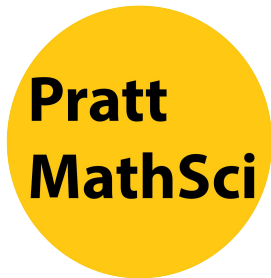
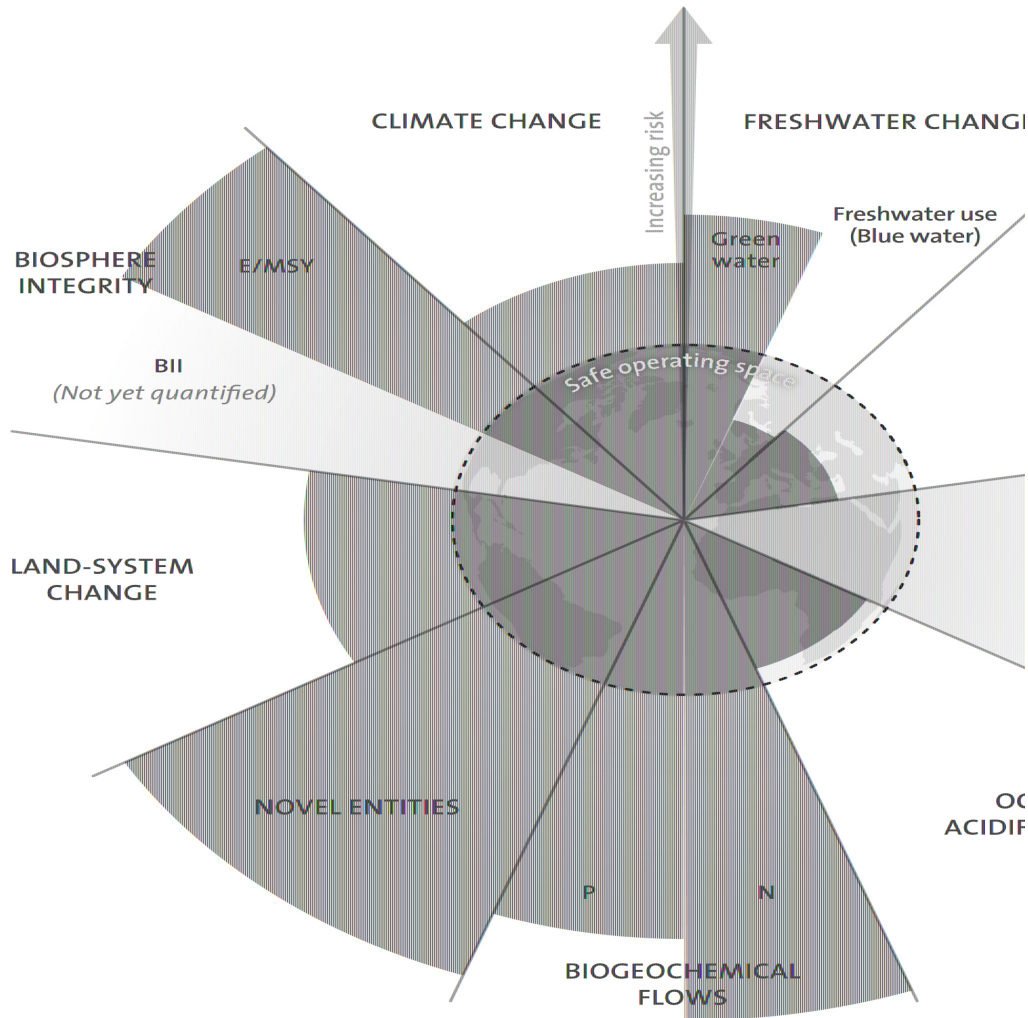


Values and Science Matter: Perspectives on Creating a Sustainable Society



Chris Jensen

Department of Mathematics & Science



Our current impact on Earth systems is unsustainable

Steffen, W., K. Richardson, J. Rockström, S.E. Cornell, et.al. 2015. Planetary boundaries: Guiding human development on a changing planet. *Science* 347: 736, 1259855

But what *ought* we do about it?

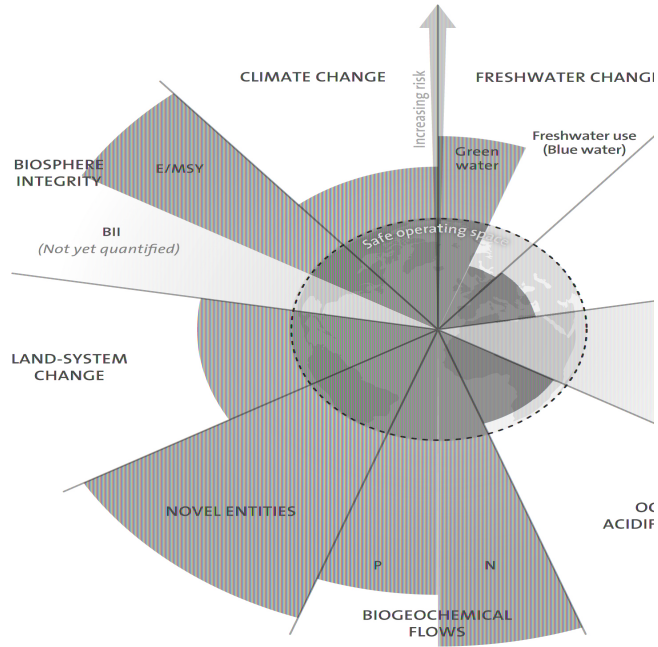
Proposals for what we ought to do about our current impact on Earth Systems

sometimes based on...

science

always based on...

values



On the small slips of paper provided...

**Write down a single
proposal for how we *ought*
to reduce our impacts on
Earth systems**

Write down as many solutions (one per paper) as you can in the time provided (~ 5 min)

Now, please...

**Wad up each of your
proposals into a small ball
and throw it across the
room**

Let go of your proposals! Send them flying around the room!

Now, finally...

**Collect up the wadded-up
proposals around you,
open and read each one**

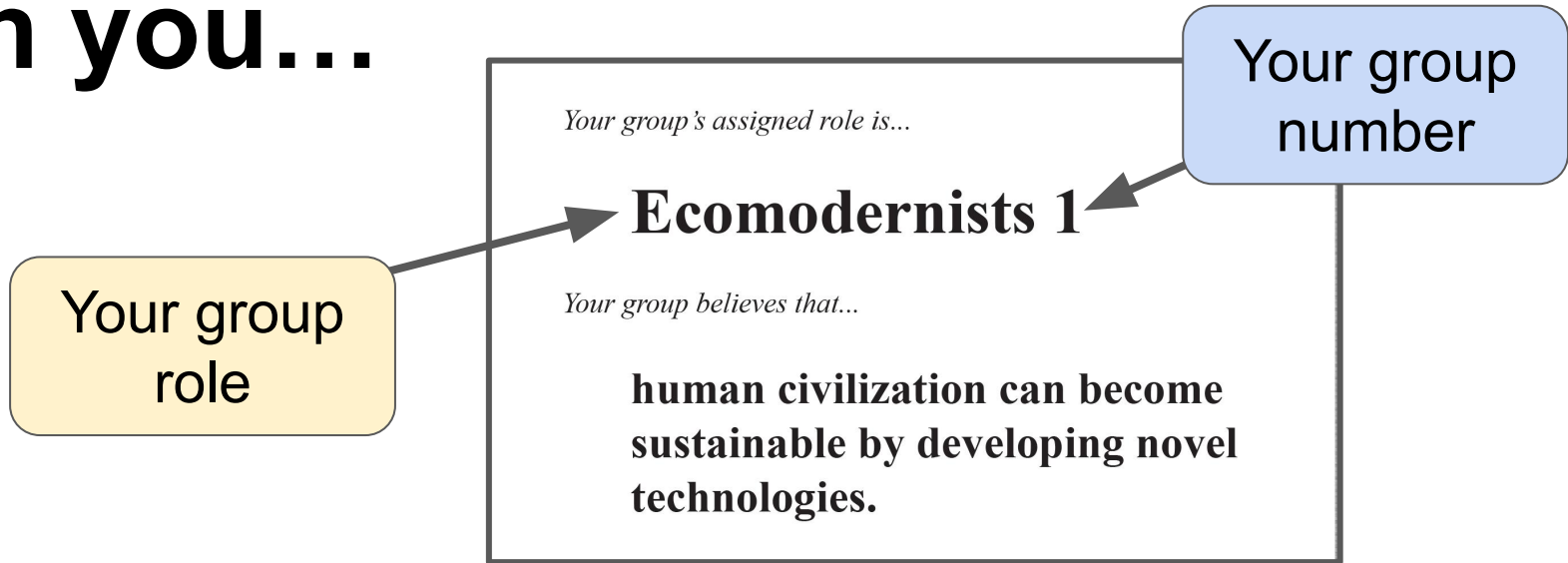
But be equitable! Share the proposals around you with the people around you!

**Can we have some volunteers
to read aloud a proposal they
collected?**

What values seem to underlie this proposal?

What scientific evidence might support this proposal?

Please join your group, taking the proposals you collected with you...



The 4 roles I am assigning you...

Your group's assigned role is...

Population Bombers

Your group believes that...

**overpopulation is the root cause
of our unsustainable lifestyles.**

Your group's assigned role is...

Neo-Luddites

Your group believes that...

**technology is the root cause of
our unsustainable lifestyles.**

Your group's assigned role is...

Deep Ecologists

Your group believes that...

**a failure to respect nature's
right to exist is the root cause of
our unsustainable lifestyles.**

Your group's assigned role is...

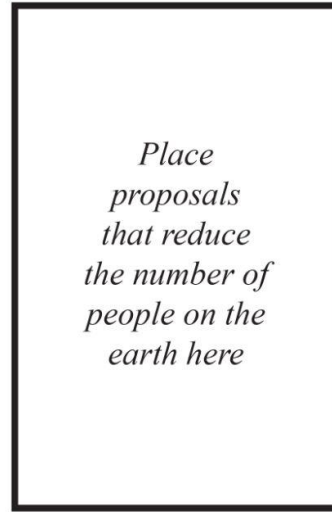
Ecomodernists

Your group believes that...

**human civilization can become
sustainable by developing novel
technologies.**



*Categorize
your proposals
by putting
them in the
spaces to the
right*



$$\mathbf{I} = \mathbf{P} \times \mathbf{A} \times \mathbf{T}$$

“Impact”

Total impact of
humans on natural
systems
 (“ecological impact”)

“Population”

Number of humans on
the earth
(*unit* = total number
of people)

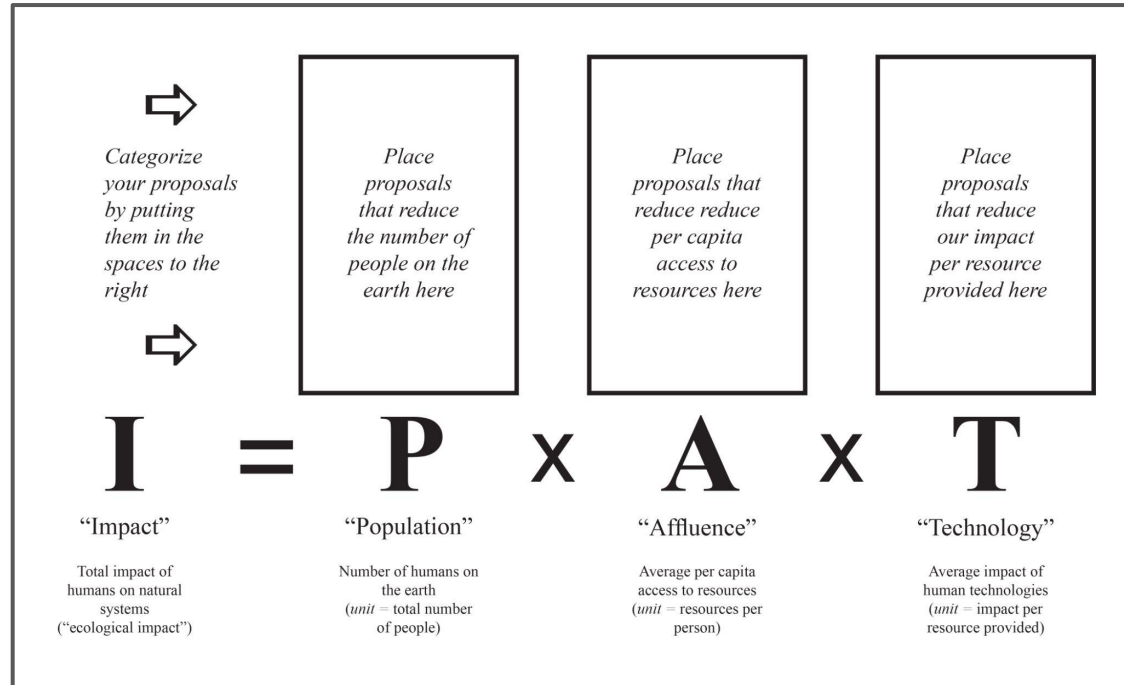
“Affluence”

Average per capita
access to resources
(*unit* = resources per
person)

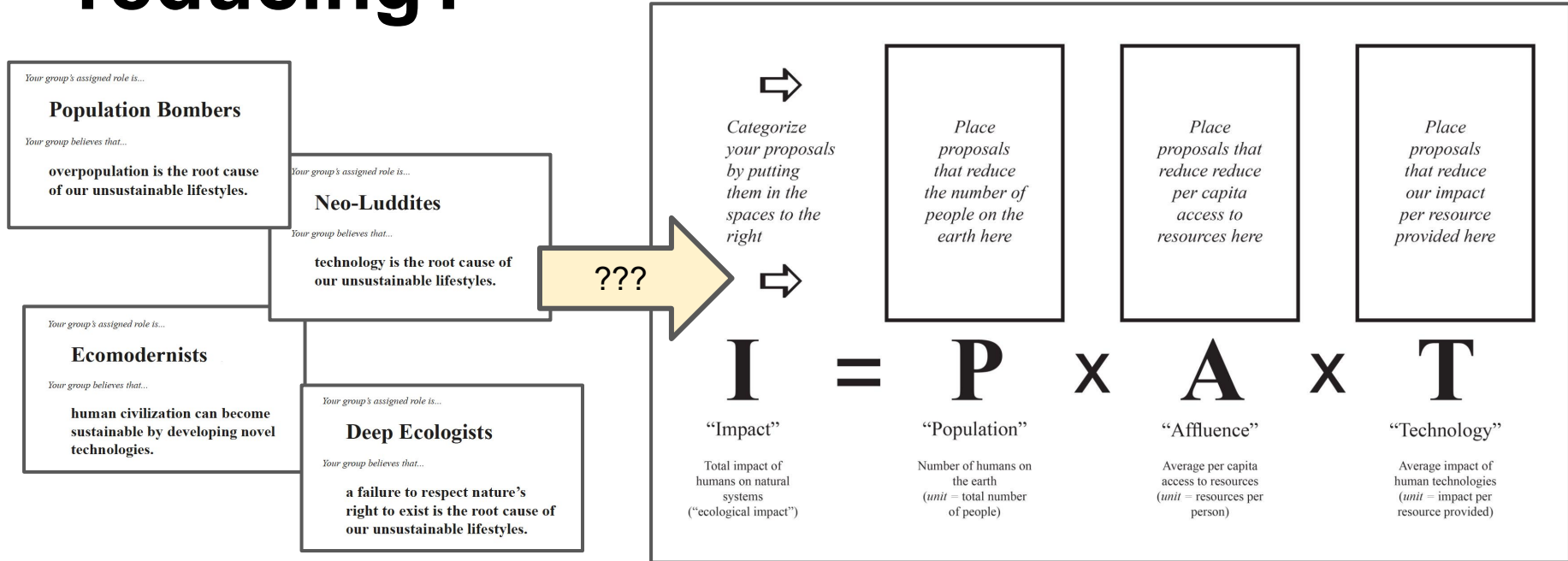
“Technology”

Average impact of
human technologies
(*unit* = impact per
resource provided)

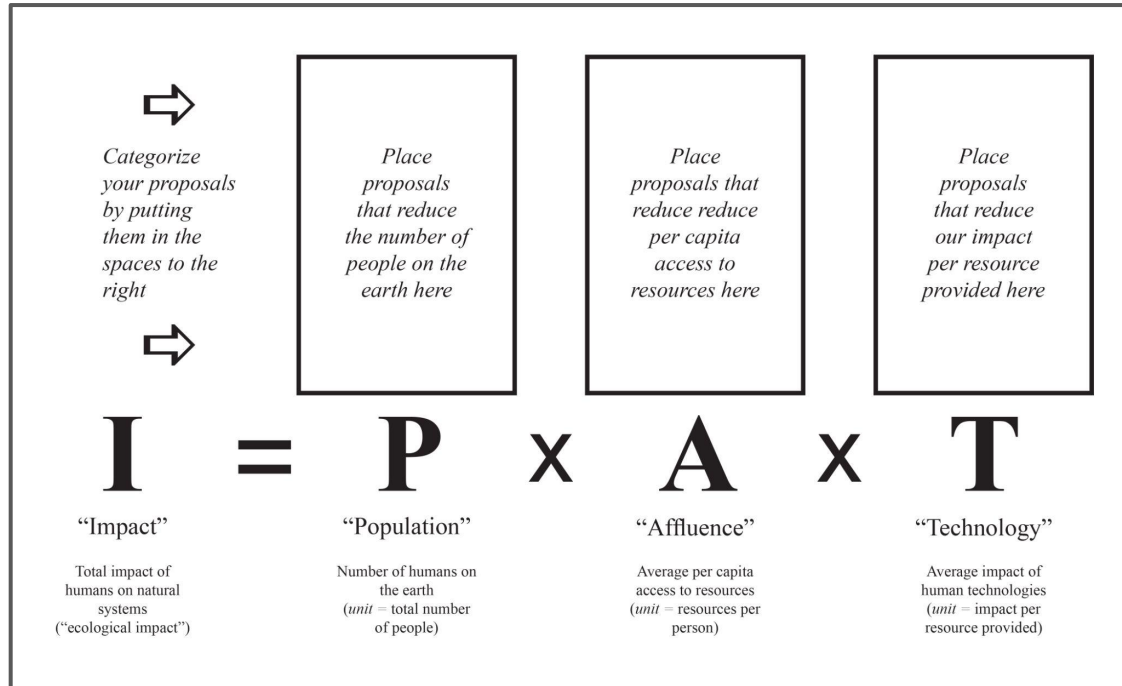
Please categorize your proposals based on what factor they reduce...



Which of these factors does your assigned perspective focus on reducing?



Add some more proposals that are in line with your assigned perspective...



What values underlie your assigned perspective?

Is your assigned perspective supported by scientific evidence?

Your group's assigned role is...

Population Bombers

Your group believes that...

**overpopulation is the root cause
of our unsustainable lifestyles.**

Your group's assigned role is...

Neo-Luddites

Your group believes that...

**technology is the root cause of
our unsustainable lifestyles.**

Your group's assigned role is...

Deep Ecologists

Your group believes that...

**a failure to respect nature's
right to exist is the root cause of
our unsustainable lifestyles.**

Your group's assigned role is...

Ecomodernists

Your group believes that...

**human civilization can become
sustainable by developing novel
technologies.**

Summarizing our experience...

How well do your own values align with your assigned perspective?

Do any of these perspectives align with your values? Is some hybrid of these perspectives a better representation of your values?

Questions or comments on...

The content of this activity?

*The teaching approach of
this activity?*