Passig, David & Gerstenhaber, Moshe (2013). A ten-pillar based model for a future pension-savings paradigm: A UK case study. *Journal of Organizational Transformation & Social Change*.

THE FAILURES OF THE CURRENT PENSION-SAVINGS MODEL

We have seen in the previous chapters how the neurophysiology of future-thinking, which I have termed "Forcognito" (forward or foresight cognition), is emerging, and how we can assess it and monitor its development. In what follows, I will illustrate how future-thinking can create new ideas for the solution of long-term problems. As we know, our leaders are scarcely capable of proposing solutions to the problems that concern us in the present, let alone generate ideas that may solve those that have yet to appear in full force. In order to generate solutions for problems that have not yet materialized, they need to develop a prolonged cognitive future-time-span. And yet, for whatever reason, very few of our managers and leaders, regardless of what institution, company, or organization they work in, are capable of this. The result, unfortunately, is a conceptual scheme that barely responds to existing challenges and futily seeks to apply stock solutions to major developing situations that would be predictable through the application of Forcognito.

Leaders have difficulty proposing solutions for long-term problems

There are problems that are bound to send entire cultures on a downward spiral

If the issues at hand were not of such cardinal importance, perhaps we could say that since we cannot predict the problems of the future, we will just wait and see how things evolve. When the day comes, we will gird our loins and find an adequate, even if not perfect, solution for the problems—just as humankind has always done. There are some problems, however, for which if a solution is not found as soon as possible, are likely to send entire cultures on a downward spiral that will be accompanied by great suffering for millions of people.

We must allow a space for Forcognito, in which ideas will be generated that will spare us suffering

At the beginning of the twenty-first century, a small number of issues come under this definition. Some of these, such as climate change, cannot be solved or even greatly influenced by human beings, as they are not solely the result of our actions. But some of them are the exclusive result of our actions and therefore only we can resolve them. I have chosen one such issue to summarize and conclude this book. The goal of this part of the book is to illustrate how a highly self-aware future-thinking mind can clearly foresee an issue that has not entirely surfaced, and to formulate a solution in advance. This section will illustrate how long future-time-span thinking about possible and likely social and economic scenarios can generate foresighted solutions, and thereby prevent future pain and collapse.

I would like to use this example to illustrate for the reader that future-thinking is not beyond reach. All we need is to be alert to the long-term implications of present-day data, and to have faith in the mechanisms in the human brain to generate a future image, even if it is not precise. We must allow a space for Forcognito, in which new ideas will be generated; ideas that will spare us certain suffering in the future.

I sought out an issue that is not presently seen by most as the most pressing problem facing humankind as we approach the middle of the twenty-first century—a problem that is ignored by most of our leaders and institutions, whether deliberately or by accident. I found one problem that stands out above them all, and this is the issue of the pension-savings paradigm. It is an issue that lurks in a dark corner of the daily discourse of developed cultures; and even if at times it does seem to loom ominously, nowhere do we find the person who will declare to his nation and the world, that if we do not rethink this paradigm, it is bound to topple everything good about modern society, at the latest, by the middle of the twenty-first century. There seems to be no one who understands the full severity of the problem; the ideas batted around nowadays are proof of this, as we will see in what follows. Nowhere does there seem to be the perfect alternative model for evading both the existing problems and the problems that have yet to surface. Or at least so I thought.

I have long been aware of the problems inherent in the present pension-savings mechanisms, and I am mindful of their scope. But, like many others, I had not found an alternative model capable of circumventing most of these problems and bringing relief to their ills. And then I was introduced to a man who in fact has created a systematic alternative paradigm for the pension-savings mechanism, a plan that will be capable of resolving most of its present and future problems.

Over the past few years, this person has successfully developed an alternative model for the institutions of pension-savings. I would like to summarize his model and to succinctly lay out its pillars in order both to demonstrate what long-term forward-thinking can generate, and to get the ball rolling in an attempt to develop a consensual and realistic model that may guide human society safely over the potholes of the twenty-first century.

Dr. Moshe Gerstenhaber is, among other things, the founder of a successful franchise organization providing a variety of high-quality print and design services in two-hundred branches throughout the UK. He has served on the boards of directors of prestigious institutions such as Middlesex University in London. In recent years, since his retirement, he has devoted himself to researching the problem of the institution of pension-savings in developed countries, to understanding its components, and to investigating its implications for the future of these countries. Despairing at what he found, he took it upon himself to develop an alternative model that can solve the ills of the existing model and, primarily, to bring some good tidings to those who will be going into retirement starting in the 2050s—those who are in their thirties in the beginning of the second decade of the twenty-first century. He laid out his model in his suggestively titled book: *Have You Ever Seen a Retired Tiger in the Jungle? Eradicating Pensioner Poverty.*[1] I highly recommend reading that book from start to finish. In this section, I present a digest of the main points of Gerstenhaber's model for the reader who is not yet aware of the scale of the issue and its implications for his own future.

The crux of the problem in a single graph

Before I lay out the pillars of the alternative pension-savings paradigm, I would like to illustrate the essence of the problem of the current model in a single graph. I thought that the best illustration of the problem would be a graph that shows the ratio between the age groups in human society over the course of the past millennia and which depicts what has happened to this ratio at the end of the twentieth and beginning of the twenty-first centuries. The graph (Figure 42) provides a stark visualization of how this ratio will change as we approach mid-century, demonstrating how a situation that held true for thousands of years is inversed within just a few decades. Few of our leaders seem to be aware of this

A picture that held true for thousands of years is inversed in just a few decades.

scenario; and what is certain is that they have no idea how to confront its vast implications.

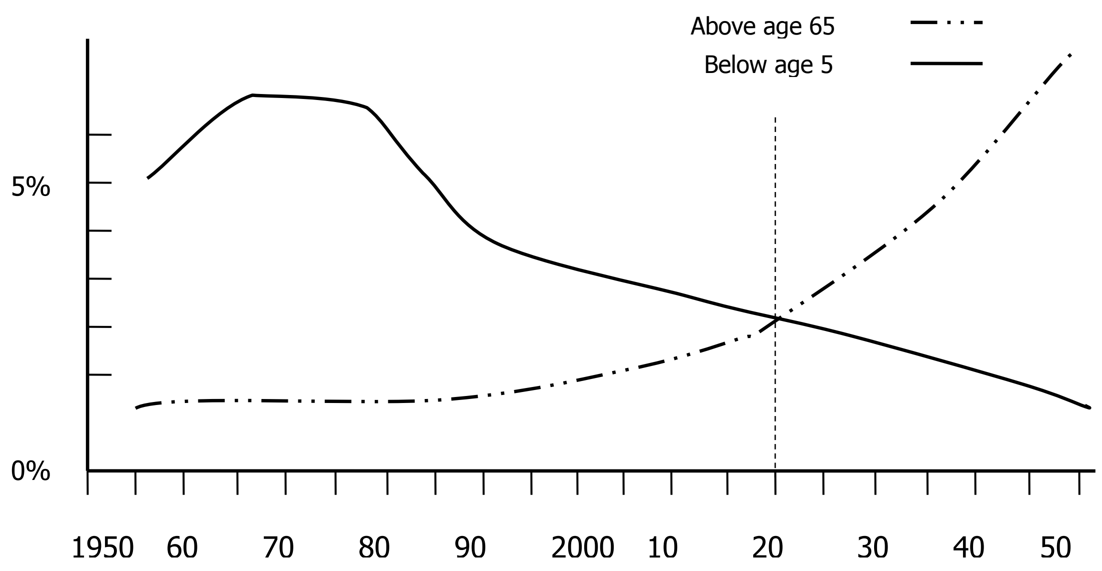

Figure 42. The ratio between age groups in the human population towards 2050

In 2050, 28% of the population in Israel will be over the age of 65.

If demographic mega-trends continue at their present pace, by 2020 the world will pass the tipping point at which the number of people aged sixty-five or older equals the number of children under the age of five. By mid-century, the age-group ratio that typified human society for thousands of years will have inverted. For millennia, the percentage of the population aged sixty-five and older never exceeded three or four percent, while the percentage of children under the age of five numbered between fifteen and twenty percent.[2] The implications of this inversion will rock the foundations of human society's institutions, services, and products. The pension's institution is among those social institutions that operate according to the assumption that, for the foreseeable future, only a small percentage of the population will be at retirement age at any given time.

The ratio between the age-groups that typified human society for thousands of years will have inverted.

When the pension institution was first drawn up in Germany, in 1889, under Bismarck and Kaiser Wilhelm II, followed by other European countries and the United States at the beginning of the twentieth century, some three percent of the female population reached the age of sixty, with three percent of the male population reaching the age of sixty five. Those who passed these ages did not do so by many years. In 2012, as this book is being written, in Israel, for example, as in many developed countries, the percentage of the population aged over sixty-five stands at ten percent. Israelis live an average of eighteen years beyond this age (about fifteen years for men and twenty years for women), while with every decade another three years on average are added to this figure. All of the governmental agencies, including the finance ministry, operate according to the assumption that in 2050, about fourteen percent of the population will be over the age of sixty five. But a more precise examination of the data, based on many studies, including those conducted by various institutes,[3] indicates that this segment of the population may reach twenty-eight percent or more by that year. The situation in many western industrial nations is similar, if not worse.

This trend is amplified when we take into account the annual population growth levels that will characterize the twenty-first century. Many of today's economic elites are of the opinion that the "population explosion" will continue unabated, and that we need to adapt today's financial instruments and social networks to it, with all that it entails. In truth, according to a long line of studies published in recent years,[4] there arises a completely different picture. If decision-makers continue to rely on that widespread conception, it is difficult to describe the crisis that is in store for future markets, followed by institutions like the pension institution. The crisis that countries like Greece, Spain, Ireland, and Italy are experiencing at the beginning of the second decade of the twenty-first century will pale in comparison to what is in store for many of the world's developed countries.

What does this all mean? Trends show that by 2050 the global population will reach a peak of nine to ten billion people before it begins to decline. Long before it reaches its peak, the world's population will age dramatically, spinning the social and economic institutions as we have known them in the twentieth century, into chaos. The following graph (Figure 43) illustrates the decreasing natural population growth rates, following which the human species will once again number between five and six billion people, towards the end of the century. Of this population, thirty to forty

The crisis that countries such as Greece, Spain, Ireland, and Italy are experiencing at the beginning of the second decade of the century will pale in comparison to what is in store for many other countries

percent will be aged sixty five or over. These people will cry out desperately for their monthly allowance from their pension funds, which, emptied of their resources, will not be able to meet the demand.

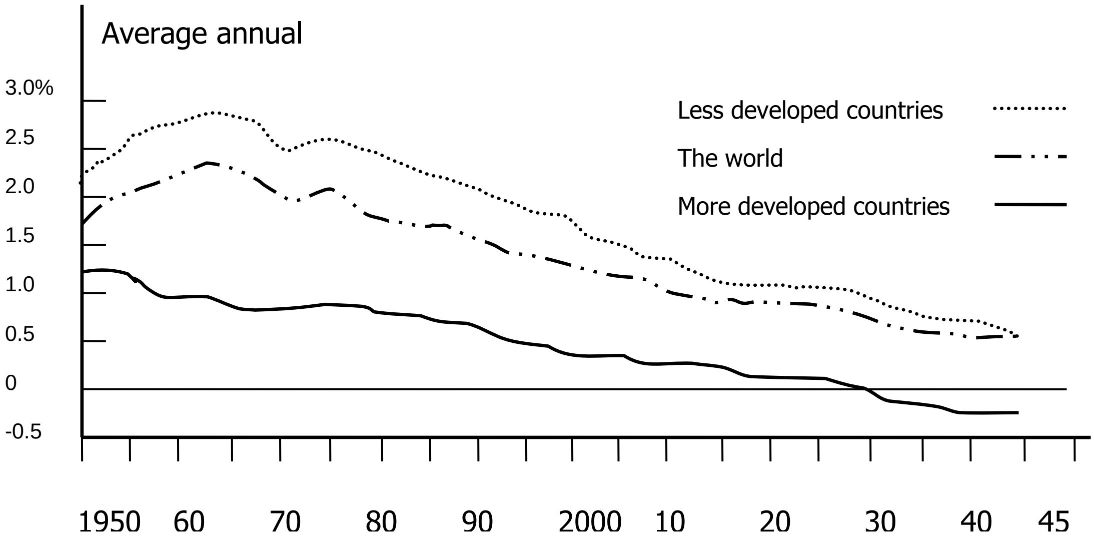

Figure 43. Drop in average natural population growth towards the middle of the 21st century

The global natural population growth rate is on the decline and will become negative in the developed countries in 2030. Statistics show that fertility levels have dropped in the last fifty years by fifty percent. Today, the populations of the fifty-nine countries that make up forty-four percent of the world's population are operating below the fertility levels needed to maintain their current populations. For the sake of illustration, the population of Russia is shrinking, as a result of low fertility rates, by about 750,000 people per year. According to this trend, in 2050, the population of Russia, which today numbers 145 million, will shrink by a third—to only one hundred million people. Additionally, UN statistics predict that in 2050 there will be 248 million fewer children in the world than there are today.

In 2050 there will be 248 million fewer children in the world than there are today.

This trend is being exacerbated by a flawed policy that has taken root in many parts of the world in recent years. For example, for years now, most of the world's leaders have been enforcing a social and economic policy that penalizes childbirth and large families—from China, which has not yet realized it must annul the one-child law, to India, where mothers strangle their children to death immediately after their birth.

Like flogging a dead horse

There is a kind of awakening in many countries regarding the untenability of the current situation, and there are even attempts to find ideas about how to deal with the problem. For many it is starting to become clear that the founding assumptions of the pension institution have changed almost completely. Governments are trying to modify the rights that this institution promises, whether by raising the retirement age or by cutting the benefits of the insured. Even when governments do make such changes, in the face of the powerful opposition of workers' organizations and amidst the angry cries of the insured, they can hardly succeed in changing the grim picture that these trends indicate. There is no need to mention the countries that haven't even managed to raise the retirement age by even a year or two.

Even raising the age of retirement by a few years will have no impact

From the point of view of Forcognito, what is most astounding is that most of those responsible for the issue have no idea what needs to be done in order to systemically treat the problem. They try to make small improvements based on existing assumptions, but, regretfully, all this will help like flogging a dead horse. Here are a few dismal attempts that members of government and legislators in a number of countries have tried, apparently in vain. What is required is an entirely new paradigm, and not small improvements here and there. Following are two particularly bewildering examples. We will begin with an anecdote from Israel, followed by a British one—simply in order to illustrate just how clueless our leaders are about what is truly needed to treat this issue from the foundations upwards.

Israel

In late 2011, the headlines of the news networks in Israel[5] announced a campaign entitled "National Savings for Every Child," which came on the backdrop of a bill that would require the state to aid in establishing a savings plan for all children. According to the initiators of the bill, the goal of the savings plan was to reduce socio-economic gaps. The estimated cost for the state would come to about 650 million shekels a year (no specific cost calculations were appended). According to the "National Savings for Every Child" Bill, initiated by MK Isaac Herzog, parents, with the help of the state, would deposit a sum of money for their children. Upon the birth of every child, the finance ministry would be required to deposit an initial sum in an account that would be opened in the child's name. Over the course of the eighteen or twenty-one subsequent years, a certain percentage (five, ten, or twenty percent) of each family's monthly national child allowance would be deposited by the parents into this account, with the state matching this sum. If the parents make additional deposits above this ceiling, the state will match it progressively. The money in the account will accrue monthly interest and will be released when the child reaches the age of eighteen or twenty-one, according to the parents' choice—to be used for education, purchasing an apartment, or opening a business.

As Welfare Minister, Herzog tried to promote this plan back in 2008, but, after strong opposition from the finance ministry, he decided to undertake legislative action in conjunction with a public campaign. The bill, whose cost is said to come to 650 million Shekels (about 160 million US dollars) per year, passed a preliminary reading in the Knesset and was meant to come up for a first reading at the Knesset plenum the following month, but at the time of the writing of these words, this has yet to happen.

According to a poll conducted as part of the public awareness campaign, in cooperation with the Yedid Association for Community Empowerment, about one quarter (twenty-eight percent) of Israeli parents put away money on a regular basis for their children, and twelve percent do so on occasion. The average amount of savings, among those who put away money regularly for their children, is 355 NIS per month per child. The highest monthly amount is found among the general Jewish population (419 NIS) while the lowest is found among the Arab population (192 NIS).

According to MK Herzog, this campaign is a way of breaking the cycle of inter-generational poverty and giving an equal chance for every citizen of Israel. According to him, "the bill does not aim to damage child allowances"; the small percentage of allowances that will be channeled into the savings plans will change the lives of the coming generations, and help reduce socio-economic gaps and inter-generational poverty. Dr. Roby Nathanson, who was instrumental in formulating the program, added that "poverty that is passed on from generation to generation is a cultural and not only an economic phenomenon. This program is meant as a preemptive measure that provides an economic base that will keep today's children from becoming tomorrow's poor."

And how will the money be invested? According to Herzog, the subject is yet to be finalized; when the time comes, defined procedures will be put into place regarding in what financial institutions the savings may be deposited.

One need not be particularly sharp-eyed to see the limits of such a proposal. The British have been tossing the very same idea around since 2001. The discussion of the idea, which has been named "Baby Bonds," dragged on for years among

Baby Bonds

various organizations and institutions, until in 2010 it came to an end. One cannot help but say that, in the absence of new ideas, intellectuals and politicians recycle old ideas that were barely valid even in their first incarnation—and this, only to give the voter a feeling that there may be relief for their problems. Dr. Nathanson and MK Herzog overlooked the calculations done in the UK that found that in the best case scenario, such a savings plan will give savers a holiday for two, a ski weekend, when they come to cash in the savings that have accumulated over twenty years.

For some reason, intellectuals and politicians have a hard time understanding that the fundamental and most urgent problem that must be addressed is that there are simply not enough savings to last the third of our lifetime that we will have to spend in retirement. In our long retirement years, even those who have had ample resources during their adult lives are bound to slide rapidly into humiliating poverty. Even if during one's lifetime one did not belong to the weak segments of society, one's chances of being poor in old age will increase the closer one's retirement days approach the 2040s and 50s, and the longer the period of retirement becomes.

Why is it so hard for people to think ahead and to understand that the truly burning fundamental challenge is that if we do not deal with the issue of pension savings in a way that will last for the long retirement years, we are bound to face social and financial bedlam? Good for former minister Herzog for thinking in such a future-time-span, even if he misses the most important point. Needless to say, not only has the finance ministry not cooperated with this kind of thinking; it also does not provide any viable alternative.

The UK

As we have said, this is not just a local Israeli problem. Leaders in all of the developed countries have difficulty finding a suitable solution for the pensions funding issue. They suggest ideas that seek to roll the problem on to future generations, thereby exacerbating its implications. Following, for example, is the proposal of the British finance minister for treating the enormous deficit that has developed in the British pension coffers. George Osborne, British Chancellor of the Exchequer in 2012, believes that it is possible to put off the problem of actuarial deficits in today's pension funds and thus maybe bring about its solution. According to various estimations, the UK government has a trillion pounds sterling of compounded debts as of 2012. Additional estimates claim that there is another trillion or so pounds sterling of "pay-as-you-earn" pension liabilities that the UK will have to pay its state workers in the coming three to four decades, in other words, until 2050. Everyone is trying to solve the approaching financial and social tsunami, with different ideas, each more ridiculous than the next.

One of Osborne's creative ideas is that the state will issue one-hundred-year bonds at the ludicrous interest rates of 2012, thereby raising money to cover existing deficits. The UK Government tends to issue bonds for fifty years at the most (the method known as "gilts"). Osborne's idea goes even further, proposing that the lenders never get back the principal invested, but rather receive a monthly return in perpetuity. The last time something like this was done was after the First World War. The British government at the time tried to finance its war expenses with a similar kind of bond. A similar funding was done in the eighteenth century in order to extricate the economy from the financial calamity known as the South Sea Bubble. Needless to say, these bonds were never repaid to the investors but were exchanged for a lifetime annual return at a low interest rate.

One-hundred-year government bonds to cover the actuarial deficits of retirement funds

Here, too, the implications of Osborne's idea are that people will once again see their assets lose value over the period of holding these bonds, even if the loss will be mitigated via annual returns for many years after their death. Governments generally sustain low interest rates by increasing the amount of money printed and lending it at low interest rates to banks through their central bank. In Osborne's opinion, the idea of purchasing these certificates will appeal to the pension funds. If this happens, pensioners will once again lose the value of their pensions; the problem will only become exacerbated, and the deficit will continue to swell, even if the feeling in the short term will be that there are funds to pay the country's workers who will go into retirement in the coming years.

Of course the only way to force the pension funds to purchase these bonds is to say to them "either you buy them or the government will impose new taxes on your profits," which will lower the annual and multi-annual management fees of the fund managers.

What is interesting is that everyone knows that the emperor is naked except for the politicians. In an article in the *Economist* (March 17, 2012), Richard Bove, an analyst for Rochdale Securities, writes that Osborne's proposals mean one thing only. In effect, the government is saying to the banks: "the only way to behave properly is to keep your distance from the consumer, keep your distance from real estate, lend sparingly to businesses and buy everything connected to the government, since the government thinks that its own bonds are secure." Bove adds, ironically, that "if the goal of the central bank is to take the banks out of the private sector and into the business of government loans, the central bank is doing an excellent job."

The emperor is naked

Political and financial leaders in the various countries are apparently too preoccupied with the question of how to continue to fund their growing annual budget deficits to search for a systemic solution that will be able to reduce the deficits and begin to generate adequate capital for future pensioners. If we do not identify the problem, we will not be able to begin to understand the power of the tsunami that is rushing towards modern society, not to mention to begin to find a path towards the proper solution.

The Path of the Solution

How do we find a solution to a problem that continues to drown all who go near it? This is a problem that can only be solved with the help of long-term methodical forward-thinking—Forcognito. The truth must be told, and that is that the solution to this problem is not a matter of an intellectual effort of a few years. Many more years will pass before twenty-first-century human society and its leaders formulate an adequate, even if not perfect, solution for it. Unfortunately, this issue will continue to accompany modern society, and we will have no choice but to confront it for many more decades to come. Those who do not commit themselves today to the task of finding a new and systemic solution to the broken system of pension savings will find themselves eventually looking down a black hole. The suffering that such leaders will bring upon their citizens will be too difficult to bear. If you want to sample some of the suffering that awaits us if we do not begin to search for creative long-term solutions to the problem, all you have to do is go for a walk in Athens after the difficult demonstrations of 2012, when the country would have become insolvent, were it not for massive emergency measures that the European Community dictated to it in exchange for streaming hundreds of billions of Euros into its economy. In every corner you will see the distress, depression, helplessness, and hopelessness of an entire population that only a few years ago (2004) hosted the Olympic Games and enjoyed an economic boom. It is reasonable to assume that the citizens of Greece have entered a period of austerity that will last for decades, until the leaders of that nation find a way to extricate themselves from a crisis that its present generation of leaders got them into. There is no need to mention the suffering that the next two generations in Greece will live with.

How can we avoid such a crisis, which the present pension institution seems destined to lead us into? In other words, what can we learn from the way in which the mind generates future-thinking so we may prepare ourselves to solve it? In chapter 12, which dealt with the way in which forward-thinking is perfected, we learned that there are two phased mechanism working in concert to create future-thinking. The first phase is the mechanism of memory, and the second phase is the mechanism that creates self-cognition. According to the latest studies in the neurophysiology of future's thinking, the first phase occurs when the brain's long-term memory banks fill up with a wealth of experience and information from one's personal past, and when the somatic markers at its disposal become properly diverse and accessible to the operational memory (the part of the memory that supports decision-making). The second phase occurs when the individual's awareness of himself and of others matures sufficiently. These two-phased mechanisms allow the mind's ability to imagine diverse futures, anticipate complex situations, and generate new ideas (desired memory) that will be capable of preventing pain and generating benefits for the person in the future. Let us follow this two-phased path in order to propose a suitable long-term solution for the issue at hand.

Recognizing why it is so difficult to find a solution

In order to find a practical solution for the problem of the deficits being amassed by the pension institutions of today, we must try to understand why it is that our leaders can't manage to create the ideas necessary to do so. In my humble opinion, the reason for this is two-fold, and it reflects the two phases mentioned above. If we manage to understand them and resolve them, we will be able to mobilize ourselves to find a new and systemic solution to the problem of pensions, one that will be able to get the ball rolling towards a desired and worthy resolution.

The first reason is as follows: not only does the individual, at the beginning of the twenty-first century, lack the long-term memory from which to tap personal experience on this issue, but, additionally, the short-term experience and the pain that he has experienced in recent years in the form of an increased number of work years before retirement, have not been sufficient to brand somatic markers in his and society's general cognition to the effect that something very serious and very painful is about to happen. So long as there are no somatic markers in the private recollection and certainly none in public memory, people will continue to walk about troubled yet and will invest no great effort in the attempt to prevent the familiar pain from repeating itself—since no such pain exists in the personal and public memory. There is a dim memory of an indefinable discomfort from a vague issue that demands attention, but which everyone still thinks can be alleviated—if only the government fulfills its promises and the fund managers truly work for the pensioners and not think only about their own commissions. The social justice outcry around the world is proof of this. Everyone thinks that the problem is only temporary, due to lack of good will on the part of politicians or of the simple greed of fund managers. Everyone thinks that if these are fixed, the problem will go away and everyone will be able to rest peacefully in the long retirement years that await them.

Society does not have somatic markers in its general cognition that indicate that something very painful is about to happen

The demonstrations in the streets and squares of big cities against governments and against Wall Street are not what will bring social justice; and certainly not what will provide a solution for issues that have not yet entirely come to the surface. The problem is not there. The problem is in the pensions concept itself. The big question is of what kind of pension model will be able to function successfully in circumstances in which fifteen percent or so of the world's population will be above the age of sixty-five—and more than twenty-five percent in the industrialized and developed countries. Under such circumstances, the entire structure and all the foundations on which it is based are liable to collapse. What we desperately need are entirely new foundations, and these must be instituted in order for the building to hold up for many more years.

The second reason for which leaders have a hard time finding a systemic solution to the issue is their own short future-time-span. As we recall from chapter 12, when the self-aware cognitive center of decision-making, located in the frontal lobe, projects an image of itself back onto itself, it thereby creates a model of itself within itself. At that point, it also inherently begins to create an alternative image of the outside world. The more sophisticated the model of the self within the self, the longer the future-time-span of that alternate image becomes.

The problem is that academics and decision-makers at the beginning of the century have not had sufficient practice projecting their own picture of self within their self, when it comes to this kind of complex issue for which we have no past understanding. In issues for which there is a great deal of past experience, practitioners are capable of generating ideas with a long future-time-span, but for questions for which we have no past know-how, they fail to conceive of the long-term implications and thus fail to create worthwhile solutions that might treat the problem in the long term.

When I first sat down to write this part of the book, my idea was to propose an alternative model, based on the above assesment of the situation, in order to illustrate the path that we need to begin to take if we wish to propose a long-term systemic solution for the problem of pension-savings. As I mentioned at the beginning of the chapter, Dr. Moshe Gerstenhaber has already suggested a systemic solution that satisfies the need for long-term thinking. I asked him to co-write this summarizing chapter of the book with me and to present his model in order to illustrate how long-time-span forward thinking is capable of generating preferable and possible future images that will solve a problem for which we have no past memory and for which we have no somatic markers to serve as an impetus for preventing similar pain in the future.

List of challenges

And so, this chapter is a joint effort to outline the main points of the problem as simply as possible, and to present its possible solution. Let us first review the financial quagmire of the pension-savings institution at the beginning of the twenty-first century, so that we may propose an alternative future model that will ensure thirty or forty years of decent life for pensioners, and so that no man or woman will have to spend his or her golden years in disgrace.

Collapse of the banks

The average person has become accustomed to a much higher standard of living that of just two generations before

At the beginning of the twenty-first century, there is no question that much of the world is interconnected and interdependent through the global financial system. We already see how the possible collapse — complete or even partial — of the euro bloc, for example, will spell immediate disaster for the entire world banking system. It will bring global financial and economic development as we know it to a standstill for quite some time. It is not inconceivable that, should the euro bloc reach financial and economic collapse, many members of the human race will have to return to transact with one another through the old systems of barter. What has yet to be grasped at the beginning of the twenty-first century, as we will see in what follows, is that seven billion human beings will not be able to survive the complete collapse of the global banking system.

Many will have to retreat to a lifestyle that characterized many cultures decades if not centuries ago

Generous services

The average person, at least in the industrialized and developed world, has become accustomed to a much higher standard of living than that of just two generations ago. He has become accustomed to thinking that, when the time comes, he will have access to any number of social safety nets, which will help him through in times of crisis: from birth allowances, through unemployment benefits, and up to welfare benefits. The average person in the industrialized world has become accustomed to the fact that a good health system awaits him whenever he should need it. We do not need many examples in order to ascertain that the average person at the beginning of the twenty-first century has simply gotten used to too many good things. But one of the reasons that these good things are on the brink of collapse in many democratic countries, is precisely that same high level of generosity on the part of government and public institutions; who continue to borrow money from whatever source they can in order to keep funding the social benefits that citizens have long taken for granted. Sometimes it seems that the average person and his leaders have forgotten the basic tenet of any sustainable economy, namely, that no financial system can survive for long if its expenses are greater than its revenues. It seems that, in their stupor, many fail to understand that in a world of overtly and covertly interconnected financial systems—if one country goes under, not only will its own citizens suffer, but so will the citizens of many and distant lands as the financial institutions there collapse as well.

An unsatisfying meal

While the average standard of living of today's populations in the developed and industrialized nations is much higher than that of just a generation or two earlier, there are still a significant number of citizens in these countries who have a hard time making ends meet, despite all of the benefits at their disposal from the welfare state. Further, for many citizens of these countries, even those who work hard and hold full-time jobs, that same average standard of living is increasingly harder to reach and maintain.

The shrinking middle class

Formerly the vast majority of the people lived at the bottom—like *Les Misérables*

One of human society's greatest achievements over the last three centuries has been the rise and institutionalization of the middle class. Formerly, human society was comprised of a tiny percentage of elites, whose entire being was dedicated to maintaining its high social and economic status, while the vast majority of the people were left at the bottom of society. Not for nothing did the French writer Victor Hugo call them *Les Misérables*. At that time the people began to rise up and to demand rights, a place in society, and the possibility of social and economic mobility on the basis of

A ratio of thirty-forty-thirty

merit and not pedigree. The struggle was difficult and it came at the price of a great deal of blood, literal and figurative. At the end of the twentieth century it was possible to say that the struggle had succeeded, with class ratios in many countries being as follows: ten percent elites, seventy percent middle class, and about twenty percent who were defined as lower class or poor. This balance, which can be called the "10-70-20 ratio," was suited to an economy based on industry and services. The ten percent of intellectuals, entrepreneurs, and the affluent sufficed to keep the entire social and economic chain of life moving, developing, and progressing. However at the end of the twentieth century and beginning of the twenty-first century, the ground beneath this delicate balance has begun to shift. The primary force behind this change is, of course, globalization, which as it grows, continues to burst existing cultural, ethnic, economic, and social boundaries.

In such a global environment of powerful competition between seven billion human beings, that same top ten percent of the pyramid cannot carry all the creative weight on its shoulders. Each nation needs many more educated, entrepreneurial, and innovative people so that each society, as a single market unit, can compete with the numerous other trans-continental and trans-cultural alliances. But in order to lift large percentages of the middle class into the top decile, the system will need to offer higher rewards to those who are creating wealth and to adopt mechanisms that by necessity contradict the paradigm of equality for which modern society has so struggled for three hundred years. At the end of the twentieth century and the beginning of the twenty-first century, the old elites find themselves obliged to provide differential rewards to the best among the middle class as an incentive to make the extra effort and to contribute even more to global competition. And thus, human society in many places at the beginning of the twenty-first century finds that its middle class is starting to shrink and to give way to a greater number of top deciles. The byproduct of this process is that an additional decile from the middle class is dropping down into the lower deciles, no longer capable of meeting the demands of tough competition. Thus, at the beginning of the century, many countries are awakening to the understanding that in their society, the gap between the haves and the have-nots is growing, and that the lower middle class increasingly numbers among the have-nots. Human society is beginning to take on a new decile division. Suddenly we have three upper deciles and three lower deciles, while the middle class, which once occupied a hearty seventy percent of society, has shrunken to just four deciles. We can call the ratio "30-40-30 ratio." This economic and social evolution is accompanied by growing unease on the part of many social activists. This is the background for the social protests taking place in many countries and which will yet bring down many governments and destroy political careers across the political spectrum. Those who try to ignore this shift will be punished and those who try to maintain the previous socio-economic ratio will push the systems under their charge towards the abyss. Many will try to promise that under their guidance this gap will be reduced or at least won't widen. Many will fall in the nets of charismatic politicians happy to promise the moon in order to gain the reins of power. But sooner or later all will fail to fulfill this promise, as has already happened in some countries, and the public's rage directed at them and the state and its institutions will only grow.

Life-span

One of the main facts that distinguishes the twenty-first century so categorically from any prior period in human history is, of course, the dizzying rise in the average human life-span. If we do not look at this issue within a broad perspective, we will be incapable of understanding the full scope of the pressures that will be brought to bear on the present structures of the institutions of pension-savings—pressures that will force us to begin to devise alternative, and much more effective structures. Of course, the sooner this is done, the fewer people will suffer from poverty and disgrace in old age.

Homo Sapiens' lifespan has made a remarkable leap in the last thirty thousand years. To the best of our knowledge, the average life span of Cro-Magnon, the humanoid that preceded Homo Sapiens by a little and lived thirty-five thousand years ago, was a mere eighteen years. After no less than thirty-five thousand years, in 1800 C.E., humankind had managed to add seven years to its average life span, with the global average reaching twenty-five years. But in the last two hundred years, this number has tripled itself (Figure 44).

Life-span measured by healthy years alone

Today, the World Health Organization (WHO) does not measure human life span according to the chronological number of years until death, but by the number of healthy years the person lives. According to this method, in the developed countries of the beginning of the twenty-first century, the world average of healthy years stands at seventy-one. After these years the human being falls into the chronic illnesses that generally characterize old age. These can last for several years, adding another five to ten years to the chronological life-span of the individual, on average.

The WHO's data (www.who.int) indicates that the country with the highest life-span at the beginning of the twenty-first century, according to the method that counts only healthy years, is Japan, standing at seventy-eighty years. The average healthy life-span in Israel in 2010 was seventy-two.

Figure 44 illustrates how human life-span is only beginning to accelerate. If this is true, there is no reason to assume that the growth-rate of human life-span will continue in a linear pattern. On the contrary, according to researchers, it is likely to rise exponentially. The meaning of this is that if human beings tripled their life-span in the two-hundred years since 1800 because they found better ways of maintaining a hygienic lifestyle and improved sanitation, or because they found ways of enriching their diet and improving medicine to treat their diseases, then, with the help of genetic engineering, improved lifestyle, and diet that slows the aging process, they will easily double their life-span in the coming two centuries. Therefore, the chances that the average person will live 130 and even 150 years are not outrageous.

The chances that the average person will live to the age of 130 or 150 are not outrageous

There are many who question these estimations, in particular biologists and physicists who adhere to the paradigm that the human body simply cannot endure for so many years. But developments in research have challenged this paradigm time and time again, and an example of this is a study dealing with a natural substance that was discovered on Easter Island in the Pacific Ocean about forty years ago, called Rapamycin. The substance has already been approved in the USA by the FDA for various uses, and the National Institute of Aging Interventions Testing Program supports studies that prove over and over again its life-extending properties in mice by nine to thirteen percent.[6] What is even more interesting is that when this substance is administered to adult mice, at an age analogous to sixty years in the average human, this late start in the consumption of the substance boosts its effectiveness threefold and adds to the life-span of the mice twenty-eight to thirty-eight percent more than the control groups. In other words, this substance could add many more years of life to the person with an expected life-span of eighty years, even if he begins to take it at age sixty. Three laboratories at three prestigious universities have conducted these studies, reaching identical results.[7]

Rapamycin was used as early as the 1970s as an antifungal agent, and it was later approved as an immunosuppressant drug for the prevention of organ transplant rejection.[8] Later, it was used as a coating for coronary stents inserted into patients suffering from arterial blockage. Recently, it was administered to cancer patients in some clinical experiments, and it was proven to cause more shrinkage in tumors than anticipated.[9] Indeed, the results of the studies examining the life-extending properties of the substance have been beyond any researcher's expectations. If it turns out that these results hold true in clinical studies on human beings, the day will not be far in which central bureaus of statistics will have to open up a new life-span index. Life-span today is calculated according to the circumstances at the time of the person's birth in relation to his place of birth. The new index will need to calculate the rate of development of life-span-related science and technology and, just as importantly, access to new classes of life-extending drugs.

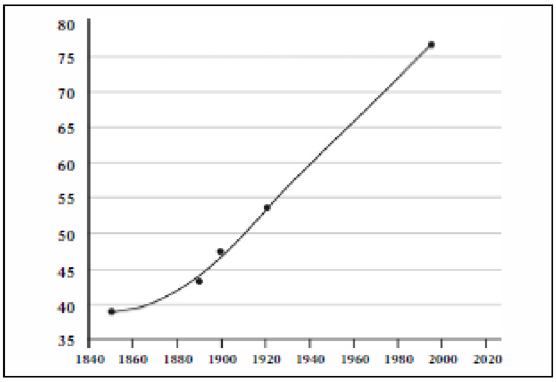

Fig. 44. Life-span of Homo Sapiens over the years

18	Cro-Magnon period
25	Ancient Egypt
30	Europe 1400 C.E.
37	Europe and the USA 1800
25	World 1800
48	USA 1900
80	USA 2012
80	Israel Men 2012
84	Israel women 2012
71	Developed world (health years) 2012

Those in their thirties in the year 2012 will spend a third of their lives in retirement

Pension years

Today, in many countries, including developing countries, pension allowances are allocated for about fifteen to twenty years on average. In Israel the average man lives for about fifteen years in retirement, and the average woman, about twenty. But over the last decade, this average has grown by three years, meaning that, within forty years, towards the middle of the century, barring any significant change, it is reasonable to assume that the average person will spend between twenty-five and thirty years in retirement. In other words, those in their thirties in 2012 could spend a third of their lives in retirement. Considering the fact that, broadly speaking, the first third of their lives is effectively spent preparing for a career and the second third is spent saving for retirement, how will it be possible to support them for an additional third of their lives? Where will we find the resources to fill the coffers to support so many pensioners for so many years? Let us recall that the present pension institution by no means operates according to these assumptions. When German theorists formulated it at the end of the nineteenth century, only three to four percent of the population reached the age of retirement, and those who did reach that age lived for another three years alone, on average. In order to illustrate these percentages in absolute numbers, let us take Germany as an example. In 2030, the number of German citizens above the age of sixty-five will rise from 16 million to 24 million (an increase of fifty percent) at which point they will make up some thirty percent of the entire German population. Furthermore, between the years 2005 and 2050, the number of Germans above the age of eighty will increase from four million to ten million—a rise of about 250%; this will mean that Germans in that age-bracket will make up about fifteen percent of the entire German population. The situation in many developed and industrialized countries is not very different from the German case. How will it be possible to support so many people with the help of so few working hands, especially when the entire period of job-market participation will not be more than forty years—years in which working individuals are meant to save for themselves and for others? Anyone can see that something major is about to happen and that today’s leaders have no answer to this challenge. They may try to reduce the pension rights and benefits of those about to receive their monthly checks in the coming years. They will also try to find additional resources through loans, bonds, or odd taxes on the public, but the further along they go on this path, the worse the situation will become. The result will be that towards the middle of the century many pension funds will not be able to meet their

At the beginning of the century, people spent on average 18 years in retirement. By mid-century this figure will grow to thirty years

obligations to the insured, and the funding channels will close before them.

Private funds

And we have yet to talk about non-governmental workers who are insured by private pension funds. Their relative number in many countries is more than twenty percent. In England they number about forty percent of all the insured, while in Israel their numbers are estimated at fifty percent. Pensions in the private market are generally funded by agreed-upon monthly allocations by the worker and the employer. Often, however, after many years in which private sector employees have set aside their part, they discover that the employer has not deposited his part into the fund. Furthermore, in order for the private fund to be able to fulfill its obligations to the insured to cover twenty years of retirement, the individual must deposit regularly for some forty years, and most importantly, the fund managers must invest the insured's money wisely in order to have good returns. Otherwise, the fund will not be able to fulfill its promises, even if the employee's and the employer's contributions are transferred regularly for forty years. This kind of phenomenon creates what is known as "actuarial deficits," meaning that the income for the entire active period of the fund does not equal its anticipated expenses. Therefore, when the time comes, it is not unreasonable to assume that these funds will be unable to meet their obligations to the pensioners.

Those who are fearful of demonstrations for social justice, as they take place at the beginning of the second decade of the century, will long for the protests of the kind and force familiar to us today

But the economy is moving like a roller coaster, in unpredictable cycles with sharp rises and falls. In down periods, funds lose huge amounts, and often people wake up to find that although their fund managers have proven for years to be investing their clients' money carefully, their mistakes can sometimes cost the insured many years of savings.

In truth, even with the good will of many fund managers, it will be impossible to meet the expectations that private funds are trying with all their might to meet. The objective circumstances and the conditions of the modern economy will not leave them a large enough margin with which to achieve their mission.

We must add to this a further chronic disease of many countries—that of overt and hidden unemployment, which precludes many from saving for their retirement. And if to all this we add the ever increasing overall personal tax levels in most of the developed countries, social services that cannot meet the expectations and requirements of people even before retirement age—when the consumption of these services necessarily rises—what we have is a pressure cooker that is waiting to burst. Those who are afraid of the social justice movements that are spreading at the beginning of the second decade of the century will find themselves longing for this kind of mild protest when the time comes.

Finally, let us summarize the list of challenges in a small number of points that will leave no doubt in the reader's mind that the existing model has long since been defunct, not to mention that it will not work in the future. The future is already here, and we have no choice but to begin to search for an alternative paradigm in order to alleviate the crisis that is gaining velocity. We need a new model in order to bring relief to the coming generations; those individuals who have not yet begun saving at all, or who have not yet even entered the job market. The following five points say it all:

- The current pension-fund paradigm will not be able to withstand the burden of providing all of the insured with what they have been promised and are expecting to receive for their long retirement years.
- The resources that the employee and the employer set aside for retirement do not suffice for the long years that the average person will live in retirement—thirty to forty years for those who will go into retirement at the middle of the century.
- Loyal tax-payers and diligent pension savers alone will not be able to carry the burden of the large percentage of uninsured people that still exists in various civilized countries.
- The state will not be able to fill this void when the time comes, because even at this time it cannot meet expectations. It lacks the resources required to support those who are obliged to live off the low yields of the funds.
- The ratio of workers to retirees is changing. In the past, for every ten workers contributing to their savings funds, there were three retired people. Today, for every two active workers there is one retired worker. In some countries, as in Greece, the ratio has already dropped to 1:1, and in Finland

that dismal situation is not far away either.

AN ALTERNATIVE PENSION-SAVINGS MODEL

One need not be an expert on retirement issues to sense that there is something fundamentally wrong with the existing pension funding model. We have made a great effort here not to bombard the reader with numbers but rather to simplify the problem of the existing model. The difficult question, however, is whether it is possible in the present situation to propose an alternative model for pension-savings that will be able to meet these challenges in the long term, even if it does not sufficiently solve the short-term problems? By the very nature of things it is impossible to wipe the slate clean and build an alternative from scratch. But it is definitely possible to try to build something that will develop gradually over the years to eventually be capable of solving the main problems of the present model.

Something is fundamentally wrong with the current pension funding model

Two principles must guide any alternative model seeking to replace the existing model. The first is that it must foster confidence among the citizens who will retire in the middle of the twenty-first century that they will have sufficient financial resources in order to live respectably in the long years of retirement that await them. The second, no less important, principle, is that it must leave these same citizens with enough available funds for social and economic development and self-fulfillment as they save for the long years of retirement. This is the rationale that must be at the base of any alternative model, lest it invite too great an opposition to succeed.

The rationale that must be at the foundation of any alternative model for the institution of retirement is sustainability

The model proposed here strives to optimally satisfy both of these principles. Some of its details may need modification, but in the opinion of Dr. Moshe Gerstenhaber, who conceived and developed it and with whom I agree, the proposed new paradigm has many components that have a good chance of succeeding in most of the places where the current model fails. The model is based on Ten Pillars, which together can provide a strong new home for the pension institution in the next hundred years. Below I have laid out Dr. Gerstenhaber Ten Pillars, with my own modifications, which have been approved by him. It is our hope that the reader will reach the right conclusions and that our presentation can be an impetus for society to begin to implement them or at least to learn from them how to go about solving the great shortcomings of the current model. The situation in Israel entails even greater challenges than in the rest of the developed and industrialized countries, due to a specific cultural constellation in which the ultra-Orthodox and Arab sectors are not fully integrated into the work force and therefore cannot allocate sufficient pension contributions. But this also contains positive seeds that could yield excellent fruits for those going into retirement towards the middle of the century and beyond—because overall, Israeli society produces more children per 1000 population than the average of the OECD nations. Nevertheless, as we present the proposed model, we should keep in mind that for those who are about to be born (as we write these lines in 2012) and who will retire in the year 2080, the situation will be grim indeed by the end of the century if a different model for retirement is **not** found and implemented by 2030.

In Israel of 2011, the population stands at about eight million, with approximately 160 thousand children being born each year. This number will grow as the Israeli population grows; the estimation is that in 2050 the Israeli population will number about 15 million men and women. The gender ratio in the state of Israel for newborns maintains a 5% advantage in favor of boys, and this ratio holds for the population under the age of fifteen.[10] According to the definitions of the Israeli National Insurance Institute, about twenty-one percent of Israelis live below the poverty line, among them about thirty thousand children. Finally, it is important to remember that the annual GDP for Israel is 245 billion USD.

The current model spells disaster for human society

We are calling here upon leaders, economists, politicians, business leaders, public servants, and social activists from all ends of the political spectrum and from every sector of the population to work together energetically to find a solution for the issue of pension-savings—whether using the model proposed here or another model. To the best of our understanding, if a new model is not developed soon, even if it should take many years to lay its foundations, human society will find itself in the heart of a storm that is bound to topple modern economies and cultures—to put it midly.

The Ten Pillars

1. Government grant at birth

A personal pension-savings account will be opened for every newborn in the first month of his or her life. The finance ministry or whatever body is charged with this by the government in any given country, such as the National Insurance Institute in Israel, will deposit in this account a fixed and agreed-upon sum. This capital contribution will be funded by a special tax to be imposed on the taxpayer with the agreement of a majority of the factions in the legislature. The money that accumulates in this personal account over the person's lifetime will be invested in productive economic activity by new institutions that will be established for this purpose (see Pillar 9, below, for an expansion of this). According to numerous calculations, this amount will range from 5,000 and 12,500 USD in 2012 values, as we will detail below. Over the course of seventy years of pension-savings, this initial sum will be able to grow to a respectable amount that will provide a solid foundation for a good number of retirement years. The underlying idea is that a principal sum deposited at the beginning of a person's life will yield the greatest returns over the years and underpin the process of pension-funding accumulation to allow the pensioner to live respectably in his retirement years.

Half of the amount needed to open pension accounts for every single child born every year will be funded by taxpaying households, with the exception of households that are defined officially as poor, and half of the tax will be funded by employers, on a differential basis, according to number of employees and levels of proven profits in any given industry or enterprise. The total amount that will be collected every year for this tax will not exceed one percent of the country's GDP.

The initial grant for every newborn will also be calculated differentially according to gender and socio-economic level. Baby girls will receive a grant that is fifty percent higher than the 5,000 USD grant for boys, meaning 7,500 USD. There are two reasons for this. The first is that women will spend on average seven years or approximately thirty-three percent longer than men in retirement—according to a calculation of an average of five years longer life-span for women, in addition to a retirement age of two years earlier. The other reason is so that when the women themselves give birth, they will be able to extend the period of their maternity leave beyond the legal allowance without their employers having to transfer their part into their personal pension account.

The children of the poor, whose relative number will not exceed twenty percent of all the children born in a given year, will receive a grant that is one hundred percent higher than the rest of the male children born in the same year, meaning 10,000 USD. Studies in developed countries have shown that the children of poor people have a six times higher risk of being poor at age thirty. It is much more cost-effective for society to set aside a higher sum for the children of the poor from the outset. Accordingly, girls of poor families will receive a grant of 12,500 USD at the time of their birth. Since these sums are meant to be efficiently invested in the productive economy (see Pillar 9), they should also bring about, in time, a drop in overall unemployment and encourage the children of the poor to find a place for themselves in the job market.

2. Parental contributions

The parents of every child will be able to add money to the personal pension-savings account over the course of the child's lifetime and thus raise the returns that the compounding initial sum will provide to the individual's monthly pension allowance.

3. Family and friends' contributions

Family members and friends of any individual will also be able to add to the pension-savings account as they see fit. This can be an additional option for gifts at life-cycle events—from birthdays, through bar and bat mitzvahs, and up to weddings.

4. Employees' contributions

When the individual enters the job market, he will be required to deposit into his personal pension-savings plan a minimum of five percent of his salary each and every month throughout the years of his employment.

5. Employers' contributions

Every employer will be required to contribute five percent per month of the employee's salary into his or her personal pension-savings account. This percentage is smaller than what is practiced in many countries today. Later on in the individual's working years, the percentage of employer's contributions could go down. It will also be a negotiable item between the employer and employee as part of the salary agreements in various sectors and industries. However, an agreed minimum will be enshrined in law.

6. First-job grants

Every holder of a first job will be eligible for a supplemental government grant to his personal pension-savings account in the event that the combined employer and employee contributions (as above) do not reach a defined minimum sum. This amount will be calculated by actuaries each year, taking into account the annual rate of growth of the average life-span. The difference will be paid by the state and will be funded by the same tax that will be used to fund the initial grant at the time of birth. This supplemental funding will be given for a period of up to seven years from the start of employment and no later than age thirty, so that these contributions may also enjoy a significant rise in value of the investment by the time the individual goes into retirement.

7. Tax-exemption deposits

The tax system will encourage workers to contribute to their pension-savings accounts with fixed sums that become smaller as the person approaches retirement by offering tax exemptions on these deposits.

8. Inheritance contributions

The state will allow families to transfer financial assets into individuals' personal pension plans and thereby to increase its value. Such contributions will be limited so as not to damage the pension plans of the family members or to serve as a tax shelter. If a person dies before the resources he accumulated during his life have been exhausted, the remaining money may be transferred tax-free to the personal pension-savings accounts of his heirs. The heirs will not be able to use these funds for any purpose other than for drawing a pension when they, too, reach retirement age.

9. Super Trusts deposits

All of the retirement savings in the personal accounts will be managed and invested in new non-governmental investment organizations called Super Trusts (ST) that neither will be under government jurisdiction nor will they constitute part of the existing pension funds system. The current pension funds are generally invested in government bonds and in stock markets. This system ensures neither proper returns nor the necessary growth of the principal. In the new paradigm, all of the pension funds will be invested directly into the economy through the purchase, establishment, and management of productive companies. The money will be committed to long-term investments with the goal of attaining at least five percent compounded annual net growth. The retirement age will be updated when necessary by legislators in each country, but every individual will be entitled to begin receiving his monthly allowance from age seventy onwards, even if he continues to work.

From age seventy onwards the individual will be entitled to withdraw from his personal account an amount that will be calculated individually and will take into account the amount that has accumulated thus far, divided by the number of months that the average person lives in retirement. The number of months will be adjusted every five years as life-span estimates are updated. Taking into consideration the rate of increase in life-span, the individual may have to lower his monthly stipend so that enough money will remain for him for those years. He will also be entitled to raise it when new contributions are made to the account, whether from inheritances or from any other source. In any case, the personal pension-savings account will remain active and will continue to accept contributions during the retirement years and as long as the individual lives.

10. MAXILIFE: personal software for managing contributions into the personal pension-savings accounts

In order for the advantages found in these nine pillars to come to bear, it seems only appropriate to develop a special software with which any person will be able to easily track and make sense of the situation of his pension-savings account. Software of this kind can be called "Maxilife." The software will recognize each person individually and will serve as a loyal virtual consultant throughout the person's lifetime on every matter related to the complexity of life in the twenty-first century and to the retirement years that await them.

Taking charge of the future

We recommend establishing a public committee, along with many sub-committees, that will more precisely calculate the actuarial advantages and disadvantages of each of the Ten Pillars. We assume that some fine-tuning may be in order so as to clearly reflect pensioners' needs and society's ability to support him.

In a number of similar calculations for Israeli society, we found that Israeli society's subdivision into age-groups, which is fundamentally different from the rest of the western and industrialized nations, raises many challenges. For example, about forty-five percent of the Israeli population is aged zero to twenty-five. This will require an even greater initial investment, and yet, this amount will yield more if it is channeled into investments that strengthen the economy through the Super Trusts, as described in Pillar 9. In order to illustrate the initial investment necessary for this model as it applies to the children born in Israel in 2011, we offer a few calculations, following. We have simplified the data in order not to overwhelm the reader with numbers, but it seems to me that they give an overall picture that illustrates both the magnitude of the challenge and the need for a solution.

Estimated costs of the model in Israel

Basic annual statistics

Number of live births in Israel for 2011	166,255
Girls	80,840
Boys	85,415
20% children of the poor	33,251
Gross Domestic Product (GDP) in USD	245.266 billion
Total workforce out of the population	3.227 million people
Number of households	2.166 million

Government grant at birth

Boys	5,000 USD
Girls	7,500 USD
Poor boys	10,000 USD
Poor girls	12,500 USD

Estimated overall costs

Boys	5,000 USD X 85,415 = 427 million USD
Girls	7,500 USD X 80,840 = 606 million USD
Poor boy supplement	5,000 USD X (20% X 85,415) = 86 million USD
Poor girls supplement	5,000 USD X (20% X 80,840) = 81 million USD

Total	1.2 billion USD cost p.a.

Total of annual grants as percentage of GDP

(1.2 billion X 100): 245.266 billion = .49% of GDP

First-job governmental grant

Assumption: this subsidy will not amount to more than ten percent of the total annual cost of the government birth grant.

1.2 billion X 10% = 120 million USD/year

Estimated annual overall amount with the addition of first-job subsidies

At the time of birth	1.2 billion USD/year
At the time of beginning a first job	0.12 billion USD/year
Annual total	1.320 billion USD

Total annual contributions as a percentage of GDP

(1.320 billion X 100): 245.266 billion = 0.54% of GDP

A parenthetical comment

We estimate that the special levy (Pillar 1, i.e., the new tax that will be imposed in order to fund the idea at the heart of the Ten Pillars) will need to be in existence only over the course of fifty-six years from the start of the implementation of the proposed pension-savings model. After that, the Super Trusts (Pillar 9) will be able to autonomously fund the pension payments for the coming generations. The idea is that at the end of the fifty-sixth year, all of the Super Trusts' investment institutions will transfer ten percent of all of their assets to a new investment institution, i.e. another Super Trust, whose whole purpose from thereon in will be to generate the necessary income in order to fund the annual special levy.

Value of the personal pension-savings account after seventy years

Assuming that the Super Trusts succeed in generating on average five percent net compounded growth per year, the principal will grow 30.4 times by the time the individual reaches the age of seventy. On this assumption, the capital deposited for each person at the time of birth will double itself every 14.4 years. In other words, by age seventy it will have doubled itself almost five times (4.86 times, to be precise). Here is how the personal pension-savings account is expected to look after seventy years:

Boys	5,000 USD —> 152,000 USD
Girls	7,500 USD —> 228,000 USD
Boys from poor families	10,000 USD —> 304,000 USD
Girls from poor families	12,500 USD —> 380,000 USD

These calculations assume that the yields from the investments will go into the personal pension-savings account at the end of each year. But if yields are calculated at the end of every quarter, the overall yield will increase by even more over the years. For example, after seventy years of savings, the accumulated amount for a boy who received 5,000 USD at birth will reach 162,023.84 USD instead of 152,132.13 USD. This is an increase of 8,891.71 USD, or 6.5 percent. In such a case, the 5,000 USD that the individual received at the time of his birth will grow by 32.4 times and not 30.4.

Value of differential monthly allowances (calculated for twenty years of retirement) after seventy years of growth from the initial government grant

Assuming that the personal pension-savings account continues to accumulate profits of five percent per annum on average over the course of the twenty years (between age seventy and age ninety), the birth allowance will continue to grow up to 44.4 times. According to this, the minimum monthly amount that every pensioner will be able to withdraw from age seventy through age ninety will be as follows:

Boy	5,000 USD X 44.4 = 222,000 USD: 20 years = 11,100 USD per year, or a monthly allowance of **925 USD**
Girl	7,500 USD X 44.4 = 333,000 USD: 20 years = 16,650 USD per year, or a monthly allowance of **1,388 USD**
Poor boy	10,000 USD X 44.4 = 444,000 USD: 20 years = 22,200 USD per year, or a monthly allowance of **1,850 USD**
Poor girl	12,500 USD X 44.4 = 555,000 USD: 20 years = 27,750 USD per year, or a monthly allowance of **2,313 USD**

These are the minimum amounts that a person will receive even if for any reason he or she hasn't worked a day in their life. If one adds to this amount additional contributions that the person has made into his account over the course of his life, from family gifts and up to employer contributions, the chances will increase for every person to receive a decent living wage for the long years of retirement—two or three times more, in a conservative estimate. In this case, we will once again be able to look forward to our retirement because we will be assured many years of enjoying the fruits from the compounded savings. This should mean that the fears of a life of shameful poverty will be eradicated.

Value of average monthly pension per Israeli individual after seventy years of growth from the initial government grant (divided by twenty years)

1. 1.320 billion USD per year: 166,255 children= 7,940 USD X 44.4 = 353,000 USD
2. 353,000 USD: 20 years of pension = 17,627 USD per year
3. 17,627 USD per year: 12 months = 1,470 USD per month

Funding the special levy (the tax)

Assumptions

Number of households in 2011	2,166,000
Workforce in the Israeli job market in 2011	3,277,000
Number of households taxed by the special tax	2,166,000 less 650,000 poor families – 1,516,000

First option

In the first option, the tax burden is divided evenly among households and employers. Thus, fifty percent of the annual tax will be paid by households and fifty percent by employers for each of their employees. With the overall annual cost of the special levy coming to 1.320 billion dollars, fifty percent of the annual tax, i.e., 660 million dollars, will be imposed on all households—excluding the poorest 20%.

Accordingly, 660 million dollars divided by 1,516,000 households = 435 dollars per year per household, or 1.19 dollars per day (for 365 days/year). In addition, 660 million dollars divided by 3,227,000 people in the workforce = 205 dollars per year for every worker, or 0.93 dollars per day (assuming 220 workdays/ year).

The proposed model strives to keep many from reaching "pension failure"

The second (preferred) option

In this option, the tax burden is divided between households and employers at a ratio of one to two. Thus, households will pay 33.33 percent of the cost of the initial government grants, coming to 440 million USD, and employers will pay 66.67 percent of the cost, amounting to 880 million USD.

Accordingly, 440 million dollars divided by 1,516,000 households = 290 dollars per year or 0.80 USD per day (at 365 days/year). Furthermore, 880 million USD divided by 3,227,000 people in the workforce = 273 USD per year per worker, or 1.24 USD per day (at 220 work days/year).

A few reflections

Without using too many words, the reader can certainly comprehend the many advantages that the proposed Ten Pillars pension-savings arrangement can provide. Not only can such a pension-funding program avert the danger of shameful poverty during retirement and the inter-generational tension that is anticipated if the current situation continues for much longer, but it will even alleviate class tensions as the gap between them shrinks.

Such a paradigm will enable governments to fund just part of the pension of their workers without bearing the burden of the country's entire pension system. This cost itself can also go down over time, as governments become more efficient and reduce the workforce working directly for them. Such a model also enables employers to stop having to worry about the need to continue to update and therefore to increase the funding of the pensions of those who retire from their organization, and also to enjoy lower overall pension costs for their employees.

The primary advantage of such a model is that the large sums of money that accumulate in the new pension accounts will be used to develop a new and dynamic economy; an economy that will create more suitable workplaces and will reduce unemployment and the need for welfare subsidies for those at the bottom of the socio-economic ladder.

To this end, the model contributes significantly greater funding in the initial government birth-grant for the children of poor families. This follows the many studies that have been conducted in Europe that show that the children of the poor have six times more risk of themselves being poor at age thirty and therefore are significantly more likely to be a burden on society and on themselves for their whole life. Therefore, it is definitely economical for society on the whole to invest an additional 170 million USD per year in the children of the poor.

It is important to note that the initial government grant at birth must be a significant one. Through the new, relatively insignificant tax (per household and per employee), the government will be able to grant every newborn a capital sum that can grow over seventy years of investment to reach an amount that will enable every person to have a living wage for at least twenty years of retirement. These pension payments will be funded through the realization of accumulated assets and will not be a burden on government coffers or on the pockets of companies that employ the individual over the course of the years. This, of course, will also reduce the danger looming today over many future pensioners, that they will reach "pension failure"—a situation in which the existing pension funds will simply be unable to meet their promises, even if the individual contributed his part every month—since these funds are simply emptying out.

The proposed model seeks to disconnect the connection between pension payments to employment years

The capital amount of the grant and everything that accumulates in the pension-savings account over the years will not be in the custody of parents when the children are minors. It will be invested immediately in new investment frameworks whose sole mandate is to invest in the real economy and not in stock-market ventures. The government will not be entitled to touch these accumulating funds. The owners over the pension funds will be the people in whose names the initial grants were made and even they will be permitted to begin using them only from age seventy—whether or not they continue to be employed. Thus, it will be possible to sever the connection between employment and pension and to keep the decision about whether or not to retire as a matter between employers and employees, without damaging the rights of the worker to begin to draw money from his personal retirement fund.

The new Super Trusts entrusted with the grant money will work according to precise laws and instructions. For example, instead of charging an annual percentage point or two from the value of the accumulating assets, the annual payment for managing these accounts will be closer to one tenth of one percent. This difference alone, and the fact that there will be no charges for frequent sale or purchase of stocks, will increase the rate of accumulation of the assets over the course of the years by tens of percentage points. The new Super Trusts will make long-term investments. They will not be influenced by the frenzied emotion that guides the activity of the stock exchange and the economy in the short term. They will not distribute dividends, and all of the accumulating monetary profits will be invested and re-invested only in productive companies and in products that can have an added value for the consumer.

The new Super Trusts will not pay huge salaries or extraordinary bonuses to their managers every time they conjure large short-term returns. Reasonable bonuses will be paid for good results over years. The management culture in the many companies owned by the Super Trusts will be based on responsibility for workers, consumers, and share-holders, i.e., future and present pensioners. As every child will be defined from the day of his birth as an investor, every adult will have a direct interest in the economy. In other words, every citizen will understand that it is in his best interest to contribute to the development of the economy and society. This awareness, that one person's success is everybody's success, will spread rapidly.

The institutions of the new Super Trusts, which will be entrusted with investing the money of the pension-savers, have the potential to leverage the economy in creative and productive directions. Instead of pension funds being invested on average for periods of about ten years, as is practiced today, the government birth-grant will be invested for a minimum of seventy years. Assuming a net income of five percent per annum compounded, one can expect that every dollar invested at the time of a person's birth will grow to forty-four dollars by the end of the average period of payment of the pension—again, according to a calculation of monthly pension payments being made up to the age of ninety.

We can think of the new software, which we have called Maxilife, as the twin brother of the Super Trusts. Together, these powerful twins can enable modern nations in the twenty-first century to foster a balanced economy and society without the fear of crises that often threaten its very foundations or of compromising the basic dignity of any of its citizens.

It is important to remember that over the years, the disadvantages of any model will render it obsolete. Therefore in the future—at intervals of one or two generations—human society will have to reassess any pension-savings model and to look for ways to resolve its shortcomings, which will not only become apparent but will be exacerbated in the long-term. If the coming generations do not do this, they will themselves bring about the collapse of their economic and social systems. The coming generations will have to engrain in their leaders' minds the somatic memory of the many cultures that have fallen over the course of history and to educate them in the spirit of the saying that "nothing lasts forever."

We must keep in mind that over the years, the disadvantages of any model will render it obsolete

A Final word

The Ten Pillars paradigm is a good example of the kind of thinking that has a clear future-thinking orientation and a long and multifaceted future-time-span. The human brain's ability to solve problems even before they have come to the fore and caused great suffering has been proven throughout the generations in countless successes. But at the beginning of the twenty-first century, such thinking can be realized with even greater awareness. Relying on our vast knowledge and experience from the past and our ability to place this knowledge in a very long future-time-span trajectory, we can begin to solve difficult problems whose force and future repercussions many have yet to be internalized.

The example of the Ten Pillars pension model demonstrates that solutions to the tough problems of an ever-evolving modern world are to be found in the creative mind of man, and not in the stars of the heavens. The twenty-first century was born at a challenging juncture of history, in which the confluence of rapidly expanding life expectancy, globalization, vast transfer payments, and rabid speculation seems to be conspiring against the realization of the dreams of mankind. While many have difficulty conceiving of an exit from the morass which the defunct model has caused, we can take comfort in the knowledge that clear and simple thinking, focused on the attempt to prevent future pain by delaying the gratification of high short-term returns from the world's stock markets, can generate some great ideas about the right thing to do today—so that future returns will be greater and more promising.

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1 Gerstenhaber, M. (2009). *Have You Ever Seen a Retired Tiger in the Jungle? Eradicating Pensioner Poverty. A Manifesto for Democratic and Responsible Capitalism.* Ruscombe Press, London.

2 Longman, Philip (2004). *The Empty Cradle: How Falling Birthrates Threaten World Prosperity and What to Do about it.* Basic Books, a Member of the Perseus Books Group.

3 Reference to these studies can be found at http://igdc.huji.ac.il

4 Connelly, Matthew (2008). *Fatal Misconception: The Struggle to Control World Population.* Belknap Press, an imprint of Harvard University Press.

5 YNet 27.12.2011; www.ynet.co.il/articles/0,7340,L-4167702,00.html

6 David E. Harrison, Randy Strong, Zelton Dave Sharp, James F. Nelson, Clinton M. Astle, Kevin Flurkey, Nancy L. Nadon, J. Erby Wilkinson, Krystyna Frenkel, Christy S. Carter, Marco Pahor, Martin A. Javors, Elizabeth Fernandez, and Richard A. Miller (2009). Rapamycin fed late in life extends lifespan in genetically heterogeneous mice. *Nature*, July 16, 2009, Vol. 460, No. 7253 www.nature.com

7 For more information on Rapamycin's life-extending properties, go to the website of the University of Texas Health Science Center: www.uthscsa.edu.

8 For more information on the use of Rapamycin in cancer treatment, visit the website of the Health Sciences Center at Emory University: http://whsc.emory.edu

9 For more information on the use of Rapamycin in cancer treatment, visit the website of the Medical Research Center at Chicago University: www.uchospitals.edu.

10 A summary of demographic statistics for Israeli can be found at the following website. They are updated each time the Israeli Central Bureau of Statistic publishes new data, and they are crossed with other international sources: www.indexmundi.com/israel/demographics_profile.html.