

CHAPTER EIGHT
ACADEMIC OPPORTUNITIES
FOR SHAPING A BETTER FUTURE

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Let's face it: we teachers possess more power than we think for influencing the course of future global developments! Most of the leaders who will shape the future of commerce, politics, and science are going through our schools at that formative age when they are in the process of conceiving their creative ideas, opinions, and obsessions. The time at the university is of great importance for the personality formation of our students. Let's take advantage of this period of receptiveness and openness, and let's implant lasting values in our students' minds—values that will germinate later and may lead to courageous decisions in critical situations or just to a more tolerant attitude in interpersonal relations!

However, let's remain modest: we teachers are not in a position to change the course of the world directly. We can only set the proper initial conditions; the relevant actions have to be undertaken by our students themselves—or by the students of our students. We are more like catalysts than reactants. And the reaction may take a long time, perhaps several generations, to yield its beneficial result. We cannot redesign the world today. For example, we cannot immediately get rid of all of the corrupt politicians, criminal businesspeople, and false prophets in this and in other countries. But we can hope that long-term development will favor lawfulness, generosity, compassion, and trust. Perhaps we have to be patient beyond our own lifetimes. But surely we contribute to a development in the "proper" direction when we ourselves behave as decently as ever possible and act as positive role models without compromises.

With these brief remarks, all has been said that needs to be said. Let me add just one more sentence: *personal responsibility and the courage to implement it, despite adverse conditions, are the foundation for a*

beneficial future. With this simple “one-sentence” thesis, I could stop and let my readers go back to work on their personal responsibilities, whatever they feel they are. Courage is one of the most important prerequisites for changing the world for the better.

Surely, the reader might be disappointed by somebody coming from as far as Switzerland to present just a “one-sentence” lecture at Notre Dame. But, in fact, sages have known for millennia that the ultimate truth lies in silence. An unconfirmed quote by Confucius says: “Silence is the true friend that never betrays.” And Spinoza wrote that “The world would be happier, if men were as fully able to keep silence as they are to speak.”¹ As a paraphrase, I sometimes tell myself before falling asleep in a lengthy and boring lecture that “those who have nothing to say cannot stop talking.” We have all experienced situations in which it would have been better to remain silent. With these superfluous words, breaking silence, I have already shown how far I am from a sage! Sometimes, I am obsessed by the feeling that I cause more problems than I could ever solve! So please do not expect much benefit from reading my lengthy and boring paper!

The views that I express in what follows are personal; perhaps they reflect a European point of view. I wished that my endeavours would be humane and responsible toward the global society, and I hope that, in some, perhaps remote, ways, my remarks might resonate in the readers’ minds.

1. Today’s Situation

Why is our world as it is today? Beautiful and disastrous, full of hope and full of despair, showing so much kindness and even more hatred! Why can we not find a “middle way” in the Buddhist sense: a middle way fair to everybody, combining joy with hope and kindness? Maybe there is such a middle way; at least, I have not yet given up hope that somebody will find one in the end! I have preserved my firm belief in the benevolence of human beings despite all evidence to the contrary!

Frequently, I end my lectures with a quote that I will put here at the beginning: “Optimism is a duty... We are all jointly responsible for what is to come.”² These are the words of the “optimistic” Austrian philosopher and scientist, Karl Popper. He expressed them on the occasion of receiving the Otto-Hahn Peace Medal on December 17, 1993 in Berlin. His family was originally of Jewish origin, but they converted to Protestantism and Karl Popper did not care much about the apparent differences between religions. So we are with him on neutral grounds. I have put his positive

statement at the beginning because in many places on our globe it is becoming more and more difficult to remain optimistic—a difficulty found even in the surroundings of Notre Dame, Indiana. One may think that here, at least, the world is still in proper order. Life is taking its usual course. On the streets one encounters many happy faces that have enjoyed their regular breakfast, possess a handsome motorized vehicle, and live in a fairly spacious apartment. But some of the hidden desperate calamities of the apparently happy citizens cannot be left unmentioned. Many of them have recently lost their jobs; many youngsters have never even had a paying job. Many have accumulated debts, even early in their lives, have difficulties paying tuition for higher education, and have become demotivated or even mentally ill. They eat cheap and unhealthy food and expand like cakes in the oven. Families are often broken, divorces are as frequent as marriages, and each person fights for his or her own survival. The apparent paradise in the surroundings of Notre Dame has indeed also reasons for despair.

I have given similar lectures to academic communities at universities around the globe. All of them have common problems, questions, and challenges. But all of them share the three academic responsibilities: (1) *educating future leaders*, (2) *research for solving the great problems of our time*, and (3) *planning a beneficial future*.

But how shall a “homebody” like me, living in an affluent ivory tower in peaceful Switzerland, be capable of appreciating the difficulties of the global situation? We scientists are so much fascinated by our own work that we easily forget the rest of the world with all its problems. We are struggling deep down in our research shaft, working on the foundations of science, and are hardly interested in the clouds that might start to overshadow the sun. It was the Sufi teacher Nawab Jan-Fishan Khan of nineteenth-century Afghanistan who coined the simple saying “The candle is not there to illuminate itself.”³ It applies well to the academic situation and to all those citizens who pretend to be more than they are. Most of the problems of our tortured globe are man-made: catastrophes like the oil spill in the Gulf of Mexico and the meltdown at Fukushima—and environmental damage like global warming—are the result of selfishness, greed, corruption, and crime—as are wars and poverty. When asked about those characteristics of our time that have a global impact, one might mention the following six: (1) *the unlimited faith in technology*, (2) *the unlimited faith in a free market economy*, (3) *the claim to unlimited personal “freedom,”* (4) *the increasing gap between rich and poor*, (5) *the loss of a shared ethical foundation*, and (6) *governance by a single superpower*.

We live today in a brutal world. Competition has become of greater importance than cooperation in all domains of human activity: we fight for living space, for food, for wealth, and for fame. Also, scientists often seem to behave in this way: Ad Lagendijk wrote in *Nature* that “Tales of brilliant scientists and their heroic discoveries can overshadow the true nature of scientific communities, which are dominated by battles for power and success.”⁴ To succeed, we have to run faster every day. We scientists are forced to produce more research results in lesser time so that industry may sell more useless consumer products that the consumer is nonetheless expected to “digest” as fast as possible, prompted by dishonest, shortsighted marketers—and convert it into garbage, making space for new (mostly unnecessary) acquisitions. In the evening, one asks oneself: what is the purpose of all this waste and rush? Just visit, occasionally, the backyard behind a typical one-family home in your neighborhood and count the obsolete and rusty gadgets that have already stood there for years! And nobody is asking: when running faster every day, at least, are we running in the proper direction?

I still remember the audience of six Nobel Laureates with the Science Minister Park Ho-koon of South Korea on November 20, 2003, when he inquired about a secret recipe by which South Korean scientists might win Nobel Prizes, and he received from us the standard answers: peer-reviewed research funding, inviting foreign scientists to Korea, English as the language of instruction, and the free selection of research topics. The next day, we had a similar discussion with President Roh Moo-hyun, who asked exactly the same question. You may all remember what has happened since then in South Korea: President Roh visited Professor Hwang Woo-suk of Seoul National University, who claimed to have performed the first human therapeutic cloning experiments. And photos were taken, proving the President’s interest in prize-worthy science. But the human cloning project turned out later to be a huge fake. This was the result of too much political pressure on science. It can easily lead to fraud! It would certainly have been better for Professor Hwang to concentrate on his teaching activities!

Around the globe, we are losing our precious humanistic heritage, such as the cultural and ethical values, responsibility, compassion, and farsightedness. They are replaced by monetary craving, by egoism, by exploiting the weaker ones, by lust for power, by racism, and by violence. We citizens of wealthy nations have caught “Luxury Fever,” which was well described by Robert H. Frank of Cornell University:

That many goods become more attractive to us when others also have them means that consumption spending has much in common with a contagious

illness. The explosive proliferation of sport-utility vehicles in American parking lots is simply unintelligent.⁵

We seem to sit in an acceleration trap, and, at the end, only stress remains. Our technological world abounds in material wealth, but, at the same time, we have become very, very poor in our minds. Just watch the average television broadcast as it spoils the cozy atmosphere of your living room!

We are caught in a deep identity crisis, in a crisis of objectives. We are in need of novel, comprehensive and lasting approaches. How can we get out of this worldwide identity crisis? Who will help us, who will keep our boat afloat? Politics, economy, or the academic community? In an ideal world, we all would have to collaborate, but my confidence in politicians and economists has become rather weak. Thus, I am convinced that we academics have to carry a significant part of the burden. We have to provide role models of honesty and foresight. As Karl Popper wrote:

Every intellectual has a very special responsibility. He has the privilege and the opportunity of studying. In return, he owes it to his fellow men (or “to society”) to represent the results of his study as simply, clearly and modestly as he can. The worst thing that intellectuals can do—the cardinal sin—is to try to set themselves up as great prophets vis-à-vis their fellow men and to impress them with puzzling philosophies. Anyone who cannot speak simply and clearly should say nothing and continue to work until he can do so.⁶

It is up to us to build bridges, built on tolerance and responsibility between the different classes within society, between different cultures, between different religions, and between the universities and society.

2. University Teaching

In the course of educating future leaders, we teach mostly skills and knowledge. We speak today of the future “knowledge society,” and we believe that those who know more will accomplish more, earn more, and, in the end, live a happier life. But more important than conveying knowledge is conveying understanding in the sense of wisdom, paired with ethics and responsibility. But wisdom cannot be taught in lectures; it grows slowly and requires lifelong experience. Anyway, I do not trust the learning efficiency of lecture room teaching, reciting cookbooks. Never *ever* read a manuscript in front of an audience! Indeed, we need not lecturers but *motivators* who inflame their students’ curiosity and initiative. Real learning happens in the research lab, in the library, or in the

course of community service. Learning by doing, trial and error are the foundation of a successful education! The most efficient learning happens in the real world.

What are the qualities that people need for becoming creative? They are *curiosity*, *relentless questioning*, and *searching for answers*. In other words, *creative unrest characterizes innovative personalities*. But such personalities also need *a broad horizon*, *knowledge in several fields*, *a talent for interdisciplinary thinking*, and *the capacity to be inspired by analogies*. Analogies are important for stimulating novel ideas in different fields—not through “copying and pasting” but rather by the creative transformation of known concepts. In this sense, widespread interests or passions can prove to be quite rewarding. But creative minds also need *an inner inquietude and conflicting feelings*. Creative minds oscillate between *self-confidence* and *self-criticism*, between *stubbornness* and *flexibility*, between *concentration* and *relaxation*. Even this, however, is not ultimately sufficient for success. A creative mind also needs *partners for discussion and collaboration*, *open dialogue*, *openness for critics*, *honesty toward oneself*, and *honesty toward others*.

Collaboration with public institutions and with industry is essential for universities to shatter the ivory tower. Teachers and professors need to have spent at least a year in a practical environment outside of any university. And engineers and scientists in industry, for their part, must return regularly to the university to “refill” their “tank” of knowledge—and also to contribute realistic practical examples to enrich teaching courses.

Public teaching is an important obligation of universities. Society at large needs to be exposed to critical views and rational scientific insights that will counterbalance the destructive influence of misleading false prophets and one-sided interest groups. Most of these come today from the extreme right of society. Here I would like to add a critical remark on fundamentalism. We are endangered by dozens of forms of fundamentalism, by Christian fundamentalism in the form of intelligent design, which is frightfully strong in American society, and by fundamentalist trends in other religions. Their views are incompatible with scientific openmindedness. They replace a critical rational attitude by a belief in simplistic, unproven, and rigid dogmas. For me, fundamentalism is like “frozen ignorance.” It is one of the major tasks of education to “melt away” ignorance and replace it by the sincere will to comprehend. Then, fundamentalism would have no place left. The true goal of education—and of teaching the public—is to arm a critical mind with knowledge, wisdom, and tolerance (though not tolerance of intolerance)!

The education of women is, perhaps, the most important global issue in education. What is done to improve the fate of women is to the benefit of everybody. This is true for all countries around the world—but particularly for those with an Islamic majority. Women are the pillars of the family and therefore of society. Mothers feel more responsible for the fate of their children than anybody else. Give them a better education, more means, and more liberty, and the situation in the country will improve! I think that it is an academic obligation to rethink the roles of the various members of the family in order to allow for fairness. Investing in our children is a thousand times more beneficial than investing in bigger cars, faster computers, and more powerful weapons. If the major producer of weapons in the world would take this to its heart, we would have soon a better world.

3. University Research

Research and teaching should never be separated. Research is by far the best tool for “learning by doing.” All of us—young and old—are researchers: searching and trying to understand is a fundamental human drive. Without it, our world—in both its positive and negative aspects—would not be as it is today. For me personally, “research” has meant, for the past fifty years, nuclear magnetic resonance (NMR), a very fascinating field of science—and a useful one as well! I could write much more about it, as an example of how beneficial research can be. NMR has led to the ability to identify and study the function of molecules in analytical chemistry, to determine the three-dimensional shape of biopolymers and to explore their functional interaction, and to peek into the human body in a clinical environment. The most recent development of NMR has led to the ability to study the functioning of the human brain by functional magnetic resonance imaging (fMRI) and to visualize cognitive processes as they occur. Science can be gripping indeed and I have been caught by it for the past half century.

University research endeavors are often difficult to fund, because it is often difficult to justify the relevance of a particular research project. Linking research to education eases this difficulty. It is the process of (re)searching by itself that brings educational benefit. Even failures or efforts without spectacular results can be beneficial experiences, justifying a serious, open-minded, and unprejudiced research effort. Research is indeed one of the very basic human drives that led to the historical human and societal development.

4. Planning Our Future

The planning of our global future is, perhaps, the most important obligation of universities. Politics and business are entirely concerned with the present, while universities must have a visionary mind that looks beyond today's realities. In fact, education and research both serve our planning of a beneficial future. In this context, I would like to give three pieces of advice to the academic community: **(4.1)** *open the university's mind*, **(4.2)** *critically observe the world*, and **(4.3)** *become active*!

4.1. Open the University's Mind

It was Mahatma Gandhi who proclaimed, unforgettably, "We need to be the change we wish to see in the world."⁷ These are straightforward but powerful words that are difficult to follow. It is so much easier to spread good advice to others than to change one's own attitudes and thinking. Doing so is considerably more painful, but, in the end, it is also more effective.

I think that we have to (re)convert our academic institutions into radiating cultural centers with an impact on society. So let us shatter our ivory towers and assume social responsibility! First of all, however, we have to break the barriers within the universities themselves. We all know that technology and science alone are not sufficient to solve the major global problems. We need more! We need support from the side of the humanities; we need also empathy, compassion, and foresight. The humanities allow us to comprehend human reactions, thoughts, and feelings such as love and hatred. Let us break the barriers within our universities between the natural sciences, humanities, and social sciences. Perhaps this will open avenues toward true wisdom. It is the "fresh smell" that we are seeking in hoping to share the insight of the humanities. When we read one of the beautiful poems of Rumi, doors to another reality seem to open indeed:

The morning wind spreads its fresh smell.
We must get up and take that in,
That wind that lets us live.
Breathe before it's gone.⁸

At this point, ethics come strongly into play, being relevant in all aspects of life, also in science. Many great sources of ethics are available and, surprisingly, they all express the same truths, just by means of slightly different words.

4.1.1. Philosophical Ethics

At first, there is philosophical ethics, which expresses the ethical principles in a “neutral” manner—in a form, that is, easily acceptable also to scientists. The German philosopher Hans Jonas (1903–1993), who lived and taught in the United States, wrote the important treatise *Das Prinzip Verantwortung*⁹ or, in English, *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*.¹⁰ In the Preface to the original German edition (which has not become part of the English edition), he writes: “The ultimately unleashed Prometheus to whom science is giving hitherto unknown strengths and economics’ unrelenting drive calls for ethics that detains its power by voluntary reins from causing harm to people.” (“Der endgültig entfesselte Prometheus, dem die Wissenschaft nie gekannte Kräfte und die Wirtschaft den rastlosen Antrieb gibt, ruft nach einer Ethik, die durch freiwillige Zügel seine Macht davor zurückhält, dem Menschen zum Unheil zu werden.”) Then he asks “What can serve us as a compass?” (“Was kann als Kompass dienen?”), and he gives the answer himself: “The anticipated danger itself!” (“Die vorausgedachte Gefahr selber.”) He summarizes his creed in the imperative of responsibility: “Act so that the effects of your action are compatible with the permanence of genuine human life.” This principle, in fact, expresses ultimate sustainability. We are requested to leave to our descendants the same chances as we have encountered them ourselves. We are no longer allowed to exploit non-renewable resources of any kind; and our life style will thus be affected drastically. Also, strict birth control becomes an absolute must. That the policies of the United States and of other countries contradict this imperative profoundly is quite obvious: we are living on the account of resources that would be indispensable for future generations!

4.1.2. The Ten Commandments of Moses

Christian ethics, as is well known, is founded on the Ten Commandments of Moses:

1. I am the Lord your God who brought you out of the land of Egypt, from the house of slavery. You shall have no other gods in My presence.
2. Do not make an image or any likeness of what is in the heavens above.
3. Do not swear falsely by the name of the Lord.
4. Remember the Sabbath day and keep it holy.

5. Honor your father and your mother.
6. Do not murder.
7. Do not commit adultery.
8. Do not steal.
9. Do not bear false witness against your neighbor.
10. Do not covet your neighbor's wife.¹¹

In contrast to Hans Jonas' *Imperative of Responsibility*, the Ten Commandments are not much concerned with our relation to future generations and their needs. Rather, they regulate today's society and individual behavior in the spirit of truthfulness, responsibility, and compassion. Obviously, Moses had not had a chance to read that famous book by the Club of Rome, *The Limits to Growth*,¹² where the highly relevant futuristic aspects are exposed and set in evidence.

4.1.3. A Global Ethics

In *The Declaration of the Parliament of the World's Religions*, a Global Ethics has been drafted in Chicago in 1993, based on Christian ideals. It aims to appeal to all religious communities and has a direct social focus and addresses today's needs. It is structured as follows:

- I. No new global order without a new global ethic.
- II. A fundamental demand: Every human being must be treated humanely.
- III. Four irrevocable directives:
 1. Commitment to a culture of non-violence and respect for life.
 2. Commitment to a culture of solidarity and a just economic order.
 3. Commitment to a culture of tolerance and a life of truthfulness.
 4. Commitment to a culture of equal rights and partnership between men and women.
- IV. A transformation of consciousness.¹³

4.1.4. The Qur'an

Also in the Qur'an, the spirit and contents of all the Ten Commandments can also be found, although dispersed:

1. There is no other god beside Allah. (Qur'an 47:19)
2. My Lord, make this a peaceful land, and protect me and my children from worshipping idols. (Qur'an 14:35)
3. And make not Allah's (name) an excuse in your oaths against doing good, or acting rightly, or making peace between persons; for Allah is One Who heareth and knoweth all things. (Qur'an 2:224)
4. O you who believe, when the Congregational Prayer... is announced on Friday, you shall hasten to the commemoration of God, and drop all business. (Qur'an 62:9)
5. And your parents shall be honoured. As long as one or both of them live, you shall never (even) say to them, "Uff" (the slightest gesture of annoyance), nor shall you shout at them; you shall treat them amicably. (Qur'an 17:23)
6. Anyone who murders any person who had not committed murder or horrendous crimes, it shall be as if he murdered all the people. (Qur'an 5:32)
7. You shall not commit adultery; it is a gross sin, and an evil behaviour. (Qur'an 17:32)
8. As for the thief, both male and female, cut off their hands. It is the reward of their own deeds, an exemplary punishment from Allah. Allah is Mighty, Wise. But whoso repenteth after his wrongdoing and amendeth, Lo! Allah will relent toward him. Lo! Allah is Forgiving, Merciful. (Qur'an 5:38)
9. Do not withhold any testimony by concealing what you had witnessed. Anyone who withholds a testimony is sinful at heart. (Qur'an 2:283)
10. And do not covet what we bestowed upon any other people. Such are temporary ornaments of this life, whereby we put them to the test. What your Lord provides for you is far better, and everlasting. (Qur'an 20:131)¹⁴

4.1.5. The Noble Eightfold Path

Finally, The Noble Eightfold Path summarizes Buddhist ethics and the rectitude in human behavior:

1. Right understanding.
2. Right intention.
3. Right speech.
4. Right action.
5. Right livelihood.
6. Right effort.
7. Right mindfulness.
8. Right meditation.¹⁵

The Noble Eightfold Path is a method of redemption from human misery after recognition of the Four Noble Truths:

1. Suffering does exist.
2. Suffering arises from attachment to desires.
3. Suffering ceases when attachment to desire ceases.
4. Freedom from suffering is possible by practicing the Eightfold Path.¹⁶

Indeed, all major world religions carry the same essence; merely the languages in which they are expressed are different. Recognizing this fact would render the coexistence of religions much easier than practiced today! By the way, only the Ten Commandments and their Muslim equivalents employ the term “God.”

Integrating these thoughts into university teaching does not require specialized ethics teachers: it is sufficient to appoint science and humanities teachers with vision and a sense of global responsibility who know how to integrate social and ethical concerns, even into science lectures. Of equal importance are discussion groups and retreats, bridging disciplines and involving students and faculty, for discussing social and ethical concerns.

At universities, we have to learn again to dream—to have the vision of an ideal World and then to try to implement it. We are the only ones who can be open-minded without restriction. In politics and in business, this is impossible without the loss of power and of sales, respectively. At universities, we have the responsibility—indeed, we are paid for it—to speak up and express our opinions as freely as ever possible on all relevant subjects. Frank personal opinions are more valuable than the avoidance of errors! We have learned that committing errors is humane and the willingness to correct errors belongs to human honesty. Roman Herzog, former German president, said in a public speech: “Without critical opposition, without the engagement of relentless thinkers, a society will degenerate. We need impertinence and questions of independent brains.” (“Ohne kritischen Einspruch, ohne das Engagement unbequemer Denker verkümmert die Gesellschaft. Wir brauchen die Zumutungen und Fragen unabhängiger Köpfe.”¹⁷) The “independent brains” that he had in mind are, in fact, ours!

Researchers and scientists should learn to operate simultaneously on two levels: we are all well accustomed to the “ground floor” of research, where we dig as deeply as possible into the secrets of nature, gaining indispensable knowledge. But we must also work on the level of social and global concerns, where we acquire breadth as we try to understand the connections and the societal context. On this “upper floor,” ethical concerns become of high relevance.

4.2. Critically Observe the World

In order to make proper assessments and adequate recommendations, we have to critically observe what happens outside of our ivory towers and draw our own conclusions.

4.2.1. Politics

We all know that politics has less to do with justice than with justification. A politician will try to justify whatever he is doing, even if his deeds border on crime.¹⁸ It happens all too often that today’s victims of crime become tomorrow’s offenders. Some outlet for their anger and pain is, it seems, a necessity. But it will lead to a vicious circle that must be broken by whatever means are necessary; education can bring in reason and restraint to prevent the senselessness of revenge, and it is the most obvious remedy. All of the suffering of the victims would be in vain if they did not learn from their experience how one should not treat even

one's worst enemy! In the strong words often misattributed to Mahatma Gandhi, "An eye-for-an-eye-for-an-eye-for-an-eye... makes the whole world blind."¹⁹

4.2.1.1. Superpower Politics

It is well known that the globe has lost its balance of power not only locally but also globally. It is likely that the overwhelming power of the United States—which causes for other nations more harm than good—will not last forever; at this moment, though, it is still a reality. The American journalist Robert Kagan wrote: "The real division of labor [between the United States and its European allies consists] of the United States 'making the dinner' and the Europeans 'doing the dishes.'"²⁰ His statement is still an apt characterization of the situation—except that there are plenty of "dishwashers" also outside of the European Union! We live today in an unjust world—one in which political, military, and economic power is both the ruling force and the explanation for all actions, right or wrong. This is because the strongest nation can violate with impunity any international agreement; it can, for example, resist the Kyoto Protocol, vote against the establishment of the Human Rights Council, vote against the Convention on the Protection and Promotion of the Diversity of Cultural Expressions, flout the disarmament article of the Treaty on the Non-Proliferation of Nuclear Weapons, refuse to sign the Ottawa Treaty on landmines, withdraw from the Anti-Ballistic Missile Treaty, refuse to ratify the Convention on Rights of the Child, and "unsign" the Rome Statute of the International Criminal Court. On March 15, 2006, the United States, Israel, the Marshall Islands, and Palau were the only four countries that voted against the new Human Rights Council of the United Nations. True, it proved to be a fairly ineffective council in practice, but voting against its establishment for selfish reasons did not reveal much international sensitiveness!

4.2.1.2. International Organizations

What can Europe, Asia, and Africa contribute in this unjust situation? I am convinced that it is our primary responsibility to strengthen international organizations. Here are a few examples.

Let us reflect on a renewal of the United Nations. Its competence has to be strengthened—and its Security Council has to be restructured so that the catastrophic right to veto is eliminated!

The International Criminal Court, or ICC, and the International Court of Justice, or ICJ, need to be folded into a single organization. The right of nations on the Security Council to veto its decisions should be eliminated,

and more power must be devoted to the enforcement of the decisions of the newly combined ICC and ICJ. And, finally, a strong United Nations force for solving international conflicts seems to be indispensable.

The restructuring of the World Trade Organization, or WTO, is necessary to give the poor nations of the Third World more influence. At this moment, the commercial interests of multinational companies dominate the Third World and rich countries can establish import tariffs that inhibit the just commercial development of poor nations.

The World Future Council, or WFC, presently a private foundation, needs an official status that does justice to its importance. As a matter of principle, it should be able to represent the rights of the many future generations of the world, who will surely number in the hundreds of billions. To a great extent, we are today living on resources due to them, resources that they would need to live with a lifestyle even remotely similar to ours. The WFC has to forcefully represent their rights to today's governments and legal authorities. It seems irresponsible to raise offspring and, at the same time, disregard their right to the means for a decent quality of life. The immense task of protecting these rights should become the responsibility of the important WFC.

Finally, a network of organizations is needed that approaches the power of a world government. Obviously, its establishment will be a long and arduous task, and so this goal has to be approached in steps. The establishment of regional unions—like the European Union—is one such step. The temporary financial difficulties of the European Union should not distract one from the remarkable fact that a bunch of hostile European states were converted, in less than fifty years, into a Union that functions peacefully and remarkably well.

4.2.2. Economics

Today, the global economic dream is that of a “free market.” Even for a casual observer, however, it is becoming obvious that an entirely free market quickly leads to an economy of exploitation. Selfishness, egoism, and lucre become the actual driving forces in such an economy. Often, Adam Smith is quoted as the guru of the free market. He writes “It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest.”²¹ Smith writes further:

He intends only his own gain; and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By

pursuing his own interest, he frequently promotes that of the society more effectually than when he really intends to promote it.²²

The markets of today are not far from the purported ideal attributed to Adam Smith. Entirely free markets mainly serve to increase the wealth of the already affluent, while the ethical “values” are going down the drain! Citizens are degraded to “consumers” in order to keep industry flourishing. As long as profit and higher shareholder value are the only goals to be achieved, no honesty or fairness is possible in business, and dishonest marketing with irresponsible, non-sustainable incentives for boosting sales will prevail. Without strict state control, maintaining the equality of all citizens by legal means, no fair market is conceivable.

It is known that pure money-mindedness corrupts. The rising CEO salaries of the past years are only one of the numerous disturbing indicators of increasing corruption in business. They violate our sense for democratic fairness and, in the end, will render unstable our entire economical system. I once proposed that the bonuses of CEOs be replaced by bonus certificates that could be used only for charitable contributions. A CEO would then have the option to choose whether to contribute to the Red Cross, Blue Cross, or Green Cross. If we do not act in some way similar to this, our free market will further enrich the rich and impoverish the poor.

The basic problem has deep roots. It is our inherent—and, some claim, ineradicable—egoism that motivates us to act solely when we hope for a personal profit. The above quotes by Adam Smith seem to purport this view. On the other hand, it is well known that Adam Smith himself had a strong ethical conscience as is evidenced by his treatise *The Theory of Moral Sentiments*,²³ written in 1759.

Irrespective of the existing theories on moral sentiments, purporting innate goodness or evilness, it is a primary goal of our educational endeavors to shape human behavior so that it adjusts to its social environment. This necessarily requires us to reduce the human egoistic trends and replace them by reasoning and a sense of social responsibility. I think that a responsible person asks himself not what he gains personally by doing this or that but, rather, what will be the societal gain that results from so doing. This kind of responsibility should become the major force for driving personal behavior.

My dream is to replace the ideal of a “free-market economy” by that of a “responsible-market economy” in which foresight, a sense of social responsibility, and conviction become major driving forces. Such a hypothetical market would somewhat reduce chances of profit and the all-important shareholder value to a level still sufficient for providing incentives for economic players. The main gain would, hopefully, be directed towards

society and the environment and to the advantage of our descendants: reducing waste, environmental damage, and the depletion of resources.

Indeed, we already have institutions that operate in this way today, for example, the Grameen Bank, founded to help the poor by Muhammad Yunus, who was awarded the 2006 Nobel Prize—not in economics but in peace. Other social entrepreneurs are acting in the same beneficial way. They provide some dim hope for the future!

4.2.3. Ecology

The global ecological situation is quite desperate! Just imagine a father coming out of his house, a partially read newspaper in his hand, and yelling to his children playing in the backyard “you need to go inside to get some fresh air!” This horrific image is not far from reality in many of our polluted cities.

Today, some of the worst offenders still pretend that global warming is a myth, a theory based on faulty data. Even a certain misinformed and misled former president of the United States claimed this! It is a fact, however, that those areas of the world that produce the least amount of greenhouse gases will be the ones to suffer most from global warming.

Indeed, we have to stop exploiting finite natural resources, like crude oil and fissionable uranium, and concentrate instead on renewable resources like solar, wind, and geothermal energy. The expected deficit in the global energy “budget” will have to be compensated by drastically reducing consumption, especially in affluent countries.

I think that, with our present lifestyle, we are not only depleting our natural resources but also acting against our conscience and our pride in humanity. We are losing our resources necessary to life and our moral right to populate the depleted planet. Unless we are changing our consumption, we are inviting a disaster that will wipe out the human race forever.

4.2.4. The Preservation of Our Cultural Heritage

Another issue relevant today is the preservation of our cultural heritage. All too often, the world of science, technology, and progress overshadows the world of culture, heritage, and tradition. In fact, however, the two have to coexist in a symbiotic way, for they depend on each other. In this respect, cultural diversity is as important as biodiversity. We have to try with all of the means at our disposal to maintain our cultural heritage by integrating it into a lifestyle that takes account of today’s realities.

Cultural heritage comprises our roots that are essential for our self esteem. Much of our sense of life is rooted in cultural traditions. Losing them causes an irretrievable loss and possibly instability in society.

I was therefore very glad when, on October 20, 2005, the Convention on the Protection and Promotion of the Diversity of Cultural Expressions was adopted by the UNESCO General Conference, with 148 nations voting for it and only 2 voting against it. However, it is unfortunate that the voices against it were those of the United States and Israel! This can hardly be interpreted as an act of tolerance towards other traditions by either nation.

4.3. Become Active

“Let’s become active” does not mean that we should start protesting or become violent. It means that we should collect our thoughts, invent solutions for averting doomsday, providing advice and education, and trying to influence the course of the world before it is too late.

Lifelong learning is of great importance in this quest. We need to educate those in the public who have forgotten or never learned before how to behave in our complex world. We have many options for this monumental task: we can organize courses, give lectures, produce television broadcasts, provide resources on the Internet, write articles in journals, send editorials to newspapers, and organize tours through our laboratories, public institutions, and nature.

I like the metaphor of a global vehicle, which represents today’s world and our mission in it. My imagined global vehicle is a powered two-wheeler with the society as its passengers. They are kept in a good mood by politics, so that they do not jump off the jolting vehicle. The enormously strong motor represents industry, which pushes the vehicle forward at maximum speed—that is, at maximum accumulation of profit. The direction the vehicle takes is irrelevant: who cares if it drives to hell when all of the profits are spent long before reaching hell? In this situation, somebody has to take the steering wheel for guaranteeing a safe journey evading hell. Who is better suited for this task than the academic community?

I would like to end with two examples of how to become active from my own experience. In 2005, ETH Zürich celebrated its 150 years’ jubilee. We decided to take advantage of this opportunity to send 150 professors onto the streets of Zürich to teach publicly. We erected small pavilions for them, each of which held about 100 people; and the 150 professors gave 430 lectures in three weeks, initiating discussions with the public after

each. This feedback from the public was an essential part of the effort, which turned out to be a great success. I hope that we can repeat it!

At the same time, there was a World of Science Exhibition that allowed members of the public to perform hands-on science experiments. Again, it was extremely successful, attracting 220,000 visitors in just three weeks. It had an ideal location next to the main railway station of Zürich.

Another activity still ongoing is the intercultural project Science Meets Dharma, which takes place in Tibetan monasteries in South India. There, we train Tibetan monks and nuns, refugees from Tibet, in Western science—not to convert them to the decadent Western ideology but rather to allow them to establish contact with the modern world. We Western teachers, on the other hand, learn compassion and wisdom from the advanced and selfless spirituality of the monks and nuns. This is an example of true intercultural discourse that is so necessary in our world—divided as it is today along cultural and religious boundaries. The project was initiated by the Dalai Lama himself, who is interested profoundly in the relations between science and Buddhism.

5. Concluding Words

The formation of responsible and innovative leaders with long-term vision indeed remains the main obligation of universities. We are educating the future pathfinders who are willing to serve society. François Rabelais had already expressed our dilemma 450 years ago: “science sans conscience n’est que ruine de l’âme”—that is, “science without conscience is but the ruination of the soul.”²⁴

And, finally, it seems appropriate to repeat the creed of Karl Popper: “Optimism is a duty... We are all jointly responsible for what is to come.”²⁵ I wish all the readers this optimism that leads to responsible action despite the irresponsible behavior of today’s narrow-minded egomaniacs in business and politics.

Notes

* This essay is based on many lectures that I have given around the world in many cities in Europe, Asia, Africa, North America, and South America, including a lecture at the University of Notre Dame on April 5, 2011. Some of the text dates to a PowerPoint lecture presented at Al-Quds University in Palestine on February 6, 2007. The author gratefully acknowledges the assembly of the references and linguistic improvements of the manuscript by Daniel Sportiello, a doctoral candidate in philosophy at the University of Notre Dame.

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- ⁹ Hans Jonas, *Das Prinzip Verantwortung: Versuch einer Ethik für die technologische Zivilisation* (Frankfurt: Suhrkamp, 1984). Translations mine.
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- ¹⁷ Roman Herzog, quoted in *Heine und die Nachwelt: Geschichte seiner Wirkung in den Deutschsprachigen Ländern: Texte und Knotexte, Analysen und Kommentare*, ed. Dietmar Goltschnigg and Hartmut Steinecke (Berlin: Erich Schmidt, 2011), 3:571. Translation mine.
- ¹⁸ See Paul Ginsborg, *Silvio Berlusconi: Television, Power and Patrimony* (New York: Verso, 2005).
- ¹⁹ Shapiro, 269.
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- ²¹ Adam Smith, *The Wealth of Nations*, ed. Jonathan B. Wight (Petersfield, Hampshire: Harriman House, 2007), 9–10.
- ²² Smith, *Wealth of Nations*, 293.
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²⁴ François Rabelais, *Gargantua and Pantagruel*, trans. M. A. Screech (New York: Penguin, 2006), 49.

²⁵ Popper, *Life*, 143.