A nuestros distinguidos visitantes:

Como parte de sus responsabilidades escolares, mi hija adolescente (Mariana) realizó una recopilación de ensayos sobre "Ética", los cuales me parecieron de gran interés para compartir con ustedes.

Su trabajo de investigación bibliográfica, titulado "My Ethics Book", comprende los siguientes temas:

1. Ética y ciencia.
2. Ética y tecnología.
3. El impacto de la ciencia y la tecnología en la economía.
4. El impacto de la ciencia y la tecnología en los negocios y en la guerra.
5. El impacto de la ciencia y la tecnología en el hogar y en la comunidad.
6. Bioética.
7. Suicidio, aborto y eutanasia.
8. Ingeniería genética.
9. Las relaciones de la naturaleza humana.
10. La crisis ecológica global.
11. Códigos de ética ambiental.
12. La ecología y el ambiente. Un problema nacional.
13. La actitud de los seres humanos.
14. Conciencia moral y conciencia de uno mismo.

Estos temas de reflexión nos competen a todos los seres humanos como personas y deben de ser considerados seriamente por las organizaciones de negocios. En la medida en que actuemos consistentemente con un comportamiento ético, nuestros negocios floreceran con mayores niveles de satisfacción, tranquilidad y RENTABILIDAD.

Invertir en Eficiencia paga los mejores dividendos...

Atentamente,

Ing. Raúl G. Morales
Director General
Market-Ing

My Ethics Book

Mariana Morales

Second Semester
Teacher Georgina Yahuaca

1. Ethics and Science.

1.1. What is Science.

How do we define science? According to Webster's New Collegiate Dictionary, the definition of science is "knowledge attained through study or practice," or "knowledge covering general truths of the operation of general laws, esp. as obtained and tested through scientific method [and] concerned with the physical world."

What does that really mean? Science refers to a system of acquiring knowledge. This system uses observation and experimentation to describe and explain natural phenomena. The term science also refers to the organized body of knowledge people have gained using that system. Less formally, the word science often describes any systematic field of study or the knowledge gained from it.

What is the purpose of science? Perhaps the most general description is that the purpose of science is to produce useful models of reality. Most scientific investigations use some form of the scientific method. You can find out more about the scientific method here.

Science as defined above is sometimes called pure science to differentiate it from applied science, which is the application of research to human needs. Fields of science are commonly classified along two major lines:

- Natural sciences, the study of the natural world, and,
- Social sciences, the systematic study of human behavior and society.

“The systematic observation of natural events and conditions in order to discover facts about them and to formulate laws and principles based on these facts. The organized body of knowledge that is derived from such observations and that can be verified or tested by further investigation. Any specific branch of this general body of knowledge, such as biology, physics, geology, or astronomy.” -Academic Press Dictionary of Science & Technology.

“Science is an intellectual activity carried on by humans that is designed to discover information about the natural world in which humans live and to discover the ways in which this information can be organized into meaningful patterns. A primary aim of science is to collect facts (data). An ultimate purpose of science is to discern the order that exists between and amongst the various facts.” -Dr. Sheldon Gottlieb in a lecture series at the University of South Alabama.

“Science involves more than the gaining of knowledge. It is the systematic and organized inquiry into the natural world and its phenomena. Science is about gaining a deeper and often useful understanding of the world." -Multicultural History of Science page at Vanderbilt University.

"Science consists simply of the formulation and testing of hypotheses based on observational evidence; experiments are important where applicable, but their function is merely to simplify observation by imposing controlled conditions." -Robert H. Dott, Jr., and Henry L. Batten, Evolution of the Earth (2nd edition).

"Science alone of all the subjects contains within itself the lesson of the danger of belief in the infallibility of the greatest teachers in the preceding generation . . .As a matter of fact, I can also define science another way: Science is the belief in the ignorance of experts." -Richard Feynman, Nobel-prize-winning physicist, in The Pleasure of Finding Things Out as quoted in American Scientist v. 87, p. 462 (1999).

"To do science is to search for repeated patterns, not simply to accumulate facts." -Robert H. MacArthur, Geographical Ecology.

"A modern poet has characterized the personality of art and the impersonality of science as follows: Art is I; Science is We." -Claude Bernard (1813-1878), Physiologist and "the father of modern experimental medicine".

"Poetry is not the proper antithesis to prose, but to science. . . . The proper and immediate object of science is the acquirement, or communication, of truth; the proper and immediate object of poetry is the communication of immediate pleasure." -Samuel Taylor Coleridge (1772-1834), Definitions of Poetry.

"Fiction is about the suspension of disbelief; science is about the suspension of belief." -James Porter, UGA Ecology Professor, as quoted by Steve Holland.

"Religion is a culture of faith; science is a culture of doubt." -Richard Feynman, Nobel-prize-winning physicist.

"As a practicing scientist, I share the credo of my colleagues: I believe that a factual reality exists and that science, though often in an obtuse and erratic manner, can learn about it. Galileo was not shown the instruments of torture in an abstract debate about lunar motion. He had threatened the Church's conventional argument for social and doctrinal stability: the static world order with planets circling about a central earth, priests subordinate to the Pope and serfs to their lord. But the Church soon made its peace with Galileo's cosmology. They had no choice; the earth really does revolve around the sun." -Stephen J. Gould, The Mismeasure of Man.

"The fuel on which science runs is ignorance. Science is like a hungry furnace that must be fed logs from the forests of ignorance that surround us. In the process, the clearing that we call knowledge expands, but the more it expands, the longer its perimeter and the more ignorance comes into view. . . . A true scientist is bored by knowledge; it is the assault on ignorance that motivates him - the mysteries that previous discoveries have revealed. The forest is more interesting than the clearing." -Matt Ridley, 1999 Genome: the autobiography of a species in 23 chapters, p. 271.

"There is no philosophical high-road in science, with epistemological signposts. No, we are in a jungle and find our way by trial and error, building our roads behind us as we proceed. We do not find sign-posts at cross-roads, but our own scouts erect them, to help the rest." -Max Born (1882-1970), Nobel Prize-winning physicist, quoted in Gerald Holton's Thematic Origins of Scientific Thought.

"The stumbling way in which even the ablest of the scientists in every generation have had to fight through thickets of erroneous observations, misleading generalizations, inadequate formulations, and unconscious prejudice is rarely appreciated by those who obtain their scientific knowledge from textbooks." -James Bryant Conant (1893-1978), Science and Common Sense.

"I think that we shall have to get accustomed to the idea that we must not look upon science as a "body of knowledge", but rather as a system of hypotheses, or as a system of guesses or anticipations that in principle cannot be justified, but with which we work as long as they stand up to tests, and of which we are never justified in saying that we know they are "true" . . ." -Karl R. Popper (1902-1994), The Logic of Scientific Discovery.

"The real purpose of the scientific method is to make sure Nature hasn't misled you into thinking you know something you don't actually know." -Robert M. Pirsig, Zen and the Art of Motorcycle Maintenance.

"We [scientists] wouldn't know truth if it jumped up and bit us in the ass. We're probably fairly good at recognizing what's false, and that's what science does on a day-to-day basis, but we can't claim to identify truth." -Dr. Steven M. Holland, University of Georgia Geology Professor.

"Science is the most subversive thing that has ever been devised by man. It is a discipline in which the rules of the game require the undermining of that which already exists, in the sense that new knowledge always necessarily crowds out inferior antecedent knowledge. . . . . This is what the patent system is all about. We reward a man for subverting and undermining that which is already known. . . . . Man has a tendency to resist changing his mind. The history of the physical sciences is replete with episode after episode in which the discoveries of science, subversive as they were because they undermined existing knowledge, had a hard time achieving acceptability and respectability. Galileo was forced to recant; Bruno was burned at the stake; and so forth. An interesting thing about the physical sciences is that they did achieve acceptance. Certainly in the more economically advanced areas of the Western World, it has become commonplace to do everything possible to accelerate the undermining of existent knowledge about the physical world. The underdeveloped areas of the world today still live in a pre-Newtonian universe. They are still resistant to anything subversive, anything requiring change; resistant even to the ideas that would change their basic concepts of the physical world." -Philip Morris Hauser (1909-), Demographer and Census Expert, as quoted in Theodore Berland's The Scientific Life.

http://www.gly.uga.edu/
Year. 2012

1.2. Development of Science.

Science is the process of generating knowledge based on evidence. While it implicitly includes both natural sciences (biology, chemistry, physics, mathematics and related disciplines) and social sciences (economics, sociology, anthropology, politics, law), we will focus in this book largely on natural science disciplines.

Technology is the application of scientific knowledge, and frequently involves invention, example, the creation of a novel object, process or technique. Innovation is the process by which inventions are produced, which may involve the bringing together of new ideas and technology, or finding novel applications of existing technologies. Generally, innovation means developing new ways of doing things in a place or by people where they have not been used before. Modern innovation is usually stimulated by innovation systems and pathways. The phrase 'Science and Innovation' in this book implicitly includes science, engineering, technology and the production systems which deliver them.

People who live in developed countries sometimes forget how scientific innovations have transformed their lives. They live much longer than their predecessors, they have access to a dependable supply and a great variety of foods and other goods, they can travel easily and quickly around the world and they have a myriad of electronic gadgets designed for work and pleasure. Much of this success is due to sound economic policies and to forms of governance that promote equality, justice and freedom of choice, but much is also due to advances in scientific innovation.

How does scientific innovation work? Scientific innovation involves the successful exploitation of new ideas to generate new techniques, products and processes. Traditionally, scientific innovation has been viewed as a process starting with curiosity-driven, basic research which generates new understanding. This then leads to translational research, which relates this fundamental understanding to systems we want to improve, and then to applied research, which produces the products which we can use.

Private enterprise plays a key role in successful innovation – without business investment and marketing, inventions such as penicillin, computers and mobile phones would not exist today. The 20th century witnessed dramatic medical inventions – a vaccine against yellow fever, Fleming's discovery of penicillin, Salk's development of the oral polio vaccine, Barnard's first heart transplant. These and other discoveries have had widespread benefits unimaginable a century before and the pace of discovery shows no signs of abating. In 2005, the average UK life expectancy for men was 78 years, compared to 66 in 1950 and 48 in 1900.

The next wave of discoveries is likely to be treatments and cures for cancers and for the diseases of ageing, such as Alzheimer's. But today it is inventions in electronics and communications that catch the imagination – Jobs' and Wozniak's development of the Apple computer, Berners-Lee's invention of the World Wide Web and its exploitation by Page and Brin in the form of Google, and by Omidyar's eBay. Arguably the biggest recent impact has come from the mobile phone, but here it is difficult to identify a single inventor.

The nature of invention has significantly changed: modern inventions are largely the result of team work. As an example of innovation, consider how new knowledge of the genetics of disease resistance, gained from basic research on a laboratory animal, may lead to translational research on livestock to determine whether similar genes exist that convey useful resistance. If this research is successful, industry may use it to develop products, in this case using livestock breeding methods to incorporate genes conferring resistance into specific commercial breeds for sale to farmers.

However, today we recognize that scientific innovation is not always a linear process, and that it often involves an interplay back-and-forth between basic, translational and applied research stages. It is possible, for example, for applied research to identify a need for more basic research in a new area. Going back to the example above, if new breeds exhibit only patchy resistance to the disease in question, farmers may choose not to buy the product. This may stimulate applied research into the causes of breakdown of resistance, which in turn may stimulate more basic research into resistance mechanisms, so as to generate new solutions.

This research interaction involves a diverse system of players and institutions that influence its progress and success. Together, these are often called a science innovation system. The players may come from companies, universities, government and civil society. Scientists play a key role, of course, but so do other stakeholders, such as policy makers, banks and investors. Involving policy makers allows for a conducive policy and regulatory environment for the development and use of new technologies, while banks and investors provide security and capital for product development. This concept of science innovation systems helps us to understand what is necessary for scientific progress to occur.

Where science does not lead to innovation and new products, key players may be absent, or something may be blocking the two-way flow of ideas. In particular, it shows us that a range of elements must be in place and functioning before locally valuable technologies can result from scientific innovation.

Science and Innovation for Development
Author. Professor Sir Gordon Conway and Professor Jeff Waage, with Sara Delaney
Year. 2010
http://www.ukcds.org.uk/

1.3. Characteristics of science.

- *Conclusions of science are reliable, though tentative.*
  Science is always a work in progress, and its conclusions are always tentative. But just as the word "theory" means something special to the scientist, so too does the word "tentative." Science's conclusions are not tentative in the sense that they are temporary until the real answer comes along. Scientific conclusions are well founded in their factual content and thinking and are tentative only in the sense that all ideas are open to scrutiny. In science, the tentativeness of ideas such as the nature of atoms, cells, stars or the history of the Earth refers to the willingness of scientists to modify their ideas as new evidence appears.

- *Science is not democratic.*
  Scientific ideas are subject to scrutiny from near and far, but nobody ever takes a vote. If the question of plate tectonics had been decided democratically when it was first presented in the early twentieth century, we would, today, have no explanation for the origins of much of Earth's terrain. Scientific ideas are accepted or rejected instead on the basis of evidence.

- *Science is non-dogmatic.*
  Nothing in the scientific enterprise or literature requires belief. To ask someone to accept ideas purely on faith, even when these ideas are expressed by "experts" is unscientific. While science must make some assumptions, such as the idea that we can trust our senses, explanations and conclusions are accepted only to the degree that they are well founded and continue to stand up to scrutiny.

- Science cannot make moral or aesthetic decisions.
  Scientists can infer the relationships of flowering plants from their anatomy, DNA, and fossils, but they cannot scientifically assert that a rose is prettier than a daisy. Being human, scientists make moral and aesthetic judgments and choices, as do all citizens of our planet, but such decisions are not part of science.

http://www.evolution.berkeley.edu/
Year. 2011

1.4. What is scientific investigation.

The scientific method is one way that people can try to find the answer to problems that are bothering them. It's called "scientific", because people like to think of themselves as being very clever, or "scientific" for solving problems. In reality, there's not really anything special about this method, except that it happens to be pretty handy for solving any problem, not just scientific ones. The scientific method is just a list of steps that you need to follow when you're solving a problem. Depending on who you talk to, there are anywhere from five to eight steps in the scientific method. However, all versions of the scientific method involve the person trying to solve the problem experimenting to find an answer. The version of the scientific method that I use in my class has six steps, as follows:

Purpose: You've got a problem that you want to have solved. The purpose step in the scientific method is just a restatement of what you want accomplished. What do you want to find out? What is your goal? You should write just one sentence for your purpose. You'll see what I mean in the upcoming example.

Hypothesis: How do you think you can solve the problem? The hypothesis step is always written in the form "If ___________, then ___________. The blank after the "if" is called the independent variable. The independent variable is just whatever you are going to do to solve the problem. The blank after "then" is the dependent variable. The dependent variable is what you think will happen when you do whatever the independent variable is. For example, if your hypothesis is that "If I take an aspirin, my headache will go away," your independent variable is "taking an aspirin" (this is what you do) and your dependent variable is "the headache will go away" (what happens as a result of your having done something).

Materials: What do you need to have in order to see if your hypothesis is true? This part of the scientific method is a list of everything you need to do the experiment. Leave nothing out!

Procedure: What are you going to do during this experiment. You should list everything that you are going to do in this section. Even if it seems obvious, write it down. A good rule of thumb: If a six-year-old child can understand what you've written, then you've written it well. If they can't, then you need to go into more detail!

Results: When you did the experiment, what happened? What did you see, hear, smell, etc? You should give a complete accounting of all data that you take (sometimes this is referred to as the "Data" section). There's an old saying among chemists: "If you didn't write it down, then it didn't happen." Make sure you write everything down!

Conclusion: What do the results mean? Was your hypothesis correct? This section should be only one sentence long. For example, if you proved the hypothesis that "If I take an aspirin, my headache will go away," then the conclusion should be "I took an aspirin, and my headache went away." Don't make this any longer than it has to be!

http://www.misterguch.brinkster.net/
Year. 2011

2. Ethics and Technology.

2.1. What is Technology.

Technology is a broad term that refers both to artifacts created by humans, such as machines, and the methods used to create those artifacts. More broadly, the word can be used to refer to a way of doing something or a means of organization: for instance, democracy might be considered a social technology. The term comes from the Greek *technologia*, which is a combination of "techne," meaning "craft," and *logia*, meaning "saying." As a result, technology might be considered the articulation of a craft. The word is also used to describe the extent to which a society can manipulate its environment.

When the word is used today, it is most often used to refer to high technology — computers, cell phones, rockets — rather than things created by humans in general. When anthropologists use the term, however, they go all the way back to the controlled use of fire (from about 500,000 – 1 million years ago), the invention of the wheel (c. 4000 BCE), and beyond. The first technological tools were simple hand-axes made by our hominid ancestors millions of years ago.

The earliest technological divisions are from mankind's early history, divided into the Stone Age, the Bronze Age, and the Iron Age, depending on the primary tool and weapon-making material at the time. Each building material is superior to the one before it, but more difficult to develop requisite metallurgical techniques. The Iron Age began in about 1400 BCE.

Since the formulation of the scientific method in the 15th century, technological progress has apparently been accelerating. Just a few of the technologies developed since then are the telescope, the microscope, the clock, the engine, the electric generator and electric motor, radio, nuclear power and weapons, television, computer, and many others.

Technological development continues strongly today, fueled by the multibillion-dollar economies of the world's most prosperous nations. The hottest developments are happening in computers, nanotechnology, materials science, renewable energy, entertainment, space travel, and medicine.

Philosophers as well as laypeople often debate whether or not technological progress is, on the whole, a good thing for humanity. On the pro side of the spectrum are techno-progressivists such as transhumanists, while on the anti side are anarcho-primitivists, and Neo-Luddites.

http://www.wisegeek.org/
Year. 2003-2013

2.2. Development of Technology.

Since 2011, a number of students from Eindhoven University of Technology, department of Mechanical Engineering, have been visiting the Toronto Rehabilitation Institute to do their traineeship and to gain experience with working in a multi-disciplinary environment. The contacts between the section Control Systems Technology, led by prof. dr. ir. Maarten Steinbuch at Eindhoven and the Toronto Rehabilitation Institute research department, led by institute director professor dr. Geoff Fernie, have been established by IDT. The supervision of the students is taken care of by IDT and the Toronto Rehabilitation Institute. Some projects that have been successfully carried out by the students include the concept design for the new Driver Lab by Bastian Eenink, the design of a glare simulator by Arne de Roest, the design of a rain simulator for Driver Lab by Bart Peeters and safety considerations and design of a control system for a robotic nurse by Leon van Breugel.

Beginning of February, three fresh students will take off to continue the great work relationship between Eindhoven and Toronto. Thijs Craenmehr will work on the improvement of the visual database and simulations in Street Lab. Rein Appeldoorn will work on the identification and definition of the driving scenarios for the new Driver Lab. Ramon Wijnands will focus on the concept design of an active fall arrest system, to be used with the Winter Lab and Stair slab payloads in CEAL, as well as the Fall slab platform.

http://www.idt-engineering.com/
Year. 2013

2.3. Different conceptions of technology.

There is wide consensus about the necessity of teaching technology concepts, Yet, technology concepts are not consistently defined in the literature (Jones, 1997) and there is still much confusion in the technology education community with regard to what are technology concepts and how to teach technology concepts.

Although various technology concepts such as design and systems are presented in different curricula, often the nature of technology concepts as big ideas are missing or get lost in the teaching of craft skills, knowledge and problem solving (design and make activities).

"Although, there are different approaches to the issue of concepts, there is wide consensus about the necessity of teaching technology concepts …not only skill, but also concepts of technology need to be taught" (De Vries, 1997).

The different views to the issue of technology concepts are inconsistent and confusing. Concepts of technology (De Vries, 1997), Concepts in technology (Banks.

1994; De Vries, 1997), universal attributes (Savage & Sterry 1990), principle (Compton, 2004; Engineering by Design™ Program).

In spite of this inconsistency, technology concepts as big ideas should play a central role in the curriculum as part of technology literacy. Such concepts helps understanding broad patterns that cut across all technology fields. Savage & Sterry (1990) identify universal attributes. They are:

- People create technology.
- Technology responds to human wants and needs.
- People use technology.
- Technology involves action and extends human potential.
- The application of technology involves creating, implementing, assessing and managing.
- Technology is implemented through the interaction of resources and systems.
- Technology exist in a social/cultural setting o Technology affects and is affected by the environment o Technology affects and is affected by people, society and culture.
- Technology shapes and is shaped by values.
- The Engineering by Design™ Program (ITEA) is organized around seven principles. These principles are very large concepts that identify major content organizers for the program. In order of importance, the seven organizing principles are:

    1. Engineering through design improves life.
    2. Technology has and continues to affect everyday life.
    3. Technology drives invention and innovation and is a thinking and doing process.
    4. Technologies are combined to make technological systems.
    5. Technology creates issues that change the way people live and interact.
    6. Technology impacts society and must be assessed to determine if it is good or bad.
    7. Technology is the basis for improving on the past and creating the future.

2.4. Social, economic and political importance of the next technological advances.

Technology is a very important part of life, and no matter what you do you have to use technology. It could range from using a light bulb to see in a cave to engineering an audio track for millions of people to use, or even making a website for your class BPA events! Even this picture has something to do with the technological future. It is a picture of the "*Strider*"used to simulate how robots will float on the surface of water.

Technology is rapidly expanding, and just like everything else of the future, we cannot say how it will grow or what it will entail. What we can say is that there is no limit of the possibilities that are within our grasps. The advances that will come in the near future will prove that our society is at the pinnacle of our potential to change the world and its future.

Futuristic technology varies from a wide range of goods and services being worked on by various companies, such as Microsoft, Sony, Intel and many others. Most are trying to improve the graphics of their processors to make video games, and to simulate real life situations. Technology is advancing very quickly. Every year, something new comes out like the upcoming PS3, and the newly arrived XBOX 360. Technology is the future of life in general. It'll soon be used to even cook for us, using the precise amount of seasonings to make a perfect taste for your thoughts and desires. Soon smart houses will be the standards in America and other outlying countries.

Cell phones will have a big change in the next few years, receiving more memory, and faster processors and other ideas Samsung electronics discussed recently. "The addition of these technologies will dramatically expand the capability of mobile handsets, which will have sensors to monitor a user's health and offer a wider range of entertainment and online services, such as shopping", said Kang-Hun Lee, vice president of Samsung's Next-Generation Terminals Team. "Voice will remain a "basic capability" of these devices", he said. The phone is called "Serene" designed by Bang & Olufson. It adds advanced technology to a basic clamshell design. It has a 2.1" QVGA TFT-LCD display, 0.3 Mega pixel camera, WAP 2.0, and Bluetooth. All the features are used by a thumb joystick pad like button with a loudspeaker integrated into it.

Designers around the world are busy designing the next generation of cell phones that will still be able to take calls- but yet look exceptionally cool doing it. Recently, Cell phone giant Nokia collaborated with industrial design students from Central Saint Martins College of Art and Design in London to come up with a cell phone of the future.

The way you look at the internet is about to be different on many different levels. Innovation Jam is working on a 3D internet project costing them a projected 100 million dollars. IBM is researching and creating a 3D internet project using virtual works such as the ones in virtual reality video games. IBM is also holding 3D intranet meetings between companies, or working on building the gateway and community for such communication. The goal of IBM ultimately is to make a world of 3D life, to where people can search, and explore the internet like they never have before in life. There are many companies working on innovating the 3D web experience such as 3D Web Tech, 3DInternet Co, and WebJack.

Most robots look like other machines and only do one task. Friendly Robotics RL1000 "Robomotor" is a lawnmower that'll cut your grass automatically. The cost is roughly $1800. In order to update the Robomower, you have to plug it into the phone line, and it'll automatically download software updates. These same robotics are being used in smart houses. Robotics will make everyday household living an extraordinary experience.

Silicon technology has met up with its limits; therefore nanotechnology is being researched very commonly. In the future, computers and other products will be even smaller, but cannot without nanotechnology. Shrinking technology is a hazard, ruining magnets, and processing conductors. When the rules are switched changed technologies will work less expensively and with more advantages. Nanotechnology is being studied by governments, and they promise discoveries that will revolutionize information technology as we know it. They plan to make it smaller but faster, less expensive but higher quality, and just all around excellent to use attempting to enhance what humans use during their everyday life.

Microsoft and Google are having, what I would call from history class, an "Arms Race". The company's rivalry, although not very discrete, is reaching its heating points. They are competing for the way people will use technology in the future. Microsoft is taking the competition very seriously, putting money where its mouth is. Microsoft with its high budget and brains has the advantage over the competition, but word has it that Google is leading. The fight for the top is narrowing, and will end up coming down to who ever releases first in the world of the internet. The Microsoft CEO takes the matters very seriously. He has thrown a chair across the room because of a meeting with an engineer who was speaking of working with Google. Though he said he didn't do it, who would admit to doing it? ; Google hired Kai-Fu Lee, the vice president of Microsoft, to set up a Research Center which is what started the whole entire problem. He worked for Google long before he was with Microsoft. Google's product and advancements are becoming threats to Microsoft. Besides the search engine, Google is trying to fix the problem that many people have. Microsoft, isn't working well with them. Plain and simple. On the other hand, Microsoft isn't enjoying the competition. The company's goal is to organize information, and make it accessible to the people easier, and more reliable.

http://www.mahoningjvs.k12.oh.us/
Year. 2006

3. Impact of Science and Technology in the economy, countryside and cities.

3.1. Science and Technology as mankind progress tools.

Taking into consideration that, while scientific and technological developments provide ever increasing opportunities to better the conditions of life of people and nations, in a number of instances they can give rise to social problems, as well as threaten the human rights and fundamental freedoms of the individual, noting with concern that scientific and technological achievements can be used to intensify the arms race, suppress national liberation movements and deprive individuals and peoples of their human rights and fundamental freedoms, also noting with concern that scientific and technological achievements can entail dangers for the civil and political rights of the individual or of the group and for human dignity, noting the urgent need to make full use of scientific and technological developments for the welfare of man and to neutralize the present and possible future harmful consequences of certain scientific and technological achievements, recognizing that scientific and technological progress is of great importance in accelerating the social and economic development of developing countries, aware that the transfer of science and technology is one of the principal ways of accelerating the economic development of developing countries, reaffirming the right of peoples to self-determination and the need to respect human rights and freedoms and the dignity of the human person in the conditions of scientific and technological progress, desiring to promote the realization of the principles which form the basis of the Charter of the United Nations, the Universal Declaration of Human Rights, the International Covenants on Human Rights, the Declaration on the Granting of Independence to Colonial Countries and Peoples, the Declaration of Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations, the Declaration on Social Progress and Development, and the Charter of Economic Rights and Duties of States;
Solemnly proclaims that:

1. All States shall promote international co-operation to ensure that the results of scientific and technological developments are used in the interests of strengthening international peace and security, freedom and independence, and also for the purpose of the economic and social development of peoples and the realization of human rights and freedoms in accordance with the Charter of the United Nations.

2. All States shall take appropriate measures to prevent the use of scientific and technological developments, particularly by the State organs, to limit or interfere with the enjoyment of the human rights and fundamental freedoms of the individual as enshrined in the Universal Declaration of Human Rights, the International Covenants on Human Rights and other relevant international instruments.

3. All States shall take measures to ensure that scientific and technological achievements satisfy the material and spiritual needs for all sectors of the population.

4. All States shall refrain from any acts involving the use of scientific and technological achievements for the purposes of violating the sovereignty and territorial integrity of other States, interfering in their internal affairs, waging aggressive wars, suppressing national liberation movements or pursuing a policy of racial discrimination. Such acts are not only a flagrant violation of the Charter of the United Nations and principles of international law, but constitute an inadmissible distortion of the purposes that should guide scientific and technological developments for the benefit of mankind.

5. All States shall co-operate in the establishment, strengthening and development of the scientific and technological capacity of developing countries with a view to accelerating the realization of the social and economic rights of the peoples of those countries.

6. All States shall take measures to extend the benefits of science and technology to all strata of the population and to protect them, both socially and materially, from possible harmful effects of the misuse of scientific and technological developments, including their misuse to infringe upon the rights of the individual or of the group, particularly with regard to respect for privacy and the protection of the human personality and its physical and intellectual integrity.

7. All States shall take the necessary measures, including legislative measures, to ensure that the utilization of scientific and technological achievements promotes the fullest realization of human rights and fundamental freedoms without any discrimination whatsoever on grounds of race, sex, language or religious beliefs.

8. All States shall take effective measures, including legislative measures, to prevent and preclude the utilization of scientific and technological achievements to the detriment of human rights and fundamental freedoms and the dignity of the human person.

9. All States shall, whenever necessary, take action to ensure compliance with legislation guaranteeing human rights and freedoms in the conditions of scientific and technological developments.

http://www.ihumanrights.ph/
Year. 2011

3.2. Articles from city and countryside development.

In the initial stages of socialist transition the party-state and a coalition of revolutionary classes characteristically eradicate the dominant property-based class divisions between landlord and tenant and between capitalist and industrial worker. In the course of state appropriation of industry and commerce and collectivization of agriculture the largest remaining concentrations of private wealth and power are further reduced. These changes eliminate forms of inequality embedded in the private ownership of property and the ability of property owners to appropriate the labor of producing classes.

However, multiple systems of ownership and attendant production relations (state, cooperative, collective and private), urban-rural and other sectoral and spatial cleavages, hierarchies of income and power, as well as divisions of labor, survive these changes. Indeed, we observe not only the continued existence of residual sectoral and spatial hierarchies of wealth and power, but the emergence of new patterns of inequality, hierarchy, status, and domination that are the direct consequences of specific institutional and developmental priorities of socialist states.

Marx and Engels to the contrary, the town-country antagonism –and that between industry and agriculture- far from inevitably disappearing with the demise of private property, may actually be exacerbated in the initial stages of development of socialist societies. Whereas the market characteristically plays the leading role and the state a secondary role in defining sectoral and class relations in capitalist societies, socialist states have officially sanctioned, reified, and enforced clear-cut sectoral divisions in societies in which ownership and control of wealth had passed from individuals to the state and collective units that it creates and directs.

The formalization of divisions between the state and collective sectors, paralleling the historic urban-rural and industrial-agricultural divide, reinforces insersectoral positions. The nature, depth, and hierarchical character of the divide, and its subsequent growth or diminution, however, vary from state to state depending on the specific weight of city and countryside, industry and agriculture, advanced and primitive technology, and the outcome of state-society conflicts.

City versus Countryside. The Social Consequences of Development Choices
Author. Mark Selden
Year. 2000-2013
http://www.jstor.org/

3.3. Discussion about the scientific and technological progress for a better living.

It has always been desirable for human beings to create innovative items. Such a need can be seen in the new inventions that are being built around us. These new technological tools make our life easier, however we need to use them in a well-balanced manner.

Firstly, one can note the vast improvements made in transport. In most developed countries every adult has his own vehicle. When traveling long distances, trains or even aero planes can be used. However these means of transport are enslaving us. This is because nowadays people are choosing the car for short distances instead of having a short walk. In the past, riding on horseback was very popular and this was a good thing for keeping fit. Consequently nowadays people are becoming lazier which can lead to health problems later in life.

Another reason why we are becoming lazy is the excessive use of the computer. In spite of its great benefit to our present world it still has its negative aspects. It is making us lazy both physically and mentally. We have developed a habit of using the calculator even for simple sums on the computer. This will not make our mind progress but regress. For some people, especially teenagers, the computer is like a magnet. Instead of socializing and playing with friends teenagers tend to spend hours in front of the "box", with their eyes red bulging out with stress. One must remember that the computer was created for man and not man for the computer.

On the other hand one cannot state that scientific progress did not bring about improvement as well. New medicine was discovered as well as new treatments and cures. Even these are not perfect since side effects will remain and pills can never prevent people from dying. However, machines in hospitals are more efficient than in the past and so work is done faster and more accurately.

Science and technology alone are not always making our life better. Consequently one can conclude that the past had its positive aspects and we must try to build on them. If we cope with the vast array of new technology we can surely get something useful out of it and avoid letting us down.

http://www.voices.yahoo.com/
Year. 2013

3.4. Positive and Negative impact.

A routing protocol is a protocol that specifies how routers communicate with each other, disseminating information that enables them to select routes between any two nodes on a computer network, the choice of the route being done by routing algorithms. Each router has a priori knowledge only of networks attached to it directly. A routing protocol shares this information first among immediate neighbors, and then throughout the network. This way, routers gain knowledge of the topology of the network.

For a discussion of the concepts behind routing protocols, see: Routing. The term routing protocol may refer specifically to one operating at layer three of the OSI model, which similarly disseminates topology information between routers. Although there are many types of routing protocols, three major classes are in widespread use on IP networks:

- Interior gateway routing via link-state routing protocols, such as OSPF and IS-IS.
- Interior gateway routing via path vector or distance vector protocols, such as RIP, IGRP and EIGRP.
- Exterior gateway routing. BGP v4 is the routing protocol used by the public Internet.
- Many routing protocols are defined in documents called RFCs.

  The specific characteristics of routing protocols include:

  - The manner in which they either prevent routing loops from forming or break them up if they do.
  - The manner in which they select preferred routes, using information about hop costs.
  - The time they take to converge.
  - How well they scale up.
  - Many other factors.

Routing is the process of directing packets from a source node to a destination node on a different network. Getting packets to their next hop requires a router to perform two basic activities: path determination and packet switching.

The Positive and Negative Impacts of Technology on Family Life. “Is technology tearing apart family life? Text messaging, social networking, and online video are changing the way parents and children see the world—and each other.” There are many technologies in today’s world that are widely used not just as a want, but as a necessity of life.

This term paper will focus on relationship between family life and computer technologies, which have become the most widely used technology in the world due to its variety of functions including SNS, mailing, online face-to-face video chatting, and assignment completing tools. Computer technologies have both positive and negative effects on family life. As more and more families are beginning to own their own computers (computer internet users in North America reached to about "78.3 %") , the effects of technologies on family life is becoming more easily identifiable. This term paper will come across both the benefit and negative effects of using technologies on family life. There are the negative effects which include the isolation of family members, and parents bringing their work home. On the other hand, linking relatives together is one positive effect that technologies have on family life, and being instantly updated on other family members' status is also a huge benefit. Overall, the benefits of using technologies outweigh the negative effects.

Improvements in the technology have antagonistic effects on the human life along with the positive effects. The growth of the technology leads to very severe problems like pollution, unemployment, effects social life of the humans etc.. First of all, the most serious problem is pollution, which is created by the technological inventions like vehicles, industries, etc.. Now-a-days the vehicles like cars, bikes are increasing which is leading to increase in pollution.

The other problem is radiation caused by the increase in the mobile phones. Secondly, in most of the developing countries like India the major problem is unemployment. This problem is mostly caused by the increase in the instruments, which are the results of improvement in the technology.

Finally, in today's world all the people are getting addicted to the internet like social sites, games and they also becoming victims of the google. For example, all the persons are getting involved in the facebook and they are not at all bothering about the surrounding world, this may leading them away from the social life and sometimes it also creates problems in the families. The other example, everyone in this world is depending on google for each and everything and they are not at all referring to the books.

However, most of the people say that improvements in technology like software solutions creates employment, but that is not true because the employment created by the software field is less than the employments which is decreased by the instruments in industries.

In conclusion, the negative effects of the technology is higher than the advantages from the improvements in technology.

http://www.studymode.com/
Year. 2011

4. Impact of Science and Technology in business and war.

4.1. Impact in Industry.

About the impact of information and communication technology (ICT) on our work and family lives and continue to be fascinated by this topic. The Pew Internet & American Life Project reported this September that, "on the eve of Apple's unveiling of the iPhone 5, 45% of American adults own smartphones." This reflects a 10% increase from May 2011. In addition, "smartphones are particularly popular with young adults and those living in relatively higher income households; 66% of those ages 18-29 own smartphones, and 68% of those living in households earning $75,000 also own them."

Add to the mix that in early 2012, "88% of American adults have a cell phone, 58% have a desktop computer, 61% have a laptop, 18% own an e-book reader, and 18% have a tablet computer," according to the Pew Internet & American Life Project.

As we celebrate National Work and Family month, I'm wondering how increasing usage of ICT affects and will continue to impact today's working families.

ICT at home: ICT permeates family life, especially for married couples with minor children, says a Pew Internet survey. ICT helps today's busy families stay connected with each other. Parents can check in with kids at all times to see where they are and what they are doing. Kids can easily reach parents if there is an emergency or a problem. However, ICT can also keep families apart. Imagine today's family gathered in the kitchen for dinner. Maybe the TV is on, a laptop on the kitchen counter and everyone has their phone with them. Mom and dad are keeping an eye on emails even though the work day is technically over. So this family is physically together, but they are not totally focused on and paying attention to each other. They are at least partially attentive to a ping or a beep indicating that there is a new text message, email or missed call.

Maggie Jackson describes how ICT can make it difficult to focus, pay attention and connect with others in her book, Distracted: The Erosion of Attention and the Coming Dark Age.

ICT at work: For many, work is no longer something we do at a certain time or place; work can be anytime, and anywhere. Technology blurs the boundaries between home and work and can negatively impact employees and their commitment to their organizations, as well as their partners, and children.

A 2010 study found that more frequent use of ICT (computer, email, cell phones, Internet) results in being more effective at work, but also generates increases in work load and the pace of work demands. In a subsequent paper, 83% of workers indicated that ICT increases productivity, but 53% describe greater stress levels.

Nicholas Carr suggests that frequent internet usage interferes with working productively and creatively as well as reduces our ability to read anything longer than a few paragraphs in, Is Google Making Us Stupid?.

Some organizations are "attempting to flip the off switch" with forced restrictions from ICT and its 24/7 connections. In Germany, Volkswagen plans to deactivate emails during non-work hours. Deutsche TeleKom vowed to not expect workers to read email after business hours at certain points during the week. Leslie Perlow in her book, Sleeping with your Smartphone, described a successful experiment with consultants at the Boston Consulting Group. One work team took off one full day a week, while another group had one evening off when they did not check email after 6 pm. Benefits resulted for everyone - the individuals, the teams and their work, and the organization.

But are ICT restrictions the answer? I might find it beneficial to work one evening, so I could take care of a personal or family matter during the day. Or I could leave early, if I got a jump start on my work the prior evening.

So how can we use ICT to our advantage - for increased productivity, reduced stress, and better work+life fit? We'll need our organizations to pitch in by providing guidelines about expectations and strategies for effectively managing our devices. And we will need to confer with our managers and colleagues to figure out how our work groups can use ICT to promote collaboration and working smarter. Lastly, we'll have to figure out how we can shut off and shut down without feeling like we will be viewed as unmotivated slackers and look for our adrenaline rush elsewhere.

http://www.huffingtonpost.com/
Year. 2012

4.2. Impact in Industry.

Today, the world's economies are facing some extraordinary challenges. The effects of the recent economic downturn are still being felt, with national debt levels rising and unemployment remaining high. Accompanying this is continued globalization of economic activities. Its distinctive features are increasing international trade, deepening economic integration – especially in emerging economies – and greater geographic fragmentation of production processes generating ever more complex global value chains. In this new geography of growth, international competition from new players is eroding the lead of more established economies. Environmental pressures challenge the sustainability of our existing growth models and longer life expectancy is putting a greater strain on the capability of health systems to meet the needs of an ageing population. Innovation is increasingly seen as being critical for effectively meeting these challenges. It will play a major role in lifting economies out of the economic crisis and finding new and sustainable sources of growth and competitiveness.

Between 2008 and 2009, in the immediate aftermath of the crisis, the OECD as a whole suffered a net loss in employed persons of about 11 million, a 2% drop. Half of these losses occurred in the United States. Manufacturing as a sector lost most jobs, although construction (Ireland, Spain) and finance and business services (France, Netherlands) were also strongly impacted. For many OECD countries, significant losses in employment continued well into 2010. The decline in manufacturing production in many OECD countries occurred against the backdrop of longer-term growth trends in emerging economies and increasing international competition.
By 2009, the People's Republic of China had almost caught up with the United States in manufacturing production, and the share of Brazil and India among world manufacturers is now similar to that of Korea. Declining manufacturing production means that, on average, services now account for about 70% of OECD gross domestic product (GDP). In addition, over 35% of employees in manufacturing in the OECD area perform services-related occupations, with percentages ranging between 17 % and 52% across economies.

The BRIICS economies (Brazil, the Russian Federation, India, Indonesia, China and South Africa) have become more integrated in the global economy. China is set to become the second largest recipient of foreign direct investment. During the period 2003-09, EU countries invested four times as much in the BRIICS economies as the United States or Japan. Direct investment in China from Europe, which partly includes flows from non-EU multinationals located in Europe, averaged USD 6.5 billion a year, 75% more than that from the United States, and over USD 9 billion a year in Brazil, four times that from the United States.

While OECD countries' export volume has nearly doubled over the past 15 years, their share of world exports declined from 75% to 60%. In 1995 the value of China's exports was USD 148 billion, of which 60% was destined for final consumption. By 2009, the value of China's exports had increased more than tenfold from USD 148 billion to USD 1 529 billion and the composition of its exports had changed substantially. In the BRIICS, high-technology manufacturing trade now represents about 30% of their total manufacturing trade, compared to 25% for the OECD area.

As economic activities become more global, economies tend to become more specialized. The degree of industrial specialization, for example a strong reliance on mining, construction or financial services, has important impacts on economies' long-run productivity, their resilience to a crisis, investment patterns, innovativeness and performance of firms and sectors. A new OECD indicator shows rising economic specialization since the 1970s, with Canada the only G7 country to experience periodic bursts of diversification. In contrast, Korea's specialization patterns partially reflect the development path previously travelled by G7 countries – early increasing diversification (into industry and services), peaking in the late 1980s, before gradual specialization as comparative advantages became more pronounced.

A few broad sectors, typically “Wholesale and retail” and “Business services”, are consistently among the top four in terms of their share of value added. The size of the two leading sectors differs considerably across countries: in Norway, “Mining and quarrying” is three times the size of the second largest sector but in Spain, the largest sectors are of more similar size.

One way to measure technological innovation is through the commercialization of inventions as reflected in patenting. While countries “specialize” in certain economic activities, new OECD indicators based on linking patents with companies’ information reveal the benefits of a broad industrial base and a strong university sector for the development of key enabling technologies.
Chemical firms, for example, contribute to the advancement of pharmaceuticals and biotechnologies, and to a lesser extent also to nanotechnologies. Institutions such as universities are also essential to these fields with 10-12% of patents originating from the education sector. Similarly important are research and development service providers. New information and communication technologies are concentrated in computer and communications industries, while environmental technologies are shaped by the patenting activity of specialized machinery manufacturers and certain technical and engineering service activities.

http://www.oecd.org/
Year. 2011

4.3. Impact in commerce.

This study aims to determine the relationship of E-commerce technology resources and management skills on organizational capabilities in the hotel industry in Malaysia and the factors associated with it. Measurement tools for E-commerce technology resources and management skills adapt from Duncan and Bogucki (1995), and Mata, Fuerst & Barney (1995). The findings show the E-commerce capabilities is higher with a mean of compared with E-commerce benefit of the study also found that Ecommerce management skills with a mean of and E-commerce technological resources. The study also shows that there is a correlation between the ability of the organization (the Ecommerce benefit and E-commerce capabilities) with variable E-commerce technology resources and management skills. While regression analysis 'stepwise' E-commerce technology resources as the most dominant factor in predicting organizational capabilities and E-commerce benefits. While E-commerce management skills is the most important factor in influencing the E-commerce capabilities.

All companies today no matter big or small, local and international use of information systems and has spent a significant investment in information technology to achieve key business objectives such as improving the ability of the company (Laudon, 2007). Internet, related technologies and applications should be changed in line with changes in business operations and how the employees work and how information systems to support business processes, decision making, competitive advantages and capabilities (O'Brien, 2007).

Today, many aspects of the world market are affected directly or indirectly by the development of information technology. In the 21st century, the world market has been supported by a market system that uses electronic infrastructure. Common knowledge of information technology has no boundaries and can be reached anywhere by anyone accessing the Internet.

Trade through the internet has opened a new era in trade relations have also been structuring the entire system in electronic markets that provide opportunities for firms from the third world countries. According to Ng (2000), generally a lot of organizations, regardless of size, are unable to identify the overall potential of the existing values in the Ecommerce. In developing countries like Malaysia for example, the enterprise has been identified as the main group does not participate in the use of E-commerce. The organizations are identified in Malaysia but it was not a pioneer in the use of E-commerce.

The tourism sector will be fast growing and constantly changing with the development of new networks and services. Tourism is one of the pioneer industries successfully adopt the system in a larger scale. Tourism is a global movement, in which the global information, global communication, service and product line is needed. Therefore, using E-commerce, information that is shared more easily, cost effectively and more importantly can be accessed on-line for the bodies which come under the tourism organizations such as hospitality. This is the reason why the information can be accessed on-line that can promote and ensure the success of E-commerce in the hotel sector. Now the hotel has introduced E-commerce in the various forms of work such as online, self-exploration, information about hotels, locations, types of rooms, prices rooms and facilities available, e-mail, purchase of raw materials from suppliers through the Internet and online payment. All these facilities will enhance the operation of hotels (Pattahnid Cheantgawee, 2005). In the year 2005, E-commerce transactions in Malaysia reached RM3.7 billion (U.S. $ 1.0 billion) and it moved up 81.8% from year to year. B2B transactions grew from RM7.7 billion in 2004 to RM29.3 billion. While B2C transactions grew from RM3.4 billion to RM7.4 billion. In a period of 5 years from 2006 to 2010 the value of E-commerce transactions are expected to increase by an average of 27% per year.

4.4. The morality of war.

If I intentionally kill another person I will be subject to a long term of imprisonment or even, in some jurisdictions, the death penalty. But if I kill 1,000 people, I might receive a medal; or if a million, I might be promoted to field marshal or even president, provided only that those killed come from another side of a border in a state known as “war”.

There is, however, a tradition which, while not resolving the paradox, does something to mitigate its evil consequences. This is known as the Just War. The tradition has its roots in St Augustine, was developed further by St Thomas Aquinas and reached its culmination in the writings of the 16th and 17th-century jurists and theologians. Attempts were made to revive it in the second half of the 20th century, initially in response to the debate on the morality of nuclear weapons. In Morality and War, David Fisher seeks to develop it further in response to today’s circumstances. He is almost uniquely qualified for this task, having been trained as a moral philosopher and then having spent his career as a senior official in the UK Ministry of Defense.

The Just War doctrine has always insisted that “the onus of proof should rest on those seeking to disturb the tranquility of the world by resorting to war”. It is permissible if and only if it is authorized by a competent authority, if it is for a just cause, if it is undertaken as a last resort and if the good likely to be achieved exceeds the harm of the war itself. And, of course, non-combatants should not be targeted.

Clearly these principles are subject to much interpretation. The author does not flinch from applying them to recent cases. After a detailed examination he considers the Nato war to free the Kosovo Muslims from the attentions of Serbia’s Slobodan Milosevic to have been justified both in content and execution. He also approves of the first Gulf war undertaken in response to Saddam Hussein’s annexation of Kuwait. But the second Bush-Blair Iraq war was undertaken “without sufficient just cause and without adequate planning to secure a just outcome”. Clearly the world would be a better place if its rulers were to observe Just War principles consistently, and if, as Fisher advocates, they were taught to all ranks and not just to leaders.

Nevertheless, the principles do not go far enough. Just War advocates tend to think implicitly of nations as persons. Once this is realized, questions about the first Iraq war need to be translated into questions about the likely sufferings of US-led troops, Kuwaitis and Iraqis compared with what would have occurred without intervention. And while not all the carnage of the first world war could have been foreseen, quite a lot of it could have been. It is indeed difficult to formulate a doctrine that would have required intervention to prevent the massacre of 800,000 people in the Rwanda genocide without encouraging busy-body intervention in most parts of the world at most times.

Fisher does insist in an eloquent chapter on adding humanitarian intervention to the list of Just War causes. I would go further and say that it is the *only* justification and that valid arguments about quarrels between states need to be translated into these terms. “Germany” did not invade Belgium in 1914 or Poland in 1939; German troops did; and the sufferings were of individuals. The question was not whether some treaty or other had been violated, but the harm likely to ensue. Cobden’s words on the unwisdom of most attempts to regulate the “affairs of other people” still apply.

Finally, there is a logical point of some importance. Fisher frets about the subjectivist view of moral judgments taken by many 20th-century philosophers. But this does not mean the death of morality; it merely means that such judgments cannot be derived by deductive reasoning or from empirical evidence. Some of us may remember letters to the press by groups of philosophers headed “Russell, Ayer” protesting at some evil in foreign or domestic policy. Yet both Bertrand Russell and AJ Ayer were renowned or even notorious for rejecting an objectivist view of ethics.

Fisher advocates what he calls “virtuous consequentialism”. By this he means that actions are to be judged mainly by their consequences, but taking intentions into account. For example, a competent swimmer is culpable if he or she fails to rescue a drowning child, but not to the same degree as if the child is deliberately pushed into a raging torrent. Of course, organised human life is impossible unless there is some overlap among the moral judgments of different people. But there is no need to fret about these judgments not being either mathematical theorems or laboratory discoveries.

Morality and War
Author. David Fisher
Year. 2011
http://www.ft.com/

4.5. Science and Technology applied to war.

For all the role of science, mathematics, and new inventions in earlier wars, no war had as profound an effect on the technologies of our current lives than World War II (1939-45). And no war was as profoundly affected by science, math, and technology than WWII.

We can point to numerous new inventions and scientific principles that emerged during the war. These include advances in rocketry, pioneered by Nazi Germany. The V-1 or “buzz bomb” was an automatic aircraft (today known as a “cruise missile”) and the V-2 was a “ballistic missile” that flew into space before falling down on its target (both were rained on London during 1944-45, killing thousands of civilians). The “rocket team” that developed these weapons for Germany were brought to the United States after World War II, settled in Huntsville, Alabama, under their leader Wernher von Braun, and then helped to build the rockets that sent American astronauts into space and to the moon.

Electronic computers were developed by the British for breaking the Nazi “Enigma” codes, and by the Americans for calculating ballistics and other battlefield equations. Numerous small “computers”—from hand-held calculating tables made out of cardboard, to mechanical trajectory calculators, to some of the earliest electronic digital computers, could be found in everything from soldiers’ pockets to large command and control centers. Early control centers aboard ships and aircraft pioneered the networked, interactive computing that is so central to our lives today.

The entire technology of radar, which is the ability to use radio waves to detect objects at a distance, was barely invented at the start of the war but became highly developed in just a few years at sites like the “Radiation Laboratory” at MIT. By allowing people to “see” remotely, at very long distances, radar made the idea of “surprise attack” virtually obsolete and vastly enlarged the arena of modern warfare (today’s radars can see potential attackers from thousands of miles away). Radar allowed nations to track incoming air attacks, guided bombers to their targets, and directed anti-aircraft guns toward airplanes flying high above.

Researchers not only constructed the radars, but also devised countermeasures: during their bombing raids, Allied bombers dropped thousands of tiny strips of tinfoil, code-named “window” and “chaff” to jam enemy radar.

By constructing complex pieces of electronic equipment that had to be small, rugged, and reliable, radar engineering also set the foundations for modern electronics, especially television. Radar signals could also be used for navigation, as a ship or airplane could measure its distance from several radar beacons to “triangulate” its position. A system for radar navigation, called LORAN (long-range navigation) was the precursor to today’s satellite-based GPS technology.

The military found other uses for radar. Meteorologists, for example, could track storms with this new technology—a crucial skill to have when planning major military operations like D-Day. When weapons designers discovered a way to place tiny radar sets onto artillery shells, the proximity fuse was invented. These new fuses would explode when they neared their targets. By the end of the war, proximity fuses had became a critical component in many anti-aircraft shells.

World War II also saw advances in medical technology. Penicillin was not invented during the war, but it was first mass produced during the war, the key to making it available to millions of people (during World War II it was mostly used to treat the venereal diseases gonorrhea and syphilis, which had been the scourge of armies for thousands of years).

While penicillin itself is still used today, it was also the precursor to the antibiotics that we take today to keep simple infections from becoming life-threatening illnesses. Medicines against tropical diseases like malaria also became critical for the United States to fight in tropical climates like the South Pacific. Pesticides like DDT played a critical role in killing mosquitoes (although the environmental impacts of DDT would last a long time; a famous book about DDT, Rachel Carson's Silent Spring (1962), would help found the modern environmental movement). The science and technology of blood transfusions were also perfected during World War II, as was aviation medicine, which allowed people (including us) to fly safely at high altitudes for long periods. Studies of night vision, supplemental oxygen, even crash helmets and safety belts emerged from aviation medicine.

http://www.learnnc.org/
Year. 2009

4.6. WWI and WWII scientific and technological advances.

World War I was so deadly primarily because it saw the use of nineteenth-century military tactics with twentieth-century technology. At the beginning of the conflict, the cavalry was still the premier branch of military service, and the commanders believed that this war would be like the last big European fight, the Franco-Prussian War (Prussia was a German principality until that war, when Prussia was able to unite all of Germany into the German Empire, the first time in history that there had ever been a "Germany.") Fought in the same way as the Napoleonic Wars of the early nineteenth century, the Franco-Prussian War taught commanders that offense could still beat defense; in other words, an attacking army could still out-maneuver an enemy on the defensive.

The American Civil War had shown that this was not always true; the combination of more accurate guns, more powerful artillery and the mobility of railroads made defenders far stronger than attackers in many battles. In fact, the Battle of Petersburg near the end of that war showed what entrenched soldiers fighting a defensive battle could do; it took nine months for Union troops under Ulysses S. Grant to break through the Confederate lines, and then only at a huge cost. European observers scoffed at these lessons, however, and believed that a similar situation would never occur in more civilized Europe. They were to be proved very, very wrong, at the cost of millions of lives.

World War I introduced machine guns, modern artillery and airplanes to the battlefield. Railroads made the supply of vast, stationary armies possible, and even the taxi cabs of Paris were employed to bring men to the front in 1914. Horses were removed from the battlefield except as beasts of burden, and tanks entered service in 1916. But the most destructive weapon of World War I was invented in DeKalb, Illinois in 1874 to help cattle farmers keep control of their flocks. Farmer Joseph Glidden invented a useable form of barbed wire after seeing an example at a county fair. Initially used to fence large sections of the American West, during World War I barbed wire was strung by the mile in front of the opposing trenches. As soldiers from one army charged across the shell-cratered hell of No Man's Land, they would become tangled in the wire, easy pickings for the machine gunners in the opposing trench. The massive artillery barrages that characterized the first years of the war were aimed primarily at cutting the enemy's wire, a job at which they failed utterly.

Before World War I, there were no machine guns. Instead, hand-cranked Gatling guns could fire hundreds of rounds quickly, and riflemen had to reload after every shot. By 1914, however, gas-driven, water-cooled machine guns had been perfected. Now a two-man team could fire hundreds of rounds per minute. Carefully placed machine guns could command the entire front of a trench line, and when combined with barbed wire to slow or stop attacking troops, machine guns ruled the battlefield.

Airplanes were also used for the first time in battle. World War I started only eleven years after the Wright brothers had flown the first power-driven airplane at Kitty Hawk, yet aviation had made great strides during that time. Airplanes were initially used only for reconnaissance, replacing hot-air balloons. Quickly each side sent their own planes to deny the enemy any advantage through the air, and thus the Flying Circus was invented. The most famous pilot of the war was Manfred von Richthofen, better known as the "Red Baron." Famously parodied in the Charlie Brown cartoons, Richthofen's record of 80 planes shot down was no laughing matter to the Allies. When Richthofen was killed in 1918, the Allies gave him a full military funeral and dropped leaflets with pictures of the ceremony over German lines to inform the Germans of their actions. The era of chivalry died hard, even after four years of bloody warfare.

The most feared weapon of the war was poison gas. First used by the Germans at the Second Battle of Ypres on 22 April 1915, chlorine, mustard and other gases were used to try to break the stalemate of trench warfare. The effects of gas were gruesome; chlorine caused the lungs to break down and choke a victim to death; mustard gas blinded its victims, and other forms of gas caused the skin to burn and nerves to seize. The most famous of the many poems to come from the trenches, Wilfred Owen's Dulce et Decorum Est, speaks of the horror of watching a friend fail to get his gas on in time. Gas never managed to create a decisive advantage for either side, and its use diminished after 1916.

Another technology aimed at breaking the brutal stalemate on the Western Front involved yet another twentieth-century invention: the automobile. Desperate to break through German wire, the Allies built the first primitive tanks in 1915 and 1916, but their use did not become widespread until 1917. There were some successes and many failures and the tank was not the decisive weapon its backers thought it would be. However, during the Allied summer offensive of 1918, which eventually won the

war, the tank played an increasingly large role and was instrumental in breaching the German lines.
Armies and air forces were not the only branches of service to undergo technological revolutions prior to and during World War I. Navies were what got Europe into the war in the first place. That is, the naval arms race between Britain and an upstart Germany that embarked on a major naval building spree at the end of the nineteenth century was one of the main causes of the war. In 1906, Britain launched HMS Dreadnaught, the largest battleship ever to that date. It was massive and it revolutionized naval ship building for all time. Submarines were also perfected before and during the war, and they played a major role by bringing the United States into the war when Germany declared renewed unrestricted submarine warfare in February 1917.

Other technologies that had a major impact on World War I were wireless telegraphy, invented by Italian Guglielmo Marconi in 1910, that allowed communication with ships at sea; radio and telephone that allowed communications over land; effective battlefield medicine that cut death rates markedly from previous wars; and powerful artillery guns, one of which—the famous German Big Bertha—was moved on railroads and could fire a shell the size of a VW Bug over 70 miles. None of these weapons proved decisive, and all of them managed to increase the death toll to unheard-of levels. Only with the effective development of the German blitzkrieg of World War II would offense once again become stronger than defense, allowing for a war of maneuver. During World War I, the world learned the high price of too much firepower and not enough mobility.

http://www.shmoop.com/
Year. 2013

4.7. Role of Human Rights in Science and Technology.

We have presented the main models of development not for historical reasons, but because contemporary prevailing ideas about societal development and goals of development are derived from them. It is an uneasy heritage because these models of development in their present-day appearance fail to offer adequate explanations of current social changes. Nor do they give us a frame of reference that enables us to analyze the interrelationship between technological change and human rights and their development and implementation.

This uneasy heritage hampers an adequate understanding of what is happening in this domain. Increasingly, the social scientists are reacting critically to this heritage Among them is Tilly, who advises us, referring especially to Durkheim's legacy, to shrug off the nineteenth-century "incubus."

The reasons for the reassessment of these development models stem from different sources:

1. A growing concern over the direction in which industrial societies (or the industrial system) are (is) developing. Technical systems, especially information systems, are penetrating modern societies in all spheres of life in such a way that technological systems and social structures have become inextricable. Moreover, the adaptation of society to the impact of technology certainly does not exclude the rise of a societal type in which alienation prevails. It's also confronted with serious, massive, and undesirable long-term effects of unplanned technological development.

   In many cases policy makers and opinion leaders in developing countries, looking at the direction in which advanced societies are moving, wonder whether major consequences, which are considered by them to be negative with respect to their ways of life, can be avoided.

2. A growing awareness of the ideological character of the industrialist developmental models. They express a specific pattern of values that supports the endeavours of specific managerial and technological elites.

3. A hopeful prospect that the development of post-industrial technological developments, especially of information technology, brings new possibilities for choice in its wake. While admitting that industrial development thus far did have unavoidable social consequences, this determinism is weakened by the fact that (as Gershuny summarizes this debate on the malleable society).

a) Increasing wealth means less unrequited need for goods to satisfy basic needs;

b) As technologies develop, advantages of scale accrue to increasingly small productive units;

c) Technologies are no longer scarce. Instead of social shortcomings demanding technical solutions, we now often find, according to Gershuny, multiple technologies chasing scarce applications;

d) The development of new "control" technologies may be a substitute for some of the earlier determining factors. "Improvements in transport, telecommunications and data handling may produce the opportunities for different types or uses of organization." 46 Among these may be the facilitation of worker participation.

4. The above-mentioned sources have given a new impetus, in the late 1960s and onward, to a critical reconsideration of industrial development. This gave birth to numerous efforts to formulate new models or "paradigms" of development, such as those of Etzioni, Eisenstadt, Habermas, Giddens, and Touraine.47 All of these authors emphasize the significance of choice, of opportunities to direct change in a planned direction, and of the pivotal role of (collective) meanings or values in societal development.

5. Finally, since the 1970s, empirical research directed at the analysis of the linkages between (new) technologies and types of organizations has shown that the tenets of technological determinism do not stand a systematic empirical test. We will return to these research results afterwards. Moreover, the rise of Japan, as the first industrial nation outside the Western world, and its avoidance of many of the disrupting consequences - at least for the time being - of industrialization in Western societies, has also contributed to the reconsideration of the Western industrial models of development.

Technological determinism is under attack, and so are models of development that are based on social determinism. Sometimes we meet in the literature advocates of extreme voluntarism who push aside all factors which restrain our choices, maintaining that we are free to build our society according to our wishes: everything is considered to be "political" and to depend on the choices we make as political communities. This is certainly not an attractive approach, because in actual life we meet numerous constraints. We have to analyse the nature and variety of constraints and social life (technical, political, social, cultural, etc.) and to look systematically for opportunities for choice. But once we admit that we have choices which reach further than adaptation to the "inevitable march of technology," we are confronted with a compelling question: How do we decide on a specific course of action? Which standards should play a role in the decision-making processes? It is quite evident that, once we are confronted with opportunities to select from courses of action connected with the development and application of new technologies, human rights comes to the fore.

In order to indicate as clearly as possible the emerging ideas concerning choice, we give a schematic representation of the industrialist model of development that subsequently will be broken down into its component elements. This schematic representation, working downstream from the individual inventors, represents the industrial model of development that has been described above. Basically, it is a simple model.

As Ogburn expressed it 50 years ago: Changes are started by one institution which impinges on others, and those on still others. . . in the past in many important cases a change occurred first in the technology, which changed the economic institutions, which in turn changed the social and governmental organizations which finally changed the social beliefs and philosophics. This series is presented as a mechanical, causal chain.

Let us start our analysis with the links between T and O (TL) and then proceed by working down- and upstream. At every step we will ask questions which deal with the impact of technology on human rights.

Since the end of the 1970s several empirical and theoretical studies, dealing with the development of new technologies and their application to industrial production and services, have been published. In them it is shown that specific new technologies, such as CNC machines, may be accompanied by quite different types of organizations. In those studies, often of an international comparative nature, it is shown that specific social consequences of the introduction of new technologies are not primarily contingent on the nature of the technology itself, but on the organizational conceptions of the interest groups that decide on the introduction and the nature of the application of the technologies. International comparative research has, moreover, demonstrated that the same technologies may have different social consequences in different countries, depending on both the nature of institutional arrangements existing between relevant interest groups and the educational system. Important studies in this area are those of Maurice, Sellier and Silvestre, Gallie, Lutz, Kerna and Schumann, Dore, Smith, and the theoretical analysis of Winner and Hirschhorn.

Although it is made clear that technological development theoretically opens up new options for social development, the prevailing institutionalized power relationships may prevent them from being used in ways other than those prescribed by the restricted logic of technological rationalization. Nevertheless, research in this domain has demonstrated, according to a five-point summary by Grootings, that:

1) Technology itself is designed and introduced by people who, in doing so, try to realize their own interests;
2) A given technology leaves room for different alternative organizational solutions;
3) These solutions are the result of social relations between people that are, however, not always and everywhere based on domination;
4) Social actors are socialized by their environment, which also shapes the nature of their social relations;
5) The impact of technological change depends on the aims and goals of its introduction, under both capitalist and socialist conditions.

From this it follows that technological changes have a predictable impact on working relationships and on the content of jobs only as long as the innovators' minds are imprisoned in the deterministic model of industrialism. In this respect the West seems to be at a disadvantage in comparison with non-Western nations. This is because the Enlightenment model of development logically implies a great divide within modern organizations between the technological and managerial elites on the one hand and the mass of the blue- and white-collar workers on the other. The first category of members of an organization see themselves confronted with the task of transferring their (rational) knowledge to the "uninformed" workers.

K. Matsushita of the Matsushita Electric Company in Japan made this point very clear when he addressed a group of Western managers a few years ago:
We are going to win and the industrial West is going to lose: there is nothing much you can do about it because the reasons for your failure are within yourself ... With your bosses doing the thinking, while the workers wield the screwdrivers, you are convinced deep down that this is the right way to run a business.

Matsushita states, in reference to this Western model, that the survival of firms is very hazardous in an environment which is increasingly unpredictable, competitive, and fraught with danger. Their continued existence depends on the day-to-day mobilization of all human resources. Management is then considered to be the art of mobilizing and pulling together the intellectual resources of all employees in the service of a firm. This type of management is clearly reflected in the organization's structure. Unlike comparable Western companies, the Japanese companies tend to carry out research, development, and the design of manufacturing processes concurrently so that knowledge from one area can readily influence decisions made in other areas. A new concept moves back and forth among the different groups until it is perfected. In most Western companies these processes are sequential: once a department has completed its task it is handed over to the next department.

This flexibility with respect to the establishment of links between technology, the organization's structure, and the content of jobs is a very important issue both for new industrializing countries and for the industrialized world, as it shows that there is room for human choice and for innovations in the domain of human interactions. It shows also that centralized planning and the application of models from above are not the right ways to handle organizational problems. The a priori rationality of the Enlightenment model is not the right way to change reality; innovations can only be really effective when they are solidly linked up with the experience of all workers.

The point is, however, whether these opportunities for choice will be used only with the goals of efficiency and efficacy in mind, or whether other values will also come to the fore, such as opportunities to learn within teams, an increase in individual autonomy, "sustainable" growth, and participation in decision-making.

Much will depend on the awareness of opportunities to make choices when technological and organizational changes are drawing near. Looking at figure 1, this signifies that we must be able to dislodge the technological-imperial interpretation of the links between T. O. and TL. Furthermore, choices among alternatives must be assessed not only on the basis of efficiency and effectiveness, but also by reference to the relevant human rights. This again needs to be done not only in a defensive way so as to protect human dignity, but also in an affirmative manner, by referring to these rights as standards of achievement for the next period. The contribution of the human and social sciences can be critical in this domain, as they have the task, as can be deduced from our analysis of the Enlightenment model of development, to go upstream and to analyze in a systematic way the actual choices that enter the development of S. T. and their interrelations. This analysis can pertain to the ways scientists manage, in their laboratories, for example, to win support for their interpretation of scientific problems. Certain groups of scientists, technologists, and clients (e.g. powerful segments of markets) have an important interest in specific research lines and research outcomes, as Latour demonstrated, and alliances could be made among them.

Moving upstream signifies also the analysis of the ways cultural values impinge on the links between S. T. O. and TR. Analysis of organizations in highly industrial countries shows that the inner workings of modern organizations are not only influenced by "'re-industrial" values, but are even dependent on behaviour that is based on such values. Recently Philippe d'lribarne showed that organizations with the same formal, "universalistic" structure and technological processes differed widely with respect to such variables as the nature of interaction between superiors and workers, discipline, and ways of handling social interactions between co-workers. He demonstrated that these differences were interrelated with differences in the cultural surroundings of these organizations. Going upstream also implies a continuation of analysis pertaining to the impact of social and political factors on the choice of specific scientific and technological trajectories and the exclusion of other possible lines of development.

It follows from what we have said that the more the social and human sciences go upstream and the more they are successful in demonstrating opportunities for choice in fact by systematically "deconstructing" the "over deterministic" Enlightenment model of development - the less downstream activities can be considered as only adaptations to technological-organizational exigencies and the more room there will be for assessing and evaluating upstream activities with systematic reference to human rights. This implies early warning systems and debates concerning the risks that are connected with new types of R&D. It signifies the analysis of technological designs with reference to the context in which the technology will be used, as characteristics of a design may already block certain downstream choices. Moreover, it emphasizes the need for a systematic analysis of the diffusion of technological innovations within the industrialized world and the impact on the developing world of Western decisions to stop production of certain types of commodities, for example when non-sustainable production processes are transferred to these countries, or when products that are considered to be a hazard to health in Western countries, and as such are forbidden by Western governments to be sold on Western markets, are still available in developing countries.

http://www.archive.unu.edu/
Year. 1993

5. Impact of Science and Technology at home and the community.

5.1. <u>Changes in Society.</u>

Since the beginning of civilization, the twin innate human quests of understanding nature in its physical, biological, and social aspect (what has come to be called science) and of modifying nature and building artifacts (the vast activity encompassing endeavors such as engineering, medicine, and agriculture, which we call technology) have had a fundamental impact on the evolution of human societies. They have also been indissolubly interconnected because to modify nature, we must understand it and to understand it, often we must manipulate it and build artifacts.1 It would be impossible within the confines of this paper to encompass the vastness, complexity, and, as Thomas Hughes (2004) put it, the messiness of the interactions among science, technology, and society; but we can attempt to adopt a systematic framework for addressing them and to exemplify some salient points.

Repeatedly, the two unstoppable quests to understand and modify nature have changed societal views, have expanded the human reach, and have fundamentally transformed society, from the discovery of agriculture and metals to the industrial and information revolutions, to today's biotechnological revolution.

The two quests have affected the very core of societal beliefs, from cosmogony to the origins of life, have determined the fates of societies and nations, and have been impacted, in turn, by society, in a double circle of interactions. The possibilities offered by engineering modifications of life are changing our very understanding of life and, for the first time, are providing us with the ability to modify life. The hard-fought acceptance of the concept of verifiable truth—the bedrock of science and technology—has pervaded many aspects of societies, from law to medicine to economics to education, offering a compass to guide an ever more complex world (making the issue of truth, in essence, also one of utility).

Science and technology have transformed society's views about the future, from the need to preserve our finite resources to the attempt to avert or mitigate the consequences of cataclysms previously believed to be acts of God and from pandemics to the glimmer of hope that one day we might be able to deflect some catastrophic asteroid hits.

Equally immense but not always fully recognized is the influence of society on science and technology. The birth of astronomy responded to earlier religious needs for precise information about the movement of celestial bodies. Discoveries spurred by the school of Henry of Lancaster (Henry the Navigator) required the most extreme science and technology of the time, from mapping to nautical instruments to the caravels.}

Religious dogmas and political and social ideologies as well as different philosophies have in various periods exerted a determining influence on the course of science and technology (Pool, 1997), all the way to today's stem cell controversy. Clearly, the polarization between science and religion weakens societies and continues to be unresolved (Silver, 2006).

The Greek philosophers believed in the fundamental unity and order of the world, leading them to scientific conclusions more from reasoning than from detailed observation. Greco-Roman law inspired a large segment of Islamic law. The five-element Yin and Yang theories of the Chinese helped the development of their scientific thinking, but, as Needham (2000) pointed out, their dominance simply went on too long so that China had no renaissance or reformation. Also, different philosophies affected the relation between time and science, with, for example, time for the ancient Chinese being one-directional and for the Hindus cyclical. The Chinese conception of harmony and the Hindus conception of the interpenetration of observation and observer (in a sense a forerunner of Heisenberg's uncertainty principle) have had profound impact on their science, as had, for the ancient Greeks, the conception of symmetry and balance. In the Koran, the concept of knowledge (ilm), the second-most recurring word, inspired inquiries in the areas of science, philosophy, and technology and led to respecting and preserving the texts of the ancient Greeks. As Needham observes, there is little to choose from between European and ancient Chinese philosophy with regard to the foundation of scientific thought, with Western scientific minds concerned with "what essentially is it?" and Chinese ones with balance; two equally important conceptions. In Europe in the seventeenth century, formal logic retarded independent thinking and became clearly inadequate to handle change. Thus, philosophical views set the stage for scientific and technological developments but can also channel and confine them. As Cyril Smith (1979) insightfully stated, if somewhat categorically, "discovery, from its very nature must at first be illogical, unforeseen and outside the framework that previously exists…. In moving beyond what is already known and well understood, logical thought is of less value than the complex reaction of the entire human being."

The Renaissance, with its new spirit of inquiry and discovery, opened the gates to new scientific and technological developments, and later, the French Revolution affirmed the separation between science and religion. Thanks to this new spirit, transportation networks that were the sinews of the Roman Empire, but had disappeared in the medieval fracturing, could be succeeded more than a millennium later in different form by the transportation networks of ships, roads, and railroads that supported the expansion of the British Empire and today's global networks of telecommunications and aviation. The late-nineteenth-century creation of the research university became a mechanism for systematizing and accelerating the process of discovery, as first triggered by von Liebig's laboratory in Germany. The industrialized battlefield in World War I and its exponential technological growth in World War II led to an unprecedented mobilization of science and technology and to the birth of formalized science and technology policies. And one cannot overlook the seminal influence of art over the millennia on the development of science and technology, from the use of metals to Leonardo, and from the 1909 futurist manifesto to today's new art media.

Science, Technology, and Society –The Tightening Circle
Author. George Bugliarello
Year. 2008
http://nap.edu/

5.2. Impact on daily life.

Technology affects our lives, there are advantages and disadvantages. The Advantages are that it makes our lives simple by using equipment that can easily finish and do well the work or job. We can save more time and energy so that we can perform and do our other job. We can now easily communicate our love ones and relatives by using cellphone and internet, it can connect us even they are in the other part of the world and then with digital camera, we can see them just like they are in front of us. Technology now can give us more information about what are happening around the world that help us to get aware and prepare for disaster and calamity that might happen in our country or in our place. Science and Technology can cure our diseases, provide us shelter and foods for crowd people. Most of the people think that there are more advantages of science and technology as compare to the disadvantages. The major advantage of science and technology is that it has made our lives easier like invention of technology has decreased the manual work. The use of technology in agriculture has increased our productivity. Doing work at workplaces is easier because of invention of computers and notebooks. Development of technology in kitchens, beauty parlors, workplace, research labs and in all fields of life has become the necessity. Now we can study and understand our history, culture and society and by the help of Science and Technology we can share our stories of what's happening in our life, what we see and what we discover to by this way we can also help the children of the next generation. The major advantage of technology and science is to assist mankind in living well and more easily and in better health.

Many years comes our atmosphere slowly destroy because of the air pollution that came from the factory and it can cause Green House Effect(GHE) it is a process by which thermal radiation from a planetary surface is absorbed by atmospheric greenhouse gasses and is re-radiated in all directions. And it is harm for the people. Science and Technology make people lazy because people just depend on it and not do their work well. It will increased the anxiety of our lives, when technology goes in the wrong hand it can have an negative impact in our society it can create cyber crime, hacking, stealing of personal information and pornography websites. It also gives opportunities to the terrorist to make crime like bombing. As technology develops we forget our traditions style of living. it simply destroying our life styles. It also destroying our nature because of illegal logging, and mining and others, this is the cause of landslide and flood that can kill many people because nature can't stop it anymore.

The major disadvantage is the assumption that every scientific statement is the final answer to anything and becomes almost a religious tenet of society.

http://www.cdeluao91.blogspot.mx/
Year. 2011

6. Bioethics

6.1. What is Bioethics.

Bioethics is an activity; it is a shared, reflective examination of ethical issues in health care, health science, and health policy. These fields have always had ethical standards, of course, handed down within each profession, and often without question. About forty years ago, however, it became obvious that we needed a more public, and more critical, discussion of these standards.

Bioethics is that discussion. It takes place in the media, in the academy, in classrooms, and in labs, offices, and hospital wards. It involves not just doctors, but patients, not just scientists and politicians but the general public. Traditional ethical standards have been articulated, reflected on, challenged, and sometimes revised; standards for new issues have been created – and then challenged and revised. The conversation is often sparked by new developments, like the possibility of cloning. But bioethics also raises new questions about old issues, like the use of placebos and the treatment of pain.

Bioethics has brought about significant changes in standards for the treatment of the sick and for the conduct of research. Every health care professional now understands that patients have a right to know what is being done to them, and to refuse. Every researcher now understands that participants in their studies have the same rights, and review boards to evaluate proposed research on those grounds are almost universal.

Our understanding of what is ethical has grown, but it is never complete. Ethical advances open new questions: We now see that getting "informed consent" does not rule out exploitation (for instance, of the desperately poor or the desperately sick); exploitation is hard to define. Scientific and technological success also force new choices: What, for instance, do we do with "unused" embryos created in fertility labs?

Finally, political and economic facts are just as challenging: One example is the fact that we are able to hire doctors and nurses away from the world's poorest countries – but should we? These are urgent, practical questions. Bioethics makes a difference; it advances slowly; and it is not finished

http://www.bioethics.msu.edu/
Year. 2012

6.2. Relationship with Ethics branches.

Philosophical ethics comprises metaethics, normative ethics and applied ethics. These have characteristically received analytic treatment by twentieth-century Anglo-American philosophy. But there has been disagreement over their interrelationship to one another and the relationship of analytical ethics to substantive morality – the making of moral judgments. I contend that the expertise philosophers have in either theoretical or applied ethics does not equip them to make sounder moral judgments on the problems of bioethics than nonphilosophers.

One cannot "apply" theories like Kantianism or consequentialism to get solutions to practical moral problems unless one knows which theory is correct, and that is a metaethical question over which there is no consensus. On the other hand, to presume to be able to reach solutions through neutral analysis of problems is unavoidably to beg controversial theoretical issues in the process. Thus, while analytical ethics can play an important clarificatory role in bioethics, it can neither provide, nor substitute for, moral wisdom.

We shall find that the metaphysical views offered on behalf of moral conclusions about abortion do nothing in defense of those conclusions. Other disputable assumptions separate each moral conclusion from the invoked metaphysical view. It is the defensibility of the other assumptions that is crucial. No metaphysical view cited on behalf of a moral conclusion substantially advances the argument in favor of the conclusion.

The Limited Relevance of Analytical Ethics to the Problems of Bioethics.
Author. Robert L. Holmes
Year. 1990
The Relevance of Metaphysics to Bioethics
Author. Timothy Chappell
Year. 2000
http://jmp.oxfordjournals.org/
http://www.jstor.org/

6.3. Theories of Ethics related to Bioethics.

As a species of practical ethics, bioethics exhibits a complex and contested relationship to philosophical theory. On the one hand, many who teach and write in this interdisciplinary field are philosophers who naturally believe that their specific contribution to the field—their "expertise," if you will—consists in the application of distinctly philosophical methods, including various kinds of ethical theory, to practical problems arising in biomedical research, clinical medicine, and public health. But on the other hand, many who work in the area of bioethics, including many philosophers, are highly skeptical of the so-called "applied ethics" model of moral reasoning, in which exemplars of high theory (e.g., consequentialist utilitarianism, Kantian deontology, rights-based theories, natural law, etc.) are directly “applied” to practical problems. Indeed, most philosophically-inclined contributors to the bioethics literature have eschewed high moral theory in favor of various modes of moral reasoning falling on a spectrum between the strong particularism of various strains of casuistry or narrative ethics, on one end, and the mid-level norms of the enormously influential “principlism” of Beauchamp and Childress, on the other (Beauchamp and Childress, 2009). According to philosophers Robert K. Fullinwider (2008) and Will Kymlicka (1996), bioethics in the public domain can and should go about its business as a species of ethical reflection independently of any reliance upon high-flying ethical theory.

Things get even more complicated when we recall that bioethics is not a monolithic field; it encompasses a variety of distinct but interrelated activities, some of which might be more amenable to the deployment of philosophical theory than others. At the most concrete and immediate level, there is clinical bioethics, which amounts to the deployment of bioethical concepts, values and methods within the domain of the hospital or clinic. The paradigmatic activity of clinical bioethics is the ethics consult, in which perplexed or worried physicians, nurses, social workers, patients or their family members call upon an ethicist (among others, e.g., psychiatrists and lawyers) for assistance in resolving an actual case. These case discussions take place in real time and they are anything but hypothetical. While those who discuss bioethics in an academic context can afford to reach the end of the hour in a state of perplexed indeterminacy, the clinical ethicist is acutely aware that the bedside is not a seminar room and that a decision must be reached.

http://plato.stanford.edu/entries/theory-bioethics/
Year. 2010

7. Suicide, Abortion and Euthanasia.

7.1. Relationship with Bioethics.

The matter of abortion, the quintessential bioethics topic, raises intensely personal issues for many people. It is a polarising and divisive issue that raises discussions about morals, science, medicine, sexuality, autonomy, religion, and politics. A central matter is deciding what we can say about unborn children, initially known as embryos and later, fetuses. What is their moral status – how much do they matter, and what are our obligations towards them? The matter of 'personhood' arises, as a philosophical and legal discussion about what rights to grant them.

'Personhood' aside, what is our relationship to them, all of us as members of the human family? Should their lives be protected, or should their mothers be allowed to make decisions about killing or protecting them? If killing is allowed, under what circumstances may it take place? If their lives are not protected, what kind of crime is it to perform an abortion on a woman without her consent, or to cause her to suffer a miscarriage?

The ethical aspect of abortion is related but distinct from the legal. Whether or not it is moral, should abortion be legal? Generally prohibited but with some exceptions? Should it be regulated? Publicly funded? Should doctors and nurses be able to object according to their conscience?

A less prominent but still important debate focuses on the reasons why women might seek abortion. Is it at all times a free choice, or are women responding to coercion in any way? Is it a free choice to seek abortion in desperation because of poverty, violence, or lack of support? What should be the community and policy response to women who feel unable to give birth to their children? And what is the role of the father in decisions about abortion?

Physician-assisted suicide is much talked about. But confusion remains as to what precisely it is, and debate continues about its ethical implications. Is physician-assisted suicide distinguishable from refusal of treatment? Is there a "right to die?" Does assisted suicide necessarily have to mean physician-assisted suicide? What is the relationship of physician-assisted suicide to end-of-life care? How should physicians deal with a request for assisted suicide? These issues are explored in this paper, along with a review of the ethical arguments for and against physician-assisted suicide. The paper concludes that society should encourage individuals not to see assisted suicide as their best option. A better policy than widespread legalization of physician-assisted suicide is to provide the necessary social support, health care including mental health care, hospice care, and compassion to those who feel they face an undignified life, or an undignified painful death.

Euthanasia is the intentional and painless taking of the life of another person, by act or omission, for compassionate motives. The word euthanasia is derived from the Ancient Greek language and can be literally interpreted as ‘good death.’ Despite its etymology, the question whether or not euthanasia is in fact a ‘good death’ is highly controversial. Correct terminology in debates about euthanasia is crucial. Euthanasia may be performed by act or omission - either by administering a legal drug or by withdrawing basic health care which normally sustains life (such as food, water or antibiotics). The term euthanasia mostly refers to the taking of human life on request of that person – the euthanasia is voluntary. However, euthanasia may also occur without the request of person who subsequently – euthanasia is non-voluntary. Involuntary euthanasia refers to the taking of a person’s life against that person’s expressed wish/direction.

Central to discussion on euthanasia is the notion of intention. While death may be caused by an action or omission of medical staff during treatment in hospital, euthanasia only occurs if death was intended. For example, if a doctor provides a dying patient extra morphine with the intention of relieving pain but knowing that his actions may hasten death, he has not performed euthanasia unless his intention was to cause death (Principle of Double Effect). Euthanasia may be distinguished from a practice called physician-assisted suicide, which occurs when death is brought about by the persons own hand (by means provided to him or her by another person). All practices of euthanasia and physician-assisted suicide are illegal in Australia.

http://www.bioethics.org.au/
Year. 2013

7.2. Doctor-Patient relationship and issues.

Power is an inescapable aspect of all social relationships, and inherently is neither good not evil. Doctors need power to fulfill their professional obligations to multiple constituencies including patients, the community and themselves. Patients need power to formulate their values, articulate and achieve health needs, and fulfill the irresponsibilities. However, both parties can use or misuse power. The ethical effective nesses a health system is maximized by empowering doctors and patients to develop ‘adult-adult’ rather than ‘adult-child’ relationships that respect and enable autonomy, accountability, fidelity and humanity. Even in adult-adult relationships, conflicts and complexities arise. Lack of concordance between doctors and patients can encourage paternalism but may be best resolved through negotiated care. A further area of conflict involves the `double agency' of doctors for both patients and the community. Empowerment of all players is not always possible but is most likely where each party considers and acknowledges power issues.

Doctors and patients alike are saddened and angered by the distance that increasingly interferes with their interactions. Two complementary strategies may enhance the human quality of clinical care and improve outcomes. First, the doctor and patient can undertake a systematic "patient's review" that addresses seven dimensions of care: 1) respect for patient's values, preferences, and expressed needs; 2) communication and education; 3) coordination and integration of care; 4) physical comfort; 5) emotional support and alleviation of fears and anxieties; 6) involvement of family and friends; and 7) continuity and transition. Incorporating the "review" into the clinical encounter encourages both patient and doctor to confront individual preferences and values and offers patients an explicit framework for participating actively in their care. Second, using survey instruments designed to solicit focused reports from patients that address each dimension of care, doctors can gather aggregate feedback about their practices. Such reports move beyond anecdote and can serve as screening tests that uncover areas in doctors' practices that merit improvement. In addition, patients can join doctors in developing solutions to problems uncovered by patients' reports.

http://www.link.springer.com/
Year. 2001
http://www.annals.org/
Year. 1992

7.3. Role of ethics in the medical practice.

A common ethical code for everybody involved in health care is desirable, but there are important limitations to the role such a code could play. In order to understand these limitations the approach to ethics using principles and their application to medicine is discussed, and in particular the implications of their being prima facie. The expectation of what an ethical code can do changes depending on how ethical properties in general are understood. The difficulties encountered when ethical values are applied reactively to an objective world can be avoided by seeing them as a more integral part of our understanding of the world. It is concluded that an ethical code can establish important values and describe a common ethical context for health care but is of limited use in solving new and complex ethical problems.

Codes of ethics have been a longstanding element in the professional control of the behavior of doctors, and indicate a commitment to act with integrity in extreme circumstances.' When patients seek medical care they are not entering an ordinary social relationship; they often feel vulnerable but need to expose and share intimate and important aspects of their lives. Ethical codes of conduct offer some tangible protection to both patients and doctors in these circumstances. The Hippocratic Oath is perhaps the best known code of this kind, and is still administered in some medical schools in the UK and elsewhere, despite uncertainty about its origin and relevance. Some schools use a modernized version of the Hippocratic Oath or the Prayer of Maimonides, others use the Declaration of Geneva or their own institutional oath. More recently the General Medical Council has issued a code, Duties of a Doctor, in response to changes in society, the law and medical practice.

Traditionally, codes were adopted and oaths taken exclusively by doctors, reflecting that professional health care was a matter mainly between the doctor and the patient. Increasingly, many of the moral difficulties in present day health care arise in complex organizations where care is delivered by multidisciplinary clinical teams and influenced by a range of others including managers, boards and governments.' This, among other considerations, has led to the recent call for a code of ethics for all health care professions, and follows a number of expressions of concern voiced about the general ethical state of modern medicine. In their recent paper, Dr Berwick et al give ample illustration of the diverse and complex moral challenges facing contemporary health care workers, and say they have been encouraged by many to seek a common ethical basis for medical practice. Their concern is not an esoteric, specialist one; ethics are a central element in the quality of day to day clinical practice and of enormous importance to the care of patients. Even if codes have only a small influence they are likely to be worthwhile. Most ethical codes cover a range of topics. They usually include some specific prohibitions, for example, forbidding euthanasia, or disclosure of secret information, but mainly they describe general attitudes and expected forms of conduct, for example: "always to act for the benefit of patients, deliver bad news with understanding and sympathy, not sit in moral judgments on any patient, and strive to cure where possible but to comfort always". There are advantages to be gained through the adoption of an ethical code and in having a common understanding of the ethical nature of medical practice. However, a code may raise unrealistic expectations about its scope and some caution is required. It is important, in striking the right balance, to understand the role that such a code can play. Ethical codes work in a similar way to ethical principles, the use of which has received much attention in recent years. In fact, the principles approach is now the most generally accepted and influential school of thought among medical ethicists and is highly relevant to the discussion of ethical codes. There are important limitations to the principles approach to ethics which apply equally to ethical codes.

The role of ethical principles in health care and the implications for ethical codes
Author. Alexander E. Limentani
Year. 1999
http://www.jme.bmj.com/

7.4. Impact of application of ethics in society.

Over the last decade, the topic of social responsibility and ethics in business has been significant interest to scholars. However, few studies have been cross-cultural in content, even though existing theoretical models recognize the importance of this factor (e.g., Ferrel and Gresham, 1985; Hunt and Vitell, 1986 and 1992). Bartels (1967) was one of the first to note the importance of the role of culture in ethics decision-making identifying cultural factors such as values and customs, religion, law, respect for individuality, national, identity and loyalty (or patriotism), and rights of property as influencing ethics. In their general theory of marketing ethics, Hunt and Vitell (1986, 1992) incorporated cultural norms as one of the constructs that affect one's perceptions in ethical situations. The influence of cultural and group norms/values on individual behavior was also noted by Ferrel and Gesham (1985) in their contingency framework for understanding ethical decision making within a business context. However, neither these theoretical conceptualizations of dangerous.ethical decision-making nor subsequent empirical investigations tell us how culture influences ethics and ethical decision-making.

The Effects of Culture on Ethical Decision-Making
Author. Scott J. Vitell, Saviour L. Nwachukwu, James H. Barnes
Year. 1993
http://www.link.springer.com/

8. Genetic Engineering.

8.1. Transgenic organism.

A transgenic organism is an organism which has been modified with genetic material from another species. The genetic modification is accomplished by inserting DNA into an embryo with the assistance of a virus, a plasmid, or a gene gun. The embryo is allowed to develop, and the mature organism will express the DNA which has been inserted into its genome. Transgenic organisms can also pass the modification on to future generations by breeding with other members of the same species.

Organisms may be genetically modified for any number of reasons. Genetic modification may be performed to make organisms more vigorous, to add resistance to specific threats, or for the goal of expressing a particular trait. It can be used for everything from adding nutrition to staple crops for the benefit of people in the developing world to making fish glow so that they can be sold as novelty pets.

While species cannot interbreed, as a general rule, DNA from one species can express in another. This is because DNA codes for the same thing no matter where it is, so if a researcher can determine which part of an organism's genome codes for a particular trait and the trait is compatible with the organism being modified, the DNA can be successfully inserted to cause the trait to be expressed in a different species.

One of the most common reasons to develop a transgenic organism is in agriculture, where the development of genetically modified crops has led to a number of advances in the way in which agriculture is practiced. A transgenic organism may grow in areas where other members of the species cannot, may be easier to harvest and handle, may be hardier, may contain more nutrition, and so forth. In some cases, transgenic organisms are rendered sterile so that they cannot interbreed, for the purpose of protecting patents and to prevent transgenic organisms from cross-breeding with wild relatives.

Another area in which some transgenic organisms are used is in scientific research. Transgenic mice, for example, are used for a variety of studies in which researchers want to be able to study traits from one species in a more convenient setting. Mice can be modified with human DNA for the purpose of testing medical treatments and seeing how they might behave in a human. There is some controversy over the practice of genetic modification. Some advocates are concerned that interbreeding between transgenic and wild organisms could have unforeseen consequences, and others worry that consuming things like transgenic organisms could be.

http://www.wiseegeek.org/
Year. 2003-2013

8.2. Animal rights.

There is much disagreement as to whether non-human animals have rights, and what is meant by animal rights. There is much less disagreement about the consequences of accepting that animals have rights. Animal rights teach us that certain things are wrong as a matter of principle, that there are some things that it is morally wrong to do to animals. Human beings must not do those things, no matter what the cost to humanity of not doing them. Human beings must not do those things, even if they do them in a humane way. For example: if animals have a right not to be bred and killed for food then animals must not be bred and killed for food. It makes no difference if the animals are given 5-star treatment throughout their lives and then killed humanely without any fear or pain - it's just plain wrong in principle, and nothing can make it right. Accepting the doctrine of animal rights means: No experiments on animals, No breeding and killing animals for food or clothes or medicine, No use of animals for hard labor, No selective breeding for any reason other than the benefit of the animal, No hunting, No zoos or use of animals in entertainment.

All beings with inherent value are equally valuable and entitled to the same rights. Their inherent value doesn't depend on how useful they are to the world, and it doesn't diminish if they are a burden to others. A number of arguments are put forward against the idea that animals have rights. This arguments are like, animals don't think, they are not really conscious, they were put on earth to serve human beings, they don't have souls, they don't behave morally, animals are not members of the 'moral community'.

http://www.bbc.co.uk/
Year. 2013

8.3. Relationship between genetic engineering and technology.

There's a very subtle difference between DNA technology and genetic engineering. Genetic engineering refers to those techniques used to modify the genotype of an organism to change its phenotype. That is, genetic engineering manipulates an organism's genes to make it look or act differently. DNA technology refers to the methods used to modify, measure, manipulate and manufacture within the DNA molecule. Because genes are stored in DNA, genetic engineering is done with DNA technology. But DNA technology can be used for more than genetic engineering.

A gene can be defined as a component of a cell that is responsible for expressing a trait in an organism, and also can pass that trait on to the next generation of an organism. It turns out that genes are segments of DNA that contain a specific pattern of nuclear bases: the four molecules abbreviated A, T, G and C. DNA is made of a long stretch of connected A, T, G and C molecules. For example, a stretch of DNA that goes something like AGCCGTAGTT... and so on for a few thousand bases might mean a cat will have green eyes. But not all DNA is a gene. Some parts of DNA work to provide signals about when and where a gene should become active, and some stretches of DNA have no known purpose.

With genetic engineering, scientists attempt to manipulate the genetic structure of an organism to make a change in the way an organism looks or functions. The genetic structure of an organism is called its genotype, while the physical structures and functions of an organism is called its phenotype. An organism's phenotype is largely determined by its genotype. For example, if scientists changed the genotype of the cat's eye color gene to be TCCCAGAGGT... then maybe they could make the cat have brown eyes instead of green. In reality, the process is far more complex and involves very long stretches of DNA that must be manipulated perfectly, but this is the principle of genetic engineering: Modify the pattern of the bases in an organism's DNA to change its phenotype.

To do genetic engineering, scientists use some of the tools of DNA technology. They haven't used the tools to change a cat's eye color, but they have done some other things. Scientists have modified bacteria to produce insulin for diabetics, have modified corn to be resistant to herbicides for less harmful farming and have modified mice to grow human cancer tumors to test medications. The most common method of genetic engineering is to snip out a piece of DNA from one organism and replace it with a section from another organism. That's called recombinant DNA, and it's done with the help of a couple of different molecules used to cut apart and glue together DNA molecules.

http://www.science.opposingviews.com/
Year. 2008-2013

9. Human Nature Relationship.

9.1. <u>Different contexts.</u>

There are many misconceptions about human nature, from the tabula rasa theory of mind to the religious or ethical pronouncements about fundamental evil or fundamental good. Evolutionary theory, along with the philosophy of naturalism on which it is based, provides many key insights into the realities of human nature. In this section we will first examine some false or unconfirmed theories of human nature, and then we will examine evolution's implications for the topic. Human nature was shaped through the forces of natural selection, like all functional features found in organisms. The reason that human nature is the way it is, is because it was adaptive to be that way in the past. Human nature, like all functional attributes of organisms, was determined by differential reproduction of varying entities in the ancestral environment.

Certain behaviors, responses, or emotions were adaptive in particular situations in our ancestors' hunter-gatherer environment. Those that possessed these behaviors, responses, and emotions were more likely to reproduce than those who did not possess them; therefore the genetic predisposition toward those things was also passed down to the next generation. In time, the genes for those behaviors had become quite prevalent in the population, driving different alleles nearly to extinction. Of course, different genetic combinations of these adaptations could arise, but these too would be subject to the forces of natural selection. In this way, the seemingly automatic responses to many ordinary stimuli that we call "human nature" were hard-wired into our brains by natural selection at work.

Despite assertions to the contrary, possessiveness in one form or another is a ubiquitous element of human existence. It almost certainly evolved from the territoriality of many monkeys, who protect their hunting grounds, and many times their mates, from potential rivals. Humans too have this possessive instinct; males and females alike resent being cheated on (though this arises for other genetic reasons as well), and no one likes to have his possessions stolen by a rival or a thief. Indeed, human possessiveness may have been one of the driving forces behind the evolution of the justice and fair play memes.

It is worth noting that even communal tribes use the notion of possession, albeit differently than Westerners do. Tribes band together because individuals cannot survive alone in such an environment, but groups of individuals working together form a viable unit. As a result, possession takes place at the group, not the individual, level - tribes tend to be highly territorial, and many consider an intrusion onto their territory sufficient provocation for war.

The very human emotion of jealousy acts as an adjunct to possessiveness. Jealousy permits a person to desire to keep his own possessions while simultaneously coveting another's. Jealousy arises when a man sees another man with a more beautiful woman, a better-constructed home, or more and healthier children than his own. The jealous man would indeed be offended if someone tried to steal his wife, house, or children; yet he also sometimes attempts to steal another man's. This strategy can make good genetic and memetic sense, creating a desire to have items that will maximize one's genetic or memetic reproductive fitness.

Sexual behavior, a fundamental element of human nature, is also deconstructible through evolutionary analysis. Sociobiologists have found that men and women commonly make basic choices about mates due to genetic predispositions selected to maximize probable genetic reproductive fitness. Males have a tendency to look for young women with all these external signs of health and fertility - clear skin, fair hair, symmetrical facial features, and wide hips are all major factors. Biologically, males invest less in parental care of offspring, and therefore their best bet genetically is to impregnate as many females as possible.

Females, on the other hand, invest more care in the offspring biologically and, as a result, culturally. Also, a female cannot maximize her genetic fitness through many matings because of the biological reality that male initial investment is much less. As a result, females tend to seek older men with good social and financial status who seems as if he will give good parental care to the offspring she bears for him.

Love and empathy are commonly held to be the better side of our human nature, but they too are simply adaptations to the environment faced by our ancestors. Love as an emotion initially served two very simple functions (or perhaps one of the two, which then expanded its functionality): to enforce kin selection and to alert the presence of a suitable mate. Love would have been a quick, efficient "macro"; an emotion that was equivalent to the object of this emotion is genetically related and deserves help.

In summary, many of the behaviors and emotions we see as human nature are in reality responses to the environment of our ancestors; these behaviors have been shaped and structured by natural selection. Contrary to the tabula rasa theory, humans do indeed have innate tendencies, but these tendencies are not intrinsically good or evil; instead, they were simply adaptive in the time in which we evolved, and are best analyzed from a functional, adaptationist point of view. This type of evolutionary reasoning has enormous implications for philosophy, since it declares that the human mind does indeed have properties, but they are not defined morally.

It should also be emphasized that, just because certain traits are part of human nature, does not mean that they are inexorable or unchangeable. It is certainly possible for cultural evolution to produce feelings and responses that are contrary to the view of human nature explained above, especially in a modern cultural context that differs widely from the ancestral environment. In addition, the reasons behind certain human behaviors and feelings neither sanction nor vilify these behaviors, or imbue them with any moral significance. The fact that aggression was adaptive does not mean it is morally correct, and the fact that justice originally evolved for "selfish" reasons does not negate it as a moral and ethical concept.

http://www.library.thinkquest.org/
Year. 2000

9.2. Human behavior impacting in climate change.

Climate change is not a new phenomenon. The Earth's temperature and climate have changed considerably over the past millions of years. However, the current changes and those projected for the future differ in that they are largely driven by human behavior. Given that the human contribution to the problem is intimately related to sustainability behavior, climate change is a central concern of psychology, especially environmental psychology, and other behavioral sciences.

Climate change is primarily driven by greenhouse gas (GHG) emitting human behaviors, such as the burning of fossil fuels, and therefore may be largely mitigated by changes to those behaviors. However, human behavior is the least-understood aspect of the climate change system; unfortunately the main cause of the problem is the very aspect of it that is least understood. Worldwide GHG emissions resulting largely from human causes continue to rise despite official efforts to promote mitigation and reports from many citizens that they are taking steps to overcome the problem. We have a considerable opportunity and an enormous responsibility to effect change through increased understanding of the factors that underlie the anthropogenic causes of climate change and the ways in which GHG-mitigating behaviors may be effectively encouraged. Although a dire need for more research remains, a body of knowledge already exists in behavioral science which elucidates some of the key mechanisms that underlie climate change-relevant behavior and points to some promising avenues for human responses to the climate crisis through behavioral interventions.

Human behavior is changing the climate, and humans are, in turn, impacted by climate change. IPCC Working Group II concluded that climate change is highly likely to result in more frequent temperatures, floods, drought, extreme storms, heat related deaths, infectious disease epidemics, and decreases in crop yields and water quality. Although some uncertainty exists about the rate and intensity of these changes—because they are contingent in part on the success of mitigation efforts—many of these changes are irreversible. Thus, these impacts not only pose a considerable threat to human health and well-being, but they will also require much adaptation. Thus, a secondary goal of this article is to provide an overview of behavioral and psychological adaptation to climate change.

http://www.pics.uvic.ca/
Year. 2011

10. Global Ecologic Crisis.

10.1. <u>International Ethics and the environmental crisis.</u>

The problems of the environment have long been seen as global in scope. “Only One Earth” was, after all, the motto of the 1972 Stockholm conference founding the United Nations Environmental Program and the title of the book that served as its semiofficial “manifesto”. Even before that, attention had been firmly fixed on considerations such as the carrying capacity of the planet and the exhaustion of the earth’s stocks of mineral and other resources.

Still, there is something new and distinctively global about the current concern with the environment. The “first environmental crisis” was essentially a concern with problems that, though recurring the world over, could in principle be resolved perfectly well on a country-by-country basis. When environmental problems were essentially matters of dirty air or water, they were very largely matters of domestic political concern. Ill winds and shared waterways apart, pollution generally stayed in the same political jurisdiction as that in which it was generated. Of course, since all industrial nations used broadly the same dirty technologies, they all experienced similar problems of pollution. But problems that were in that sense common among of a number of nations were not “shared problems” in a stronger sense, requiring concerted action among all countries for their resolution.

That is not to minimize the seriousness of the problems forming the focus of earlier environmental crusades. London’s “killer fogs” were no less lethal for being purely domestic products. Neither, politically, are these traditional environmental problems necessarily all that tractable just because they are purely domestic in nature. Even in purely domestic terms, producers with a vested interest in not cleaning up after themselves will always be a political force to be reckoned with. Still, whatever obstacles politicians face in mounting effective action against domestic polluters, those obstacles will be multiplied many times over with the addition of a genuinely international dimension to the problem.

What is striking about the environmental crisis as it is currently understood is how genuinely global it is, in contrast to traditional environmental problems. The problems as the forefront of present environmentalist discussions are problems like the degradation of the ozone layer and the “greenhouse effect”. These problems are shared internationally, in the stronger sense. They are not just problems for each nation, taken one by one. They simply cannot be resolved by isolated actions of individual nations.

Dirty air could effectively be cleaned simply through local regulations requiring domestic users to install scrubbers in their smokestacks. No such purely local remedies will patch the hole in the ozone layer. The voluntary decision of the United

States –or indeed the whole Organization for Economic Cooperation and Development (OECD)- to ban the use of aerosols may serve as a useful start and an important precedent; the United States produces something like 28 percent of global CFC-11 and CFC-12, and Western Europe another 30 percent, all told. However, if our goal is genuine stabilization of the ozone layer, and if we want to be reasonably certain of accomplishing it, then we cannot (working with present knowledge, anyway) be sufficiently sure of achieving if, even through dramatic reductions in emissions by such major producers.

In and of themselves, initiatives by single countries or even small groups of countries cannot really solve such problems. These new environmental concerns, unlike the core concerns of the "first environmental crusade", are truly global. The whole world, or some very large proportion of it, must be involved in the solution.

International Ethics and the Environmental Crisis
Author. Robert E. Goodin
Year. 1995
http://www.nyu.edu/

10.2. Normative sources.

The first task, then, is to explore alternative normative structures for coping with issues of the international environment. Here I shall indentify three. One is a system of shared rights, giving each nation absolute and total control over what happens within its own boundaries. Another is a system of internationally shared duties, specifying particular performances for each nation that are the duty of that nation alone; the effect is to exempt other from any obligation to pick up the slack left, should any one nation fail to do its duty. A third is a system of shared responsibilities for helping to produce; the effect there is to enjoin all nations, individually and collectively, to help take up the slack, should any among them default, in whole or in part.

International Ethics and the Environmental Crisis
Author. Robert E. Goodin
Year. 1995
http://www.nyu.edu/

10.3. Shared Rights.

The fundamental principles of international law, from Grotius and Vattel forward, are all based on premises of national autonomy and noninterference with the domestic affair of other nations. These, in turn, seem to follow from a normative structure in which each nations is thought to have a strong right to do whatever it likes to people, property, and natural resources within its own jurisdiction.

Just as a system of personal rights gives individuals a “protected sphere” within which they can act without interference from others, so too does a system of international law that accords analogous rights to political entities protect the autonomy of nation-states. And just as modern liberal political theory accords to each individual maximal rights to liberty consistent with like liberty for all, so too does liberal international law accord only such fundamental rights to any one nation as are consistent with like rights being accorded to all other nations as well. The rights in questions are, thus, shared rights –“shared” in the sense that all other agents possess right strictly similar to one’s own.

Of course, there are limits to what liberal political theory will let agents do to themselves –as individuals or as nations. At the international level, we might sometimes want to impose standards of decent conduct –respecting basic human rights, for example- even upon regimes that might want to renounce them autonomously.

But those practices constitute the exceptions rather than the rule, both in liberal political theory and in the regime of international law that flows from it. By and large, if we are to interfere in the affair of some other person or nation, we must find justification for it. That, in turn, usually amounts to showing that some of our own rights would somehow be infringed upon by the conduct in question.

If we can succeed in showing that the actions of other actually violate some of our own rights, then we can justifiably intervene in those actions, however sovereign or autonomous they may be. In the case of genuine spillovers, where others activities impose external costs upon us –and, crucially in this rights-based context, we actually have a right that they not impose such costs upon our interfering with their activities, Transboundary spillovers are, within a regime of shared rights, akin to aggression, an infringement of the prerogatives of another autonomous actor with rights identical to one’s own. Thus, it is far from surprising that the case for international environmental protection long has been –and still largely continues to be- couched in terms of damage done beyond one’s own borders.

Absent a demonstration of transboundary spillovers, however, we must, within a regime of shared rights, simply concede that environmental policy is entirely within a nation’s sovereign sphere. What is then left for us to do is to try to persuade all nations that –either because it is in their interests or for some other, less self-serving reason- they should exercise their sovereign rights so as to produce the outcomes we want.
It is far from absurd to believe that we might be able to do so. Ward, Dubois, and participants at the 1972 Stockholm Conference on the Human Environment more generally saw no real need to “reconsider national sovereignty” to solve the problems they were considering: simply sharing information worldwide would, they supposed, be more than enough; once nations realize what environmental threats they actually face, they will have no hesitation in agreeing to concerted international

action to counter them. In a similar vein, Jessica Tuchman Matthews's recent Foreign Affairs article attempts to cast the environmentalist case explicitly in terms of national interest, inviting nations to "redefine" conceptions of their "national security" so as to include environmental interests preeminently alongside their other "vital interests".

International Ethics and the Environmental Crisis
Author. Robert E. Goodin
Year. 1995
http://www.nyu.edu/

11. Ethical Environmental Codes.

11.1. Environmental Professions NREP Code of Ethics.

Because of the type of work that an environmental professional must fulfill, it is essential that the creeds and codes of conduct be stipulated where any and all are welcome to see it. Therefore, the Code of Ethical Practice of the National Registry of Environmental Professionals (NREP) is set forth.

Whereas, the goal of an Environmental Professional or Manager is to be of the highest moral principles in providing knowledgeable decisions relating to the planning and management of environmental activities in which industry, government, and the public may place their complete confidence.

Therefore, this Code of Ethical Practice shall govern the professional activities of NREP certificants and registrants:

- To practice only in those areas of environmental science, safety, health, or technology in which professional competence has been attained;
- To emblazon documents with the NREP seal, name, or initials only when such documents are complete and contain only your work or work done under your personal, direct supervision and for which you can attest that all information is true and complete;
- To take all appropriate measures to prevent any conflict of interest that could compromise the planning and management of environmental activities;
- To perform assigned or contracted environmental planning and management duties always in a professional manner that is respectful of laws and regulations and the needs and concerns of others;
- To use the best principles of environmental science, health, safety, and technology in planning and management to protect and enhance environmental quality;
- To cooperate with all levels of government in the furtherance and development of appropriate public policies supportive of environmental quality, occupational health and safety;
- To comply with applicable environmental quality, occupational health and safety, and product safety laws and regulations;

- To manage facilities in a manner to protect health and safety of employees and of individuals in surrounding communities;

- To fully disclose in writing to employers/clients all known positive and negative impacts to the environment of assigned activities, duties and/or responsibilities;

- To refrain from using the name of the National Registry of Environmental Professionals or its seal in any activity not previously approved by the Board of Directors.

The knowing violation of the NREP Code of Ethical Practice or the NREP Code of Professional Practice shall be grounds for revocation of NREP professional certification.

http://www.nrep.org/
Year. 2009-2012

12. Ecology and environment/National problem.

12.1. Density Dependence.

Because environments are finite and resources might not be renewed as quickly as they are harvested, the success of individuals often depends on the number of individuals of the same and other species in their environments. Often, but not always, conditions deteriorate for individuals as the numbers of individuals of the same species, predators, and parasites increase. Conversely, conditions can improve when the numbers of individuals of those classes decrease. It is therefore often possible to extract much higher sustainable yields from populations than would be expected on the basis of an examination of birth, growth, and death rates in an unharvested population existing close to the limit set by environmental resources. Alternatively, high population densities in most areas could prevent individuals displaced by a perturbation from moving into other areas. Very low densities might influence the probability of finding mates, erode genetic diversity of a population, and increase the probability of its extinction. The existence of density-dependent effects does not necessarily imply that populations exist at steady densities. These effects can cause populations to fluctuate regularly or irregularly (May 1973), as did the blowflies studied by Nicholson and Bailey (1935) and the bean weevil Callosubrochus chinensis studied by Utida (1957). Moreover, density-independent effects can often mask density-dependent ones, because they are often much larger.

Ecological Knowledge and Environmental Problem-Solving
Author. Committee of the Applications of Ecological Theory to Environmental Problems
Year. 1986
http://www.nap.edu/

12.2. The uniqueness of individuals.

Each individual in a sexually reproducing population is unique, as opposed to many nonliving entities (e.g., all CO2 molecules can be treated as identical). A species is composed of different age and sex classes, and genetic variation occurs within each class. Plants with open growth systems often have substantial intraindividual variability that is important for consumers of the plants (Whitham et al., 1984). Because of genetic variability, management practices can create selective pressures that cause genetic and thus phenotypic changes in a population that sometimes subvert the goals of the management practices.

Ecological Knowledge and Environmental Problem-Solving
Author. Committee of the Applications of Ecological Theory to Environmental Problems
Year. 1986
http://www.nap.edu/

12.3. Keystone Species.

Keystone species are those which exert influences over other members of their ecological communities out of proportion to their abundances. Keystone species can have various roles in ecological communities. For example, dominant plants are the major photosynthesizers in communities, and they also form the physical structure in which many interactions in the system take place. Keystone predators preferentially eat prey that would be competitive dominants in the absence of predation. As a result, keystone predators create conditions favorable for the existence of species that are crowded out of systems with less predation. Keystone predators have been most commonly identified among predators on sessile prey—such as plants and sessile marine invertebrates of rocky shores—that compete for space (Harper, 1969; Hurlbert and Mulla, 1981; Lubchenco, 1978; Morin, 1983; Paine, 1974; Paine and Vadas, 1969). Keystone mutualists are essential for survival of other members of their communities, even though the amount of resources they consume is sometimes small. Well-known examples are pollinators and frugivores, ants that patrol and protect plants, and microorganisms associated with vascular plants (Alexander, 1971; Gilbert, 1975; Howe, 1981; Janzen, 1966). Because changes in the populations of keystone species can influence community dynamics in major ways, astute environmental problem-solvers are alert to keystone relationships in the communities being altered.

Ecological Knowledge and Environmental Problem-Solving
Author. Committee of the Applications of Ecological Theory to Environmental Problems
Year. 1986
http://www.nap.edu/

12.4. Stability Boundaries.

"Stability," the tendency of ecological systems to remain in a relatively constant state, can result from several processes (Orians, 1975). Of concern to the manager and environmental problem-solver are the resistance of a system or a component of it to change, the speed with which it returns to its previous state when the perturbation ends, and its stability boundaries—the range over which it can be changed without leaving it unable to return to its previous state (Holling, 1973). The crossing of stability boundaries or thresholds by individual organisms can lead to large changes in their functioning. Photoperiods above a threshold might be necessary to induce a plant to flower or an animal to come into breeding condition (e.g., Farner, 1964; Salisbury and Ross, 1978; Sundararaj and Vasali, 1976). A critical minimal density of prey might be necessary for a particular kind of predator to survive in an area. A specific patch size of suitable habitat might be necessary for a particular species to survive. An organism might be able to withstand temperatures down to or up to a critical point, but not beyond. Stability boundaries are also important for more complex ecological systems. For example, environmental change and overharvesting can cause persistent changes in the composition of fish stocks

(Daan, 1980; Gulland and Garcia, 1984). Overgrazed plant communities might be resistant to invasion by new species, even if grazing ceases. These "alternate stable states" are usually less desirable from the human perspective, but some are seen as beneficial, as when a shrub stage resistant to invasion by trees is established as a low-maintenance community along roads and powerline rights of way (Niering and Egler, 1955). Managing systems to achieve greater constancy, a common human objective, can reduce their ability to withstand perturbations. For example, the suppression of spruce budworm populations in eastern Canada through the use of insecticides achieved the intended preservation of the pulp and paper industry in the short run, but left the forests and the economy more vulnerable to outbreaks of a size and intensity that would be impossible in undisturbed forests (Holling, 1973). It is especially important for the environmental problem-solver to recognize that these thresholds are sometimes not apparent until after they have been crossed. An important role of ecological knowledge is to suggest what such thresholds are likely to be.

Ecological Knowledge and Environmental Problem-Solving
Author. Committee of the Applications of Ecological Theory to Environmental Problems
Year. 1986
http://www.nap.edu/

12.5. Individuals and Single Populations.

Environmental concern commonly focuses on populations of organisms, whether the goal is protection of valued species, harvest of economically profitable species, or control of economically destructive species. We are interested in predicting and controlling changes in size and structure of populations that occur in response to environmental change, whether anthropogenic or not. The ecology of individuals and populations is of particular relevance to this interest. Population biology, the subject of this chapter, encompasses many kinds of research, from the study of the details of life history and behavior to the construction of mathematical models of the dynamics and genetics of multiple populations of a species over a large area.

A life history encompasses an individual's interactions with its physical and biological environment throughout its lifetime. Research into life histories has taken several paths, all of them valuable in the management of populations: detailed studies of the ecology of individual species comparative studies of groups of species, and theoretical treatments of the evolution of life-history patterns. Studies of particular species yield the detailed information needed for management with respect to nutrient and habitat requirements, important interactions with other species, reproductive requirements, and significant behavioral idiosyncrasies. Moreover, research on organisms with complex life cycles has shown the importance of choosing the appropriate stages in the life cycle for management intervention. Comparative studies reveal general patterns that help focus individual studies and provide managers with guidance in the absence of detailed information. Theoretical research focuses attention on the elements of life history important in solving long-term management problems (e.g., Beddington, 1974; Lewontin, 1965; May, 1980). Thorough knowledge of species' life histories has a broad range of applicability to problems of population management, including captive propagation programs for endangered species (Frankel and Soulé, 1981), pest and disease control, species protection, harvesting, predicting environmental impacts, and restoring plant communities.

As valuable as life-history information is for the prediction and control of population behavior, it provides only partial insight into the causes and consequences of changes in population numbers and composition. To determine how a population will respond to an increase in mortality due to harvesting or stress or how effective a given procedure might be for improving reproductive output, we need some understanding of population dynamics. Research in population dynamics has ranged from field studies designed to determine what factors affect population sizes in an area to theoretical studies of how such factors can act together to "regulate" population size over long periods. Some simple models use an "accounting" formulation to calculate future population size on the basis of current size and rates of growth, death, and birth. More complex models deal with such phenomena as dispersal, breeding structure, interchange between populations, environmental variability, and the effects of intraspecific interactions on population behavior.

Traditional models of population dynamics are based on the assumption that organisms do not change genetically during a period of management. However, genetic changes do occur when populations are exposed to repeated manipulations, and evolution can take place with startling rapidity—e.g., the evolution of insect resistance to pesticides and of bacterial resistance to antibiotics. Both insects and bacteria have the short life spans and high reproductive rates that speed evolution (May and Dobson, in press), but long- lived organisms can also evolve quickly if management results in large differences in mortality or reproduction among individuals. Size-selective harvesting of fish can lead to a reduction in the average age and size at maturity (Ricker, 1981), possibly as a result of changes in competition among age classes and in the frequencies of particular genes. When populations are small, harvesting practices can lead also to loss of genetic variability and can increase the deleterious effects of inbreeding. Preserving a species that is distributed into many small and isolated populations—as many endangered species are— involves an understanding of both population dynamics and population genetics (Frankel and Soulé, 1981). Dynamic and evolutionary effects of manipulations are not always separable. Changing such population characteristics as total numbers, distributions of ages and sizes, and sex ratio not only changes the dynamics of a population, but also establishes a potential for evolutionary change in traits that exhibit genetic variation. Population management that is based only on dynamic considerations can in the long run produce results opposite to those intended. DDT works miracles on untreated populations of mosquitoes that transmit malaria, but within 5-50 generations the evolution of resistance might largely negate the effectiveness of the chemical; at the same time, human resistance to malaria can decrease in the absence of the disease. Using large- mesh nets to ensure the harvest of male but not female migrating salmon can lead to an increase in the proportion of early-maturing small male salmon (jacks) (Gross, 1984, 1985). An increase in the proportion of jacks that escape the nets can lead to an increase in the proportion that breed and thus in the proportion that are hatched in the next generation.

Ecological Knowledge and Environmental Problem-Solving
Author. Committee of the Applications of Ecological Theory to Environmental Problems
Year. 1986
http://www.nap.edu/

13. Human being’s attitude.

13.1. Altruism.

Altruism or selflessness is the principle or practice of concern for the welfare of others. It is a traditional virtue in many cultures and a core aspect of various religious traditions, though the concept of "others" toward whom concern should be directed can vary among cultures and religions. Altruism or selflessness is the opposite of selfishness.
Altruism can be distinguished from feelings of duty and loyalty. Altruism is a motivation to provide something of value to a party who must be anyone but one's self, while duty focuses on a moral obligation towards a specific individual (e.g., a god, a king), or collective (e.g., a government). Pure altruism consists of sacrificing something for someone other than the self (e.g. sacrificing time, energy or possessions) with no expectation of any compensation or benefits, either direct, or indirect (e.g., receiving recognition for the act of giving).

Much debate exists as to whether "true" altruism is possible. The theory of psychological egoism suggests that no act of sharing, helping or sacrificing can be described as truly altruistic, as the actor may receive an intrinsic reward in the form of personal gratification. The validity of this argument depends on whether intrinsic rewards qualify as "benefits". The term altruism may also refer to an ethical doctrine that claims that individuals are morally obliged to benefit others. Used in this sense, it's usually contrasted to egoism, which is defined as acting to the benefit of one's self. Altruism-personal sacrifice on behalf of others-is really just long-run self-interest. Richard Dawkins (1976, 1989), for instance, struck a responsive chord when, in The Selfish Gene, he confidently asserted ‘‘We are survival machines-robot vehicles blindly programmed to preserve the selfish molecules known as genes....This gene selfishness will usually give rise to selfishness in individual behavior.’’ Dawkins allows for morality in social life, but it must be socially imposed on a fundamentally selfish agent. ‘‘Let us try to teach generosity and altruism,’’ he advises, ‘‘because we are born selfish.’’ Yet, even social morality, according to R. D. Alexander, the most influential ethicist working in the William– Hamilton tradition, can only superficially transcend selfishness. In The Biology of Moral Systems, Alexander (1987) asserts, ‘‘ethics, morality, human conduct, and the human psyche are to be understood only if societies are seen as collections of individuals seeking their own self-interest.’’ In a similar state of explanatory euphoria, Ghiselin (1974) claims ‘‘No hint of genuine charity ameliorates our vision of society, once sentimentalism has been laid aside. What passes for cooperation turns out to be a mixture of opportunism and exploitation...Scratch an altruist, and watch a hypocrite bleed.’’ However, recent experimental research has revealed forms of human behavior involving interaction among unrelated individuals that cannot be explained in terms of self-interest. One such trait, which we call strong reciprocity (Gintis, 2000b; Henrich et al., 2001), is a predisposition to cooperate with others and to punish those who violate the norms of cooperation, at personal cost, even when it is implausible to expect that these costs will be repaid either by others or at a later date.

Explaining altruistic behavior in humans
Author. Herbert Gintis, Samuel Bowles, Robert Boyd, Ernst Fehr
Year. 2003
http://www.econ.uzh.ch/

13.2. Love and solidarity.

People generally cooperate more with members of their own group than with outsiders. From the game-theoretic point of view, this "in-group bias" in cooperation is no surprise. The shadow of the future (Axelrod, 1984), which is more prominent in relations with members of the same group than with outsiders with whom one may not see again in the future, is a prerequisite for cooperation among fitness-enhancers. What is surprising, however, is the finding originally reported by Tajfel, Billig, Bundy, and Flament (1971) and later replicated in many studies that such in-group bias exists even in minimal groups.

A minimal group consists of individuals who share a seemingly trivial social category while lacking interpersonal interactions and interdependence of interest. In a typical study involving minimal groups, participants are divided into two groups based on a trivial criterion such as preference for one painter over another. Then, participants play some forms of a game such as a one-shot prisoner's dilemma game with either a member of their own group or of another group. Since they play a one-shot game, and the groups they belong to disappear as soon as the experiment is over, the shadow of the future cannot explain in-group bias in such an experiment. And yet, participants typically cooperate more with a member of their own group (an in-group member) than with a member of the other group (an out-group member).

The presence of an in-group bias in minimal groups has since engendered a dispute on "in-group love" and "out-group hatred" as the source of inter-group conflict (Brewer, 1999; Halevy, Bornstein, & Sagiv, 2008).

Many researchers have contended that altruistic behavior toward the in-group is the mirror image of spiteful behavior toward the out-group, such that these two behaviors are the two sides of the same coin (Tajfel & Turner, 1979, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Others, however, argued that the two can be independent from each other, and in-group love does not necessarily imply out-group hatred (Brewer, 1999). A series of minimal group experiments conducted by Yamagishi and colleagues (see Yamagishi et al., 1999, Yamagishi, 2007) provide evidence that in-group bias in minimal groups is a product of in-group love, promoting within group social exchange as will be shown below. In a minimal group experiment, a participant unilaterally decides whether or not to give resources to another participant.

Under such a gift-giving game situation, conditional altruists, who behave altruistically only to those who have earned a reputation of being altruistic, evolve and prosper. In other words, a system of indirect reciprocity based on some forms of conditional altruism has been shown to evolve (Nowak & Sigmund, 1998; Milinski, Semmann, Bakker & Krambeck, 2001; Takahashi & Mashima, 2006). Yamagishi and colleagues (e.g., Yamagishi, et al., 1999; Yamagishi & Mifune, 2008) argued that people use the reputation earning strategy by default when they face a group situation. Being cooperative and altruistic toward members of the same group is an "investment" to earn good reputation.

A "default strategy" is a decision rule that is used by default, unless salient cues are present that indicate the inappropriateness of using such a strategy. It is a form of error management strategy (Haselton & Buss, 2000) designed to reduce a more serious error of losing a reputation at a cost of increasing the probability of committing a less serious error of failing to free ride when possible. If in-group bias in minimal groups is a default reputation management strategy as suggested by Yamagishi and colleagues, then the bias should disappear when it becomes salient that the strategy does not work

Social exchange and solidarity: in-group love or out-group hate?
Author. Yamagishi, Toshio, Mifune, Nobuhiro
Year. 2009
http://www.econ.uzh.ch/

13.3. Hate and Violence.

Are violent children conceived or created? Is there a neurobiological reason that a child is violent? What makes a child violent? Genes that make testosterone? Maternal neglect? Physical abuse? Modeling from a father hitting a mother? Impaired problem solving skills? Peer/gang pressures? Violence on television? Violent lyrics in music? Access to guns? In attempting to understand what makes a child violent, it is important to remember three points: 1) not all violence is the same; 2) the brain mediates all human behavior; and 3) the biological properties of the brain are the result of genotype and developmental experiences. Violence is heterogeneous. Physical violence can be impulsive, reactive or defensive; or it can be predatory, remorseless aggression. Violent behaviors can be related to intoxication from alcohol or psychosis or other neuropsychiatric conditions (e.g., dementia, traumatic head injury). Violent acts may be the result of personal (Oklahoma City bombing) or a cultural (political terrorism) belief systems. Violence can be sexualized (rape) or directed at a specific victim (domestic violence) or at a specific group (e.g., African-Americans, homosexuals, Jews). Aggression is not violence. An aggressive person may not be violent. Aggression is a behavior characterized by verbal or physical attack, yet it may be appropriate and self-protective or destructive and violent.

The complex set of behaviors recognized as aggression has been studied in man and animals for many years. Thousands of studies have examined various aspects of the neurobiology of aggression — and the summed result is a better understanding of, simply, the neurobiology of aggressive behaviors within specific contexts, (typically animal populations in experimental conditions). Unfortunately, these insights have resulted in few advances in clinical practice or public policy related to domestic or community violence. Why? Because the complexity of violence means that there is a complexity of neurobiology. The neurobiology of aggression, studied in the lab, leads to little insight into the neurobiology of racism or misogyny — or anti-Semitism. Ironically, many violent behaviors are the result of a defensive response to perceived aggression. The neurobiology of fear, therefore, holds as many important clues to prevention and treatment interventions related to violence as the neurobiology of aggression. The neurobiology of hate — or ideology — remain unstudied — yet as surely as there are neurobiological mediators of aggression, there are neurobiological mediators of ideology.

The human brain mediates all human behavior — aggression, violence, fear, ideology — indeed, all human emotional, behavioral, cognitive and social functioning. This three pound mass of 100 billion neurons and 1000 billion glial cells is infinitely complex. Yet certain principles of brain organization and function can lead to insights regarding neurological factors involved in violence and aggression. The brain has a hierarchical organization, from the lower, more simple areas to the more complex higher cortical areas. Simple, regulatory functions (e.g., regulation of respiration, heart rate, blood pressure, body temperature) are mediated by the 'lower' parts of the brain (brainstem and midbrain) and the most complex functions (e.g., language and abstract thinking) by cortical structures. The brain's impulse-mediating capacity is related to the ratio between the excitatory activity of the lower, more-primitive portions of the brain and the modulating activity of higher, sub-cortical and cortical areas (Cortical Modulation Ratio).

Any factors which increase the activity or reactivity of the brainstem (e.g., chronic traumatic stress, testosterone, deregulated serotonin or norepinephrine systems) or decrease the moderating capacity of the limbic or cortical areas (e.g., neglect) will increase an individual's aggressivity, impulsivity, and capacity to display violence. As the brain develops and the sub-cortical and cortical areas organize, they begin to modulate and 'control' the more primitive and 'reactive' lower portions of the brain. With a set of sufficient motor, sensory, emotional, cognitive and social experiences during infancy and childhood, the mature brain develops — in a use-dependent fashion — a mature, humane capacity to tolerate frustration. A frustrated three year old will have a difficult time modulating the reactive, brainstem-mediated state of arousal — he will scream, kick, bite, throw and hit. However, the older child when frustrated may feel like kicking, biting and spitting, but has the capacity to modulate those urges. Loss of cortical function through any variety of pathological process (e.g., stroke, dementia, head injury, alcohol intoxication) results in regression — simply, a loss of cortical modulation of arousal, impulsivity, motor hyperactivity, and aggressivity — all mediated by lower portions of the central nervous system (brainstem, midbrain). Deprivation of key developmental experiences (which leads to underdevelopment of cortical, sub-cortical and limbic areas) will necessarily result in persistence of primitive, immature behavioral reactivity, and, thereby, predispose an individual to violent behavior. The most dangerous children are created by a malignant combination of experiences. Developmental neglect and traumatic stress during childhood create violent, remorseless children. This is characterized by sensitized brainstem systems (e.g., serotonergic, noradrenergic and dopaminergic systems). Dysregulated brainstem functions (e.g., anxiety, impulsivity, poor affect regulation, motor hyperactivity) are then poorly modulated by poorly organized limbic and cortical neurophysiology and functions (e.g., empathy, problem-solving skills) which are the result of chaotic, undersocialized development. This experience-based imbalance predisposes to a host of neuropsychiatric problems and violent behavior. As we search for solutions to the plagues of violence in our society, it will be imperative that we avoid the False God of Simple Solutions. The neurobiology of complex, heterogeneous behaviors is complex and heterogeneous. In the end, paying attention to the neurobiological impact of developmental experiences — traumatic or nurturing — will yield great insight for prevention and therapeutic interventions.

http://www.teacher.scholastic.com/
Year. 2011

14. Moral conscience and self-conscience/ eudemonism-hedonism.

14.1. Eudemonism.

In ethics, the view that the ultimate justification of virtuous activity is happiness. Virtuous activity may be conceived as a means to happiness, or well-being, or as partly constitutive of it (see teleological ethics). Ethical eudemonism should be distinguished from psychological eudemonism, which holds that happiness is the ultimate motive of virtuous activity.

14.2. Hedonism.

The doctrine that holds that pleasure is the highest good. Ancient hedonism expressed itself in two ways: the cruder form was that proposed by Aristippus and the early Cyrenaics, who believed that pleasure was achieved by the complete gratification of all one's sensual desires; on the other hand, Epicurus and his school, though accepting the primacy of pleasure, tended to equate it with the absence of pain and taught that it could best be attained through the rational control of one's desires. Ancient hedonism was egoistic; modern British hedonism, expressed first in 19th-century utilitarianism, is universalistic in that it is conceived in a social sense—"the greatest happiness for the greatest number."
Ethics: a. the doctrine that moral value can be defined in terms of pleasure; b. the doctrine that the pursuit of pleasure is the highest good

http://www.inquisitivepositivist.wordpress.com/
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