


1A

**Greater investment**

People who have longer lives would make larger investments.

(S)

(559)

1B

**Health goods**

People acquire health products to increase their life expectancy and to achieve the appropriate level of productivity at work.

(P)

(562)
**1C**

**Ageing concern**

“Although greater longevity has a clearly positive connotation, ageing is a significant cause for concern in developed economies, given that the efficacy of the resources devoted to health decreases with this ageing, in such a way that the expenditure required to maintaining a given level of health increases.”

(DQ)

(563)

**1D**

**Health level**

“Each generation will enjoy an average level of health that comes determined by the degree of development reached by the medical technology at the time of its birth.”

(DQ)

(564)

**1E**

**Education devotion**

Humans will decide the amount of time to dedicate to furthering their intellect which, combined with the health level of a human, will decide the standard of people he will employ during the working life.

(P)

(564)
1F

Capital transfer

Society takes on the financial burden, good or bad, at the time of death of an individual.

(S) (566)

1G

Devote Time to Education

People will devote a proportional amount of time to their education based on their expected longevity.

(P) (569)

1H

Increased health care

Increased medical technology does not mean a decrease in medical spending. On the contrary because of all the new possibilities people will spend more to improve their quality of life and longevity.

(S) (572)
Medical innovation

“Medical innovation improves the health of the new generations, thereby enhancing their productive capacity and, as a result, sustaining economic growth. This economic growth, in turn, finances medical research and health expenditure, in this way establishing a feedback interrelation between economic growth and medical innovation.”

(DQ)

Life extension

Life extension therapies are predicted to be just over the horizon in a couple of decades.

(P)

Three bridges

Myktytn refers to three bridges of longevity which include: current technology, biotechnology, and nanotechnology.

(S)
Key areas

“… key areas the organization [A4M] believes to be the most likely to succeed in anti-aging endeavors: genetic engineering and stem cell research, cloning, nanotechnology, artificial organs, and digital cerebral interfacing (wherein even memories can be digitally stored).”

(DQ)

(16)

Minuscule robots

Nanotechnology is the creation of minuscule robots that may, with great accuracy, fix molecular problems inside the body.

(DQ)

(16)

Replacing brains

Mykytyn thinks that it is possible in the future that we will have cybernetic brains that are able to process and store more information than our current grey matter brains allow.

(P)

(17)
**Exponential growth**

Satava states that there is an exponential growth in technology compared to a steady growth previous to the 20th century.

(S)

(246)

**Too slow**

“Unfortunately, or political, social, and behavioral systems are too slow to respond, and the moral and ethical implications are either ignored or made subservient to a more pressing (commercial?) need.”

(DQ)

(247)

**Discord**

“… it is necessary to start by identifying those [“unthinkable”] technologies that could cause such fundamental moral and ethical discord.”

(DQ)

(247)
Emerging Tech

Satava labels longevity as an important and emerging technology.

(S)

BNW

Satava references *Brave New World* when it comes to debating the moral implications of cloning and how humans need to consider the impacts of such technologies before we proceed any further in developing them.

(S)

Tissue engineering

It is projected that, within the ten years, bio artificial body parts will be accessible for replacement, with patient’s spawning them from their stem cells, thereby abolishing the problem of denial as well as the current shortage of donor body parts.

(P)
**Lifespan**

“The average life span of humans in the advanced nations has slowly been increasing, with the average in the United States now being more than 75 years.”

(DQ)

**Implications**

Satava lists off the implications if we had people living to 200 years. Some of them include: social classes, multiple jobs, and over population.

(S)

**Six billion deaths**

Shermer starts his article off by telling us that in the next 120 years over six billion people will die unless we find something to do about it.

(S)
Hucksters

“Lifestyle longevity. Because this is the goal we can try to implement today, the hucksters are out in force offering all manner of elixirs to extend life.”

(DQ)

Fleeting time

“Until science finds a solution to prolonging the duration of healthy life, we should instead rave about the time we have, however fleeting.”

(DQ)

Drugs

Following World War II new technology in the biomedical field has produced the biggest increases in life extension.

(P)
Gains compared to age

The first part of the century saw the biggest life expectancy increases in people under the age of 65. In that latter parts the biggest gains have come to people over the age of 65.

(S)

5C

Quality of life

Fuchs talks about how the quality of life in people over 55 years of age is a massive industry. He gives statistics on ailments that afflict people over 55 to prove his point.

(S)

6A

Transhumanism

“Transhumanism views sickness, aging, and death as unnecessary hindrances that we have the right and responsibility to overcome.”

(DQ)
Groups

There are such groups as: transhumanists, Methuselah Foundation, Immortality Institute, and Lifeboat Foundation that are out there in search of extending life further and/or indefinitely.

Partners

There are big named entities out there backing the Methuselah Foundation, like Arizona State University’s fresh Biodesign Institute.

Nanotechnology

“Central to the idea of technological immortality is the belief that in 100 years nanotechnology will repair the body’s failed organs and degenerated cells.”
Tampering

“Some bioethicists worry that tampering with the human body may irreversibly screw up our genetic composition.”

(DQ)

Concentrated increase

In the past 75 or so years humans have concentrated almost three-fourths of lifespan increases during this period.

(P)

First to get it

The first to get the increases in longevity were the most advanced countries and then spreading, once their mortality rates had significantly declined, to developing countries.

(S)
7C

Tech significance

Gains in world life expectancy can be attributed to health measures and technological control of infectious diseases.

(S)

7D

Maximum longevity

Gwatkin states that there is a maximum longevity to be obtained by man. This is due to research that says there is a natural limit due to biological deteriorating processes.

(S)

8A

Aging research

“Aging research has made great progress recently, but has it advanced enough to defer our years of infirmity?”

(DQ)

(1 or 106?)
Robust old age

Rose says that there isn’t much difference in the quality of life for people over 65 now compared to 2000 years ago.

(S)

Universal defect

Biological aging affects species that sexually reproduce because the force of natural selection falloffs at the beginning of maturity.

(P)

Fruit flies

Scientists have gotten fruit flies to live two to three times longer than normal. They have also seen that the flies exhibit better competencies even at advanced ages.

(S)
Cocktails

“I see no limit to how long human life can be extended if scientists learn how to turn on antiaging genes in the young or how to prepare cocktails of drugs that serve the same purpose as genetic engineering.”

(DQ)

Maximize old age

Doctors and patients alike have had a shift in the way they think about treatments for the elderly. There is a shift to maximize the lives and quality for elderly people.

(S)

Routine for the old

“Individuals in their eighth, ninth, and even tenth decades of life are becoming routine recipients of life-prolonging cardiac treatments (Interdisciplinary Leadership Group of the American Geriatrics Society 2000, Solomon et al. 2000).”

(DQ)
9C

Rejuvenated

“Elderly individuals often describe themselves as ‘rejuvenated after cardiac intervention.”

(DQ)

9D

Age reversible

“…patients…themselves come to understand the experience of advanced age as reversible through biomedical intervention,…”

(DQ)

10A

83 years

Life expectancy is expected to reach 83 years of age in the U.S. by the time someone is born in 2050.

(P)
Minor roles

Science has only played a minor role in improving the human lifespan by 50 years since the beginning of 1900. Public health and nutritional measures have been the biggest factors.

(P)

HGP

The Human Genome Project was heralded as the way to unlock huge leaps and bounds in the medical world. Current research shows no such signs of this happening.

(S)

No link

Amid epidemiologists the communication seems to be that there is merely no fundamental connection between genomic influences and population prolonged existence.

(P)