plays a fundamental role in Maltese ethnic consciousness and forms an integral part of the Maltese cultural tradition. Despite the modern changing eating habits and a drop in the local per capita consumption of bread, the Maltese are traditionally known to be mainly ‘bread eaters’ – not much different in this sense from the people of Paris who are labelled by the food historian S. L Kaplan as ‘panivours’.

Elsewhere in the western world, and particularly in Mediterranean Southern Europe, the Maltese lived a frugal life, the consequence of habitual rationing that by time became both voluntary and necessary. It was in essence a forced choice, and this compelled them to be mass consumers of bread and sundry grain products. Their body derived most of its calories from this staple food. Nevertheless, it would be wrong to assume that wheat, or at least other grains like barley or corn, were always and everywhere in abundance. Thus despite the very central position of bread in the lives of our ancestors its supply was a perennial preoccupation.

In the case of Malta, these challenges were magnified for several obvious reasons. The scarce natural resources and the eventual emphasis on cotton as a cash crop marginalized the island’s ability of provisioning itself. Consequently, provisioning depended exclusively on imports.
When the source experienced scarcity, the islanders faced the imminent danger of hunger. The reasons for food shortages in general, and bread in particular, were various and ranged from recurrent crop failures, and insufficiency, which often gave rise to typical pathologies of malnutrition, high death rates, malaria, plague and other chronic diseases. Bread shortages often led to a precarious and fragile equilibrium since food consumption often fell below nutritional requirements. Although not unique within this framework, Maltese politics and economics were essentially dictated by the need to procure enough grain to sustain the Maltese population. As bread emerges as the basic food nourishing Maltese history, it also became an important cultural symbol of pre-industrial Malta.

Several scholarly works have identified the element of food symbolism in different societies and cultures. Research based on pre-industrial societies is of a particular interest as the people have fewer objects to get symbolic about. Unlike more complex societies, the element of alienation is considerably lower. Consequently, the association of man and the few products of his own labour become strongly embedded within the symbolic system of the society. In pre-industrial societies, the relation between man and his work, especially manual labour, used to generate special bonds, particularly those of a psychological nature. Within this context, bread is shrouded in a symbolic system and its importance goes beyond the alimentary and nutritional values. This significance varies among societies and cultures for a myriad of reasons. In the local case study, bread emerges as a symbol reaching out into economic and ritual experiences. Its symbolism becomes a process highlighting responsibility and control at both human and spiritual levels. Bread serves as a modicum to express several emotions and feelings.

For the local populace, these reflections state the obvious. Much of the relationship between early modern Maltese society and bread is strongly pragmatic. The Maltese want to eat their bread, they don’t want to waste any of it, they are anxious on acquiring their supply, they organize a good part of their day around getting it and making it ready for eating. They are also very interested in creating strong intellectual and emotional bonds with bread. In fact, they talk a lot about their bread, as remarked by a nineteenth century Arab visitor. Within this framework, the Maltese have developed an elaborate set of symbolic concepts revolving around bread – symbols of human activities and relationships.

**Holy Bread**

In early modern Malta, religion dominated and regulated people's lives. Official and popular religion existed side-by-side in a quasi-theocratic island. Social life revolved around church activities and the parish priest and his clergy played an integral part in the life of the urban and rural inhabitants. Christianity and the Christian ethic moulded a way of behaviour which influenced the cultural system and the concept of national identity.

When the secretary of the Papal envoy, Mgr. Visconti, penned his *Relazione di Malta* in 1582, he commented on the generosity of the local inhabitants, “Sono tutti questi popoli devotissimi….e per quanto possano fanno unco prontissime limosine, conforme all’Istituzione de loro antichi…” The fraternal act of giving and sharing food is best epitomised in an important eighteenth century mural found in the refectory of the Bishop’s Curia in Floriana. Formerly known as Casa Manresa, this edifice was originally built as a place of retreat by the Jesuits in 1740. The paintings were made in 1762 by an unknown artist and were restored after the Second World War by the late Maltese painter, Emvin Cremona. The paintings, which adorn the four walls of the refectory, are embellished by images of various foods. In fact, each mural is inspired by a quote from the Bible, the subject depicted transmits both a spiritual and a temporal meaning.

One of the murals adorning this hall represents the arrival of St. Paul in Malta. This marks an important event in the history of the Maltese archipelago, probably one of the most significant emblems of Maltese national identity, already clearly established by the second half of the eighteenth century.

There is written in the Acts of the Apostles that the local populace exhibited great kindness. The bread in a cane basket is the food, according to the artist, the locals had made available to St. Paul and those reaching the safety of the shore. The artist might have loaded this bread with religious symbolism yet its quite intriguing to consider the inclusion of such food even before the rite of the Eucharist and the Christian symbol of bread was ever explained to the locals. The use of artistic hindsight, thus, gives this painting a greater temporal significance within Maltese ethnic consciousness. It
marks one of the most important elements of national identity. The Pauline cult is here fused with the notion of Maltese hospitality. Bread, amid its simplicity, is an act of faith, a reciprocal gift from the locals to St. Paul, the messenger of God.

The act of giving is one of the several symbolic universals already researched in detail by several scholars. The association of bread and religion, and its holy nature pushed humans to translate the supernatural into more temporal meanings. Several festive breads, such as those of St. Nicholas, St. Anthony or St Basle are but few of the occasions which defined Maltese hospitality. Until recently, rituals associated with bread were commonly found among several European Mediterranean countries, such as Sicily, France, Spain and Malta. These include the tracing of the symbol of the cross on each piece of bread before consumption as a sign for Divine prosperity. When a piece of bread was dropped on the ground, this was immediately picked up and kissed. Knives never pierced a loaf of bread but broken into using one’s bare hands. Wasting bread was a taboo, to an extent that even crumbs were saved for later use.

Bread, apart from other foods, played symbolic roles in two particular rites of passage: marriage and death. The marriage ceremony involved a considerable amount of drama with specific roles and protocols. The nature of what happened during this long-standing tradition varied according to the socio-economic background of the spouses. As the church bells toll, the bride and her groom would process in the company of family and friends. Leading the procession were two men who used to have hanging from their shoulder a big qarçilla (a bread ring). These men also carried two crates on top of their heads: one full of sweets and different types of nuts and the other packed with small buns. Sometimes, instead of buns, a qarçilla was prepared, otherwise, a pie or some sort of cake decorated with two pastry figures representing the couple and fertility. Incidentally, the qarçilla was also the name given to a grotesque marriage ceremony practiced during the carnival period that now died out.

Following the marriage ceremony, the betrothed couple proceeded back home. On returning home, the husband and wife were accompanied in a processional manner by members of the family and guests. Friends perched in windows or standing in terraces would toss handfuls of grains and rice, according to the Gozitan Canon Agius de Soldanis, symbols of fertility, luck and perpetual peace. Those invited follow a particular protocol. For instance, on the day of the wedding party, two big loaves of bread, two bottles of wine and ideally a chicken had to be sent to the reception place. These were then prepared and shared among those invited to celebrate with the wedded couple in a dinner followed by dancing.

Grains, raw or cooked, were also present during funerals. Among the observations compiled in a report by the Apostolic Delegate Mons. Pietro Dusina in 1575 one reads about the distribution of la foccia. Made out of cooked grain mixed with dried fruits, almonds and nuts. During the funerary mass, these were placed in the shape of a cross on the floor, any left over placed in buckets on top of the coffin. Bread was also distributed to the poor and all this happened in suffragio del morto.

**Bread and Social Class**

Bread, observed the medic Pietro Parisi in 1592, “is the basis of all nourishing foods, not only for the poor and miserable, but also for the rich and powerful”. At face value, the term bread is here indicative of an egalitarian society where, knight or slave, merchant or craftsman, cleric or witch, all consumed the same type of bread. The situation, however, was quite different.

Malta was no exception to the general understanding related to bread as a denominator of socio-economic distinctions.

Writing about dietary practices during the early modern period, Ken Albala locates bread as the focus around which the most interesting and subtle malleable food prejudices revolve.

Similarly, Piero Camporesi refers to bread as “a dietary metaphor of the two different cultural systems that find their focal point in bread.” The social significance of bread in Malta reinforces an already well-established bi-polar perception of bread symbolism.

Bread was generally categorized into two standards, arranged hierarchically according to colour and texture. Bread made of white flour was considered to be of a fine quality for the higher echelons of society. The poor had to contend with a less expensive product. Brown bread, sometimes even referred to as black bread, had a rough texture. A cursory look into the language employed in local documents immediately emphasise the above reflections. White bread was always referred to as pane, breads of an inferior quality as misturato or in local parlance tal-maḥlut, bread made from a mixture of grains, normally with a concentration of barely.
as a measure of social distinction is found in a letter sent by Emperor Frederick II in reply to Gilibertus Abate, his agent in Malta around 1241. The information listed here tells us that those employed in the defense of Malta were paid in grain and meat, while rations of barely, an inferior product often associated with animal fodder or as a cheap substitute for grain shortages, went to the serfs that toiled in the fields. Writing during the second half of the sixteenth century, Mons. Visconti observed how the majority of the local population lived-off on an inferior type of bread made up of a mixture of grains. A century later, Inquisitor Fabio Chigi (1634-1639) writes about the country people as mass consumers of barely bread. During the year 1747 emergency measures were put in place to minimize the effect of grain shortage in Malta. The report proposing a strategy to alleviate hunger remarks how the country folk were used to eating bread of the mała type rather than bread made out of white unadulterated flour. Therefore, the Grandmaster mandated the preparation of white bread only for those civil people who normally consumed bread of a fine quality. Three types of bread were distributed among those receiving medical treatment within the hospital of the Knights of St. John: bread made out of white flour for the knights and the nobility, bread of a lower quality distributed to the manual labourers and the poor and a type of bread of an inferior quality for the slaves and prison inmates.

The disparate value of grain in the local market further influenced the local grading of bread where quality became a symbol of social distinction. Obviously, the well-off members of the local elite invested in Sicilian grain because of their purchasing power. On the otherhand, the lower classes had to contend with the local produce, considered to be of an inferior quality. Who knows which quality of bread Quintin d’Autun commented on in his Description of Malta? Or is it just the cumin spread over the bread’s crust, which gave it a very delicious taste?

The terms employed here send derogatory messages when read in documents. During depositions recorded by the scriveners of the Holy Roman Inquisition or the Magna Curia Castellania (Civil Courts of Justice) it is quite clear that for the lower classes they always refer to their staple food as pane [bread] without ever specifying its grade or quality. Consequently, such labelling was probably defined as a status marker by the higher echelons of society rather than by those whose close encounter with hunger was omnipresent and thus any grade or type of bread was more than welcome. As a daily basic need for everyone, it became necessary to label this food unlike other foods which were clearly understood to be economically out of reach for the lower classes. In other words, it became also important to identify the noble from the rest especially in those environments where social differences could be regularly enforced.

Another preconception within Europe and the Mediterranean region reinforced social distinction based on popular medical arguments and published works of dietary authors. In some cases, these chose to wilfully distort the realities low class people experienced by evoking images of happiness and satisfaction living off a frugal diet mainly made up of brown bread. This type of bread was seen appropriate for the lower classes, as their toil generated the necessary physical activity required to assist the body to digest this type of food. Some dietary authors even singled out food appropriate only for particular professions. For example, salted fish and dried beef and ship biscuit rendered sailors’ bodies firmer. Of course, these types of imperishable foods were nothing but what was available not out of choice but pure necessity.

From a different perspective, the nobility could never consume such breads as their stomachs were not used to digest breads of an inferior quality. This perception went hand in glove with a rather paternalistic cultural understanding that lower class people would feel sick if they had to consume bread of a fine quality. Similar to the idea that meat was the most important element of human diet as held by many early modern European thinkers; views about the adequacy of bread diets were practiced by the rich and held as ideals by the poor. This general perception was aptly defined by Goody as ‘civilization of the stomach’. During the early modern period, food could easily reveal one’s diet and subsequently their social status. Especially in the case of bread, it was irrespective whether this was consumed privately [in the fields or in home] or publicly [in taverns or at the door step]. Although for several families the preparation of bread was still happening within the domestic sphere, the baking of bread still had to happen using the services of the village baker. In a society where private lives are still everyone’s business, bread was a social stamp that spared no individuals.
Bread and the Maltese Idiom

Social historians of language often question which source helps decipher what the ordinary folk spoke about when the majority were unable to read or write. The works of Le Roy Ladurie in Montaillou, Carlo Ginzburg in The Cheese and the Worms or Bread of Dreams by Piero Camporesi are indicative of the importance of the Inquisition and civil courts records. Folklorists and anthropologists have studied riddles, jokes, legends and popular songs among others. The difference in the nature of these sources lies in the fact that while the former often reflects the perception of an individual in a court room, the latter is more reflective of a collective group. Undoubtedly, proverbs fall into this category.21

The social history of language, however, is only a relative new area of study. Scholarly works like those of Natalie Zemon Davies, Peter Burke, Roy Porter and Massimo Montanari show that social historians are better equipped to seek the origins of proverbs and their consequences. What then do ‘bread’ proverbs tell us about the attitudes and values of those who used them?

When included in Maltese idiomatic expressions, bread becomes an expression in metaphorical terms. The inferences made through bread generate a number of emotional parallels.

The transaction, in other words the idiom, is sandwiched between the transmitter and the receiver. Here a number of socio-cultural norms are given a new understanding which is not easily deciphered by the outsider. The edible, that is bread, is given a non-edible understanding which could imply several psycho-emotional meanings such as frustration, recognition, honour, shame and degradation. In general, these idioms evaluate human behaviour against the ability of those same humans in expressing responsibility and control over bread on both a human and spiritual level.

Let us mention some local idoms including within them a direct reference to the word ħobż (bread) or any of its variations. The inquisitive type would ask x’ħobż jiekol dan? (lit. what type of bread does he consume?), if wanting to know about the socio, economic, or political standing of a person. If interested in employing the services of an individual, the last thing the inquirer would want to hear is dak ma jiswiex il-ħobż li jiekol (lit. he is not worth the bread he eats) or mhux ħobż ghal snienu (lit. this bread is no good for his teeth). If a person could live up to an expectation the Maltese say jikolha mal-ħobż (lit. he eats it with bread). Among the idioms related to employment and profit or loss one finds ħel ħobż (lit. he lost his bread), ħandu ħobż maħbut (lit. his bread is baked), fih biċċa ħobż (lit. someone who could provide bread) or conversely, ma fih ħobż (lit. someone who could not provide bread). For someone who is in dire need of something the locals say jeħtieqha bhall-ħobż (lit. he needs it as much as he needs bread) but if that aim is still out of reach they say fadilu x’jiekol ħobż u ġbol (lit. he still needs to eat a loadsome of bread and cheese). ħa ħobż minn ġal ħaddieħor (lit. he took the bread from someone else’s mouth) is uttered when someone is seen to have performed a task instead of the person assigned to do so.22

The above are a series of mental representations which revolve around important cultural imprints within the Mediterranean littoral. There is no such word as ‘breadwinner’ within the Maltese language. The idioms above are an immediate substitute. These popular expressions can only be understood if they are contextualized within the same cultural environment of their authors.

Proverbs were not simply an exercise in rhetoric. Gifted proverb speakers are not measured against their ability of coming up with new expressions, but those who aptly use the right formula in the appropriate situation. At face value, the proverbs we are dealing with have a common theme – one’s ability to earn a living. Looking deeper into the context, however, one finds several other messages, such as, gender roles.

From a grammatical perspective, the term bread, ħobż, is always in the plural. In the Maltese language this has an immediate male connotation which enhances the significance that such sayings are mainly associated with men. The term bread here is also identifying the final product ignoring the whole bread-making process, traditionally a female domain.

Specific events in early modern Malta emphasize long term socio-economic transformations. The economic challenges of the late eighteenth century Malta and the growing involvement of women in the labour market seem to have initiated a steady abandonment of domestic bread production. The gradual demise of such home processing activity was more typical within the harbour littoral rather than its rural counterparts. While several rural inhabitants could have still cultivated their own grain for a good part of the year, the urban dwellers’ total disassociation with grain production made it easier to get used to the idea of buying ready made bread. Women could have wondered why...
they should bother getting involved in a process requiring considerable trouble and time consuming. Furthermore, the cosmopolitan nature of the urban towns bred a society preferring to purchase ready-made bread. Fresh bread reached the shops and markets daily and so the problem of dealing with the grumbling about stale bread was minimised.

As more women became less shameful about buying the baker’s bread, the complimentary tasks of husband and wife in procuring grain and baking bread gradually disappeared. While men and women still needed each other’s support for several other things, males gradually became totally responsible for the acquisition of such a basic life necessity as bread. While the local baker, became more of a professional, the relation between bread and women experiences a transformation - bread entered a man’s world as its availability is entirely made possible using the money earned by the male figure of the family.

Within this context, these proverbs measure man’s ability in meeting some of the expected basic socio-cultural norms such as looking after the family, providing a living, employment, respect business transactions, avoid unethical behaviour. These moral obligations, motivated by cultural norms, revolved around another important social concept – honour.

Idioms are not just static expressions of social relationships or ideas about the meaning of Maltese culture, they are instruments in an ongoing process of social action. Adopting Leach’s argument about totemism, the pragmatic and the symbolic overlap especially when the pragmatic impact the very existence of men and women. This reality turns the concrete object, in this case bread, into an abstract complex of ideas related to basic social and personal experiences. Bread related Maltese idioms are pregnant with ideas of labour and resources, status and power, honour and shame, success and failure, and are focused and employed to explain in popular terms the basic and personal experiences. Within the local context, bread is used as a symbolic instrument to express ideas of social co-operation and social status through several subtle variations in amount, composition and style of presentation.

Conclusion

Bread brings together people of different countries, languages and cultures. Bread is a reality as much as a myth; it’s a symbol of both temporal existence and afterlife, it’s a symbol of peace as well as a cause for war; it’s the result of sweat and labour and an instrument of political control.

This study attempted to apply anthropological analysis of bread symbolism within the historical context of early modern Malta. Granted that meaning is ultimately ‘in the head’, bread made it possible to link head and stomach as compliments of each other. Mary Douglas argues that, “reality might lie in the world of ideas but illusion demands that the body be fed.” Within the local context, Margret Mead’s remark that, “the poor are to live” truly emphasizes the importance of bread to the local inhabitants. That someone would experience hunger for days on end during the course of a year was no anomaly.

Bread has several meaning to the Maltese: religious, social, economical and political. In a ‘totemic’ order, bread’s significant importance in the daily life of the early modern Maltese community allocated this foodstuff as the ‘head’ of all foods available. This pervasive experience would mould a symbolic understanding which symmetrically measures humans and their ability to at least meet the basic norms of survival in a pre-industrial society.

Although such social values are less clearly reflected in attitudes towards bread today, the idealized Mediterranean dietary regime is no less complicated than the early modern perceptions. Nowadays, brown bread enjoys a positive value, itself being healthy and close to nature. In fact, anything associated with rustic culinary tradition seem to be the modern trend, a justification to pursue individuality and ethnic consciousness. W

References

2. T. Zammatar, ‘Chelentum fak il l’hob’’ in Maghjula u Ze’umes, 21, (Malta, 1922), p.43.
6. NLM Libr. Ms. XXIII, p.210. The inhabitants are very devout, ... and whenever they can they are always prepared to hand out alms, according to their old customs.
14. NLM Libr. Ms. 23, f.268, see also, Gambin & Buttigieg, Kahhanar taz-Zmien f’Malta, pp.115-116.
15. NLM Libr Ms. 1220, O.28, 295.
23. 260
Sicily’s ties with the sea are long standing: oyster shells and limpets, fish bones and fossilized remains of meals from Mesolithic times have been unearthed from the Uzzo cave which is now part of the Zingaro Natural Reserve near Castellammare del Golfo.

The wide array of seafood has, for a long time, represented livelihood for the poor who, as early as Prehistoric times, scoured the sea-shore in search of tellinas, limpets, crabs, urchins and the like. Most fishing techniques which are currently in use are very old. The fishermen from Marsala lower a bundle of reeds in the waters of the Stagnone to attract the fish by means of the shade similarly to what took place in the Mediterranean since Egypt’s pharaohs.

In antiquity Polybius and Oppian thoroughly described the fishing of the swordfish in the Strait of Messina and tuna fishing in Trapani, stating that it took place in boats which were built in the image and likeness of a swordfish. Fishermen could hence deceive the fish and approach them without any difficulty. Centuries later Prince Don John of Austria who travelled to Messina before the battle of Lepanto (1571) spent long days watching the fishing of the swordfish and wanted to be taught to throw the lance. Until the 18th century observing the fishing represented a means of entertainment for Messina’s noble families. In 1773 Patrick Brydone considered it a kind of whale fishing on a smaller scale and in his Tour through Sicily and Malta he describes how the fishermen of Messina whispered rhymes in Greek to attract the swordfish to their boats: the fish would listen in awe to that unusual language and would be subdued, however, it was believed that should they hear barely one word in Italian, they would disappear forever.

In one of his idylls, Theocritus compares the restlessness of a lover’s soul to that of the sea as observed by the tuna-watcher (tunnoskòpos). Red tuna (Thunnus thynnus) was once very abundant in the Mediterranean. Theresa Maggio dedicated
her book *Mattanza – Love and death in the sea of Sicily* – (2000 Perseus USA), to the Northern Bluefin Tuna and compared it to the buffalo of the great American prairies for its importance in providing the main source of protein to local inhabitants. The qualities of the Sicilian tuna were renowned in antiquity. Archestratus of Gela wrote that the coast of Tindari nurtured the best tuna, and the famous *Crater of the Tuna Vendor* which was found in Lipari and is now exhibited in the Mandralisca Museum of Cefalù, dates back to the 4th Century B.C. Depending on the period in which they were manufactured, vases of this kind show either a red figure on a black background or else a black figure on a red background. The best examples were imported directly from Attica although many were produced locally in the colonies of the Magna Graecia. The Lipari vase represents a customer who, coin in hand, looks puzzled by the price he has been asked to pay and is waiting for the old fishmonger who is holding a big knife, ready to slice the tuna on a three-foot stump (*chianza*). A very similar scene may be observed in Sicilian markets when fresh tuna is on sale. The salesman is very aptly described including wrinkles and navel; these lively sketches capturing moments from daily life help us understand that the early Greeks were people who, like us, ate and aged and worried about the increasing cost of life.

Tuna fishing in Sicilian waters has been taking place incessantly for at least 12,000 years: a charcoal drawing dating back to Paleolithic times (10,000 years B.C.) discovered in the Genovese’s Cave in the island of Levanzo, represents, in fact, a tuna. Strabo (III, 2-7) defines the tuna the “pig of the sea”: up until very recent times nothing was disposed of, and the city of Trapani and the Egadi Islands are still specialized in tuna based products and recipes: the same ingredients used for meat balls are blended with finely cut tuna in the preparation of delicious fish balls.

In antiquity, the fish industry was highly developed, and a sauce called *garum* was the object of trade in all the Mediterranean. *Garum*, which was produced by allowing fish to marinate under the sun in large open air vats, was a favourite among Greeks, Phoenicians and Romans who were particularly careful in manufacturing the product in a place where the winds would not carry into the city the bad odours emitted during the process. Nowadays most of us would be skeptical about the results of such a process, however it might as well be our limitation since a very similar fish sauce called *ruek-nam* does exist and is a favourite in South-east Asia, and it is recommended as a substitute to *garum* to those who would like to try old recipes. *Garum* used to be eaten as a condiment, or mixed either with wine, or with oil, vinegar or water, and one could distinguish the *flos* (‘flower’) from the *liquamen*, a term used to indicate a brine of inferior quality. The residue mush, of an even inferior quality, was called *alex*.

The ancient factories for fish processing (*turícheia*, *cetariae*) were not only producing *garum*, but were also manufacturing salted fish (*úríchos*). Salt pans were often found close by, together with the furnaces where amphorae were produced to contain the finished product. Tuna used to be distinguished by its level of salting, its method of presentation and its use, which are all features commonly identifiable in today’s classifications. Extensive ‘industrial’ areas of this type are still accessible in the archaeological area of Barcino, as Barcelona was known in Roman times, beneath the modern city, and in Catalonia there are also restaurants which, in their quest to reproduce long-lost flavours, include *garum* in their menu. Other large ‘industrial’ areas of Roman times existed in many other places of the Mediterranean as well as along the Atlantic coast of Portugal and Africa. *Garum* vats were unearthed in a number of areas in Sicily, amongst which the islet of Isola delle Femmine near Palermo. In many cases as, for example, in Vendicari and in San Vito Lo Capo, they are adjacent to the old *tonnare* (tuna fishing farms), which undoubtedly shows that fish products have changed, but the ‘industrial’ zone has remained in the same place for at least two thousand years.

The sea is the source of another important product: salt, a precious element in the history of mankind. It is used in the preservation of food, and the word salary sheds evidence on its importance: Roman soldiers received a wage which partially consisted in salt (Latin *salarium*, Italian *salario*). Homer had even defined salt as “divine” (*hulos theio*, *Iliad*, IX, 214). It is probable that the Sicilians’ passion for anchovies, and salted fish in general, owes its origin to the island’s ancient ties with *garum* and similar kinds of foods. A Roman fish factory existed in Cetara, *(from Latin *cetaria*, ‘fishpond’ or ‘tuna fish farm’)*, a town on the Amalfi coast where one can still find the production of *colatura di alici*, that is the dripping of salted anchovies. The amber juice is produced by pressing preserved salted anchovies and it is thought to be the direct descendant
of garum. Legend has it that, in bygone times, the barrel in which the fishermen preserved the salted anchovies had accidentally leaked this uniquely flavoured juice. The Romans were also renowned for their fish hatcheries, the piscinae. The fish pools became a must for the most important families, some of which dedicated themselves totally to the farming of a certain fish, taking on their name: Sergio Orata, Licinio Murena, and so forth (orata and murena are kinds of fish in Italian).

From old recipe books, we know with certainty that the ancient Romans were avid consumers of fish from which they prepared sausages, omelettes and fish balls. In those days the Mediterranean was surely a very abundant sea and this may be observed through many of the magnificent mosaics of the Bardo Museum in Tunis and of the Villa del Casale in Piazza Armerina in Sicily, where fishermen were portrayed holding nets overflowing with fish. The artists reproduced many different species of fish with such accuracy that Professor Silvano Riggio from the University of Palermo has used these ancient masterpieces as visual support to his lectures on marine biology. The situation must have been unaltered in 1872 when Pietro Doderlein, founder of Mediterranean ichthyology, wrote his treatise The Fish of the Sicilian Seas, in which he gives an accurate description of an exceptionally abundant and varied fauna. Due to the impoverishment of the marine fauna and the unfair competition from large fishing boats, small vessel fishing is in decline. In his Laws, Plato had already warned about the dangers of fishing with the cyclamen (probably similar to copper sulphate).

Per fare un’isola ci vuole il mare (‘In order to have an island you need the sea’) was the title of an old Italian song. Nevertheless, there are islands like Lampedusa which are intrinsically linked to the sea, and others like Pantelleria which belongs to the land, so much so that there are people living there who have never in their lives been to the sea. Even larger islands like Sardinia and Ireland share the same strange fate, that of a island where farming prevails over fishing. Sicily has two souls, two parallel dimensions which very rarely converge: the agricultural aspect of the island is all-pervading in the endless stretches of the old large land estates (latifundia). On the other hand, a quarter of the Italian national fish catch comes from Sicily which is also the only Italian region surrounded by three seas (Tyrrenian, Ionian and Mediterranean), the same seas which engulf the island’s agricultural lands. Nicolò Agruso, the last of Balestrate’s fish trap manufacturer, weaves the reeds as if to make a basket and away from the beach umbrellas and tourist resorts, the old fishermen repair the nets with the avugghia, or sewing needle, whose shape is identical to the small netting needle which some of the women still use to embroider filet.

In any case, for the Sicilians ‘fish is beautiful’, as Charlie Brown would have said, and dreaming of fish is believed to bring good fortune in Sicily. Language is always an undisputable source of information about the culture of a people and it is remarkable that in the Italian language there is no translation for the adjective ‘fishy’, which has totally negative connotations in English and is used to describe something that smells like a fish (puzza come un pesce).
Research & Innovation

By David Pace & Jesmond Atkins
To produce a new brand of Maltese cheeselet and cheese from sheep milk.

Introduction
The investment in a new laboratory, the introduction of Food Science as a compulsory subject in the Food Preparation Syllabus and the focus on a final research project by the 4th year Hospitality Management and Hospitality Operations students all form part of the systematic approach ITS is adopting to implement the Government's educational remit emphasising research, creativity and innovation.

Method
Five litres of sheep milk were poured into a large stainless steel pot and heated to body temperature. The milk was mixed continuously until the temperature reached 37°C. 6g of thyme and 4g of chillies were added, and the mixture was mixed again. Next, 3g of Rennet were added. After 40 seconds the milk started to curdle. Half the curd was scooped into moulds to

Materials
5 litres sheep milk, 3g of rennet (CHY-MAX™ Standard NB – Fermentation Produced Chymosin Powder), 6g sprigs of thyme, 4g chillies.

The milk starts to curdle. This happens because a milk protein called casein starts to clump

Thyme and chillies were added to the mixture to create a cheeselet with a new flavour

It is important that this step is finished quickly because the curd starts to coagulate quickly

Lecturer chef Mr. Jesmond Atkins stirring the sheep milk, thyme and chillie mixture. To start making cheeselets, the temperature had to reach a body temperature of 37°C.

The first project to focus on research and innovation with the ITS, the brainchild of Mr. Jesmond Atkins, Mr. Joseph Bonello and Mr. David Pace, involves the production of new Dairy Products.

The Maltese cheeselet has occupied the distinction of being the only Maltese cheese for a long time. Although there have been some attempts to produce new cheeselets with traditional additives including herbs and spices, these have been the province of cottage industries and there has never been an attempt to follow up this research using the correct scientific procedures within a laboratory context.

Being the only Educational Institution dedicated to the culinary arts in Malta, it is fitting that scientific research regarding local dairy products should start here and the production of cheeselets from goat or sheep’s milk was deemed to provide a perfect starting point.

Lecturer chef Mr. Jesmond Atkins stirring the sheep milk, thyme and chillie mixture. To start making cheeselets, the temperature had to reach a body temperature of 37°C.
make 11 flavoured cheeselets, whilst the other half was poured in a chinou, filtered, drained and placed in ice-cold water at 4°C. The chilled curd was placed in a mould and left to drain further at room temperature. Once drained, it was dusted with salt and stored to dry.

**Data**

Five litres of milk produced 0.22kg of Cheeselets and 0.915Kg of Cheese.

**Results**

The general appearance of the cheeselets was white and moist. The texture was creamy which hardened with time and the smell was slightly sour.

**Discussion/Analysis**

Basic sensory analysis of the cheeselets on ten individuals revealed a smooth taste of thyme with a general piquant aftertaste of chillies. 70% of the subjects described the consistency as chewy and 100% reported the burning sensation of chillies as an aftertaste.

The main precaution was sterilisation. So all the equipment including metal ladles, spoons, saucepans and moulds were sterilized in boiling water; and the fresh herbs and chillies were thoroughly washed.

**Conclusion**

The reaction of all those who tasted the cheeselet samples was that the product was a high-quality one with a unique taste not found in any of the commercially available brands, most of which are actually made of cow milk and so are not strictly Maltese cheeselets. So, it can be concluded that the Institute of Tourism Studies first attempt in producing new cheese products was a success.
Introduction
The idea behind the first part of this experiment was to emulate the way our forefathers used to make traditional ċkerkota from sea-water using the original recipe. The second part of the experiment involved the production of new flavoured ricotta made from a mixture of whey taken from the ċkerkota mixed with the thyme and chilli flavoured whey obtained in experiment 1.

Method(1) - ċkerkota
We made the sea-water surrogate by dissolving 37g of sea-salt in 1000ml of water and used 750ml as stipulated by the traditional recipe. We brought this volume to boil in a large deep pan and 6 litres of sheep milk were added. The mixture was stirred continuously for 25 minutes until it started to boil when the heat was turned low. At this point the mixture started curdling, so it had to be scooped and drained through a conical chinou. The drained curd was called ċkerkota by traditional Maltese peasants and is the first byproduct of the process. It was placed in a large porous mould for continuous drainage and started to set.

Method(2) – Ricotta
The next step involved the addition of the herb flavoured whey from the first experiment to the whey collected from the previous step that produced the ċkerkota. The mixture was stirred continuously for 25 minutes until it started to boil when the heat was turned low. At this point the mixture started curdling and so had to be scooped and drained through a conical chinou. The drained curd is called ricotta and resembles quite closely the Sicilian ricotta, which is the second byproduct of the process. It was placed in a large porous mould for continuous drainage and started to set.
The first step produced 1.034 kg. of *irkotta* from 6 litres of sheep milk.

The second step produced 0.7 kg. of flavoured *ricotta* from 2.6 litres of *irkotta* whey and 2.3 litres of flavoured cheeselet whey from experiment 1.

So 9.9 litres of sheep milk produce a total of 1.734 kg. of *irkotta* + *ricotta*.

Data

The general appearance of the *irkotta* was white, moist and the texture very firm with a slightly sour smell.

The general appearance of the *ricotta* was also white, moist and the texture very firm with a slightly sour smell intermingled with a slightly piquant smell.

Discussion/Analysis

There was a general consensus between seven tasters that the *irkotta* was of a superior quality to the commercially available product.

A basic precaution was taken to make sure that all the equipment was sterile. This included boiling all metal ladles, spoons, saucepans and moulds.

Results

The process involves draining and scooping as in normal *irkotta* production and letting it set.

Conclusion

Once again, it can be concluded that the Institute of Tourism Studies’ first attempt in experimenting with new cheese products was a success. This augers well for the future as plans for the production of more varied cheeselets, cheeses and *irkottas* and *ricottas* are being drawn up. It will be suggested that such experiments be made part of a number of ITS syllabi to actively include research and innovation as part of the Institute’s curricula.
Dining out can be defined as the study of the consumption of food outside the home. Intense research on this area has been carried out in England in the 1990’s. Locally, the dining out philosophy (or want) has increased and has become a means of escape for a lot of individuals seeking entertainment, knowledge in food and wine, as well as a means to express a status symbol. This, however, does not mean that the number of individuals dining out has increased.

Internationally, the dining out concept goes through various trends, usually influenced by the national or international economic situation. For instance, in the UK the recession and higher prices caused by rocketing overheads have both contributed to a second successive year of declining leisure spending. Despite this, eating out and drinking in pubs and bars - which together account for 70% of total leisure spending - have been experiencing contrasting fortunes during the past five years. Eating out (+16.6% by value) has seen growth (albeit with a greater focus on value since the recession began) whereas pub/ bar drinking (-2.8%) is on the wane as the sector reels from the ‘double-whammy’ of the smoking ban and competition from cut-price supermarket alcohol. (Leisure Industry Overview - UK - December 2009)

Therefore, in order to strategically analyze a market which has been drastically influenced by the global financial crisis, we need to carefully identify what customers really look for and expect from such a sensitive industry. The answer might lie in the theory of the ‘Meal Experience’ which may be defined as a series of events – both tangible and intangible – that a customer experiences when eating out. (Davis, Lockwood, Stone 2007) Social and business factors, convenience and time, atmosphere and service, price, and the menu, are all contributors to the fulfillment of this theory.

It is generally held that the ‘product’ of a food service outlet is a “meal experience” consisting (like other hospitality ‘products’) of an amalgam of tangible and intangible components … . Authors have identified three broad categories of factors that make up the meal experience: those concerned with customer traits and preferences, those which are directly important in terms of managing a food service outlet and those which seem intuitively to be attributes or benefits of eating outside home. (Hopkinson (1996: 15) cited in Wood 2003)

These factors, consciously, or subconsciously, are always sought after by customers and influence their choice and expectations.

In an era where a lot of importance is being injected in the décor and the general atmosphere of restaurants, it seems that a lot of entrepreneurs embarking on a business venture in the food and beverage industry are neglecting other vital factors necessary for the success of their outlet.

Chaudhuri notes this in some of London's best designer restaurants, “It is now more likely that you are eating a dish dreamed up in a corporate kitchen after intense market research. The result of all this focus group activity seems to be that the architecture – the

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mysterious ambience – is more important than the food” (1999:14 - cited in Wood 2003)

It seems rather difficult to specifically define the tangibles and non-tangible factors of this theory. After all, most food and beverage professionals including trainers in hospitality higher vocational institutes believe that ultimately quality in the type of product and service an outlet offers has to be close to impeccable. Such concept is usually attempted by high-class dining venues.

However, dining out in high class establishments doesn’t necessarily mean that a meal experience is going to be an impeccable one. From a psychological point of view, this might be a result of the high expectations such outlets project, or ‘impose’ via their promotional campaigns, décor and atmospheres, on customers choosing to dine in their establishment – a projection which in reality might not be reflected and met via their tangible product and intangible service.

The aspect of quality; another complex concept; can also occur in mediocre (or below average) decorated food outlets that offer high quality products, and middling, straightforward service.

The British Standards definition of quality (BS 4778, 1987) is “the totality of features and characteristics of a product or service that bear on its ability to satisfy a stated or implied need”. These needs are usually translated by customers into a series of expectations of the service or product they will experience.

These are the needs or expectations that customers develop prior to entering a full meal experience. It is the role of the entrepreneur and his employees to fulfill these needs and move parallel to the image his marketing and promotional strategy is projecting. Such achievement is also facilitated in a concept – old yet new for some food and beverage entrepreneurs i.e. training!

“If the restaurant does not meet their expectations, then there is a gap between customers’ expectations and the perceived characteristics of the service or product delivered to them” (Parasuraman, Zeithaml and Berry, 1985 – cited in Davis, et al 2006)

But, does this mean that the meal experience depends entirely on the food on offer, i.e. the tangible aspect, or does this mean that the meal experience can also be attributed to factors such as the perception of value for money?

Customers are aware of the amount they are prepared to spend and relate to differing types of establishments and operations. Value is the personal estimate of a product’s capacity to satisfy a set of goals and also a perception of the balance between worth or cost. (Lillicrap, Cousins – 2006)

While the meal experience has acquired a degree of sterility as a result of standardization of products and services, tangible and non-tangible elements of that meal experience are important: recent research has interestingly pointed to the role of customers in creating their own atmosphere and ambience in the form of interaction with their co-diners (Wood 2003).

Such as it is, available research evidence suggest that while relatively intangible elements of the meal experience (for example, décor, atmosphere and ambience) are important to consumers in selecting where to dine, food type, quality, range and price remain pre-eminent factors in the decision-making process (Wood 2003).

Hence, from a social context, the notion of value for money can also be satisfied via an informal type of service expected for example, in the traditional Maltese fenkata, whereby, besides the tangible element (i.e. the food) the main sociological factor is the aspect of sharing good quality, informal time with friends!

Therefore, we have to realize that complex as it may sound, the meal experience theory can be rather self explanatory. It is an experience whereby customers seek primarily to have their expectations met and possibly exceeded. This does not mean that the public in general, or rather, individuals who are seeking to dine out, need to spend a large sum of money to go through an excellent meal event. The perception that a positive meal experience is only probable in fine dining restaurants and high-class establishments is a misconception which unfortunately supersedes the basic principles of food and beverage service: that of offering good quality safe food with a style of service which reflects the philosophy of the establishment and after all its management and employees. W

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is a company which offers assistance for the improvement of quality, whether as a service or as a product. To support this, the company has opened its own testing and development laboratory. The lab can do all the analysis that is related to food, water (drinking, swimming pool, cooling towers, production plants) and environmental issues (effluents, drains, air etc). In short, a complete package.

The company also uses the laboratory to give hands on training and to develop the skills of the workers in terms of hygiene. Courses are available in food handling, HACCP, cleaning where the course is more focused on the training (hands-on and inter activity) rather then the just lectures. The lab is used to continually monitor the workers.

The Company also offers design of food production areas, HACCP (both implementation and certification), Quality certification, packaging and product development, risk assessments for the hospitality industry. It also offers legal support in cases of litigation.

Finally the company is ISO 9001:2000 registered.
Fast forward to the present and come to Malta, where the history of chocolate in Malta is taking an important turn. The Institute of Tourism Studies has just launched the Chocolate Academy, an initiative that will promote the art of chocolate locally. ITS is an ideal place to have such a centre of learning about chocolate as it has the professional academic staff and the facilities to promote such an art in the country.

“The aims of the Academy are to improve the standards of our patissiers, to generate a passion for chocolate and chocolatiers, and to introduce the skills into the local market, which at the moment is not fully developed,” explained Jesmond Atkins, co-ordinator of the Academy and lecturer at ITS.

The idea for such an Academy came after World Wide Marketing organised a demonstration by Mr Phillipe Vancayseele, technical advisor for Callebaut, a Belgian company part of Barry Callebaut, the world’s leading manufacturer of high-quality cocoa, chocolate and confectionery products. The demonstration, held at ITS in March 2009, was very-well attended and ITS realised that there was a demand for courses in the art of chocolate.

Indeed a year after the event the ITS Chocolate Academy has already launched its first course, called “Starting with Chocolate”. The aim of this course is to offer in-depth knowledge of the art of chocolate-making through both a theoretical and a practical approach. The areas covered include the origins of cocoa, chocolate in all its diversity, preparing chocolate for processing, making hollow figures and pralines, and enrobing and decoration techniques. It is intended for both professionals and students wanting to learn more about the subject.

Does the name Xocoatl ring a bell? What is the nearest English word? If you thought of chocolate, then you are spot on! Xocoatl is the name of the oldest chocolate drink in history, consumed in Honduras, Latin America, thousands of years ago. This could well be the cradle of chocolate.

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“We are planning to have more courses in the future. First of all the number of students per course is very limited and the demand is quite high, so yes we want to do more courses,” added Mr Atkins.

This is further proof, if there was any need of it, that the Maltese love chocolate.

“From the attendance at last year’s demonstration, the interest shown in these courses, as well as the amount of chocolate consumed in Malta, the Maltese definitely love chocolate. The only problem is that it is restricted to certain periods and to certain types of chocolate. The real chocolates, the praline, are only now being manufactured by a few local confectioners.”

The Maltese weather is not very well suited for working with chocolate, but it is not a major barrier.

“You need an air conditioned environment. Chocolate has to be worked at a certain temperature and even maintained at a specific temperature and humidity.”

This was very evident at last year’s demonstration where Mr Vancayseele had to use special techniques to keep the chocolate at the right temperature while working with it.

The video of the presentation is available on DVD from ITS. Please contact ITS on (+356) 2379 3100 or send an email to: help.its@gov.mt

The cocoa tree, also known as Theobroma cacao, thrives in warm and humid regions near the equator. Although its origins have not been conclusively proven, cocoa was probably already of great importance to ancient Latin American civilizations 2000 years before the birth of Christ. Historians have found the oldest cups and plates for eating and drinking cocoa in the small village of Ulúa in Honduras. These utensils were presumably used exclusively for preparing and enjoying Xocoatl, the original cocoa drink. Today, cocoa is cultivated primarily in the tropical rain forests of West Africa, Asia and Latin America, and the major cocoa-producing countries are Ivory Coast, Ghana and Indonesia.

There are three distinct varieties of cocoa trees along with numerous subspecies that have been created through cross-breeding:

- The Criollo tree is a rare variety and produces aromatic and very fine cocoa beans. These trees mainly grow in Latin America and are very vulnerable to meteorological changes and often have low yields.
- The high-yielding Forastero tree, which is grown on almost every cocoa plantation in West Africa, supplies about 70 percent of the world’s cocoa crop.
- The Trinitario tree is a hybrid created by combining the high yield of the Forastero with the delicate flavor of the Criollo beans. The unique, distinctive taste of cocoa beans varies according to the region, the weather, and the soil conditions where they are cultivated.

Beans from different countries are mixed in most chocolate recipes to ensure uniform taste and quality. There is also a pure chocolate called origin chocolate (i.e. unblended chocolate), which is made from cocoa beans that were grown in one particular region. This means every single origin chocolate has a unique, characteristic flavor.
Those who think chocolate is just another culinary sin, well, they cannot be more wrong. Of course, too much chocolate is not good for your health, like every other foodstuff on this planet. But scientific studies have proven the positive effects of responsible consumption of chocolate.

Barry Callebaut lists several reasons why chocolate is good for your health. This is a summary of these properties:

**Source of energy for an active lifestyle**
Because of the high concentration of calories in a relatively small volume and thanks to the positive relationship between sugars and fats, chocolate is an important source of direct energy. Chocolate also compensates very rapidly for the energy that the body expends during heavy physical or mental exertion. That's why chocolate is extremely popular with athletes, students and anyone who wants to restore their energy quickly after strenuous activity. In short, chocolate goes hand in hand with an active lifestyle.

**Polyphenols believed to counteract free radicals**
Cocoa flavanols, the specific group of polyphenols which are abundantly present in the cocoa bean, have been shown to possess several beneficial effects and play an important role in supporting our health and well-being.

**Low levels of cholesterol**
In cocoa and chocolate, we also find a unique saturated fat which, according to recent research, has a neutral effect on the production of bad cholesterol and could possibly promote the creation of good cholesterol. Cocoa and dark chocolate are naturally cholesterol-free, and milk and white chocolate only contain a minimal amount of cholesterol, which comes from the milk used in these products.

**Sugar absorbed slowly by body, resulting in low Glycaemic Index**
Before being turned into chocolate, cocoa beans contain very few natural sugars. The added sugar only causes the blood sugar to rise by a very slight degree, which results in a low Glycaemic Index. Thanks to the unique composition of chocolate, the sugar present is absorbed very slowly by the human body. Chocolate does not harm teeth. Eating chocolate can lead to a feeling of well-being and have a calming effect on one’s state of mind.

**Stimulating effect of theobromine and caffeine**
Cocoa and chocolate also contain minimal levels of theobromine and caffeine. These substances have a stimulating effect on the central nervous system, the heartbeat and the relaxation of the respiratory muscles. Recent medical research indicates that theobromine and caffeine reduce fatigue and improve concentration.

**Essential calcium and proteins for young people**
Children and young adults, for whom proteins and calcium are extremely important, adore milk chocolate and chocolate-flavored drinks. Furthermore, milk and white chocolate are themselves sources of calcium and proteins.

**chocolate is extremely popular with athletes, students and anyone who wants to restore their energy quickly after strenuous activity**
**Good vitamins**
Milk and white chocolate are rich first and foremost in vitamins A and B12, which, among other things, contribute to the growth of healthy teeth and bones, the absorption of calcium and phosphorus, the creation of red blood cells and the growth of muscles and tissues. Cocoa and dark chocolate also contain many B-complex vitamins, needed for releasing energy and creating the body’s building blocks. In addition, dark, milk and white chocolate all contain vitamins D and E.

**Minerals for proper functioning of the body**
As well as being a source of vitamins, chocolate is also a source of those minerals vital to proper body functions. Dark chocolate is particularly rich in magnesium, important for robust brain function. It also contains copper, iron, manganese and zinc for the promotion of cell growth, the repair of tissue and the absorption of nutrients.

**Dietary fiber with cleaning effect on digestive system**
Chocolate also has a beneficial effect on digestion. Cocoa mass contains around 15% of soluble and non-soluble dietary fiber. This fiber improves intestinal movements and keeps the intestinal and stomach walls clean.

Eating chocolate can lead to a feeling of well-being and have a calming effect on one’s state of mind.

**Conclusions**
- Cocoa and chocolate contain valuable nutritional elements and may, with regular and moderate consumption, form part of a healthy and balanced diet.
- Alongside its role as a source of energy and minerals, vitamins, flavanols and other substances, its taste and its fat/carbohydrate ratio means that chocolate has positive effect for the body and mind to such an extent that these effects are among its most significant.
In this work, the second in the series, the eminent Maltese historian and social anthropologist Carmel Cassar has courageously released himself from the strict confines of academic literary convention and joined one of Malta’s contemporary artists, Anthony Calleja, to produce an illustrated account of the powers, movements, religious and other ideas which have contributed over the centuries to the way Mediterranean people cook and eat.
There is a timely preface from Gianni Ferrero of the Slow Food Movement and eleven chapters, of which nine form the body of the work and trace the earliest representations of food in Mesopotamia in 3000 BC, continuing with the people of Ancient Egypt, Romans, Arabs, and the Ottomans and the subtle marks left by Byzantium. The development of the art of cookery in Medieval and Renaissance Europe leads to the exciting arrival of unknown foods from the New World, the emergence of French cuisine and haute cuisine. The last course in this glorious historical journey takes us to the present – with food a commodity, moved round the world to our tables by the global giants of the advanced capitalist system and showing how the age-old interconnectedness between farmers and fishermen, land, sea and people are being eroded.

It must be left to the art critics, rather than a food writer, to comment on Calleja's work, but the written account is colourful enough: a work of extensive research with an impressive bibliography spanning the centuries as well as recipes selected from every period – most of which can be cooked in our kitchens today. It is truly disappointing and astonishing to note that a book of this calibre does not include an index. Cassar, whose interest in the anthropology of food was first expressed in “Fenkata: A Symbol of Maltese Peasant Resistance” (1994) presents several threads for readers to follow. What has not changed in thousands of years, is that poor people all over the world – even when they do not die of famine or chronic malnutrition, have always had to make do with the foods they could grow or otherwise obtain or afford to buy, while wealthy people could, and still do, indulge in unimaginable luxury and more food than they need. Moreover, the affluent were able to develop the techniques and artistry which have given us such elaborate ways of not just eating to live but making food a centre of social life while the poor labourers and slaves - "the people without history" as Eric Wolf described them, brought about the wealth of the West and struggled to produce the food for the tables of the rich. Sometimes – in Roman times for example – the urban lower classes fared even worse than their country counterparts – much in the same way as people today who have left the countryside and ‘settled’ in shanty towns close to big cities like Calcutta or San Paolo. For the Roman rich, as ever, dining was a long drawn-out social activity and during the ‘men only’ symposia philosophical debate would take place over supper.

The wide variety of foods of every kind, from every part of the globe exists because of a succession of transformations, be they of invading forces, religious movements, captured slaves, systems of hierarchy and the adventures of explorers who ventured into strange worlds and found new foods and pungent spices.

What is the Mediterranean diet if it exists at all except in the minds of health spin doctors who have pointed to our wide use of olive oil, to the way we extend a small amount of meat or fish with carbohydrates and an abundance of fresh vegetables and fruit?

That this is largely correct fails to take into account that many Mediterranean people today also eat unhealthy quantities of sugar, animal fats and highly sweetened drinks as well as processed foods of various kind. We frequently hear about “traditional foods” but the sudden appearance of hitherto unheard of bogus “traditional” dishes or drinks (often promoted by tourist authorities) should make us question the use of the word and remember that tradition is “opinion or belief or custom handed down…from ancestors to posterity, especially orally or by practice” (OED).

Traditional foods cannot be invented – they only become so over time if people continue to like them. What is clear in this work is that the way we eat and prepare food in the Mediterranean (perhaps more than in any other part of the world) has come about from the absorption of different foods and ways of cooking but always governed by what Amartya Sen called people’s ‘entitlement’ to food and a sufficient nutritional norm. Yet Cassar reminds us that there was a continuous back and forth movement between the peasants who produced the food and the town cooks who made subtle changes and
embellishments to simple dishes: so that, by the early 19th century these were re-absorbed by the least of the rural poor and it is this constant process of addition here, variation there which we can much later call “traditional”. The late food historian Alan Davidson used to say that if one nation or society adapts an established dish from another, adding an ingredient which was not there before – then, in time, that becomes the tradition of the nation which acquired it.

What must interest food writers and people who cook or who would like to learn to cook, is that much of what we eat today and the way we prepare a meal have remained remarkably much as they were centuries ago – yet no one source can be said to be specifically Arab or Greek or French because on the shores of the Mediterranean customs merged into one another much as religious icons and shrines and sites were imperceptibly moved from one system of belief into another. What we call in Malta a ‘stuffat’ may have come from the French ‘estouffat’ or the Arab Sifat but where did that way of cooking come from? A glance at Sumerian recipes show that 5000 years ago they were making something very similar with kid. The Egyptian Ful Medames has come down over the centuries hardly changed. The Greeks (who like the Romans, favoured fish over meat because of the latter’s close association with ritual sacrifice) taught us how to stuff a mullet, and that firm fish need only be flavoured with good olive oil and mild herbs, leaving stronger flavours to enhance inferior fish. Some contemporary TV cooks and glossy food writers would do well to learn such lessons!

The Greeks left us little in the way of actual recipes but rather a list of ingredients in much the same way as the Sumerians who recorded 800 or more items on 24 brick tablets in Cuneiform characters. The Egyptians left us their culinary knowledge in wall paintings and in their tombs when they buried food with their loved ones to nourish them on their final journey. Byzantine influences are more subtle but Cassar argues that while Byzantine influences are more subtle a number of contemporary Greek dishes might have been inspired by them.

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Not only have some recipes changed hardly at all in hundreds of years but even the terminology remains. The older generation in Malta, for example, still speak of ‘pranzu’ and ‘cena’ derived from Latin terms. Cassar has given us recipes from every period and most of them can be produced in our kitchens today. Take the Roman Columella Salad, for example or the first French attempts with the arrival of potatoes. No account of Roman food would be complete without the numerous contributors to the great work “Apicius in De Re Coquinaria” written needless to say, for the elite classes. Did the Romans absorb the famous Garum (old and dried up fish sauce) from the Greeks? Certainly Apicius’s recipes seems to include garum or liquamen in almost everything. Were these sauces used as preservatives or as natural flavour enhancers, like the modern Thai Fish Sauce? This raises the question of spontaneous inventions in different parts of the world, such that they could not have been acquired by diffusion – just as we find almost identical second funerals in different parts of the world which had no contact whatever with one another.

More literary works follow: the famous and delightful Al Baghdadi (9th century AD) many of whose recipes are easily recognisable in both Middle Eastern and Maltese cooking today (and note that this is where our now abandoned weights and measures – the ratal – come from). On to the great French writers and chefs – Taillevent – followed by Careme, Brillat-Savarin, Escoffier – often seen as having brought the art of cookery to absolute perfection, later turning away – (through Montagne) from over-rich foods and elaborate decoration.

It is not only in the Mediterranean that people, food and cultures have intermingled (think of the Moghul wave into India bringing rice and other foods, techniques and other Persian customs). Perhaps it is in places like the British Isles that things did not change so much – purely because they were, literally, isolated. Thus, what came to us from Andalucia was in turn left by the Moors of Fez and other Moroccan cities. Islam and Christianity absorbed each others ways of cooking (except for pork) and fasting and in the early days of British occupation Malta acquired spices which came to be added to our hitherto traditional recipes in new ways – curry with rabbit or octopus for example.

Cassar’s “Eating through Time” (what a brilliant title!) takes us next to the foods which came to us from the New World after Columbus. Few people stop to think that foods, some of which we now take for granted as typically Mediterranean – tomatoes, pumpkins, squash, peppers, maize – all came from the Americas – any more than we stop to remember that it was the Arabs who brought us oranges and taught us how to irrigate effectively. Potatoes, in particular, aroused great suspicion - some people even reported them to the Inquisition! Here we are given some interesting recipes for the way the French coped with the intriguing potato - in 1795.

To make an end is to make a beginning as Eliot wrote – the end of this culinary tale is a depressing one but already there are new beginnings as the agri-business giants who straddle the globe and control almost all we eat, are faced by...
the Slow Food movement representing not the elite (as it has wrongly been accused of doing) but small food-growers all over the world; they struggle to retain land that they might continue to grow and to distribute the traditional diverse crops of their ancestors and to be justly paid for their labour in a fair-trade system. The debate rages about carbon footprints, the arguments are complex - is the carbon footprint of locally produced vegetables costlier than that of green beans flown across the globe from Kenya as some would have us believe? Is it best for Kenyan farmers to grow French beans for us or to grow food for local consumption?

We are being told that European farmers have given up on fighting for subsidies (the system is, in any case, being reformed); that they have embraced the Free Market and are better off than they were under subsidisation. One Bavarian farmer has given up growing vegetables as his family have done for generations but now grows only parsley and dill, dries them and has them shipped as far away as India and Japan (Newsweek March 24th 2008). One wonders where the people who live in walking distance of his farm now buy their vegetables – green beans from Kenya perhaps? We are told that even the Slow Food movement is finding a niche market for the promotion of regional foods. However, small farms are struggling under Free Trade so it is not, altogether of benefit to small producers even in Europe, and countries such as Mexico have seen their local agricultural economies ruined by Free Trade which imports US rice at a much reduced tariff thus destroying the indigenous rice market.

So, how can we assess the Mediterranean diet today – where Malta is concerned, more than 40 years after independence and with the British influence on our cuisine gradually abating it seems that the foods which we enjoy and are happiest with are those inherited from the Arabs, the Ottomans and the New World – lentils, beans, meatballs, aubergines and peppers, pumpkins and tomatoes. Other favourite foods which the Sicilians claim as having come from them – pasta and the cannoli we all love will almost certainly have come to both countries during the 200 years of Arab domination… We learned how to cook artichokes and many other ways with vegetables from those brilliant cooks, the Ottoman and Arab slaves. Yet the influence of the Greeks and Romans and of Babylon is there too. Despite what has been said about the diets of the poor and the rich some traditional and inexpensive dishes become favourites amongst all classes – in Malta, for example, minestra is universally loved and only snobs regard bigilla as fit only for peasants. It is the same in Middle Eastern countries as Claudia Roden has shown us.

Nothing in this world has ever not been political and the control of our supposedly diminishing food in the early 21st century is one of the great political issues of our times: How will historians of the future judge the culture of food in the Mediterranean in the 21st century? As young people sink their teeth into hamburgers and families put cardboard wrapped supermarket frozen meals into their microwaves because they are “too busy” to cook, they might stop to consider whether this is progress. As Cassar so eloquently shows us there is nothing in the contemporary fast-food eating customs of so many people today that we could teach the Ottomans or the Sumerians or any others of our culinary ancestors. Quite the opposite! This work offers a feast of recipes to keep you happily eating meals devised thousands of years ago: 13th century Andalusian stuffed eggs, a sweet cheesecake from Ancient Rome, even Egyptian bread baked on hot sand, chick pea soup and nightingales’ nests from the Ottomans and much more as you learn about not only the food but of the diverse people who traded and ruled in the Mediterranean.

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