



**State of current reflections of  
ICRP Task Group 94  
on the ethics of radiological protection**

---

**Chieko Kurihara**

National Institute of Radiological Sciences, member of ICRP-TG94

**2<sup>nd</sup> Asian Workshop**

**Fukushima Medical University, Fukushima, Japan**

**June 2-3, 2015**

# Task Group 94 members

Established in October 2013

## Full members:

**Kunwoo Cho, Korea** (Chair since March 2015)

Deborah Oughton, Norway (Chair; Oct. 2013~Feb. 2015)

Thierry Schneider, France

Marie-Claire Cantone, Italy

Sven Ove Hansson, Sweden

Chieko Kurihara-Saio, Japan

Richard Toohey, USA

Sidika Wambani, Kenya

Friedo Zölzer, Czech Republic

## Corresponding members:

Renate Czarwinski (IRPA)

Bernard Le Guen (IRPA)

Emilie Van Deventer (WHO)

## Critical reviewers C4:

- François Bochud, Switzerland
- John Takala, Canada

## Critical reviewers MC:

- Car-Magnus Larsson
- Eliseo Vano

This presentation is the creation of all of these members, especially Cho K, Oughton D; as well as Lochard J, Clement C, leading this topic in ICRP.

**Core Ethical Values  
underpinning the RP System  
identified through  
plenty of opportunities of WS and conferences**

善行／無危害

**Beneficence/Non-maleficence:** do more good than harm

尊嚴

**Dignity:** treat people with respect

正義

**Justice:** seek for fair distribution of exposure

慎重?賢慮..?熟慮..? ≡ wisdom?

**Prudence:** avoid unnecessary exposure

*In no particular order or hierarchy.*

*Balance will depend on case and context.*

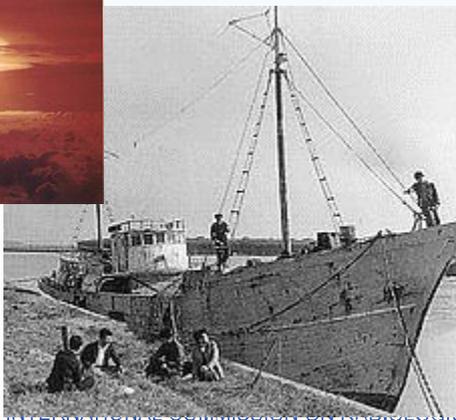
**Historical background:  
How we reached here?  
Where are we now?  
Where are we going towards?**



*D'où venons-nous ? Que sommes nous ?  
Où allons-nous ?..... Paul Gauguin*

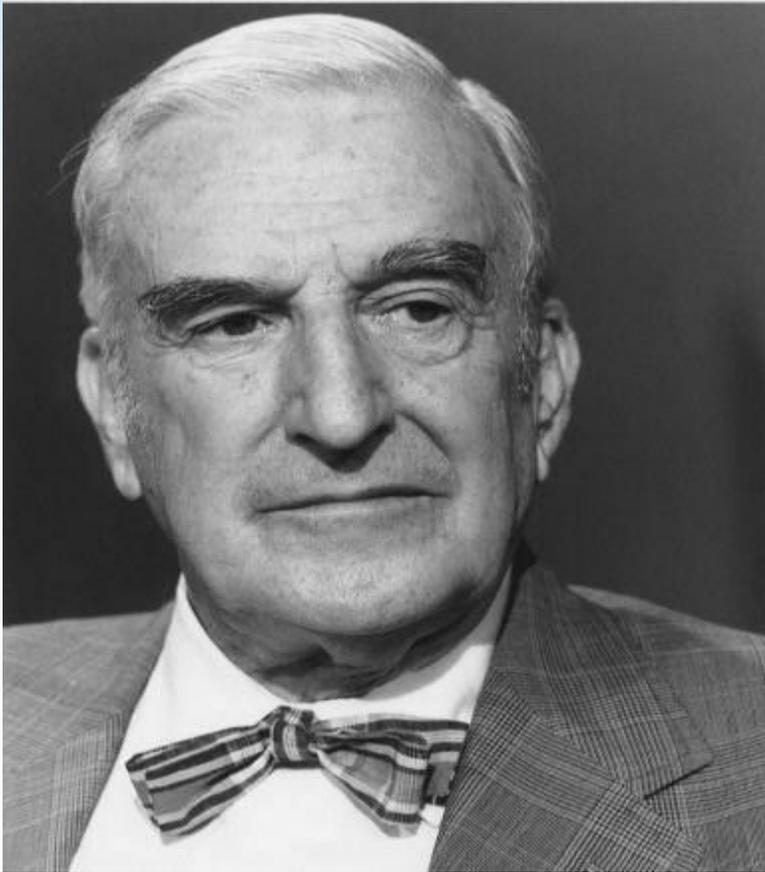
# Historical Context

- Discovery/application of radioactivity of x-rays in 1895; ICRP's recommendations in 1928 to protect people from deterministic effects.
- Military, industrial applications of atomic energy and social awareness of harmful effects raised considerations for stochastic effects



# Science and ethics in radiological protection

## - A long tradition -



"Radiation protection is not only a matter for science. It is a problem of philosophy, and morality, and the utmost **wisdom.**"

**Lauriston S. Taylor** (1902 – 2004)

The Philosophy Underlying  
Radiation Protection

Am. J. Roent. Vol. 77, N° 5,  
914-919, 1957

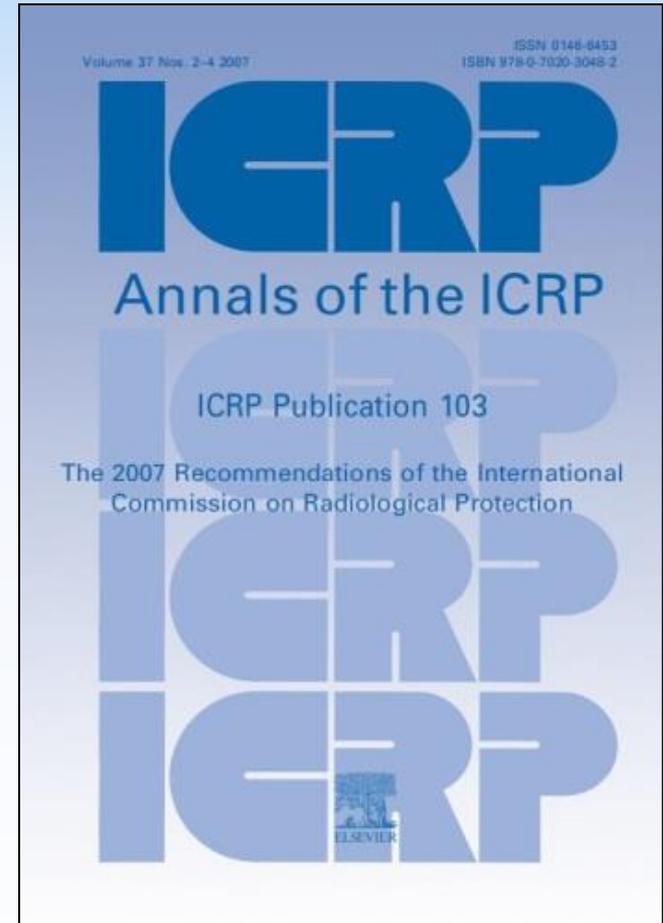
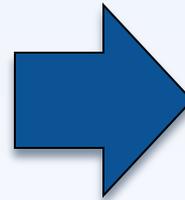
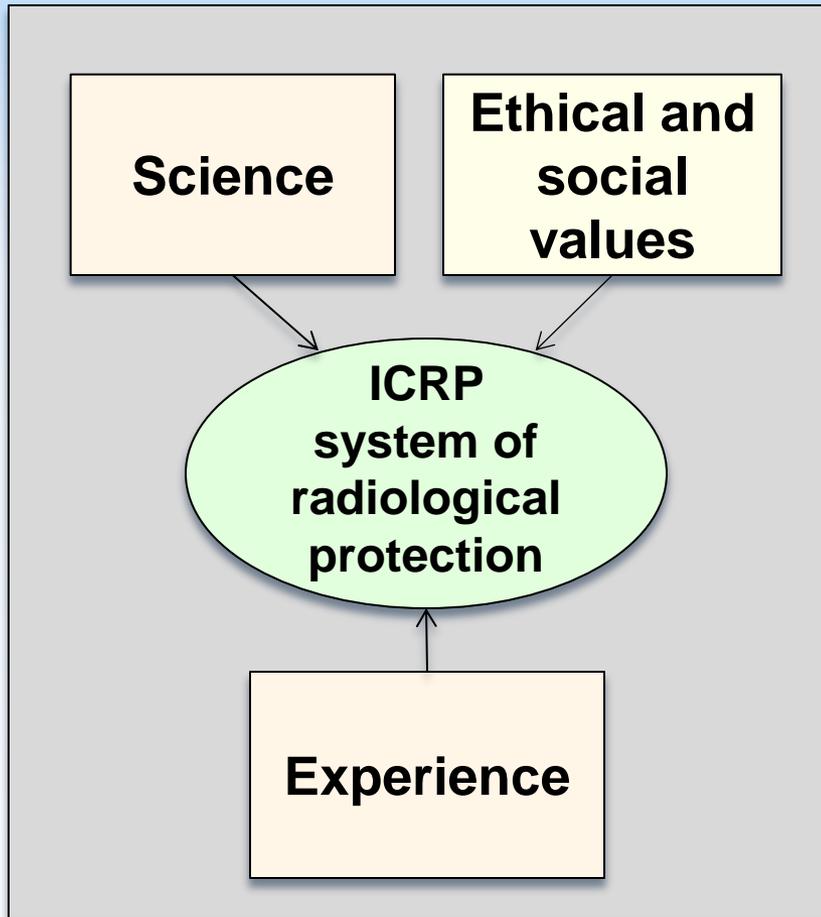
From address on 7 Nov. 1956

## A first reference of stakeholder involvement in radiological protection

“Aside from our experienced scientists, trained in radiation protection, where do we look further for our supply of **wisdom**? Personally, I feel strongly that we must turn to the much larger group of citizens generally, most of whom have to be regarded **as well-meaning and sincere**, but rarely well-informed about the radiation problems that they have to deal with. **Nevertheless, collectively or as individuals, they can be of great value ... in developing our total radiation protection philosophy.**”

**Lauriston Taylor, Sievert Lecture, IRPA 5 Congress,  
Jerusalem, 1980**

# The three pillars of the ICRP system of radiological protection



**Publication 103**  
(2007)

# After Chernobyl to Fukushima

## ICRP Publication 109

Protection of People in  
Emergency Exposure  
Situations (2008)

## ICRP Publication 111

Protection of People Living  
in Long-term Contaminated  
Areas after a Nuclear  
Accident or a Radiation  
Emergency (2008)

### ICRP111から 考えたこと

Introduction to ICRP Publ. 111  
福島で「現存被曝状況」を生きる

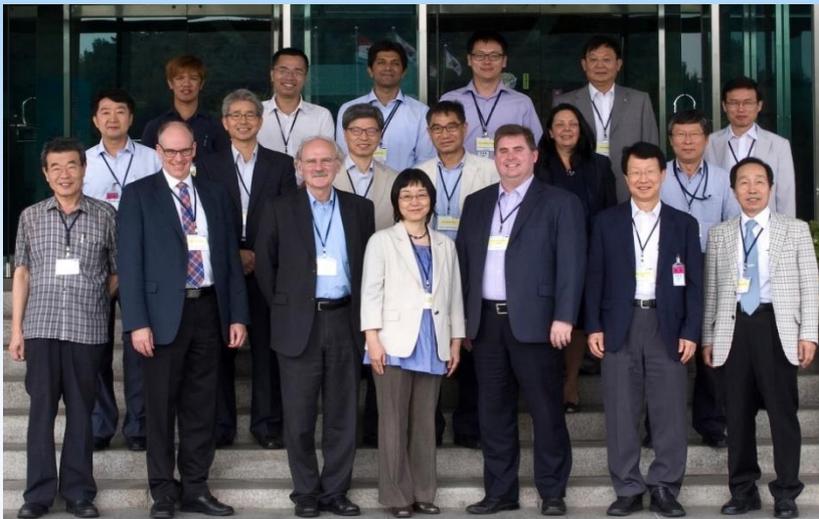
〔国際放射線防護委員会  
ICRP入門講座 対話篇〕  
先生 生徒会長  
J\_Tphoto × buvery

- ◎放射線の被曝って、どこまで下げれば十分?
- ◎住みつづけたい人で、もっとも線量の高い被曝を減らすようにする、ってなに?
- ◎社会的・経済的な要素を考えに入れて、合理的に、達成できる限り低くする、ってなに?
- ◎じゃあ、それはどうやったら可能になるの?  
——オープンな議論、利害の調整、福島との連携  
——リスクを引き受ける人が判断する。慎重に、



# What about the ethics?

# The workshops and meetings on the ethical dimensions of the radiological protection system (1)



**Daejeon, Korea, August 2013**



**Milan, Italy, December 2013**



**London, UK, June 2014**



**Baltimore, USA, July 2014**

# The workshops and meetings on the ethical dimensions of the radiological protection system (2)



**Budweis, Czech Republic, June 2014**



**Madrid, Spain, February 2015**



**ICRP Cambridge, USA, March 2015**  
INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION

## **FIRST ANNOUNCEMENT**

**Second Asian Workshop  
on the Ethical Dimensions  
of the System of  
Radiological Protection**

**A focus on  
Nuclear Emergencies  
and Post-Accident Situations**

Fukushima Medical University,  
June 2-3, 2015



**Fukushima, Japan, June 2015**

# Western theories of ethics

メタ倫理

**Meta-ethics:** what is ethics?

規範倫理

**Normative ethics:** ethical obligations; how should we act ethically?

徳倫理

**Virtue ethics:** moral and personality of human being to drive ethical behaviours

義務論倫理

**Deontological ethics:** moral duties and normative whatever the consequences

目的論倫理

功利主義

**Teleological ethics/consequentialist ethics/utilitarianism:** to achieve greatest happiness of the greatest number 最大多数の最大幸福

応用倫理

**Applied ethics:** how actual issues can be ethically analyzed?

application of ethical theories to practical issues

bioethics, medical ethics, research ethics, environmental ethics,

business ethics, neuro ethics, nuclear ethics.....

# The 3 principles of RP and ethics

正当化

- The principle of justification: Any decision that alters the radiation exposure situation **should do more good than harm**

→ This refers to the ethical value of **beneficence/non-maleficence**

最適化

- The principle of optimisation of protection: All exposures should be **kept as low as reasonably achievable**

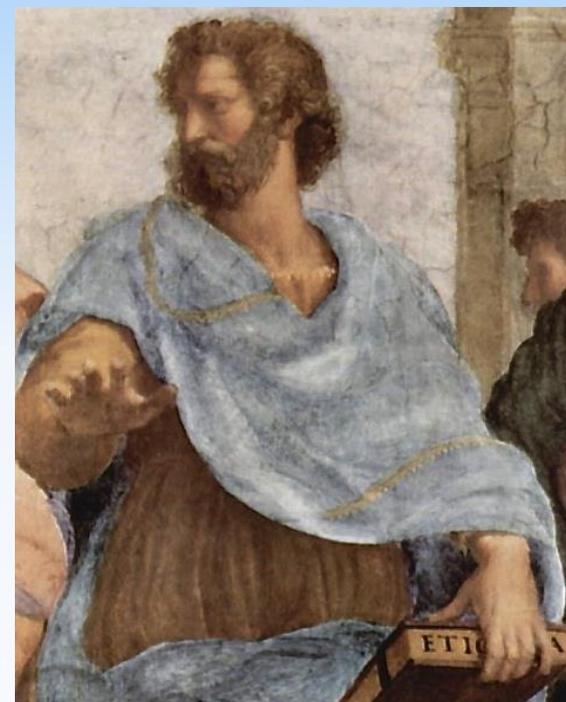
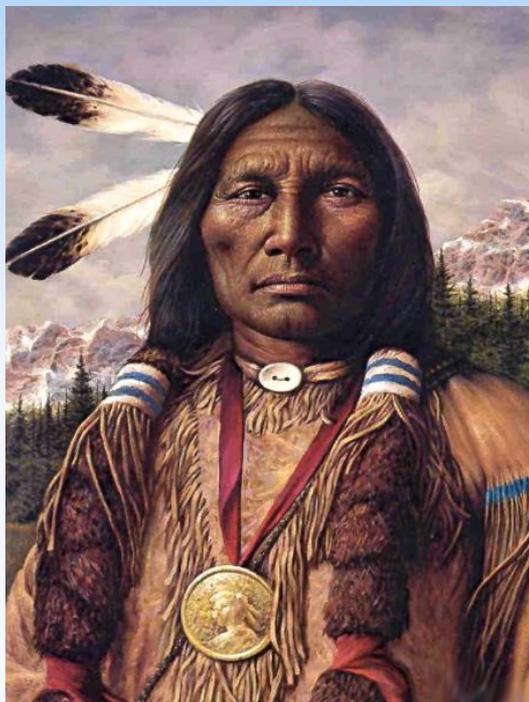
→ From an ethical point of view, this principle refers to the virtue of **prudence**

線量限度

- The principle of limitation of individual exposure: All individual exposures should **not exceed the dose criteria** recommended by the Commission; equity of the level of protection

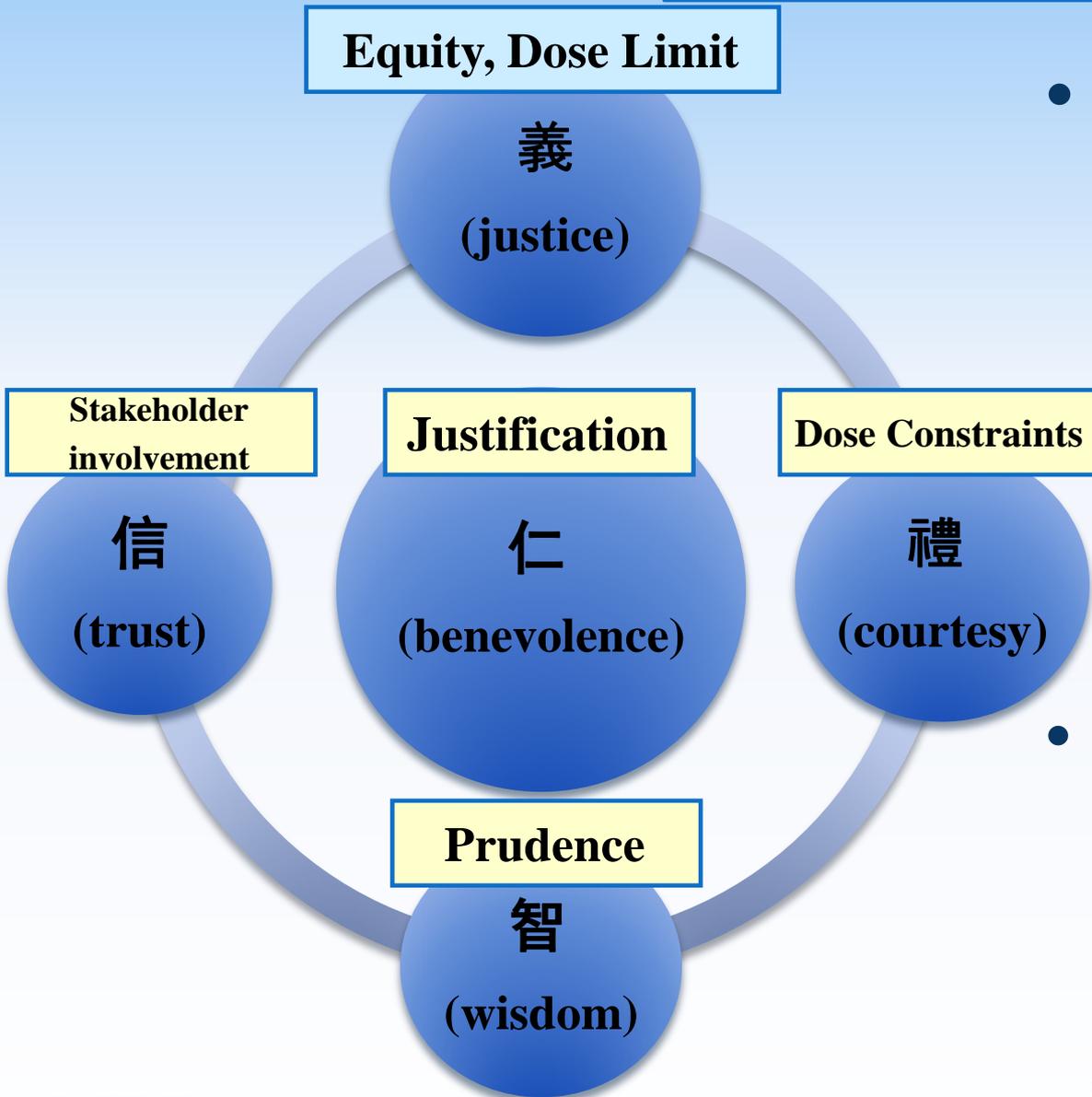
→ This refers to the ethical values of **justice** and **equity**

# Common Values Approach



Not only grounded in Western Ethical Theories but on a **study of the oral and written traditions** which have guided people in different cultures over the ages (Friedo Zoelzer, 2011)

# The value system of Classic Confucianism



- **The five virtues:**
  - Benevolence
  - Righteousness/justice
  - Courtesy (Propriety, Manners)
  - Wisdom
  - Sincerity/trust

- **The traditional ethics in China is mainly derived from Classic Confucian thought.**

# Biomedical Ethics - Beauchamp and Childress, 1979 (1st edition)

- **Respect for autonomy** (to respect the free-will and decision-making capacities of self-governing persons)
- **Nonmaleficence** (to avoid harm)
- **Beneficence** (to provide benefits)
- **Justice** (fair, equal distribution of benefits, risks and costs, etc.)

UTILITARIANISM

DEONTOLOGY

*Ethical Theories*

Broadly compatible with the principles of:

Autonomy

Beneficence

Non-Maleficence

Justice

*Biomedical Principles*

Widely adapted in other areas: public health and environmental ethics, technology assessment, etc

# Biomedical Ethics - Beauchamp and Childress, 1979 (1st edition)

## Dignity

- **Respect for autonomy** (to respect the free-will and decision-making capacities of self-governing persons)
- **Nonmaleficence** (to avoid harm)
- **Beneficence** (to provide benefits)
- **Justice** (fair, equal distribution of benefits, risks and costs, etc.)

Prudence..... ≙ wisdom?

UTILITARIANISM

DEONTOLOGY

*Ethical Theories*

Broadly compatible with the principles of:

Autonomy

Beneficence

Non-Maleficence

Justice

*Biomedical Principles*

Widely adapted in other areas: public health and environmental ethics, technology assessment, etc

# Draft Report Structure

Historical Context

Common Values

Core Ethical Values Underpinning the System

- Beneficence/Non-maleficence 善行/無危害
- Dignity 尊嚴
- Justice 正義 *In no particular order or hierachy.*  
*Balance will depend on case and context.*
- Prudence 慎重? 賢慮...? 熟慮...? ≡Wisdom?

Applications

- Medical
- Worker and Nuclear Safety
- Waste Management
- Accidents★
- Environmental Protection

# Beneficence/Non-Maleficence

## Definition in ethics

*Beneficence (and non maleficence)* – promote to do good and to avoid harm (Frankena, 1963);

*Non-Maleficence* – first, do no harm (The Hippocratic Oath)

## Relevance in RP

*Beneficence* – health benefits of radiotherapy;

*Non-Maleficence* – all exposures have an inherent risk of causing harm; RP system implemented to avoid harm

**Challenges** – In the emergency and post-accident situations: Difficulties of decision making of evacuation, returning, staying, considering risks/benefits of radiation and other factors associated with the lives in/out of homeland  
(WHO definition of health – well being)

# Dignity

## Definition in ethics

Implication: Every individual deserves unconditional respect, whatever age, gender, health, social condition, ethnic origin and religion

Respecting Autonomy – the capacity to choose freely for oneself and be able to direct one's own life; to be treated as an end, and not only as a means....Not natural, described by Kant (18C); enshrined in the UN Universal Declaration of Human Rights (1948) conquest over the inhuman; incorporated into the Constitutions to assure human rights

## Relevance in RP

Informed consent/right to know – patients, workers, public, people living in post-accident situations

Stakeholder engagement – empowerment, capacity development

# Justice

## Definition in ethics

Distributive Justice: Fair distribution of resources; risks and benefits; opportunity/treatment, status (equity)

Corrective/Reciprocal Justice: compensation for the loss

Procedural Justice: due process; transparency

\* Focus on the vulnerable/worst-off (Rawls, Sen)

## Relevance in RP

Dose constraints: to achieve equity of protection evaluating exposure of individuals, across the differences of ages, genders, etc.

Difficulties remain in the issue of site location of NPP and nuclear waste disposal for fair distribution of risks and benefits of nation, also considering future generations.

# Prudence

## Definition in ethics

Long ethical tradition: Aristotle, Buddhism, Confucianism, ancient peoples of Oceania and America

Aristotle: “*phronesis*”: practical wisdom, rational choice

Another aspect: cautiousness, deliberation

## Relevance in RP

LNT (linear, non-threshold) model

« *It is prudent to take uncertainties in the current estimates of thresholds for deterministic effects into account... Consequently, annual doses rising towards 100 mSv will almost always justify the introduction of protective actions* ». ICRP 103, § 35

⇒ **radiation protection culture, led by stakeholders**

ALARA (to keep exposures as low as reasonably achievable, economic and societal factors being taken into account)

⇒ **integrate all other ethical values**

## Where to next?

**We need further evaluation of core values  
against applications/examples,  
especially considering the lives of people  
living in the post-accident areas**



**Photo: Jacques LOCHARD**

Science, ethics and society  
Dignity of the people living in  
Post-accident area,  
Beneficence/do no harm  
Justice and prudence  
Communities and individuals

# Forthcoming meetings

- ICRP 2015: ICRP 3<sup>rd</sup> International Symposium on Radiological Protection with a **special session** on the ethics of radiological protection, **Seoul, Korea, 20-22 October 2015**



**ICRP 2015**  
3rd International Symposium  
on the System of Radiological Protection

October 20-22, 2015 | Mayfield Hotel & Resort, Seoul, KOREA




Symposium Program	Venue
<p>Session 1 <i>ICRP: Advancing Together</i></p> <p>Session 2 <i>Exploring Existing Exposure Situations</i></p> <p>Session 3 <i>Radiological Protection in Medicine Today</i></p> <p>Session 4 <i>The Science behind Radiation Doses</i></p> <p>Session 5 <i>New Developments in Understanding Radiation Effects</i></p> <p>Session 6 <i>Ethics in Radiological Protection</i></p>	<p>Mayfield Hotel and Resort, KOREA <a href="http://www.mayfield.co.kr/eng/">http://www.mayfield.co.kr/eng/</a></p>  <p><b>ICRP 2015 Secretariat</b> TEL +82-2-765-7996 FAX +82-303-3441-7996 E-mail <a href="mailto:icrp2015@icrp.org">icrp2015@icrp.org</a></p>

# Provisional timetable

- **Adoption of the TG 94 report by C4** in October 2015 in Seoul, Korea, at the occasion of the general meeting of the Commission in conjunction with the 3<sup>rd</sup> International Symposium on the System of Radiological Protection
- **Public consultation** beginning of 2016
- General discussion at the **IRPA14 Congress**, Cape Town, in May 2016
- **Adoption for publication** of the revised TG 94 report by the Main Commission in **autumn 2016** or **spring 2017**

# ICRP

[www.icrp.org](http://www.icrp.org)

Thank you for your attention!  
Let's facilitate discussion!