

NUCLEAR POWER AND PUBLIC ACCEPTANCE

Prof. Aquilino Senra



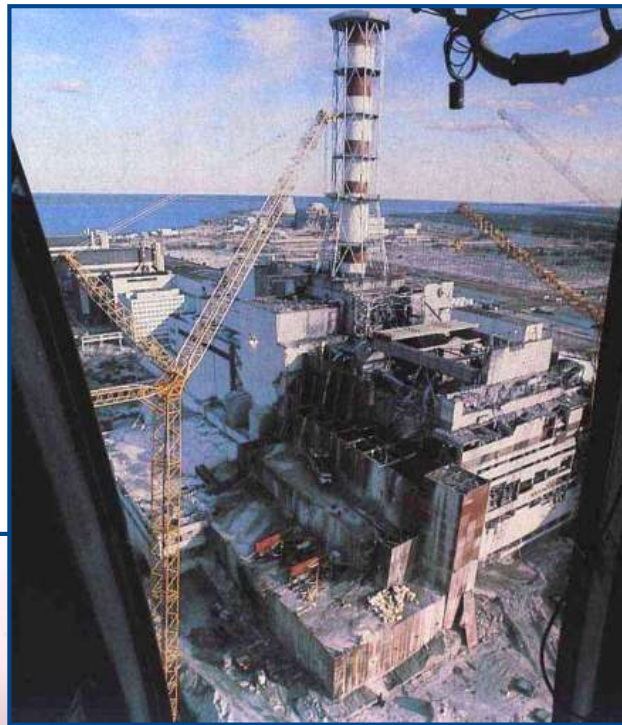
2024 LAS-ANS SYMPOSIUM

MAIN NUCLEAR ENERGY APPLICATIONS

- ⇒ **NUCLEAR MEDICINE FOR DIAGNOSIS AND TREATMENTS**
- ⇒ **NUCLEAR TECHNOLOGY USED IN INDUSTRIES**
- ⇒ **NUCLEAR TECHNOLOGY USED IN AGRICULTURE**
- ⇒ **FOOD IRRADIATION**
- ⇒ **NUCLEAR TECHNOLOGY USED IN THE ENVIRONMENT**
- ⇒ **CARBON DATING USED IN ARCHEOLOGY/ANTHROPOLOGY**
- ⇒ **SCIENTIFIC INVESTIGATIONS**
- ⇒ **SEAWATER DESALINIZATION**
- ⇒ **ELETRICITY AND HEAT GENERATION**
- ⇒ **ETC...**

POPULAR IMAGINATION

ACCIDENTS IN NUCLEAR POWER PLANTS



NUCLEAR WEAPONS





MAJOR NUCLEAR POWER PLANTS (NPPs) ACCIDENTS

IAEA ANNUAL REPORT 2010

COUNTRY	NUMBER OF NPPs	MAJOR ACCIDENT
UNITED STATES OF AMERICA	104	1979 – THREE MILE ISLAND
FRANCE	58	---
JAPAN	54	2011 - FUKUSHIMA
RUSSIA FEDERATION	32	
...
WORLDWIDE	441	TMI + CHERNOBYL + FUKUSHIMA

IAEA ANNUAL REPORT 2023

COUNTRY	NUMBER OF NPPs	MAJOR ACCIDENT
UNITED STATES OF AMERICA	92	1979 – THREE MILE ISLAND
FRANCE	56	---
CHINA	54	2011 - FUKUSHIMA
RUSSIA FEDERATION	37	
...
WORLDWIDE	438	TMI + CHERNOBYL + FUKUSHIMA



TOPICS TO BE CONSIDERED IN NUCLEAR PUBLIC ACCEPTANCE

- **COUNTRY DEPENDENT FACTORS**
- **COUNTRY ACCUMULATED SOCIAL ACCEPTANCE OF NUCLEAR ENERGY**
- **COUNTRY DEPENDENCY ON NUCLEAR ENERGY**
- **LONG-LIVED RADIOACTIVE WASTES**
- **ACCIDENTS IN NUCLEAR REACTORS**
- **COUNTRY MEDIA**
- **NUCLEAR PROLIFERATION**
- **NATIONAL GOVERNMENTS AND POLICYMAKERS MUST BE SENSIBLE TO NUCLEAR ENERGY DEVELOPMENT**
- **INFORMATION AND TECHNICAL ARGUMENTS MAY NOT CHANGE PUBLIC OPINION**
- **ETC...**



INTERESTING FINDINGS IN THE LITERATURE

- **NUCLEAR ACCIDENTS GENERATE A STRONG SIGNAL THAT THERE IS AN UNUSUAL RISK IN NUCLEAR POWER GENERATION (STIGMA)**
- **THE CLOSER AN AREA IS TO THE SITE OF AN ACCIDENT THE LOWER PUBLIC ACCEPTANCE (DISTANCE EFFECT)**
- **THERE IS TENSION BETWEEN THE NEEDS AND THE CONCERNS FOR NUCLEAR ENERGY**
- **FUKUSHIMA NUCLEAR DISASTER HAS CHANGED NUCLEAR PUBLIC ACCEPTANCE SIGNIFICANTLY, BUT NOT AS MUCH AS CHERNOBYL.**

SOME RESULTS OF RECENT OPINION POOLS

An overview of young Brazilians and science



2276 individuals



Between 15 and 24 y/o

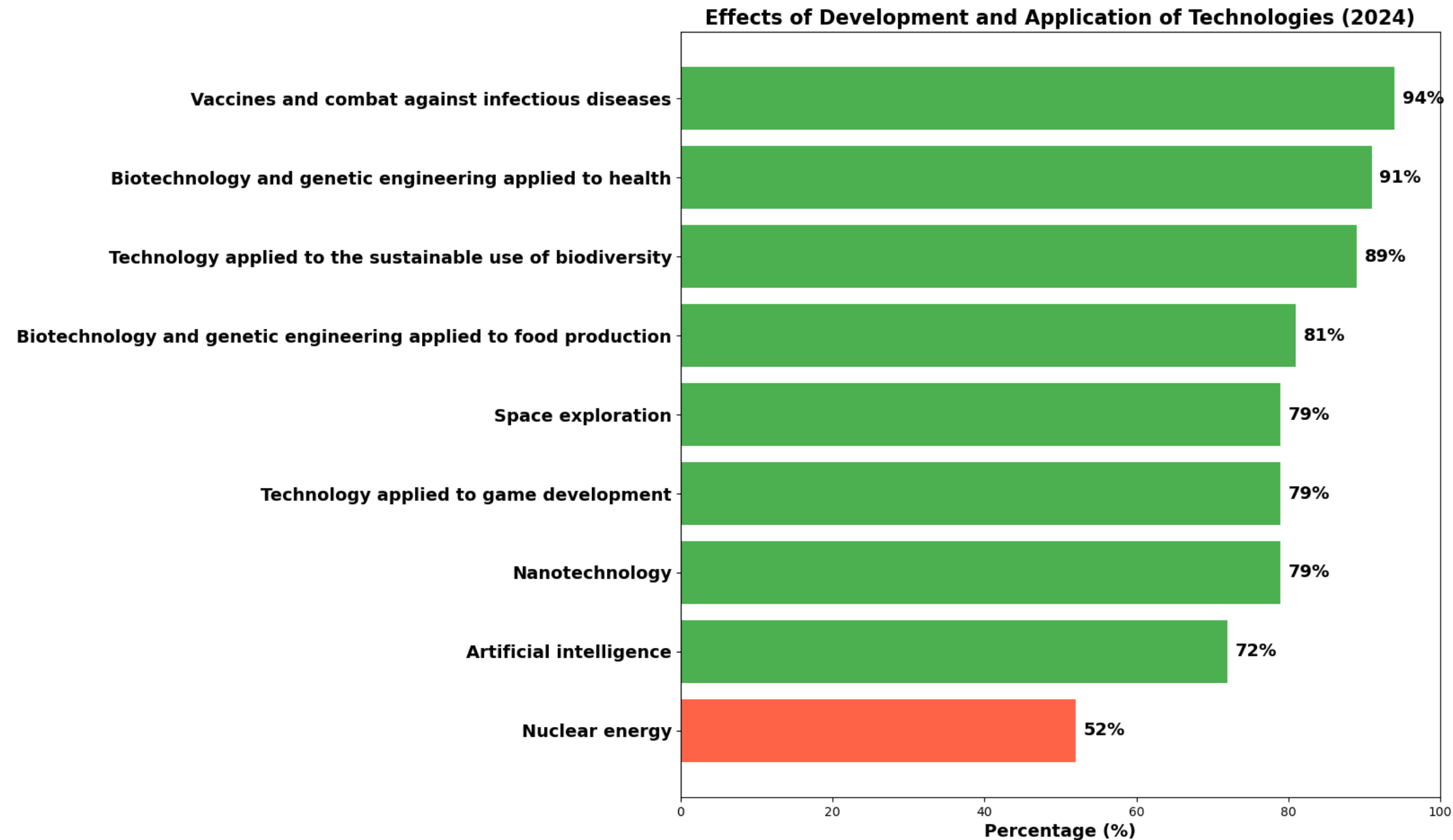


Data collection: 2024



Some of the results

Question: “The areas listed below stand out by the development and application of new technologies. In your opinion, each of them will have a very positive effect on our way of life in the coming years?”

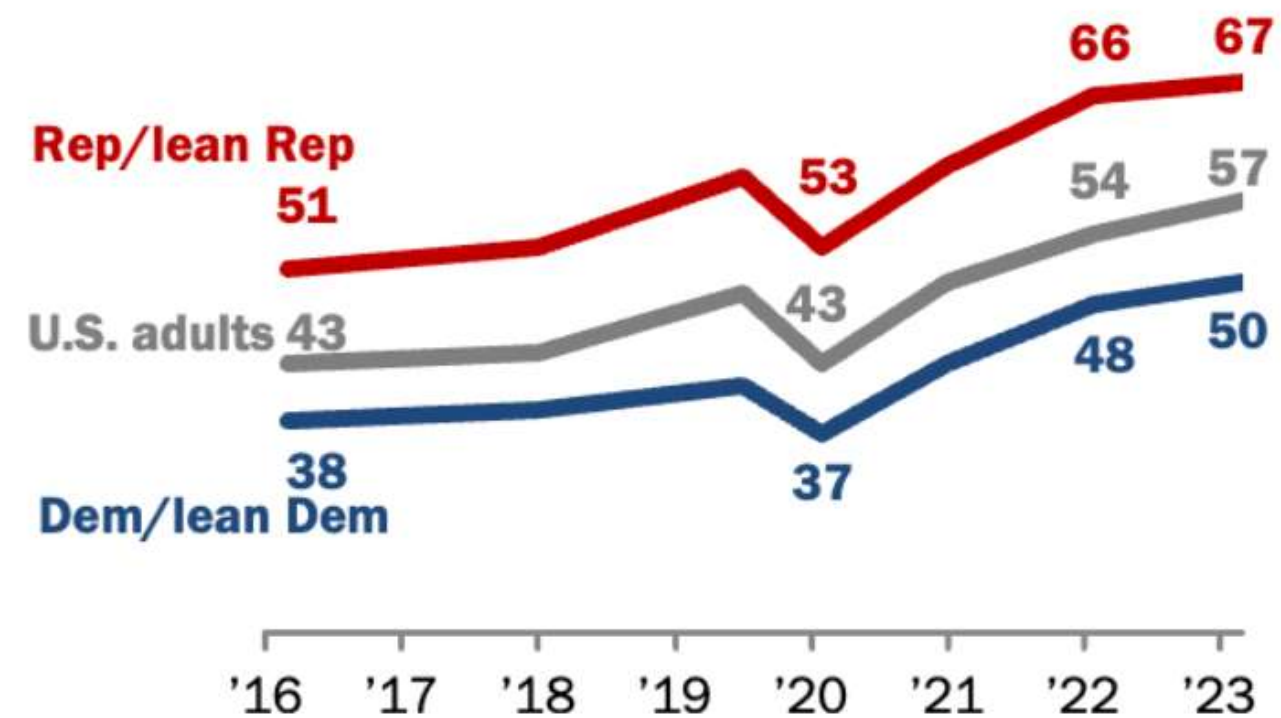


Source: Instituto Nacional de Ciência Tecnologia (INCT) de Comunicação Pública da Ciência e da Tecnologia (CPCT)

SOME RESULTS OF RECENT OPINION POOLS

Support for nuclear power is up among both Democrats and Republicans

% of U.S. adults who say they favor more nuclear power plants to generate electricity in the country



Source: Pew Research Center (2023)



POLICY PROPOSALS



POLICYMAKERS SHOULD BE RESPONSIBLE FOR PREDICTABLE AND TRANSPARENT DECISION-MAKING PROCESS OF COUNTRY NUCLEAR ENERGY PROGRAM



NATIONAL GOVERNMENT SHOULD BE RESPONSIBLE FOR DEFINING THE BASIC ENERGY POLICY AND COMPREHENSIVE RULES FOR SAFETY REGULATION



EDUCATION ON ENERGY SECURITY AND RISKS IS VERY IMPORTANT, BECAUSE THE MAIN DISASTER IS A COUNTRY WITHOUT ENOUGH ENERGY GENERATION FOR THE ECONOMIC AND SOCIAL DEVELOPMENT



ONE FINAL QUESTION: WHO IS RIGHT OR WRONG?

- 1. Those who defend the use of nuclear energy argue that it could play a crucial role in the decarbonization process.**
- 2. Critics of the use of nuclear energy highlight the high cost of nuclear plants and the complexities of radioactive waste management.**

Thank You