CC BY

You are free to

- share, adapt or re-mix
- photograph, video, or broadcast
- blog, live-blog or post-video

this presentation

Provided that

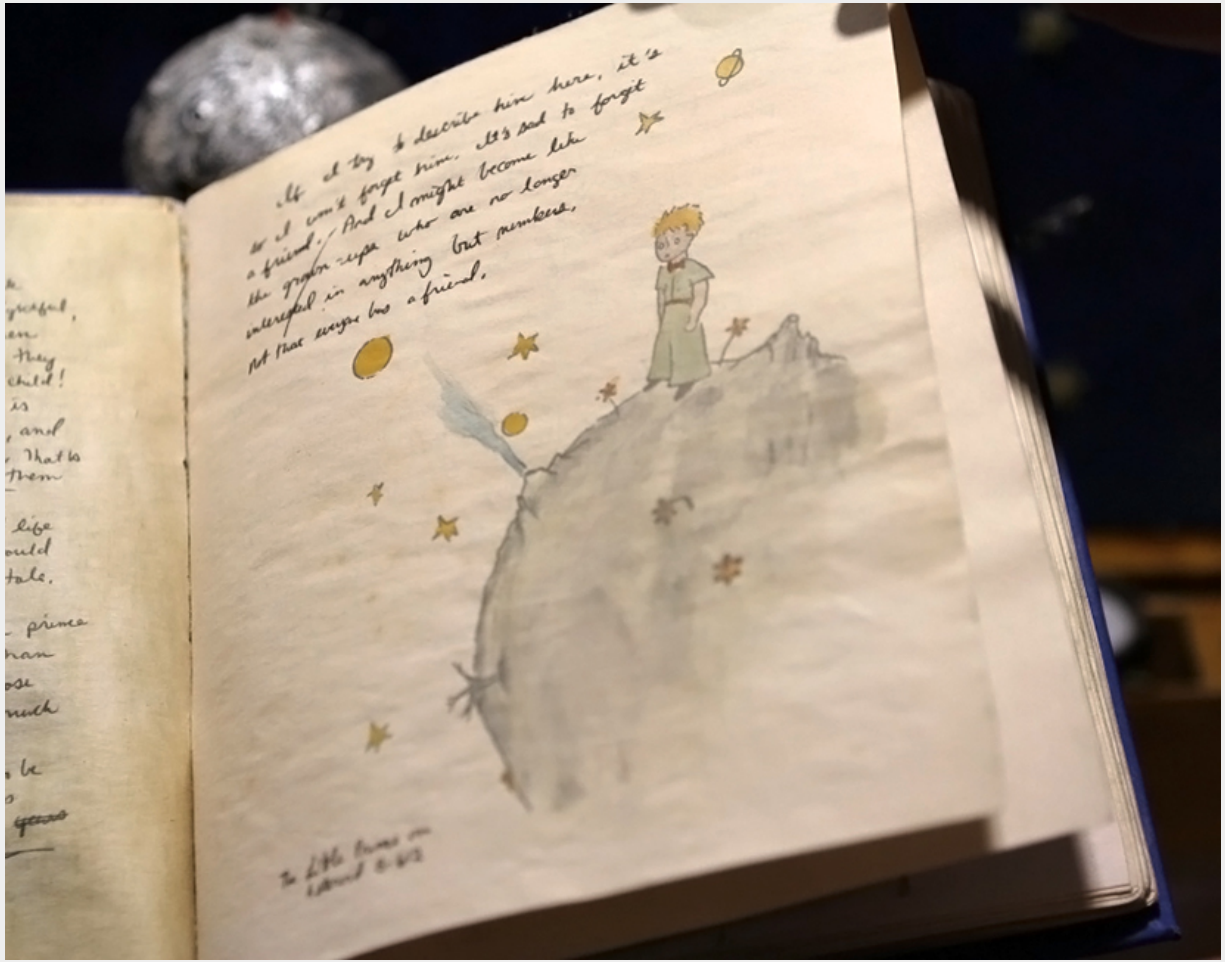
you attribute the work to its author and respect the rights and licenses associated with its components

Rewriting science and its purpose: water the flowers, clean the volcanoes

OSAP 2023
Max Planck Society
Berlin, Germany
19th September 2023

Picture - The little prince - Antoine de Saint-Exupéry

CC BY



Artist impression of the original manuscript of The Little Prince. Credit: KPCC;
The little prince - Antoine de Saint-Exupéry

Science as a social institution with values and norms

Rewriting science through narratives of openness

Going rogue: living alternative spaces

Science as a social institution with values and norms

Rewriting science through narratives of openness

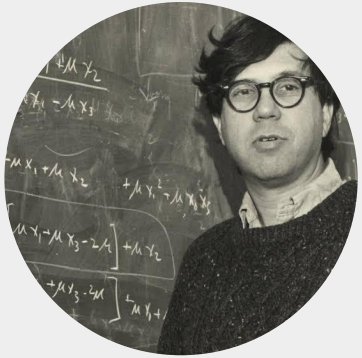
Going rogue: living alternative spaces

DREAM
BIG.

Picture of me by Esther De Smet; Picture

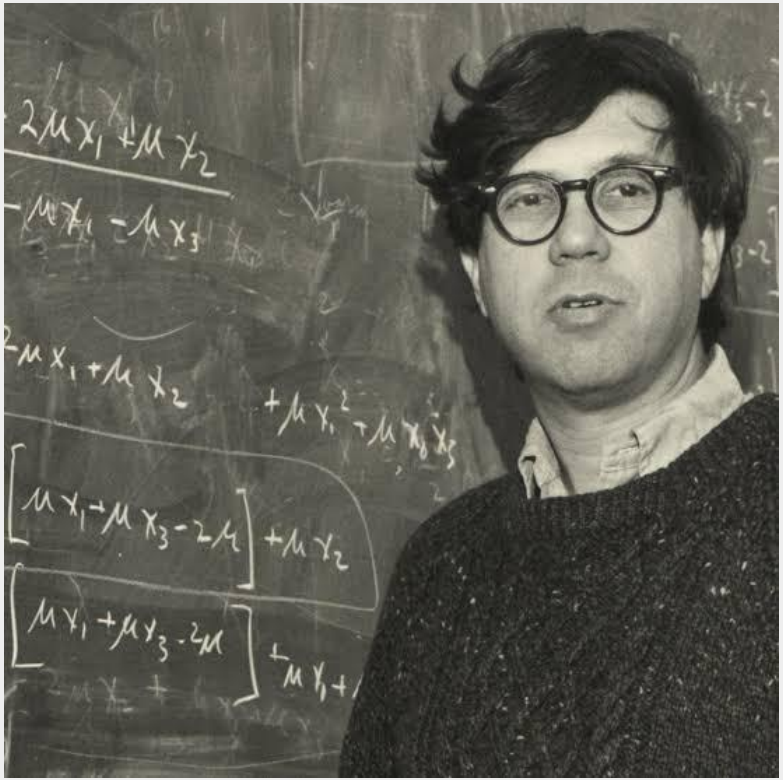
Science is a social institution about which there is a great deal of misunderstanding, even among those who are part of it.

Richard Lewontin
A Reasonable Skepticism



CC BY

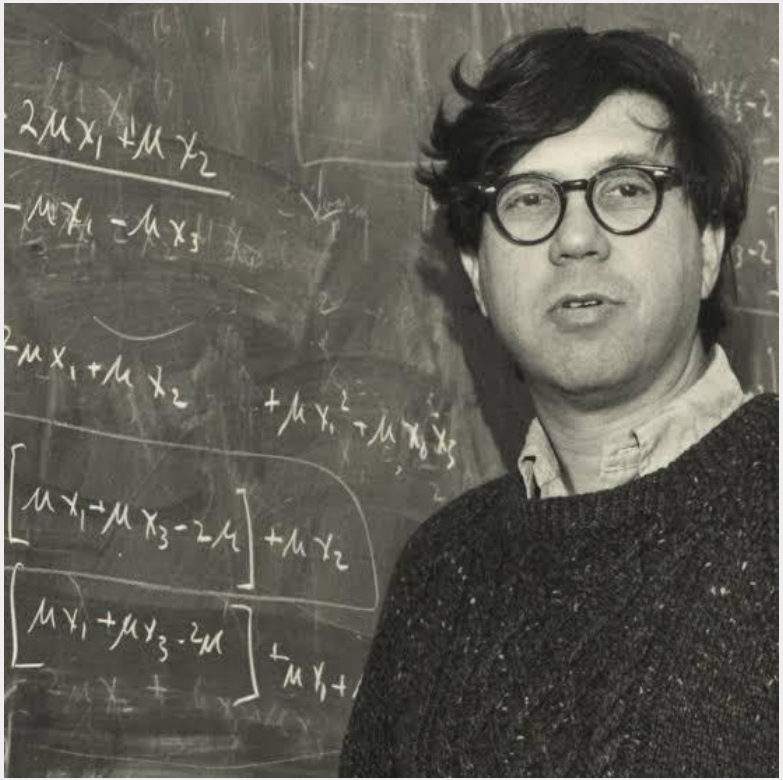
science is a social institution



We think that science as an institution, a set of methods, a set of people, a great body of knowledge that we call scientific, is somehow apart from the forces that rule our everyday lives and that govern the structure of our society.

Picture; https://www.andrew.cmu.edu/course/76-101AA/readings/Lewontinfull.htm

science is a social institution

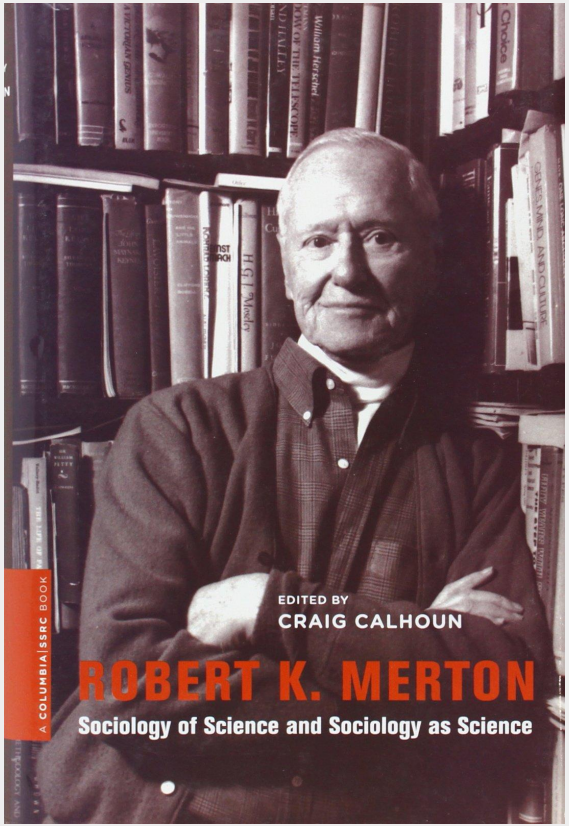


We think that science as an institution, a set of methods, a set of people, a great body of knowledge that we call scientific, is somehow apart from the forces that rule our everyday lives and that govern the structure of our society.

[...] science, like other productive activities, like the state, the family, sport, is a social institution completely integrated into and influenced by the structure of all our other social institutions.

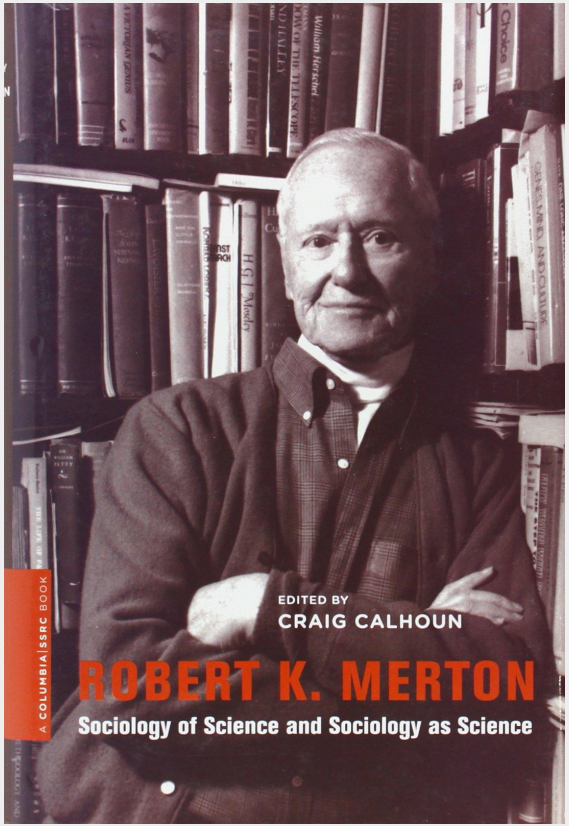
Picture; https://www.andrew.cmu.edu/course/76-101AA/readings/Lewontinfull.htm

a normative structure of science



Robert K Merton, the Normative Structure of Science, 1942

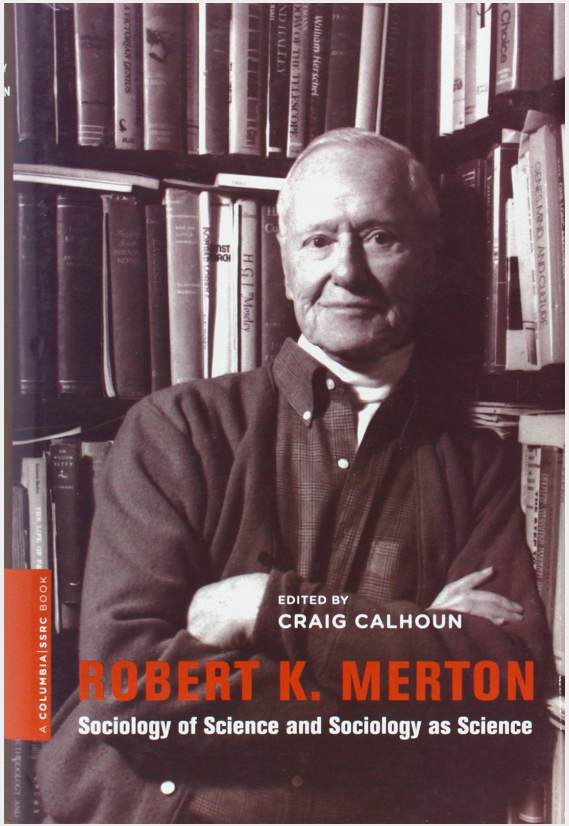
a normative structure of science



<u>communality</u>
all scientists should have common ownership of scientific goods

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2995462/

a normative structure of science

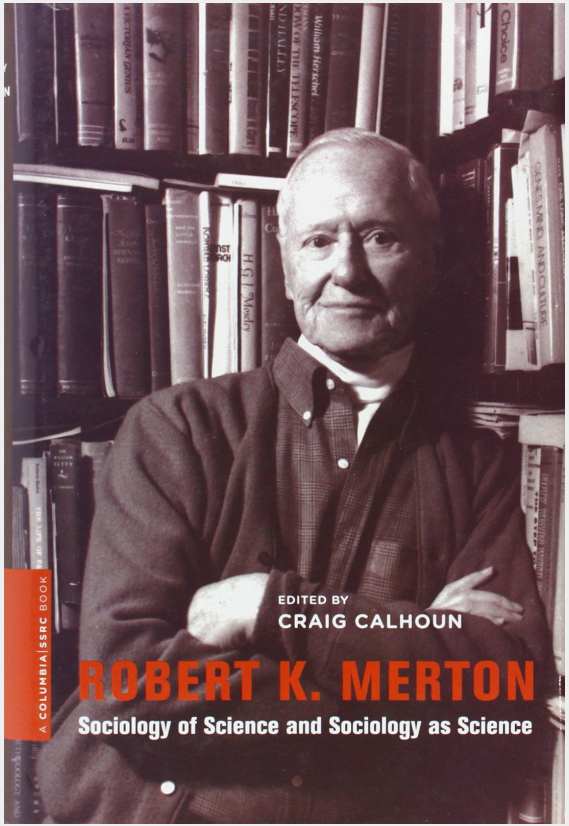


<u>communality</u>
all scientists should have common ownership of scientific goods

<u>universalism</u>
scientific validity is independent of the attributes of its participants

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2995462/

a normative structure of science



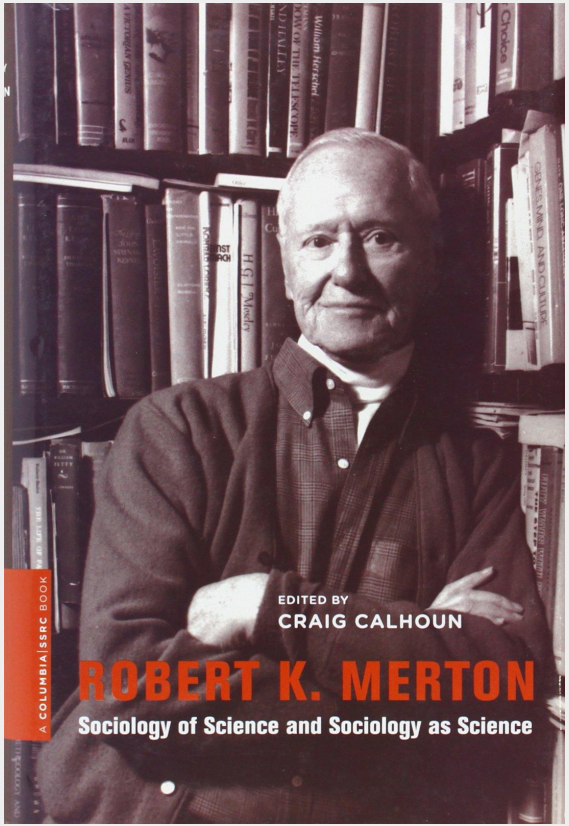
<u>communality</u>
all scientists should have common ownership of scientific goods

<u>universalism</u>
scientific validity is independent of the attributes of its participants

<u>disinterest</u>
scientific institutions act for the benefit of a common scientific enterprise

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2995462/

a normative structure of science



<u>communality</u>
all scientists should have common ownership of scientific goods

<u>universalism</u>
scientific validity is independent of the attributes of its participants

<u>disinterest</u>
scientific institutions act for the benefit of a common scientific enterprise

<u>organized skepticism</u>
scientific claims should be exposed to critical scrutiny before being accepted

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2995462/

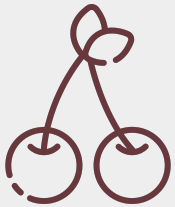
secrecy
particularism
self-interest
dogmatism

Picture

science in a time of crisis

serial crisis

cherry-picking sexy results



low statistical power and HARKing

reproducibility crisis

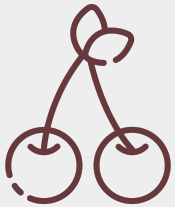
lack of trust from the public

obsession over h-index, IF, citation metrics...

science in a time of crisis

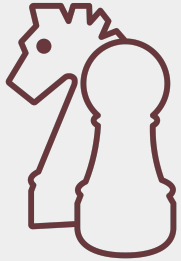
serial crisis

cherry-picking sexy results



low statistical power and HARKing

research excellence



reproducibility crisis

lack of trust from the public

obsession over h-index, IF, citation metrics...

Picture; The Lord of the Rings: Gollum

the rhetoric of research excellence

- the holy grail of academic life (Michèle Lamont)

the rhetoric of research excellence

- the holy grail of academic life (Michèle Lamont)
- a word we have chosen to avoid having a difficult conversation, a conversation about *values* (Cameron Neylon)

the rhetoric of research excellence

- the holy grail of academic life (Michèle Lamont)
- a word we have chosen to avoid having a difficult conversation, a conversation about *values* (Cameron Neylon)
- [something that] tells us nothing about how important the science is and everything about who decides (Jack Stilgoe)

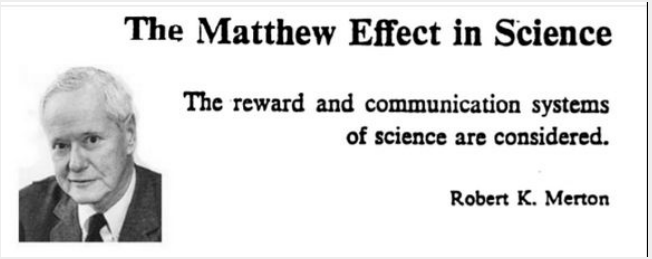
the rhetoric of research excellence

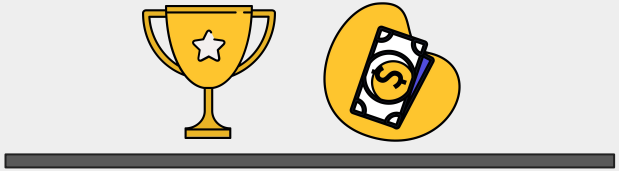
- the holy grail of academic life (Michèle Lamont)
- a word we have chosen to avoid having a difficult conversation, a conversation about *values* (Cameron Neylon)
- [something that] tells us nothing about how important the science is and everything about who decides (Jack Stilgoe)
- used in its current unqualified form, research excellence is a pernicious and *dangerous rhetoric* that undermines the very foundations of good research and scholarship (Moore *et al.*)

the rhetoric of research excellence

- the holy grail of academic life (Michèle Lamont)
- a word we have chosen to avoid having a difficult conversation, a conversation about *values* (Cameron Neylon)
- [something that] tells us nothing about how important the science is and everything about who decides (Jack Stilgoe)
- used in its current unqualified form, research excellence is a pernicious and *dangerous rhetoric* that undermines the very foundations of good research and scholarship (Moore *et al.*)
- a neo-colonial agenda that reinforces *systemic biases in power structures*, reduces diversity, and *excludes* many participants from the processes of scholarship (Cameron Neylon)

the Matthew effect in science



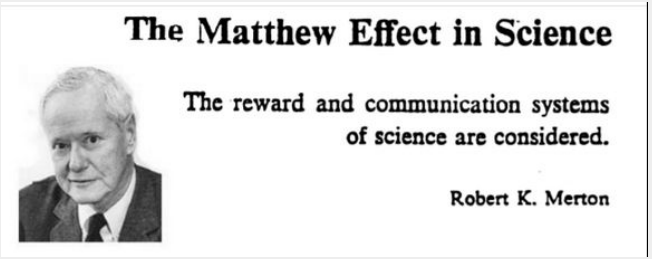


well-rewarded researchers & institutions

the rest of researchers & institutions

http://www.garfield.library.upenn.edu/merton/matthew1.pdf

the ~~Matthew~~ Matilda effect in science



Matilda Joslyn Gage

Margaret W. Rossiter

https://www.nomorematildas.com

CC BY

If our values don't drive our metrics, our metrics will distort our values.

Christopher P. Long,
Michigan State University

Picture

Picture

Science as a social institution with values and norms

Rewriting science through narratives of openness

Going rogue: living alternative spaces

CC BY

An institution under attack must reexamine its foundations, restate its objectives, seek out its rationale. [...]

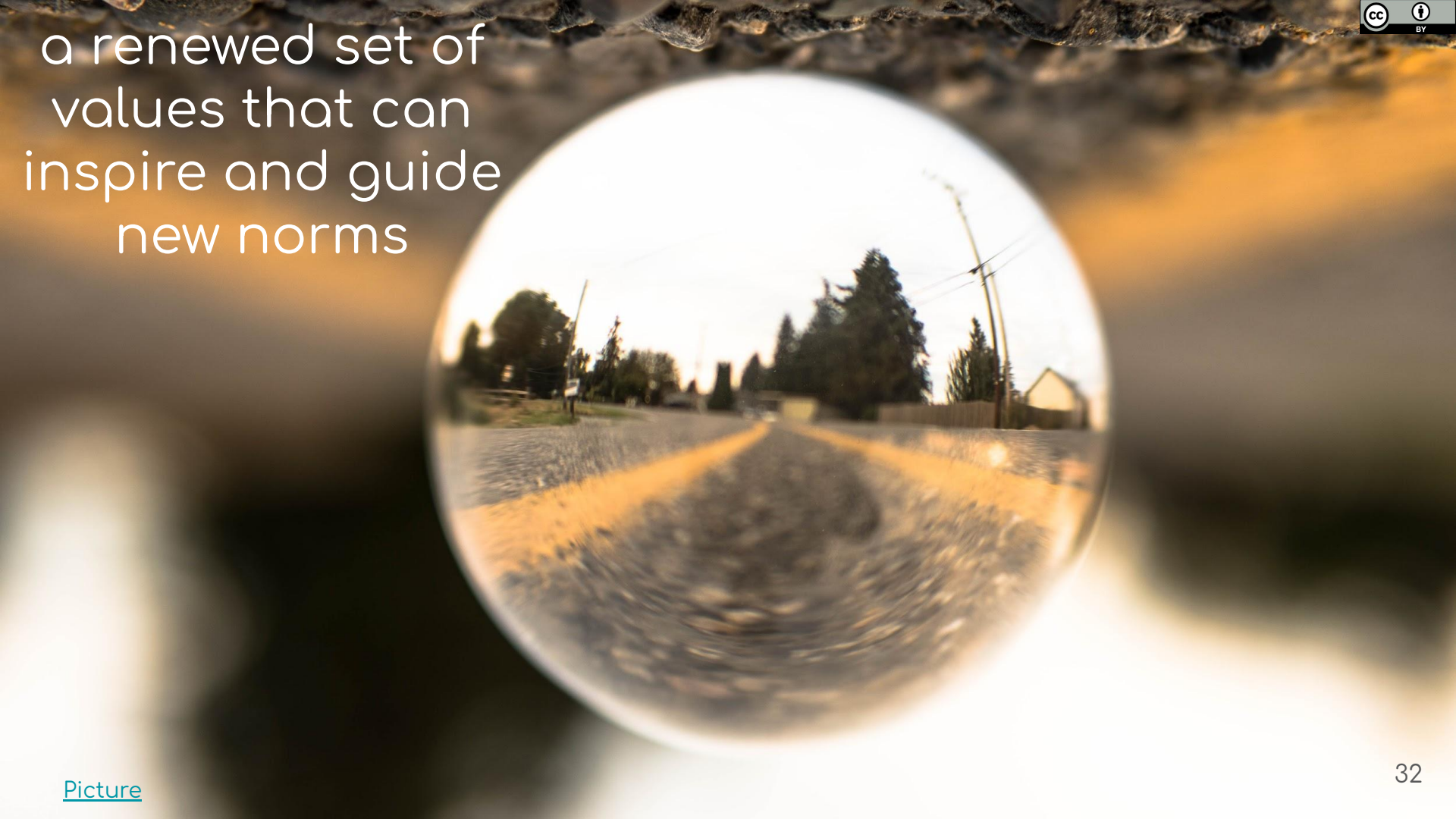
A tower of ivory becomes untenable when its walls are under prolonged assault.

Robert K. Merton
The normative structure of Science

secrecy
particularism
self-interest
dogmatism

Picture

a renewed set of values that can inspire and guide new norms



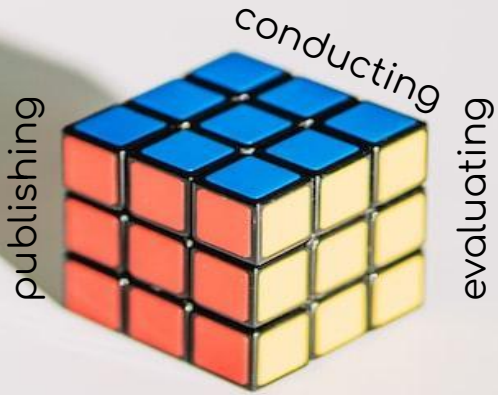
Picture

a more open and participatory way of conducting, publishing and evaluating scholarly research

central to this is the goal of increasing cooperation and transparency in all research stages

open science leads to more robust scientific results, to more efficient research and (faster) access to scientific results for everyone

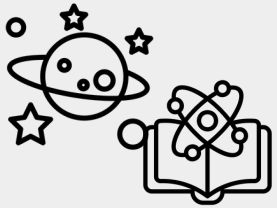
this generates bigger societal and economic impact



Picture

the “traditional” production of scientific knowledge

governments and institutions allocate public funds for research



researchers conduct the research

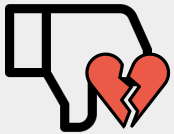
the results obtained are summarized in an article and subjected to peer review

the article is accepted, the authors transfer the copyright to the journal

published articles are locked behind paywalls

libraries pay for journal subscriptions, or the public pays to read individual articles

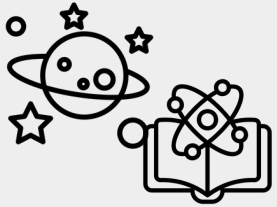
even after paying to read, people are granted little or no reuse permission



all in all, very slow scientific progress and poor return on investment

the open access way

governments and institutions allocate public funds for research



researchers conduct the research

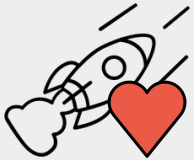
the results obtained are summarized in an article and subjected to peer review

the article is accepted, the publication policy ensures deposit in an open archive

the articles can still be published on traditional journals (embargoes)

the public can download articles from open repositories

the public is granted full reuse rights under open licenses

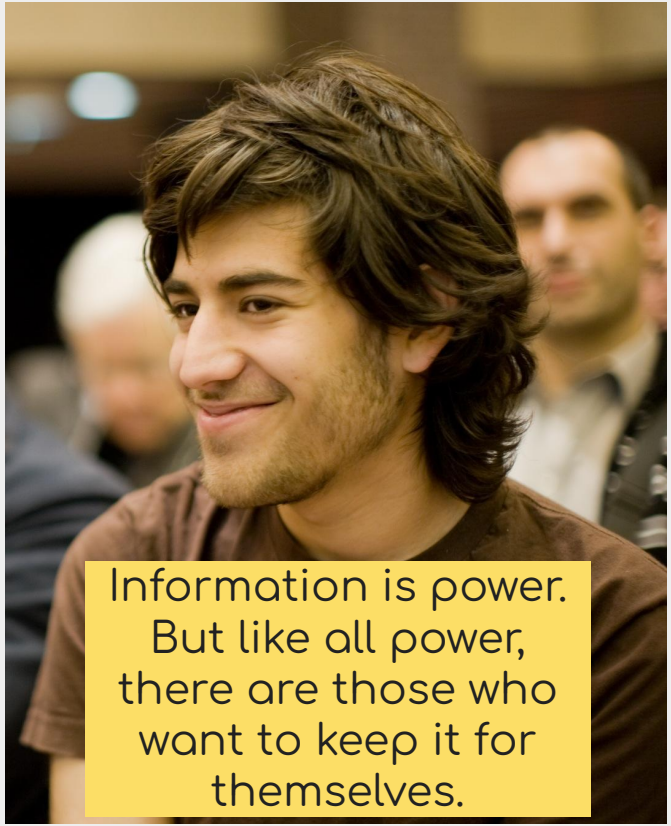


acceleration of scientific progress and optimal return on public investment

CC BY

Guerilla Open Access Manifesto

by Aaron Swartz

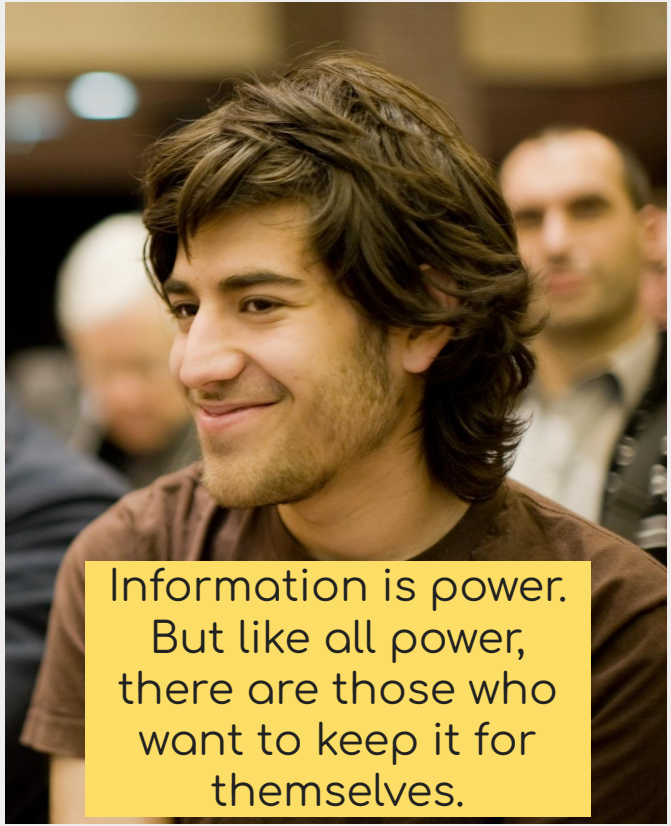


Aaron Swartz, 1986-2013

CC BY

Guerilla Open Access Manifesto

by Aaron Swartz



Aaron Swartz, 1986-2013

The [R]evolution of Open Science

Jonathan Tennant

Jon Tennant, 1988-2020

all languages (should) matter

Languages Are Still a Major Barrier to Global Science

Tatsuya Amano, Juan P. González-Varo, William J. Sutherland

over-representation of positive and/or statistically significant results

information on local species, ecosystems, and phenomena can be overlooked

knowledge transfer problem, especially for local practitioners, policymakers, and the public at large who wants (and has all the rights) to access this knowledge

all languages (should) matter

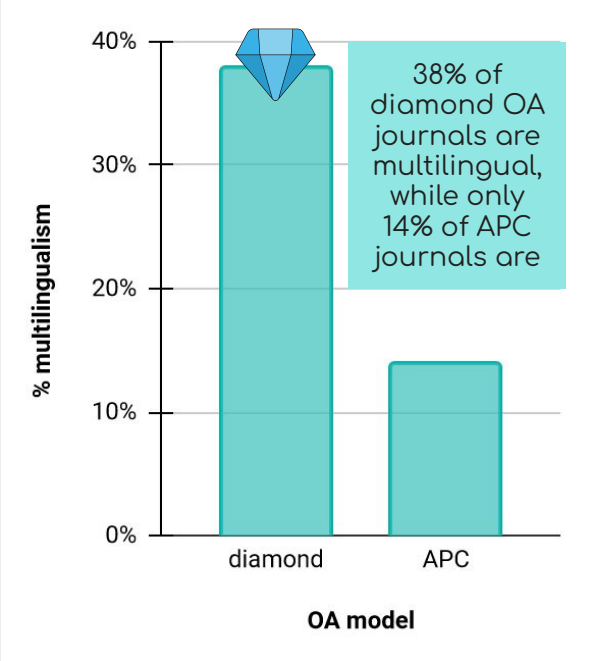
Languages Are Still a Major Barrier to Global Science

Tatsuya Amano, Juan P. González-Varo, William J. Sutherland

over-representation of positive and/or statistically significant results

information on local species, ecosystems, and phenomena can be overlooked

knowledge transfer problem, especially for local practitioners, policymakers, and the public at large who wants (and has all the rights) to access this knowledge



https://zenodo.org/record/5592704 + https://zenodo.org/record/4558704#.YYMwwBrMLv1

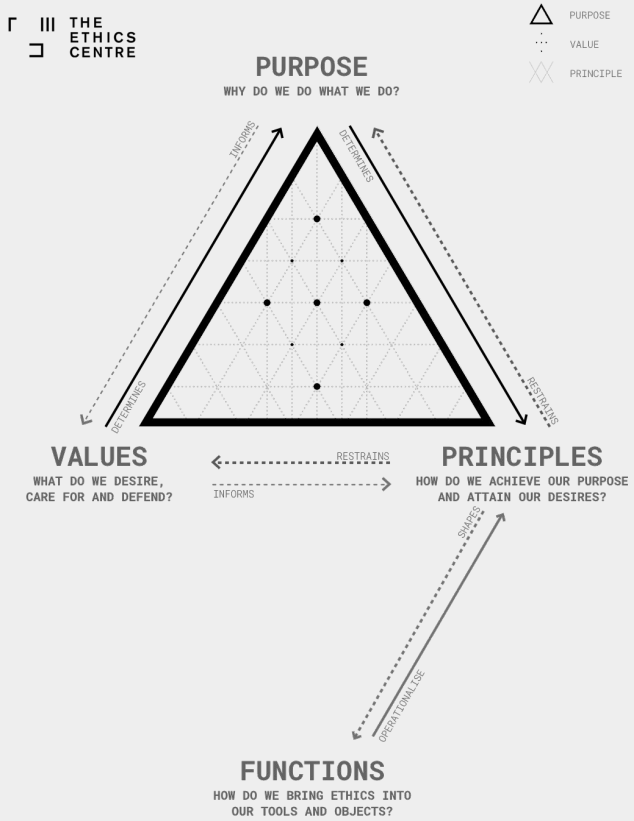
ethical by design: principles for good science

purpose
why do we do what we do?

values
what drives our job? what do we desire? care for? defend?

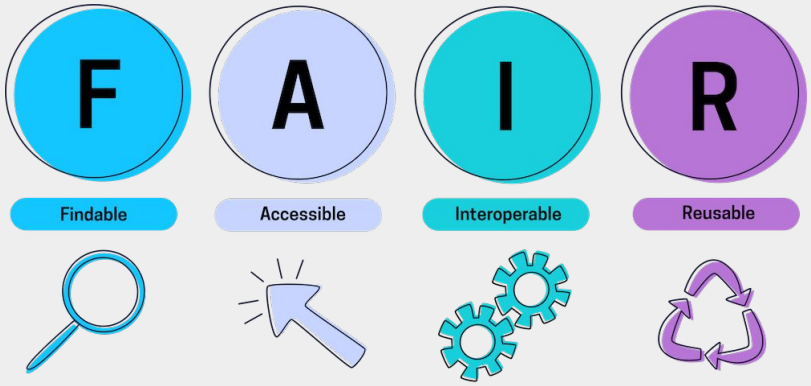
principles
which road do we choose to achieve our purpose?

functions
how do we bring ethics into what we build (data, tools, etc.)?



https://ethics.org.au/ethical-by-design/#download-copy

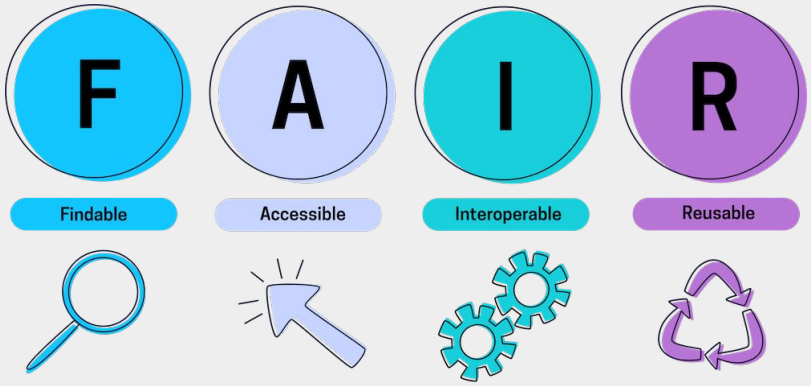
an example: the FAIR principles



The FAIR Principles are aligned to the global shift towards open science and open data, promoting criteria that facilitate data sharing, while ignoring relationships, power differentials, and the historical conditions associated with the collection of data.

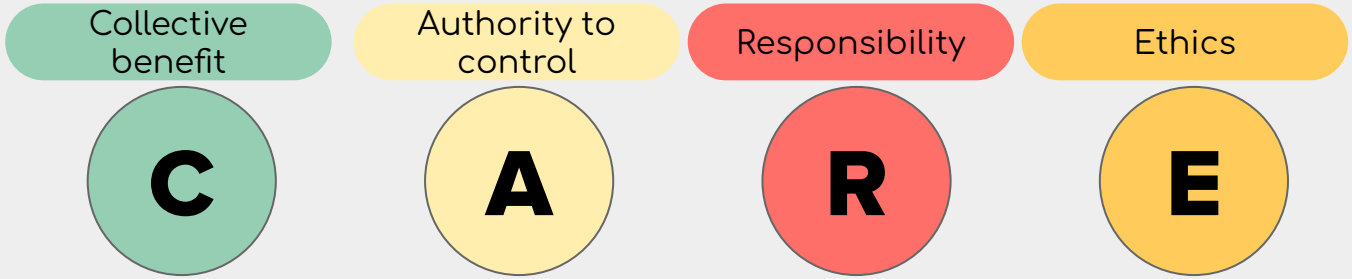
https://www.nature.com/articles/sdata201618

an example: the FAIR principles



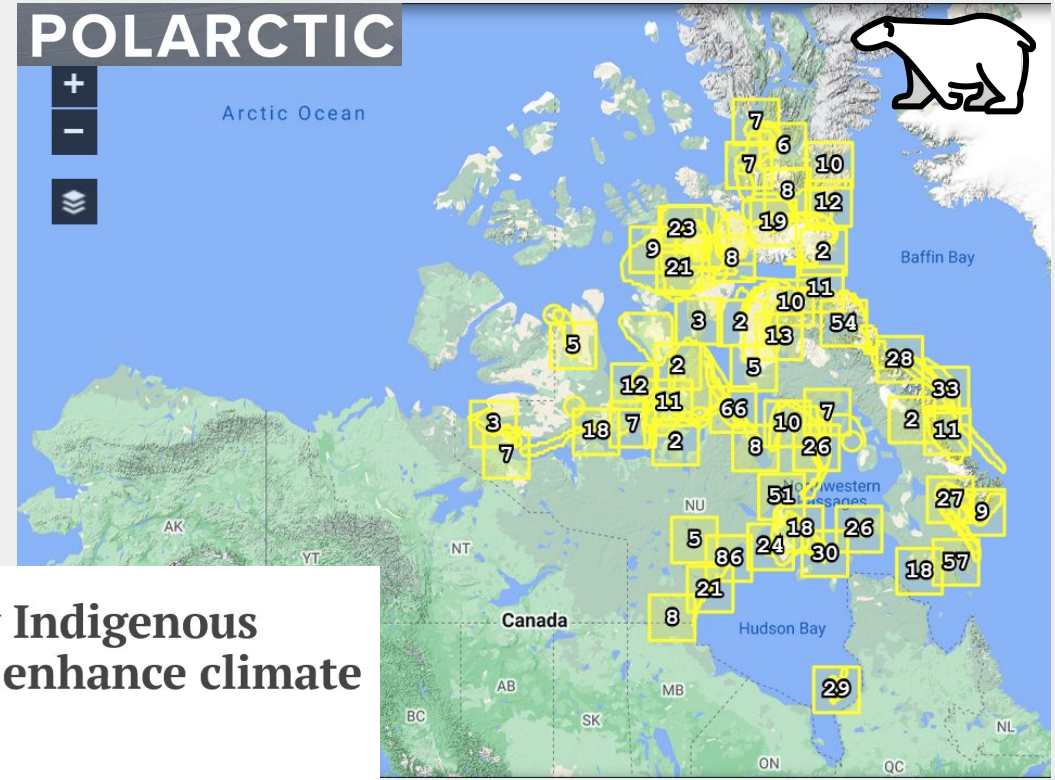
Operationalizing the CARE and FAIR Principles for Indigenous data futures

The CARE Principles speak to how scientific data are used in ways that are purposeful and oriented towards enhancing wellbeing of people.



https://www.nature.com/articles/s41597-021-00892-0

pack up the parachute: building ethical spaces



Partnerships, not parachutes: How Indigenous knowledge and citizen science can enhance climate research

By Chad Small | August 21, 2023

https://www.arcticwwf.org/the-circle/;
https://thebulletin.org/2023/08/how-indigenous-knowledge-and-citizen-science-can-enhance-climate-research/

ethical spaces require kindness

WORLD VIEW | 04 February 2020

People will not trust unkind science

A mean and aggressive research working culture threatens the public's respect for scientists and their expertise, says Gail Cardew.

Research culture must be kinder for all, not just royalty

Dr. Jaclyn A. Siegel
@jacasiegel

The next frontier in science reform is promoting kindness.

3:18 PM · Nov 15, 2021 · Twitter for iPhone

66 Retweets 12 Quote Tweets 492 Likes

Vittorio Iacovella
@V_Iacovella

Replying to @pcmasuzzo

From "A new kind of science" to "a new, kind science".

9:43 AM · Nov 16, 2021 · Twitter for Android

1 Retweet 5 Likes

> "A kinder research culture will build stronger, deeper support for research."

https://media.nature.com/original/magazine-assets/d41586-020-00269-0/d41586-020-00269-0.pdf;
https://media.nature.com/original/magazine-assets/d41586-019-03466-8/d41586-019-03466-8.pdf

the mission should be: leave no one behind

SUSTAINABLE DEVELOPMENT GOALS

https://en.unesco.org/science-sustainable-future/open-science/recommendation

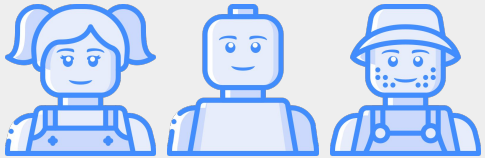
the mission should be: leave no one behind

SUSTAINABLE DEVELOPMENT GOALS

[...] open science should not only foster enhanced sharing of scientific knowledge solely among scientific communities but also promote inclusion and exchange of scholarly knowledge from traditionally underrepresented or excluded groups (such as women, minorities, indigenous scholars, scholars from less-advantaged countries and low-resource languages) and contribute to reducing inequalities in access to scientific development, infrastructures, and capabilities among different countries and regions...

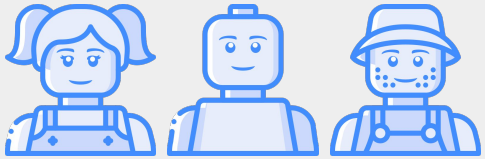
https://en.unesco.org/science-sustainable-future/open-science/recommendation

there's no open reform without inclusion

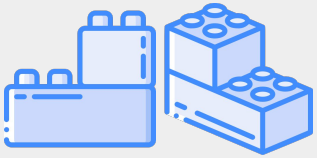


attract people
with different
background, skills,
and experiences,
but also: ask
culturally informed
research questions
that are relevant to
diverse populations

there's no open reform without inclusion

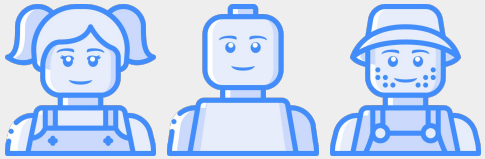


attract people with different background, skills, and experiences, but also: ask culturally informed research questions that are relevant to diverse populations

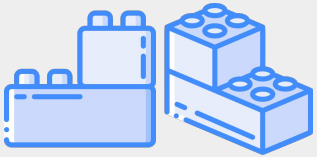


empower these people by providing them with an environment that welcomes the best of those backgrounds, skills, and experiences

there's no open reform without inclusion



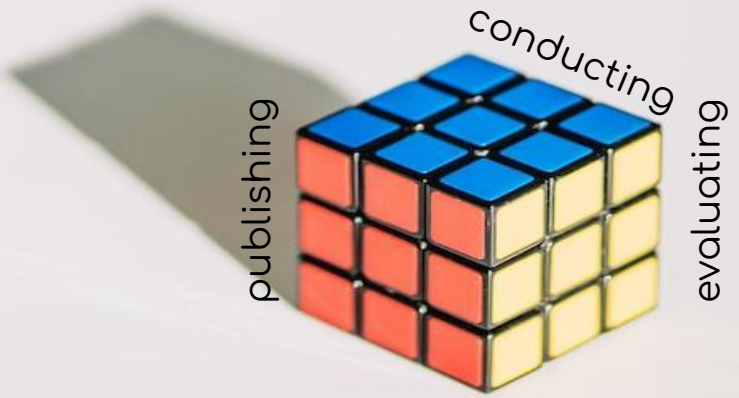
attract people with different background, skills, and experiences, but also: ask culturally informed research questions that are relevant to diverse populations



empower these people by providing them with an environment that welcomes the best of those backgrounds, skills, and experiences

include individuals or groups who were previously excluded, give them eligibility, opportunities, and involvement in decision-making and leadership, achieved when members share and not compete for resources

open science as a driver to change



Picture

open science as a driver to change

recognize that papers are not the only units of scientific knowledge

invest in community-driven tools and initiatives

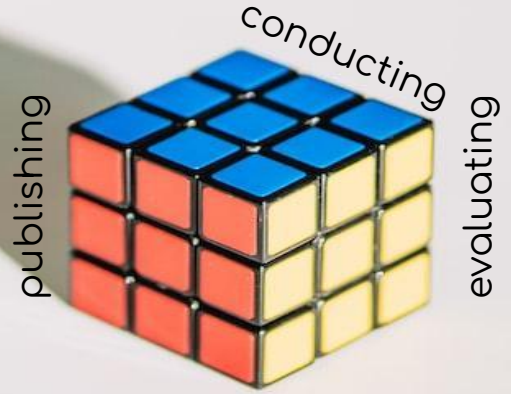
respect and nourish personal and institutional values

respect traditions and diversity of research groups and disciplines

redefine research excellence towards value

work towards collective liberation

Democratize access to open scholarship discussions, empower underrepresented researchers, and make science more equitable.



Picture

Science as a social institution with values and norms

Rewriting science through narratives of openness

Going rogue: living alternative spaces

Science is a big, fundamental, democratic matter.
It needs to find back its values, reaffirm its objectives, and design ethical spaces in which flourish and serve society.

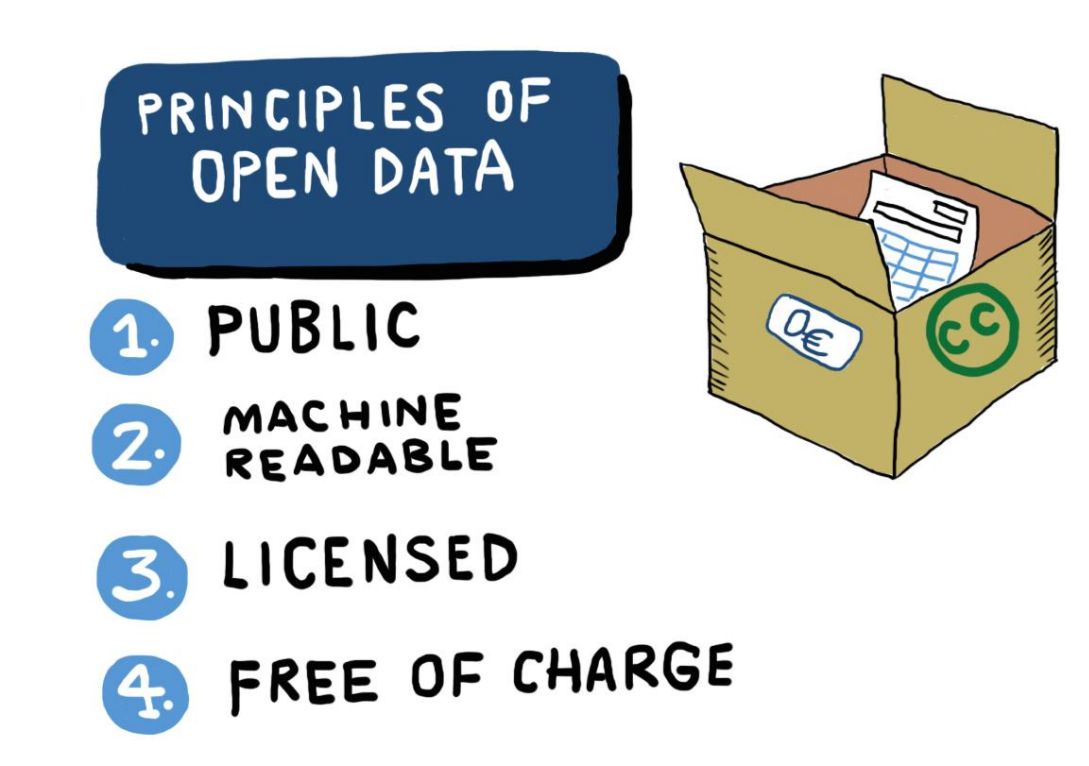
onData: open knowledge for an open society

onData

We promote the openness of public data to make them a common good for everyone, our values are the driving force behind our actions

https://www.ondata.it/

data: our passion and our tools



crowdsourcing
citizen science

advocacy and
lobbying

guides and tutorials
for the public

Picture

thinking of data as a common good

nData

Change lives. For good.
actionaid

TRANSPARENCY INTERNATIONAL ITALIA
Associazione contro la corruzione

dati bene comune

https://www.datibenecomune.it/

if data doesn't exist, people don't exist

Disabled Data

> **If we wanted to tell the story of disability through its data we would immediately find ourselves in a condition of disability, prevented from research, collection, analysis and processing due to structural and contextual barriers.** What are the structural and contextual barriers that limit access to disability data?

https://disableddata.fightthestroke.org/en/

if data doesn't exist, people don't exist

Disabled Data

If we wanted to tell the story of disability through its data we would immediately find ourselves in a condition of disability, prevented from research, collection, analysis and processing due to structural and contextual barriers. What are the structural and contextual barriers that limit access to disability data?

Sheldon. studio

nData

phenomenon of disability, and on the other hand, to support citizens in researching and understanding the data currently available, as described in Article 31, "Statistics and Data Collection", of the UN Convention on the Rights of Persons with Disabilities, approved by the General Assembly on 13 December 2006 and ratified by Italy with Law 18 of 3 March 2009. The data reported are **extracted** from ISTAT and

https://disableddata.fightthestroke.org/en/

talking about and understanding disability through its data

The dashboard

The dashboard stems from the desire to make data accessible and interpretable to all. The aim is to facilitate the consultation of existing statistics by means of a design that is also accessible to those without specific skills.

Go to dashboard

Disability in Italy, data at hand

Who are people with disabilities in Italy? What are their characteristics, and what disadvantages do they report respective to the rest of the population? How do they experience school life, free time, and work?

Go to the page

F.A.Q. and Methodology

Everything you always wanted to know about data on disability that you never dared asking.

Go to the page

https://disableddata.fightthestroke.org/en/

the unfulfilled promise of academia

[...] the enterprise of scientific research follows the logic of profit, [...] the division of scientific labor is oriented toward standardized production, measured in purely quantitative terms.
A university in which [...] inequalities are exacerbated by a competitive system that rewards the strongest and punishes the weakest, increasing social and territorial gaps

https://www.roars.it/il-malessere-e-la-retorica-delleccellenza-nelluniversita-neoliberale/

the academia I dream about

a safe harbor dedicated to the reappropriation and the free sharing of knowledge, in all its forms

Picture; new-academia

the academia I dream about

a safe harbor dedicated to the reappropriation and the free sharing of knowledge, in all its forms

an institution that can provide its researchers with the tools, time, and space they need to choose who they want to be, and how

Picture; new-academia

IGDORE: a new academia

IGDORE
Institute for Globally Distributed Open Research and Education

Institute for Globally Distributed Open Research and Education (IGDORE) is an independent research institute dedicated to improving the quality of science, science education, and quality of life for scientists, students and their families

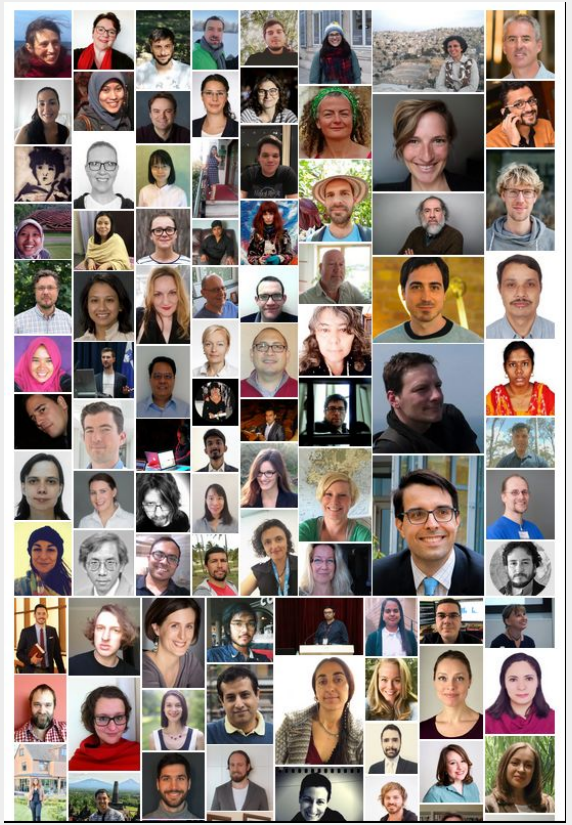
Governance

https://igdore.org/

IGDORE: a new academia

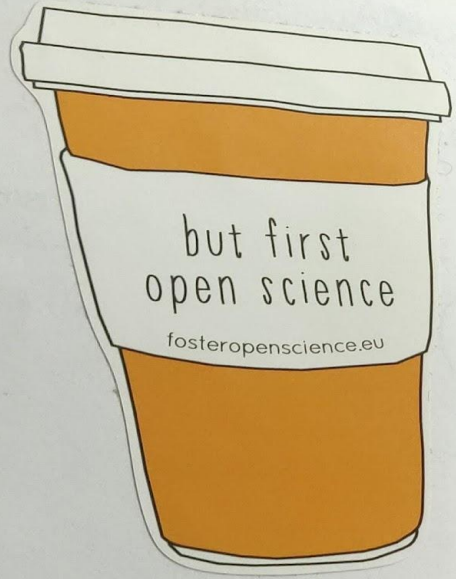
IGDORE
Institute for Globally Distributed Open Research and Education

Institute for Globally Distributed Open Research and Education (IGDORE) is an independent research institute dedicated to improving the quality of science, science education, and quality of life for scientists, students and their families

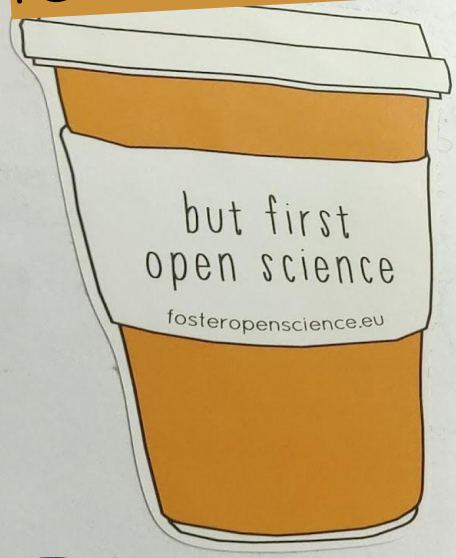


Governance

https://igdore.org/


but first
open science
fosteropenscience.eu

IGDORE Code of Research Conduct



IGDORE
Institute for Globally Distributed Open Research and Education

make their research articles available in an open manner (open access in all its nuances)

upon request, promptly provide data and other information necessary for independent verification of any publication in which they have been included as author(s)

https://igdore.org/wp-content/uploads/2022/07/IGDORE-Code-of-Research-Conduct.pdf

IGDORE promotes a slow and responsible scientific discourse

Affiliation

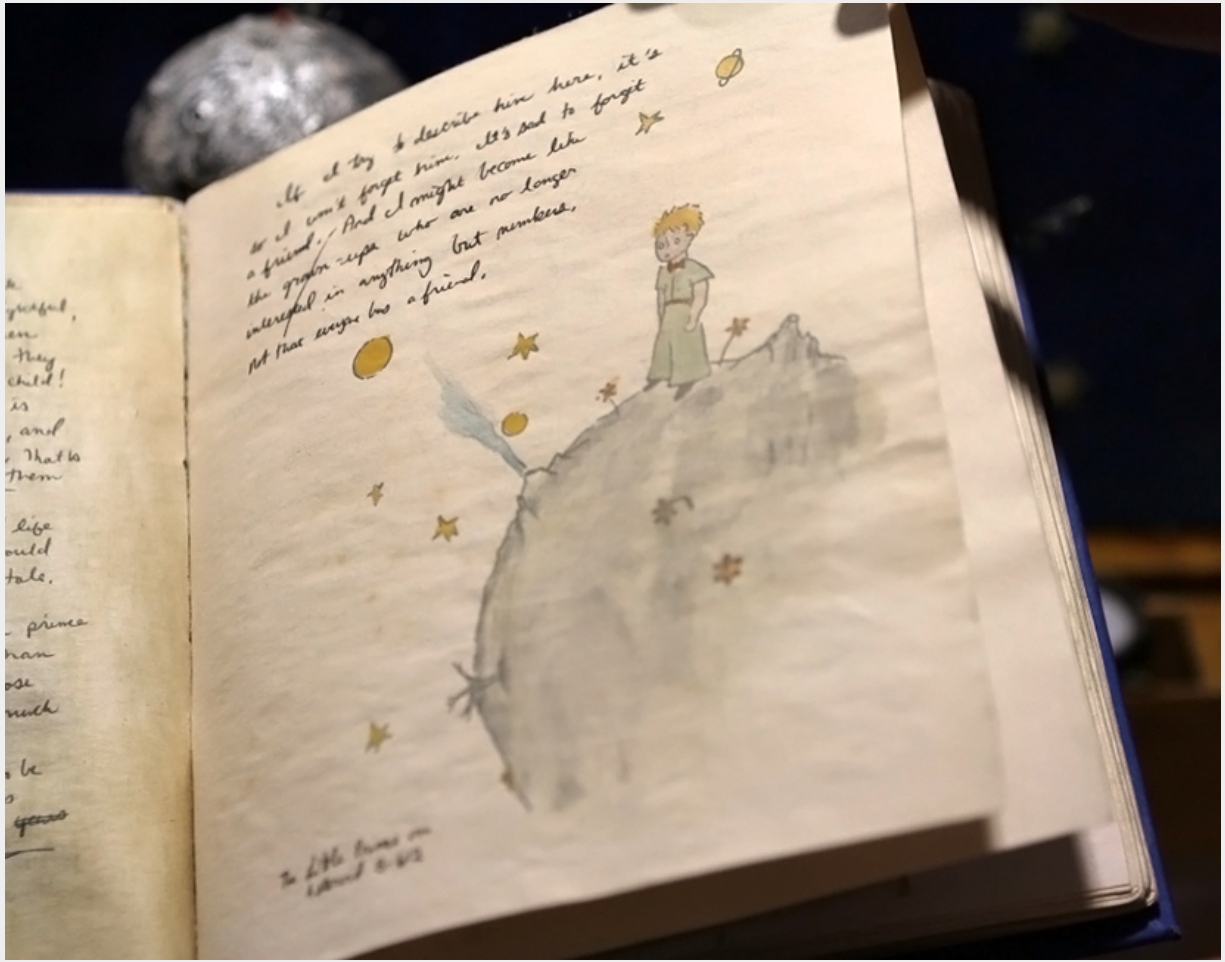
Researchers that can show proof of commitment[1] to our Code of Research Conduct, which emphasises open and replicable science, can become affiliated with IGDORE.

About On Science & Academia

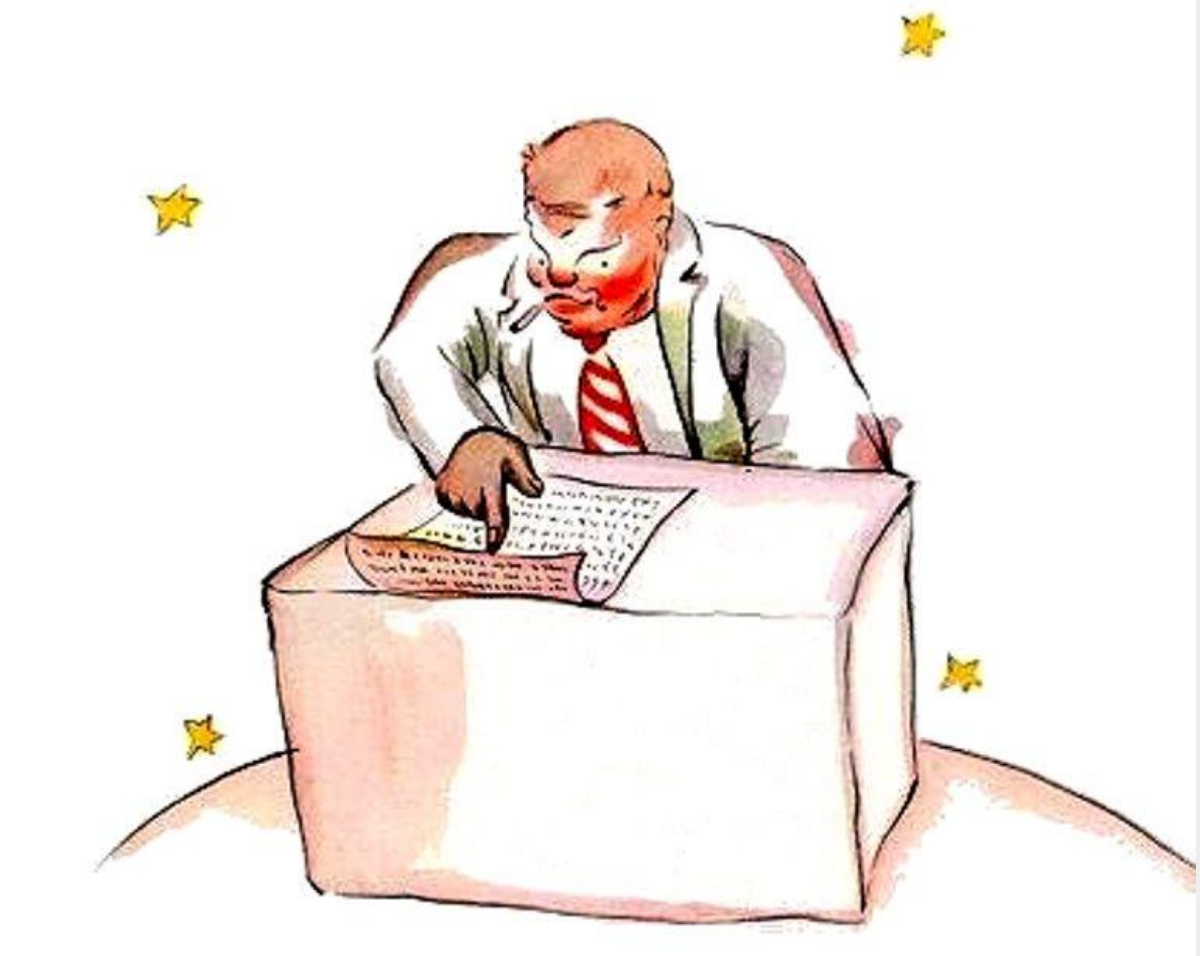
A place for researchers, students, and the science-interested public, to discuss good science; bad science; statistics; openness; academia.

Discourse

https://onscienceandacademia.org/

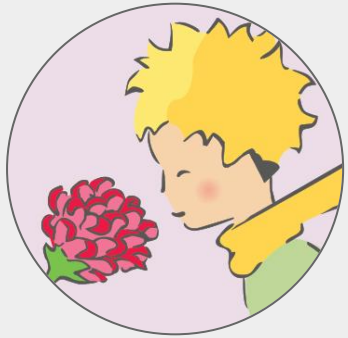


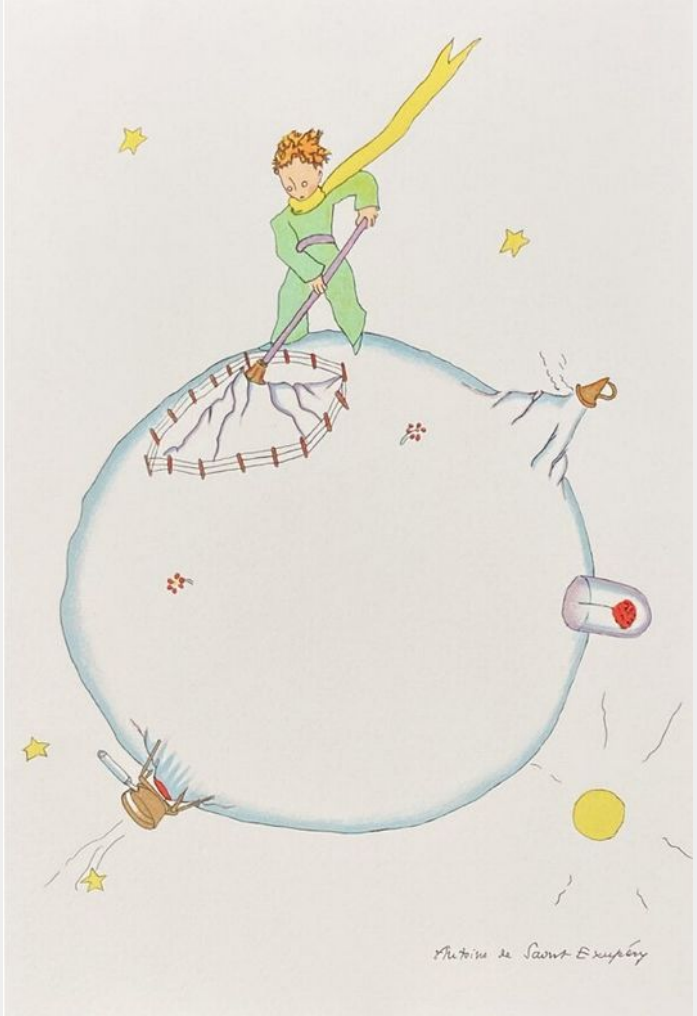
Artist impression of the original manuscript of The Little Prince. Credit: KPCC;
The little prince - Antoine de Saint-Exupéry



https://geecologist.org/2015/06/the-little-prince/; The little prince - Antoine de Saint-Exupéry

“I myself own a flower,” he continued his conversation with the businessman, “which I water every day. I own three volcanoes, which I clean out every week (for I also clean out the one that is extinct; one never knows). It is of some use to my volcanoes, and it is of some use to my flower, that I own them. But you are of no use to the stars...”





The little prince - Antoine de Saint-Exupéry

THANK YOU!

Questions?
You can always email me at
paola.masuzzo@gmail.com