

Ethics and Digital Technologies: First steps

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Sources of inspiration

- ▶ Coursera MOOC from the University of Geneva (2018): *Le Bien, le Juste, l'Utile. Introduction aux éthiques philosophiques*
- ▶ edX MOOC from the University of Michigan (2018): *Data Science Ethics*
- ▶ *Ethical IT Innovation* (2016). S. Spiekermann. CRC Press.
- ▶ *L'éthique aux interfaces entre biologie/santé et sciences de l'information* (2016). H. Chneiweiss. (with his approval)
- ▶ *L'éthique appliquée* (2010). M. Marzano. PUF
- ▶ Wikipedia

Introduction

Definitions

Motivation and Goal

A Bit of Practice

A Question of Time

To finish

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Digital Technologies?



Digital Technologies?

Including:

- ▶ robots
- ▶ machine learning technologies
- ▶ Internet of Objects
- ▶ information extraction
- ▶ data mining
- ▶ ...

Ethics?

soft law

Merriam-Webster

SINCE 1828

JOIN MWU | GAMES | BROWSE THESAURUS | WORD OF THE DAY | VIDEO | WORDS AT P

ethics

DICTIONARY | THESAURUS

Definition of ETHIC

f

Twitter

People

Heart

CITE

7

1

ethics *plural in form but singular or plural in construction* : the discipline dealing with what is good and bad and with moral duty and obligation

2

a : a set of moral principles : a theory or system of moral values • the present-day materialistic *ethic* • an old-fashioned work *ethic* —often used in plural but singular or plural in construction • an elaborate *ethics* • Christian *ethics*
b *ethics* *plural in form but singular or plural in construction* : the principles of conduct governing an individual or a group • professional *ethics*
c : a guiding philosophy
d : a consciousness of moral importance • forge a conservation *ethic*

3

ethics *plural* : a set of moral issues or aspects (such as rightness) • debated the *ethics* of human cloning

<https://www.merriam-webster.com/dictionary/ethics>

What do you know about ethics?

- ▶ well-known ethical issues?
- ▶ ethical institutions?
- ▶ famous thinkers?
- ▶ well-known texts/documents about ethics? turning points?

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Why should you care?

- ▶ because you are a citizen
- ▶ because ethical products sell better [Spiekermann, 2015]
- ▶ because if you don't as data scientists, others with less knowledge will

What this course will (hopefully) bring you

No ready-made solution

BUT

tools to think by yourself

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Your turn to think

Which ethical issues can you imagine? Which solutions?

Automatically generated and assigned groups of 3 students, 20 minutes of preparation, then present to all of us (no slides, just you and the whiteboard):

- ▶ Self-driving car
- ▶ Chatbot
- ▶ Amazon Mechanical Turk
- ▶ Amazon Alexa and Google Home
- ▶ Social credit in China

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Who's dealing with it?

Is Science Necessarily Good?

(some) Turning Points in the XXth century

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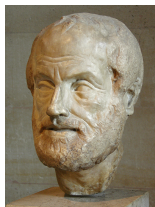
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A very old question (the oldest?) in a brave new world



From Lysippe — Eric Gaba (User:Sting),
July 2005., CC BY-SA 2.5

Ethics is a domain from...



What discipline/domain thinks a lot about ethics?



(some) French institutions dealing with ethics

- ▶ **CNIL**: Commission Nationale de l'Informatique et des Libertés
- ▶ **CCNE**: Comité consultatif national d'éthique
- ▶ **CERNA**: Commission de réflexion sur l'éthique de la recherche en sciences et technologies du numérique d'Allistene
- ▶ **COMETS**: Comité d'éthique du CNRS
- ▶ **CEI**: Comité d'éthique de l'Inserm
- ▶ **COERLE**: Comité opérationnel d'évaluation des risques légaux et éthiques

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Is (the outcome of) science necessarily good?

Are there things that are possible to do that we agree we should not?



(c) <https://www.starwars.com/databank/clone-troopers>

Is (the way we do) science necessarily good?

Are there things that are possible to do that we agree we should not?

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The Nuremberg Code

originated before, but finalized during "the Doctors' Trial" (1947)



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10 main principles, including:

- ▶ Respect of the subject:
 - ▶ informed consent
 - ▶ freedom to quit the experiment
- ▶ Beneficence:
 - ▶ favorable risks/benefits balance
- ▶ Justice:
 - ▶ positive results for society

The Belmont Report [Bel, 1979]

originated from "Tuskegee Syphilis Experiment" (1932-1972)



By National Archives Atlanta, GA

The Belmont Report [Bel, 1979]

originated from "Tuskegee Syphilis Experiment" (1932-1972)



The report includes 3 main principles:

- ▶ Respect of the subject:
 - ▶ informed consent
- ▶ Beneficence:
 - ▶ favorable risks/benefits balance
- ▶ Justice:
 - ▶ fair selection of the subjects

Tableau 1. Bref historique des textes fondateurs de l'éthique et exemples des raisons de leur rédaction

Codes éthiques fondateurs	Code de Nuremberg (traduction française in ²⁷)	Déclaration d'Helsinki	Rapport Belmont
Quand, où ?	1947, Etats-Unis	1964, Finlande (dernière révision de 2000)	1978, Etats-Unis
Qui ?	Juges du Tribunal militaire américain de Nuremberg	Association médicale mondiale (AMM)	Commission nationale américaine pour la protection des sujets humains dans la recherche biomédicale et comportementale
Pourquoi ? Précisions	<ul style="list-style-type: none"> • Expériences des médecins nazis sur des prisonniers en camp de concentration • Trois officiels nazis et vingt médecins impliqués, dont : <ul style="list-style-type: none"> – Heinrich Himmler : mécène et directeur de la médecine nazie, parfois surnommé « le meurtrier du Siècle ». Met en œuvre la solution finale – Josef Mengele : tortures, sévices corporels lors d'expériences médicales absurdes et inhumaines entraînant souvent la mort, à Auschwitz – Aribert Heim : vivisection humaine sur les détenus de Mauthausen 	<ul style="list-style-type: none"> • Fait suite aux atrocités de la Seconde Guerre mondiale • AMM : association internationale de médecins (fondée en 1947 à Paris) dont le but humanitaire est de mettre en place les normes les plus rigoureuses dans le domaine de la médecine, l'éthique et l'enseignement médical 	<ul style="list-style-type: none"> • Création le 12 juillet 1974 du National research act (Loi publique 93348 sur la recherche) • Tuskegee : expériences sur la syphilis (1932-1972, Etats-Unis) : ouvriers agricoles noirs et pauvres, non traités par les médecins (diagnostic donné : « mauvais sang ») pour observer l'évolution de la maladie, et ce même après l'efficacité avérée du traitement à la pénicilline. L'expérience cesse en 1972, lorsque le Washington Star²⁸ révèle l'affaire. N'a jamais donné de résultats concluants • Willowbrook : étude sur l'hépatite (1950-1960, Etats-Unis) : virus délibérément inoculé à des enfants placés en établissements psychiatriques. Selon le formulaire de consentement signé par les parents, est administré un vaccin et non le virus. Justification d'alors : ces enfants seraient infectés de toute manière ; en participant à l'étude, ils seraient mieux soignés.
Principes généraux	<ul style="list-style-type: none"> • Bienfaisance : rapport risque/ bénéfice favorable • Respect du sujet de recherche : consentement volontaire, capacité de consentir, possibilité de quitter l'essai • Justice : utilité pour la société 	<ul style="list-style-type: none"> • Bienfaisance : rapport risque/ bénéfice favorable • Respect du sujet de recherche : consentement informé • Justice : distinction entre recherche thérapeutique ou non • Responsabilité : pas uniquement au chercheur, avis extérieur nécessaire (comité d'éthique) 	<ul style="list-style-type: none"> • Bienfaisance : rapport risque/bénéfice favorable (distinction entre risques « minimes » et risques « plus que minimes ») • Respect du sujet de recherche : consentement éclairé • Justice : sélection équitable des sujets
Forme	Dix principes fondamentaux	Loi consensuelle, nombreux paragraphes	Paragraphes agencés en trois catégories éthiques et applications

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WYHTR: What You Have To Remember

A bit of work



- ▶ it's a question of time (spent questioning/thinking)
- ▶ others have thought about it before (get inspired)
- ▶ no ready-made solution

Homework

Find institutions dealing with ethics in other countries

A bit of reading

Read, annotate and comment

the Menlo report [Dittrich and Kenneally, 2012]



(1979).

The belmont report : Ethical principles and guidelines for the protection of human subjects of research.



Chenaud, C., Gigon, F., Ricou, B., and Merlani, P. (2008).

Le consentement éclairé pour la recherche aux soins intensifs en suisse : quelle solution ?

Rev Med Suisse, 4:2691–2695.



Dittrich, D. and Kenneally, E. (2012).

The Menlo Report: Ethical Principles Guiding Information and Communication Technology Research.

Technical report, U.S. Department of Homeland Security.



Spiekermann, S. (2015).

Ethical IT Innovation: A Value-Based System Design Approach.

CRC Press.