Collaborating with Communities on Climate Change Decision-Making

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Adapting to Climate Change in the Mid-Atlantic
24 March 2010

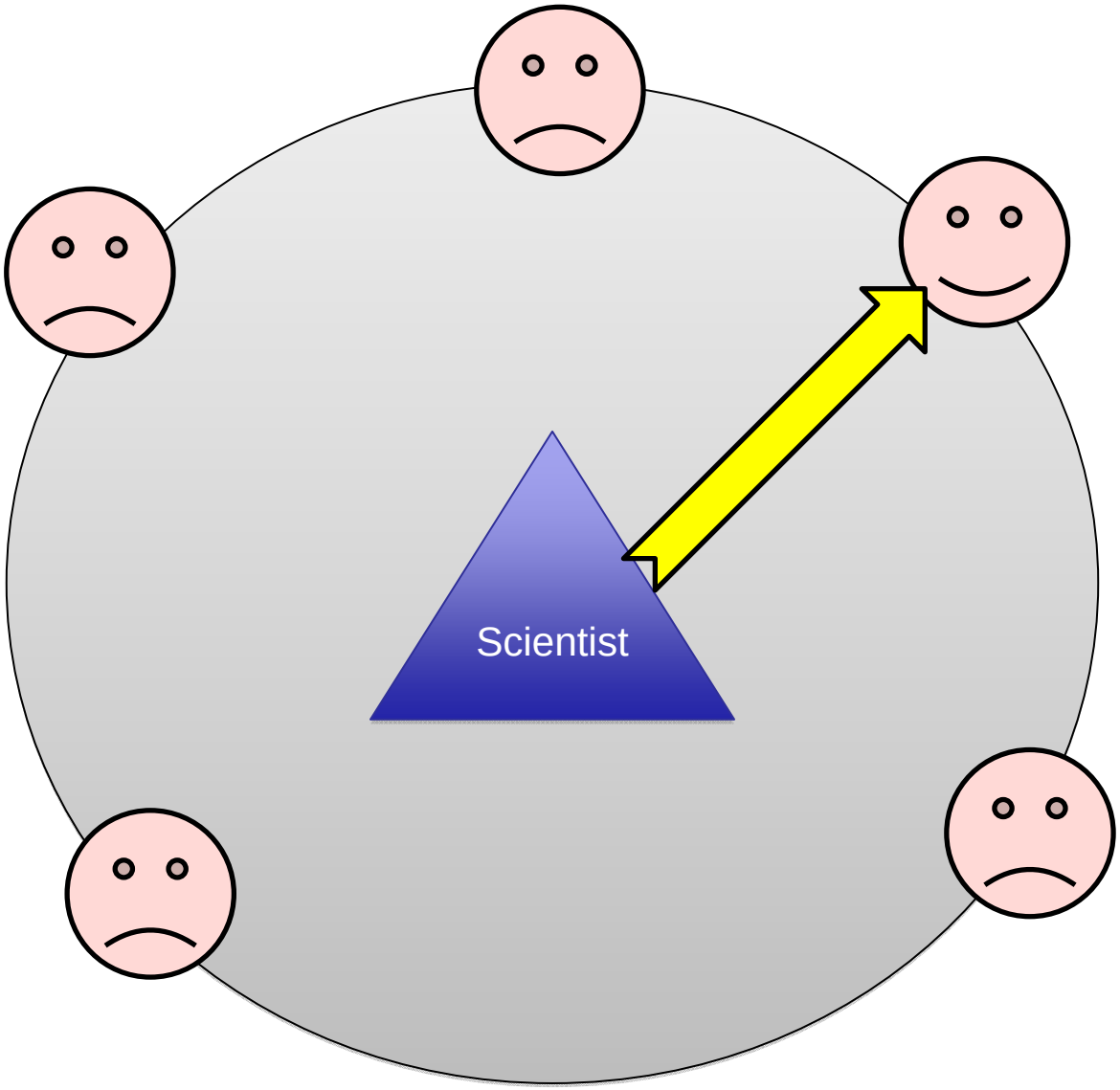
Outline

Goal: Present rationale and methods of a case-study community collaboration process

- Reflections on two common approaches to communicating science, and their limitations
- A different approach, and how it works
- Some observations and tools from research on communication, learning, and decision-making

What is effective science communication?

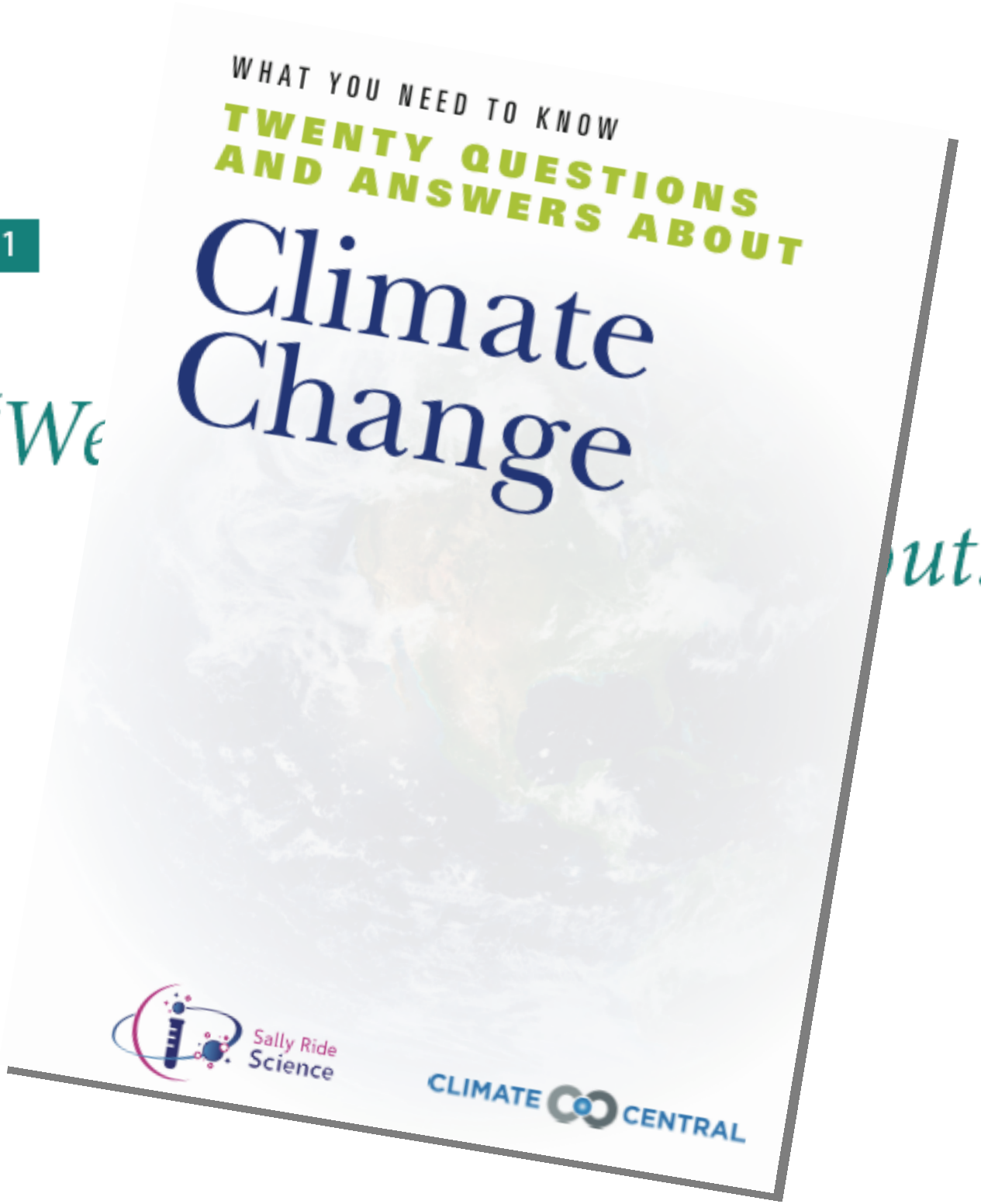
Direct Dissemination Approach



Assumption 1

"We

ut."



GLOBAL WARMING'S SIX AMERICAS 2009:

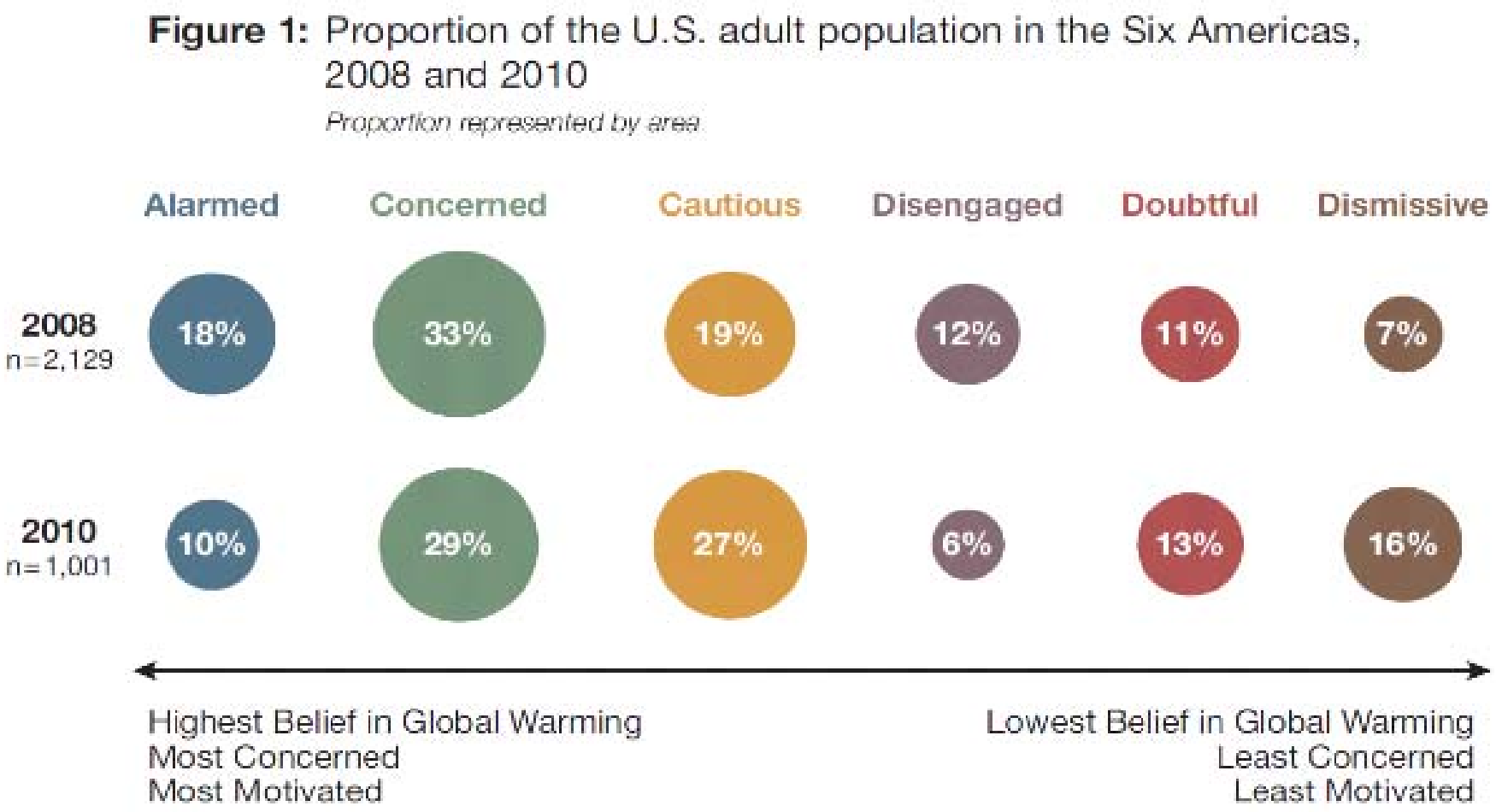
An Audience Segmentation Analysis

YALE PROJECT ON CLIMATE CHANGE

4C

George Mason University
Center for Climate Change Communication

Six Americas: The Belief Profile



Understanding Others: Values' Effect

Why is the American public still divided about global warming?

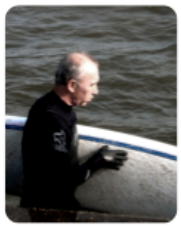
Don't they understand that 99% of scientists agree?

Are they just ignorant of the facts?

"If you do not want your energy rationed, your lifestyle and your sovereignty sacrificed, the time to react is ***now!***"

"If divergent values are the defined problem, what's the ion?"

GREENEST AMERICANS



9% of adults, 4% of voters
35% make $100k+
49% have post grad degree
25% are 65+ years of age
89% Caucasian
93% very likely to vote
68% rank global warming as one of the most important issues

Values to Tap
Ecological Concern
Comfort with Ambiguity
Civic Engagement
Global Consciousness

Values to Avoid
National Pride
American Entitlement
Confidence in Big Business

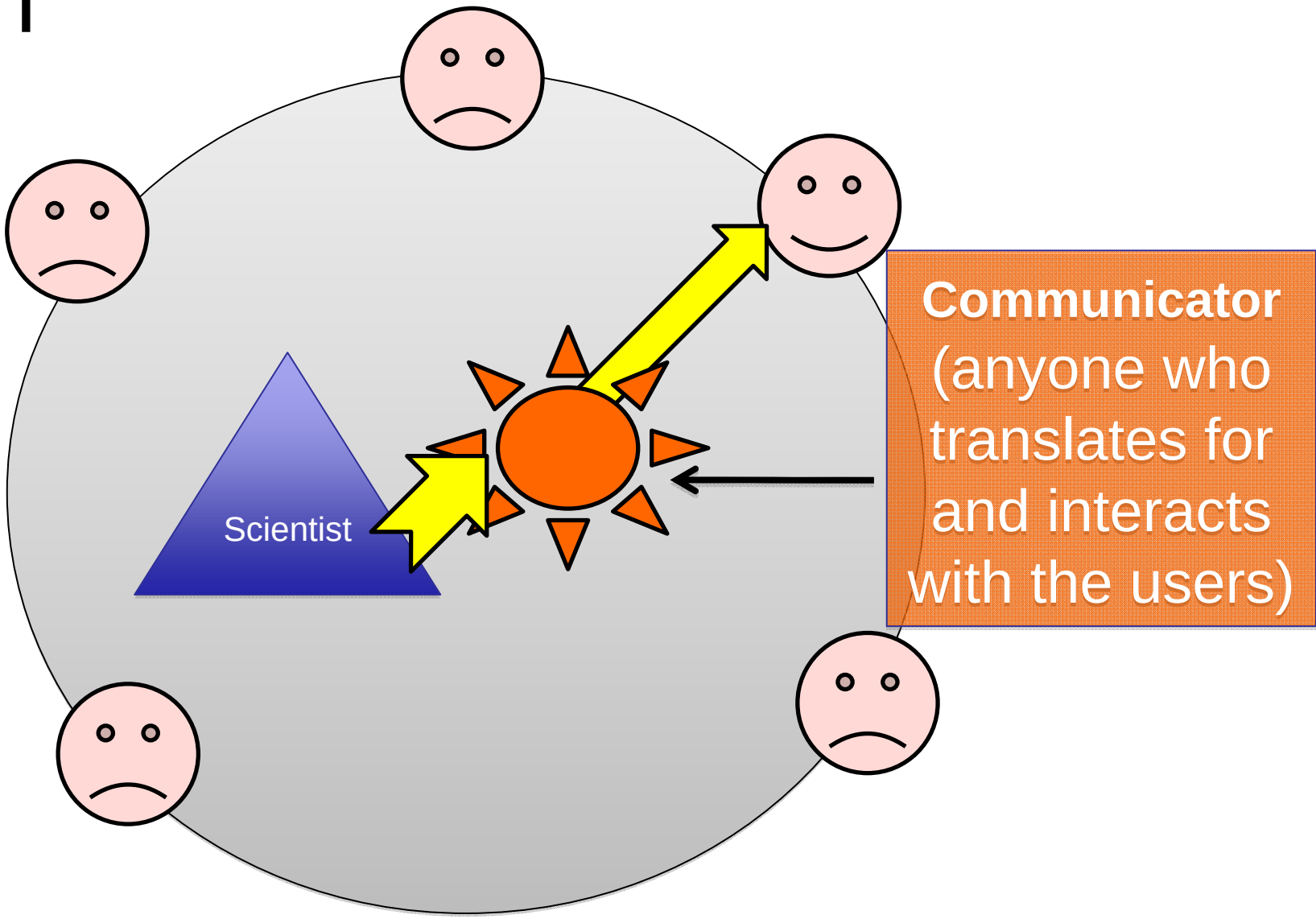
About the Greenest Americans:
The Greenest Americans represent the 9% of the public who are the most politically engaged and supportive of environmental causes. These affluent, highly educated Americans can often afford to make green consumer choices, including renovating their homes to include green features. Given most of the Greenest Americans can be found in the later stages of behavior change, it is possible to engage this group in the political process as well as to provide incentives for this group to continue to move to carbon-neutral lifestyles.

Tips:
The Greenest Americans are the most informed about global warming yet even they need help determining the most effective ways to address it. Create tools that help the Greenest Americans measure and reduce their carbon footprint such as consumer guides and carbon calculators. Ask the civically-minded Greenest Americans to be community leaders by reaching out and helping to engage their neighbors, families, and friends.

Sample framing:
We know you do your part. You recycle, save energy, try to drive less. Now global warming is calling us to do more. It impacts every other environmental issue you care about and other concerns from energy to the economy. We have a responsibility in the United States to act as a leader by creating new laws that limit carbon and other greenhouse gas emissions and by investing in clean energy technologies. Your effort to save energy at home is important too. Learn more about how you can take advantage of tax and cash incentives to make even more efficiency improvements.

"We know you do your part. You recycle, save energy, try to drive less. Now global warming is calling us to do more . . . "

Indirect Transmission/Persuasion Approach




Transmission or persuasion:
Is that all there is?
Are options available for communicating and moving others toward the goal of climate-change readiness?

Communication is 2-way; it negotiates mental models

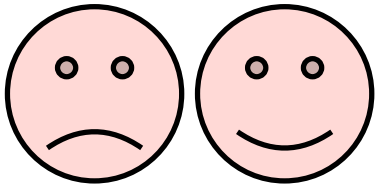
- Model of reality

model

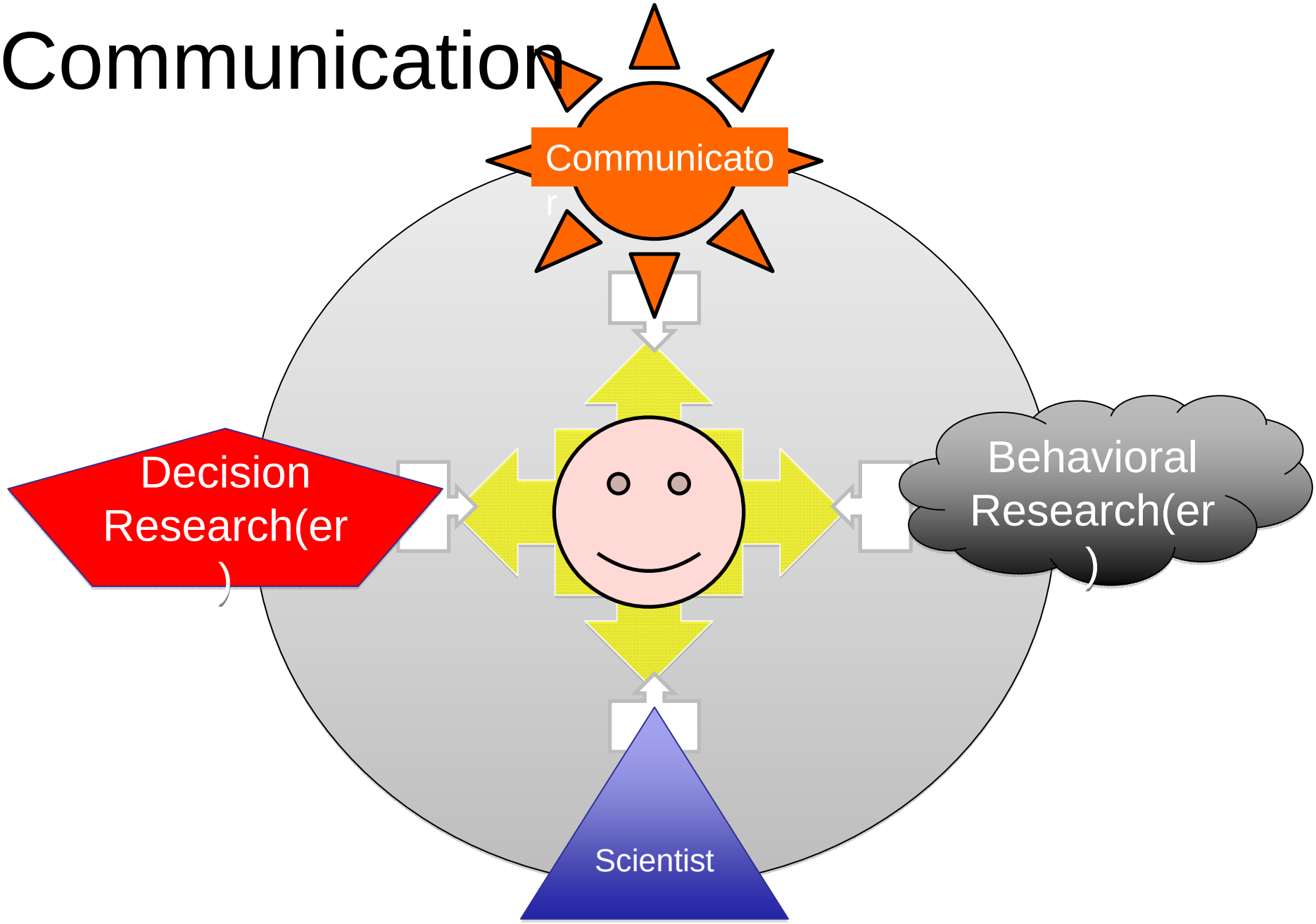
Why make the effort to understand others? Give me two good reasons.

1. Effectiveness: You handicap yourself by not knowing what the other understands and cares about.

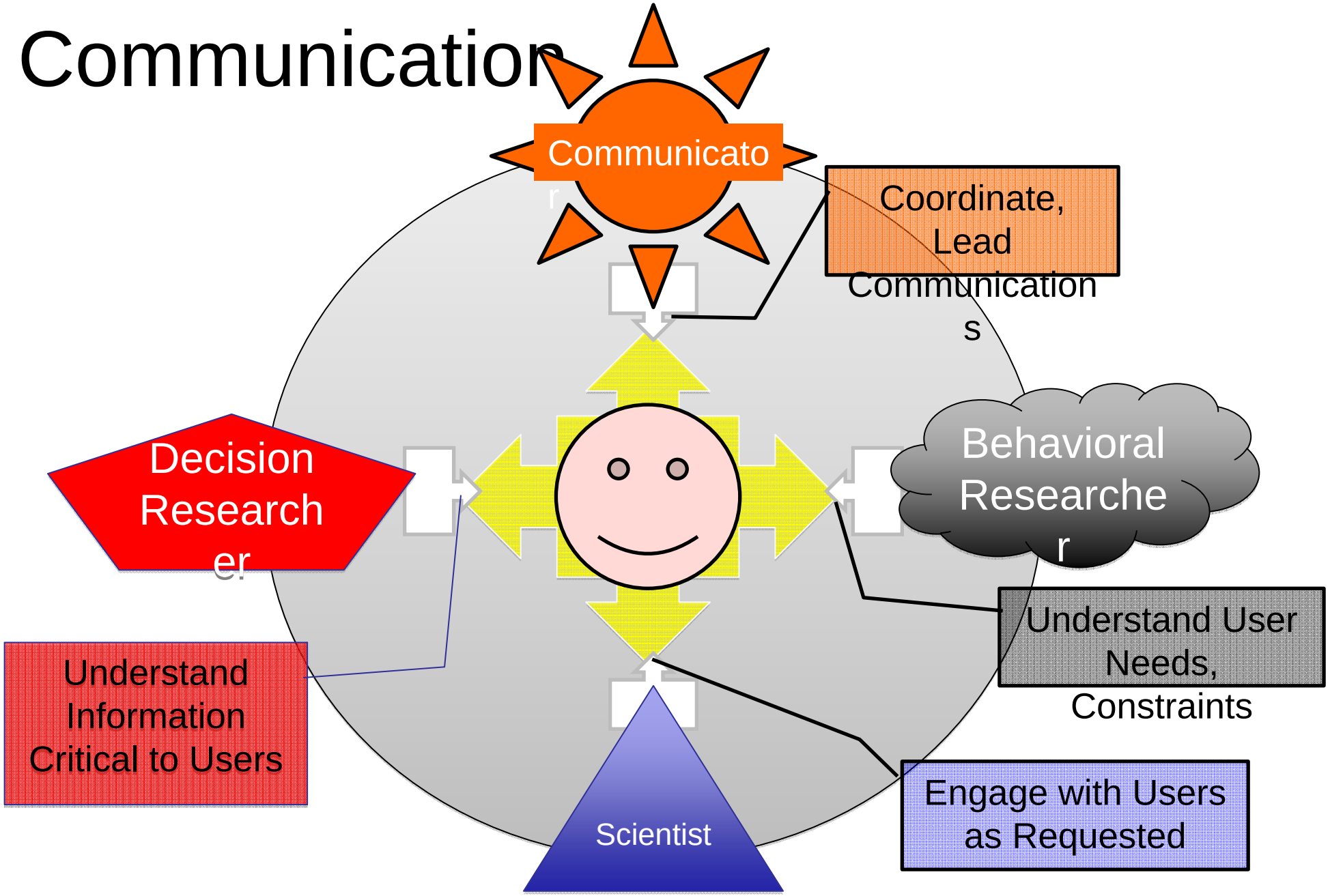
2. Courtesy: Promotes reciprocity



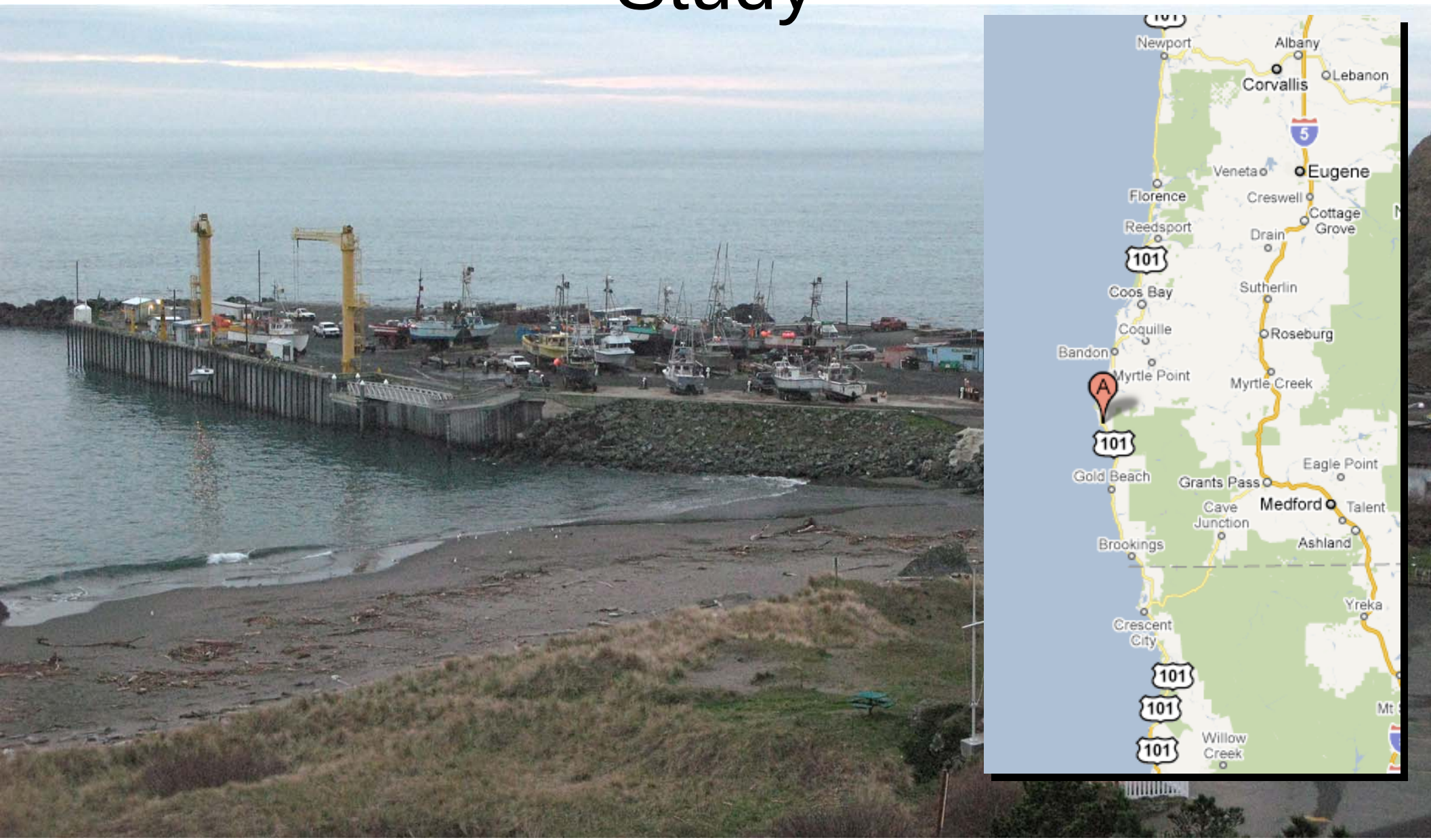
User-Centered Science Communication

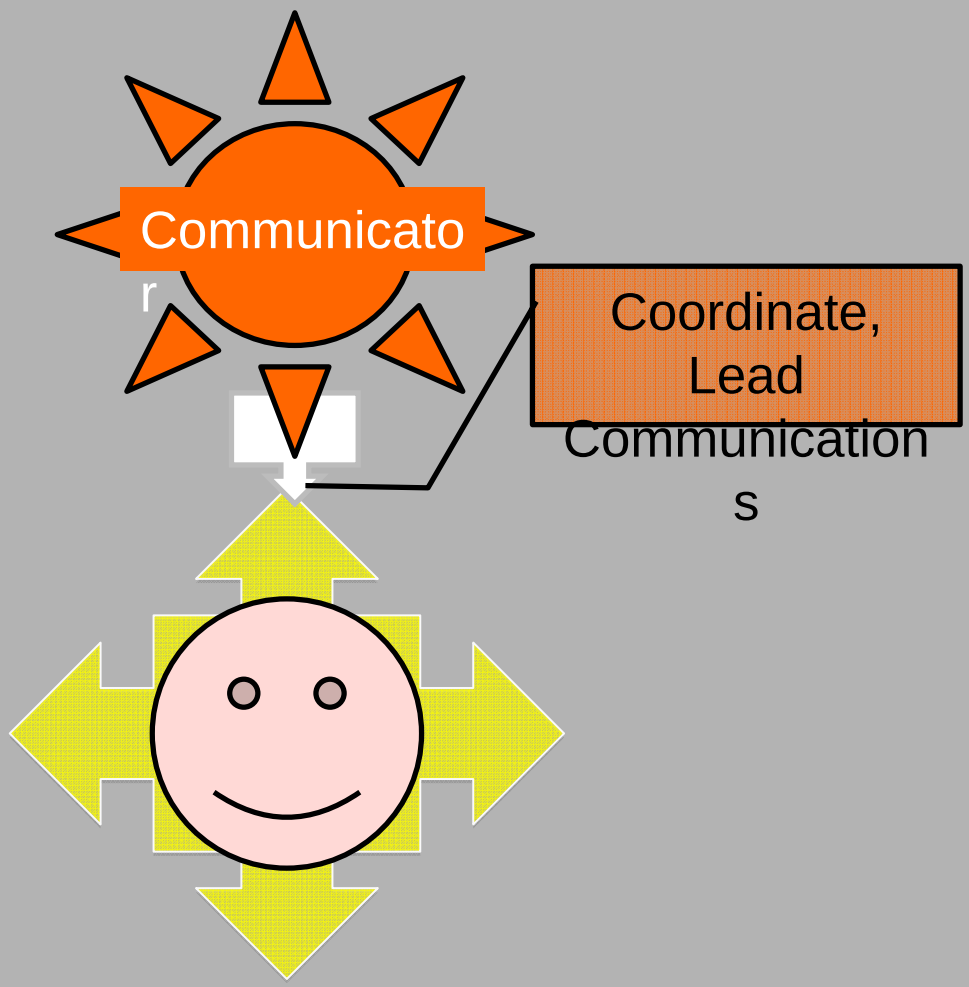


User-Centered Science Communication



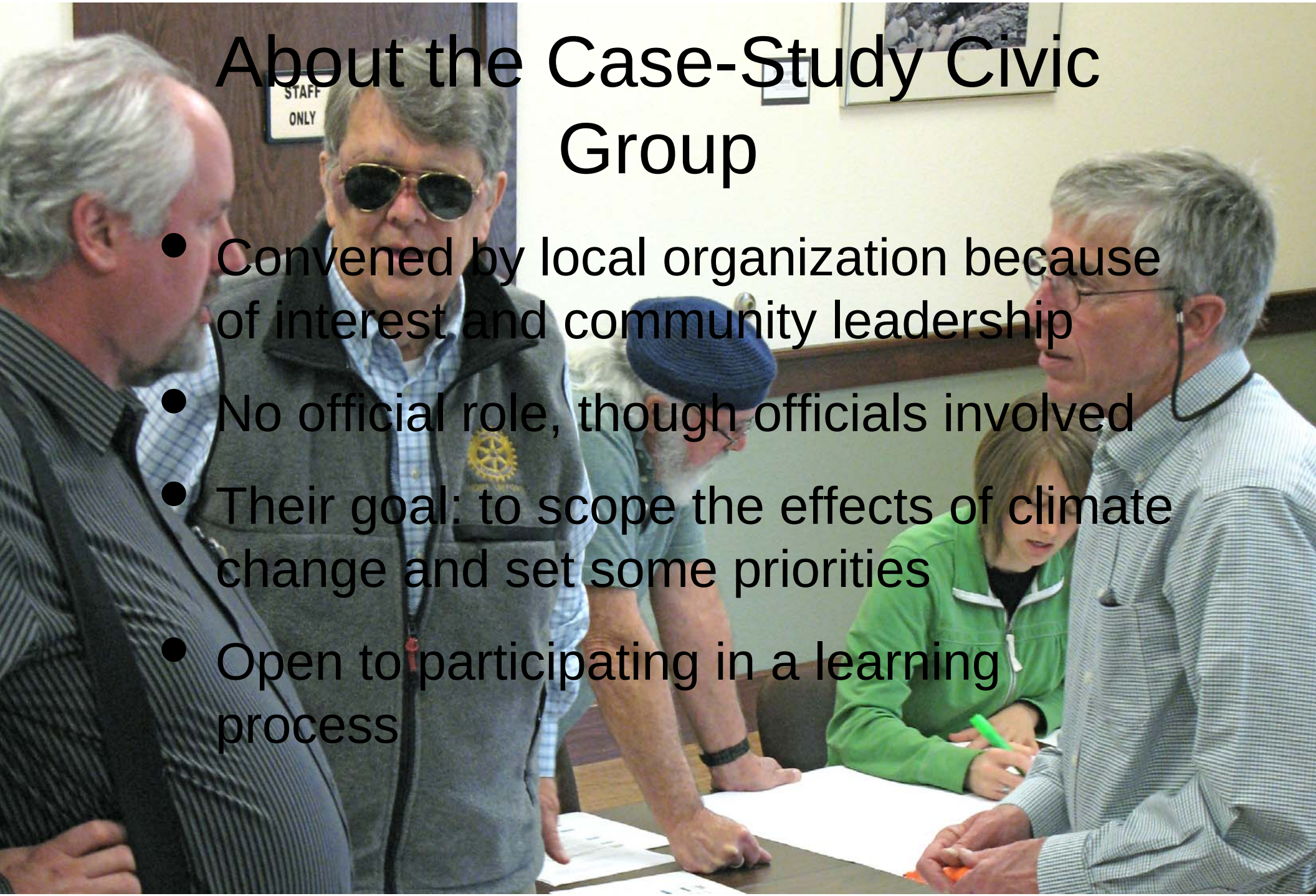
Port Orford, Oregon, Case Study




Communicato
r
Coordinate,
Lead
Communication
s

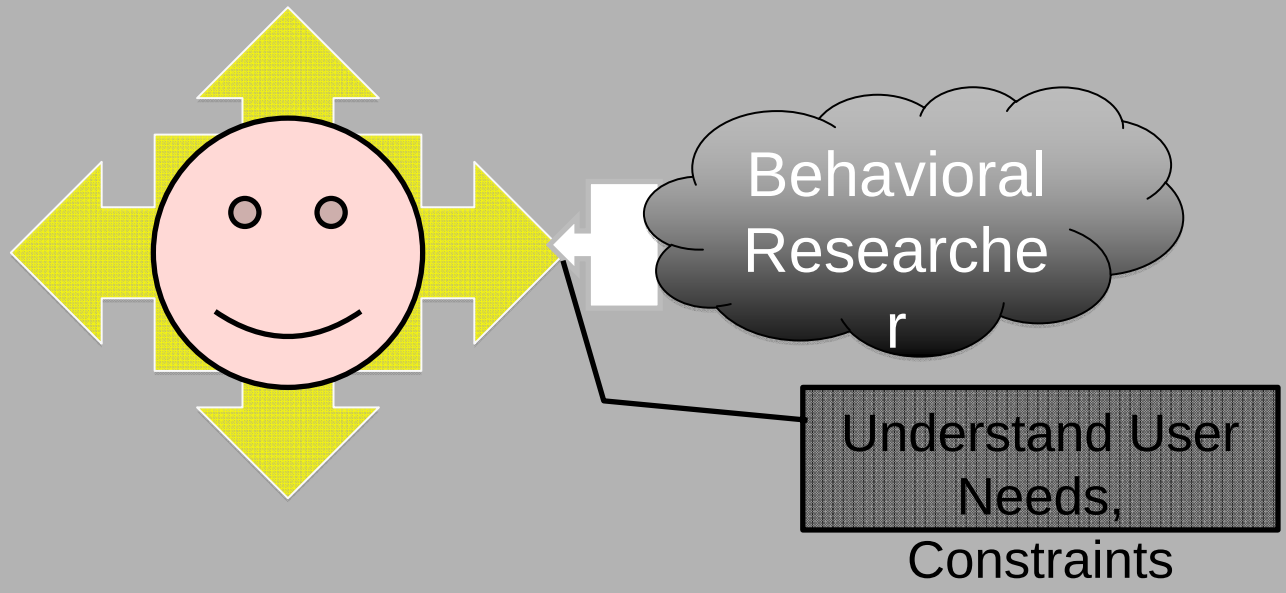
Case Study Community Selection

- An **existing community organization** with a good reputation
- The organization **able to convene** community participants
- Constructive **working relationships** with university and team members
- Apparent **trust** and goodwill between the parties
- Participation of **manageable** size and complexity



About the Case-Study Civic Group

- Convened by local organization because of interest and community leadership
- No official role, though officials involved
- Their goal: to scope the effects of climate change and set some priorities
- Open to participating in a learning process


Behavioral Researcher
Understand User Needs, Constraints

Empirical research: What? Who?

- Mental models interviews
  - Analyze
- Focus/ other groups
  - Analyze
- Survey
  - Analyze

Pre-Survey: Needs, Constraints

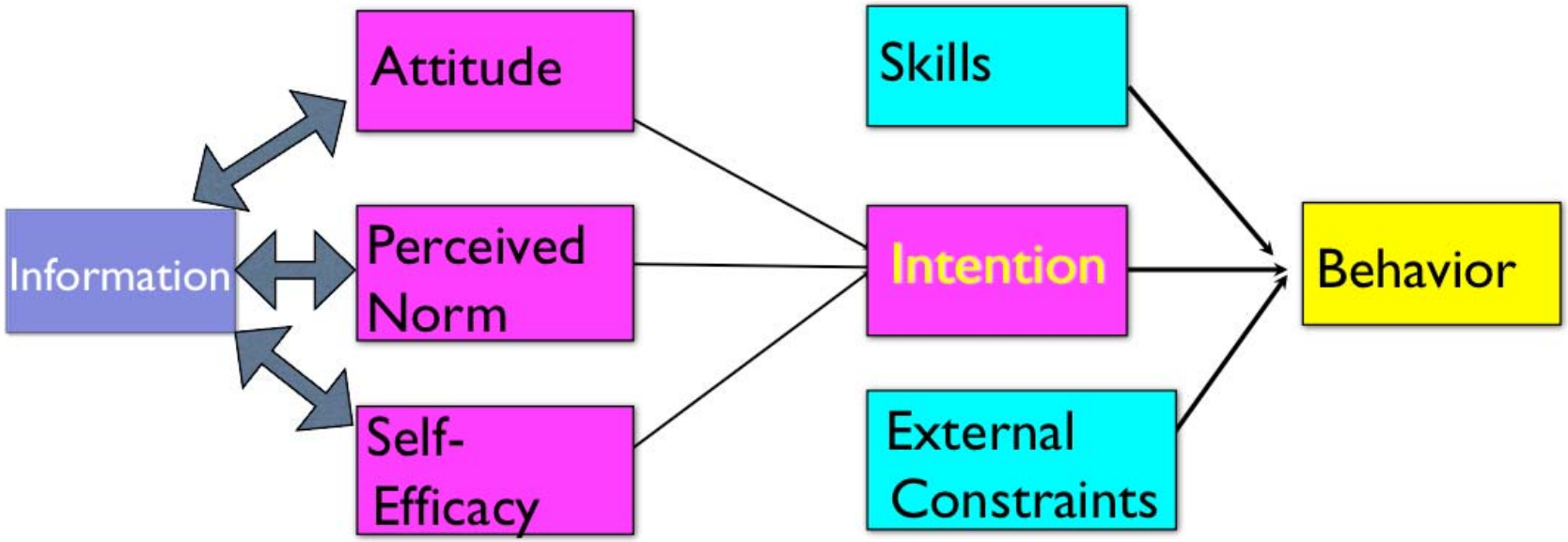
9. Please indicate your level of agreement with each of the following statements about responding or adapting to climate change effects at the Oregon coast, as it involves your work.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	No opinion	Response Count
I already have a full load of activities and can't add another.	0.0% (0)	12.5% (1)	**62.5% (5)**	25.0% (2)	0.0% (0)	0.0% (0)	8
I don't have enough information about how climate change may affect my work (such as the resources, areas, or community infrastructure within my responsibility).	0.0% (0)	12.5% (1)	25.0% (2)	**62.5% (5)**	0.0% (0)	0.0% (0)	8
I know of no authoritative sources for climate information in Oregon.	0.0% (0)	**50.0% (4)**	25.0% (2)	25.0% (2)	0.0% (0)	0.0% (0)	8
I don't believe climate change requires action from me in the next year or two.	25.0% (2)	**62.5% (5)**	0.0% (0)	12.5% (1)			8
I'm not hearing any urgency about local climate change effects from those who influence or assign my work.	0.0% (0)	0.0% (0)	25.0% (2)	**75.0% (6)**			8
I'm not hearing any urgency about local climate change effects from those who influence me OUTSIDE OF WORK.	0.0% (0)	**37.5% (3)**	25.0% (2)	**37.5% (3)**			8
No other coastal community like mine anywhere in the United States is addressing climate change in a significant way.	0.0% (0)	**50.0% (4)**	25.0% (2)	12.5% (1)	0.0% (0)	12.5% (1)	8
I'd be willing to take action in my work if I had compelling information	0.0% (0)	0.0% (0)	12.5% (1)	**87.5% (7)**	0.0% (0)	0.0% (0)	8

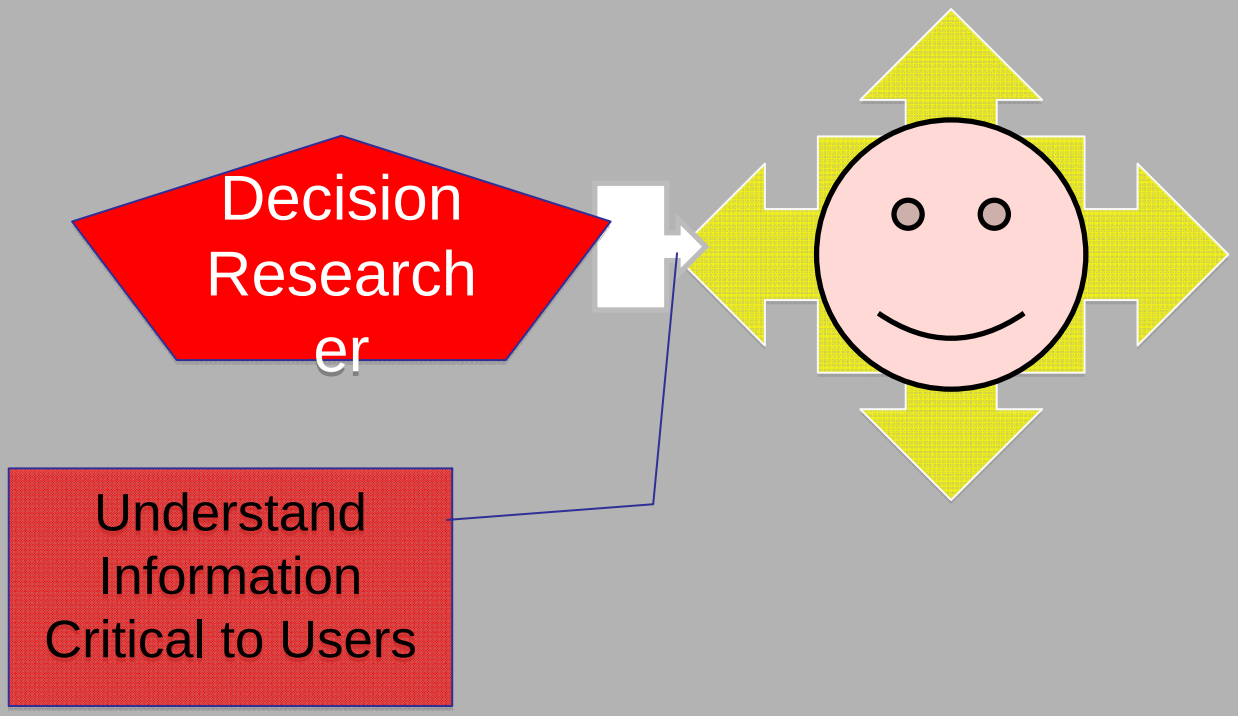
75% - "No urgency" at work

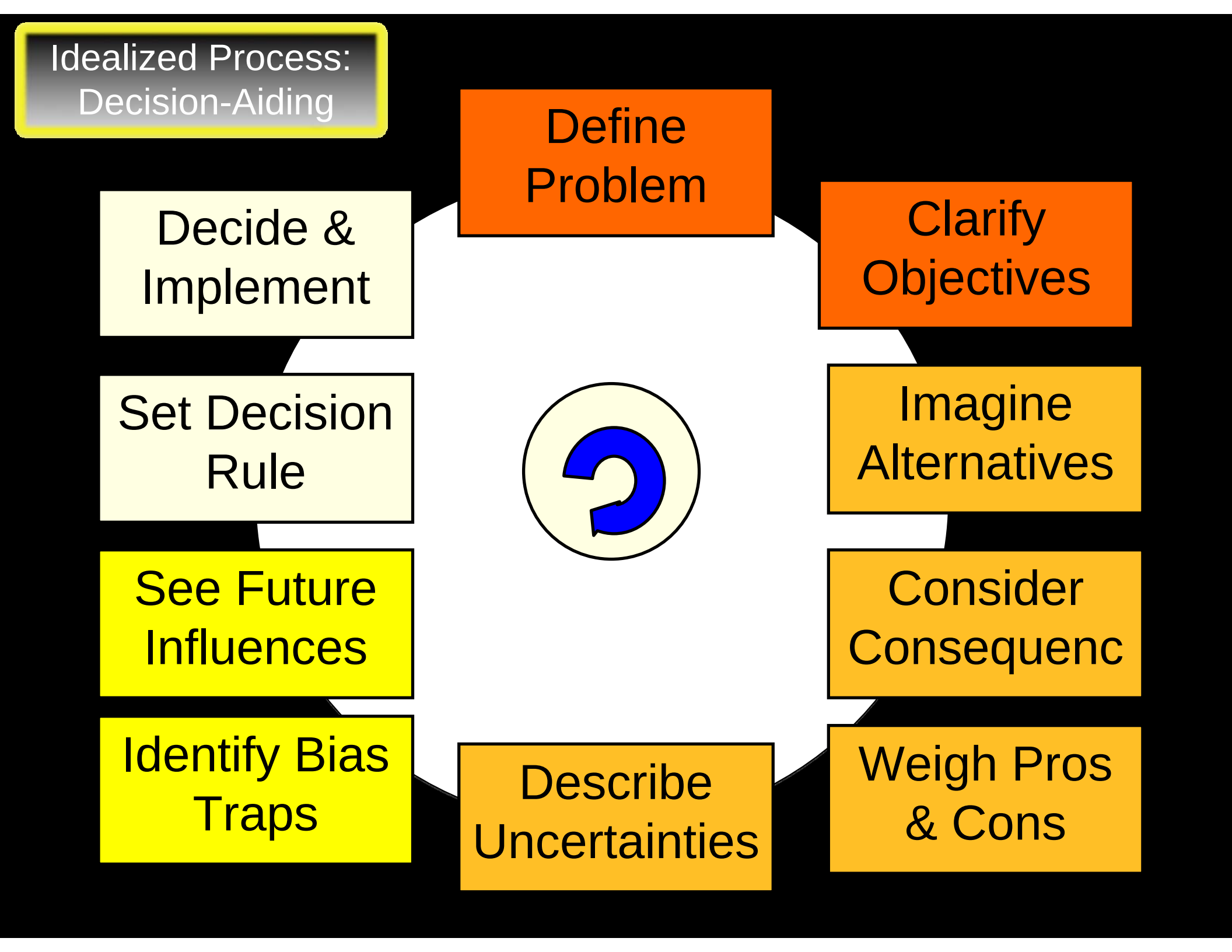
Why seek needs and *constraints?*

A Model to Examine Behavioral Constraints

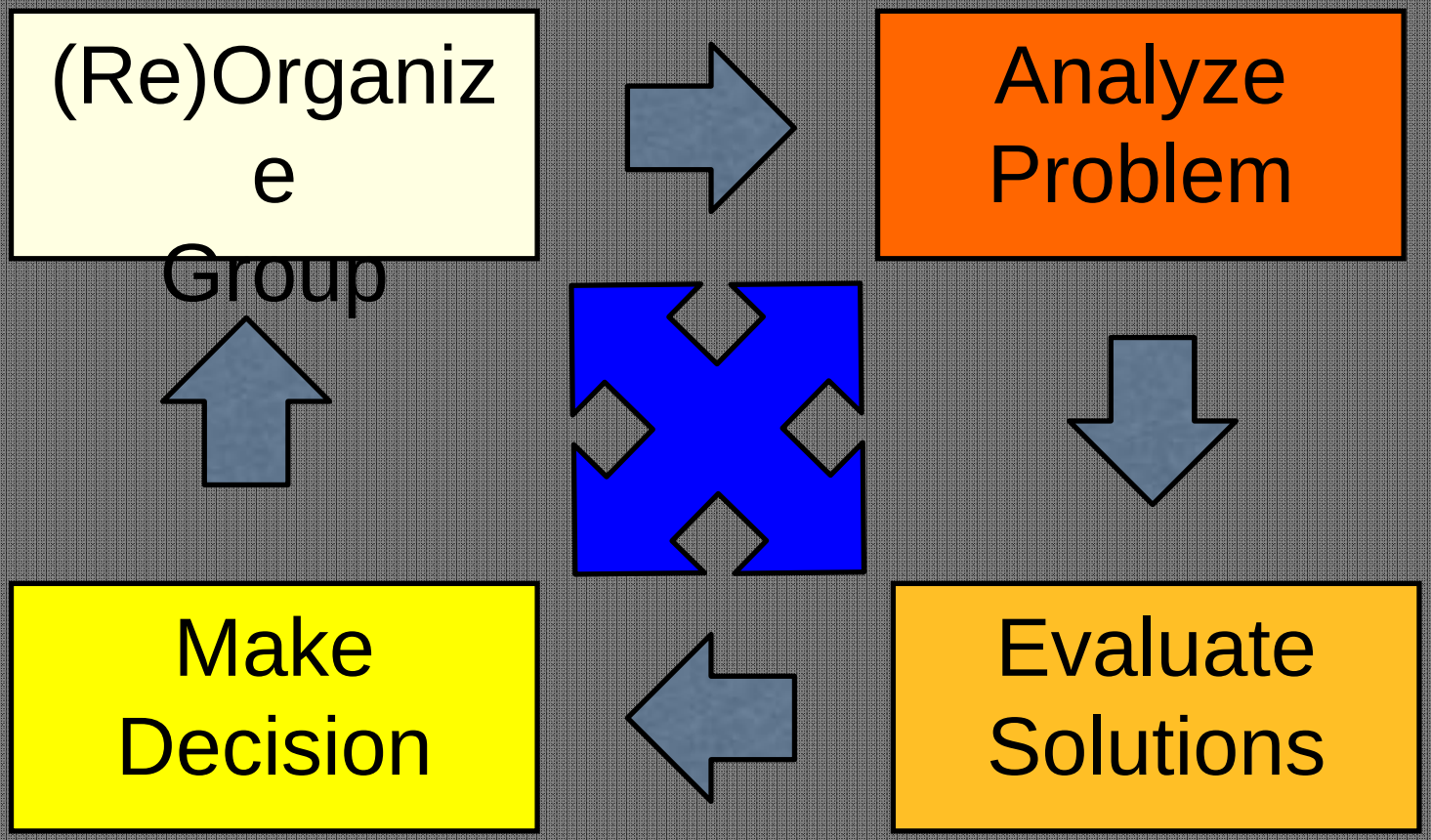


Adapted from An Integrative Model of Behavioral Prediction (Fishbein & Yzer 2003)

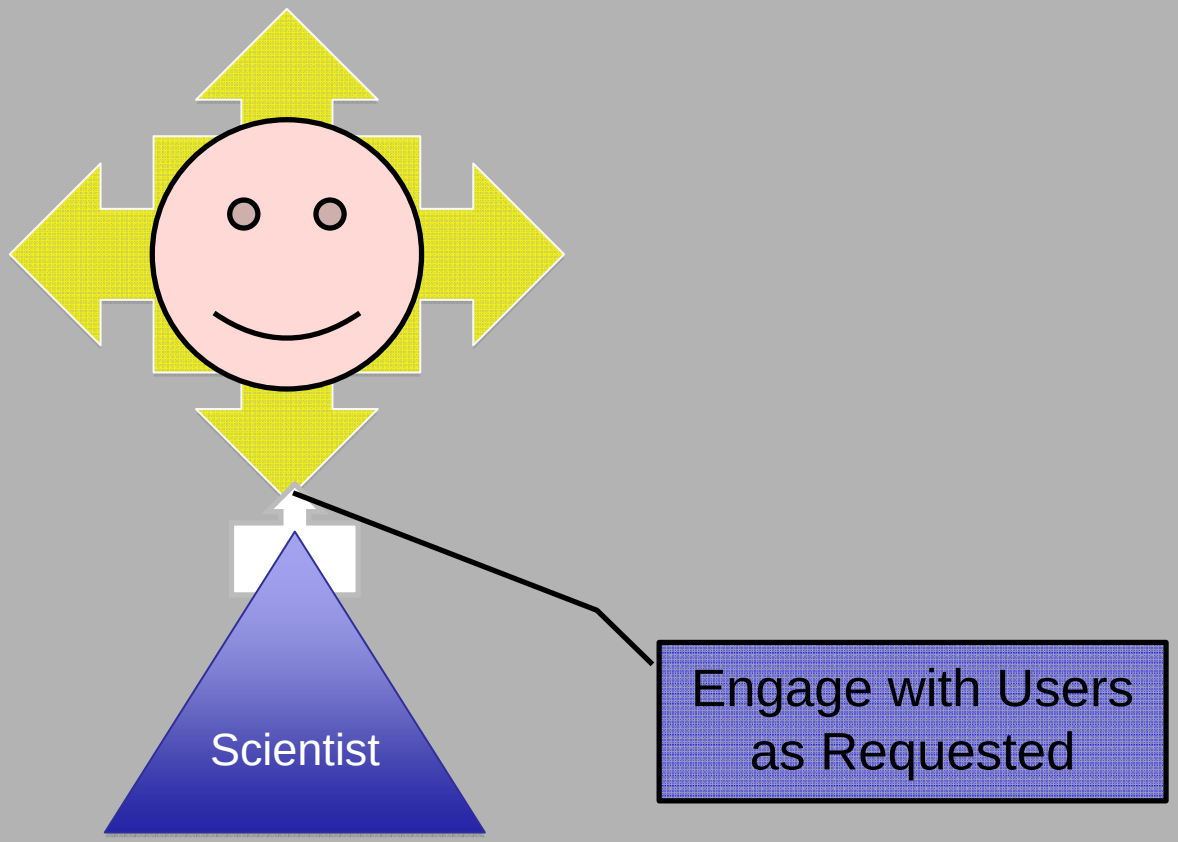

Decision Researcher
Understand Information Critical to Users


Idealized Process:
Decision-Aiding
Define Problem
Clarify Objectives
Imagine Alternatives
Consider Consequenc
Weigh Pros & Cons
Describe Uncertainties
Identify Bias Traps
See Future Influences
Set Decision Rule
Decide & Implement

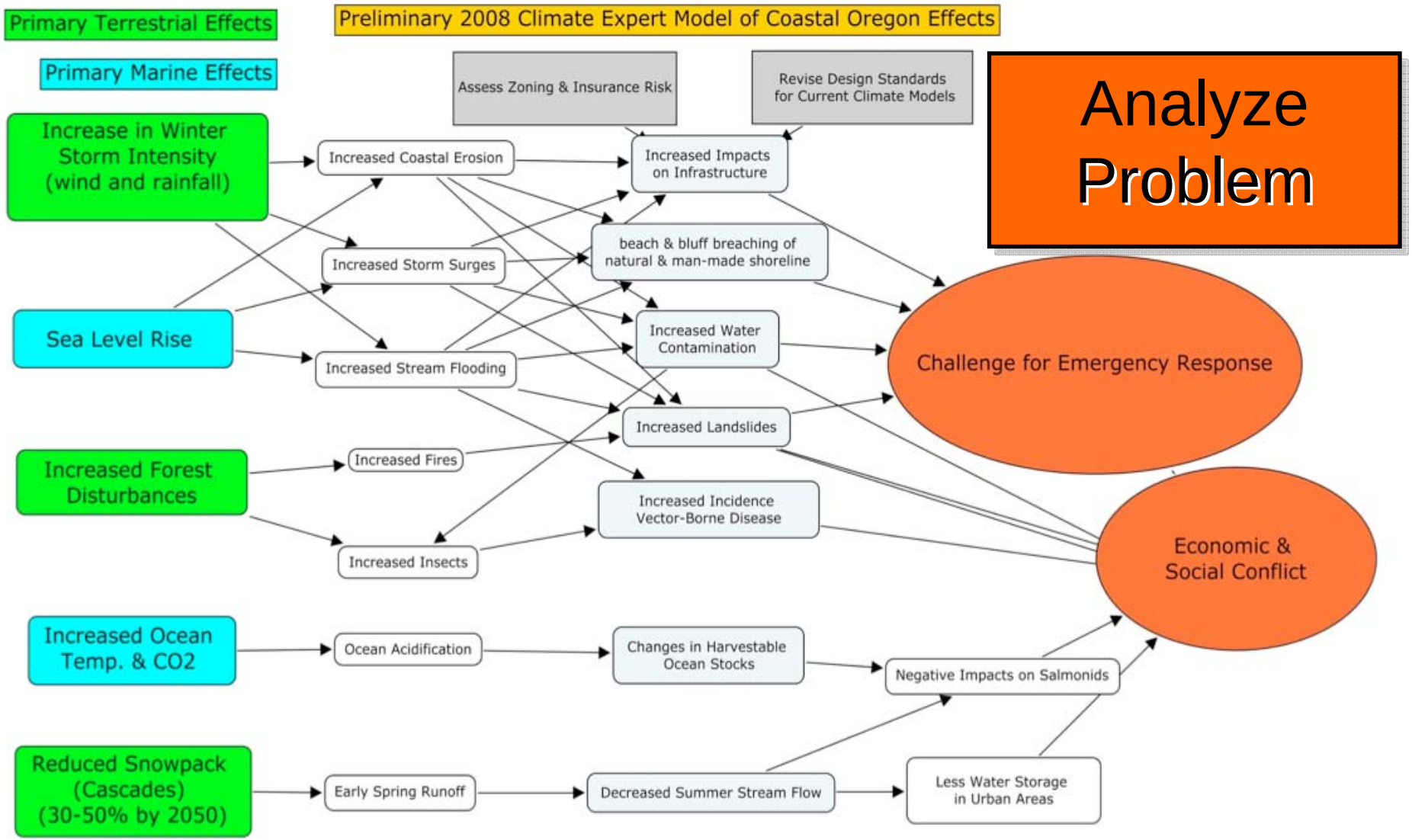
Actual Process: Decision-Making



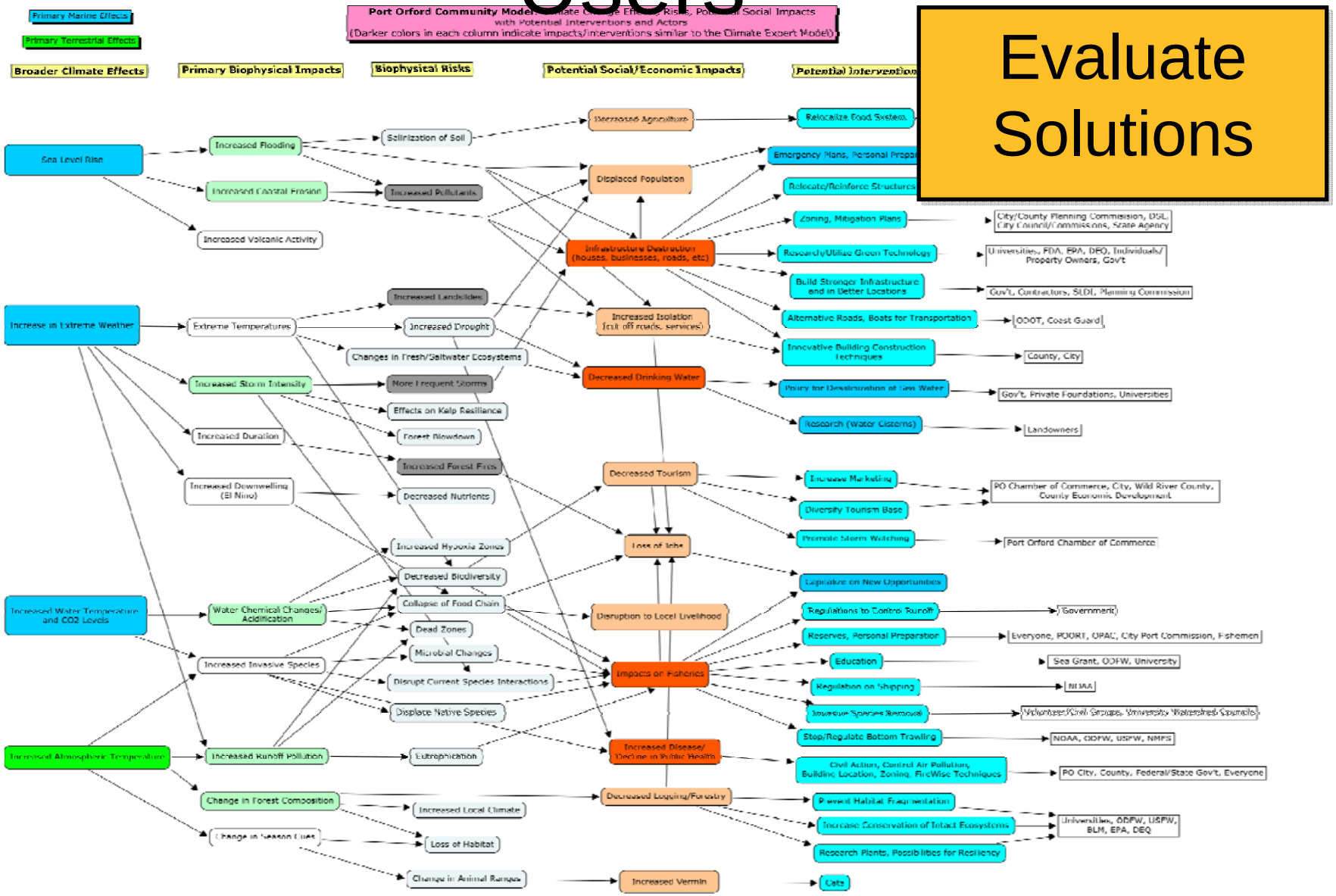
Map User Knowledge & Concerns


Scientist
Engage with Users
as Requested

Map Specialist Knowledge

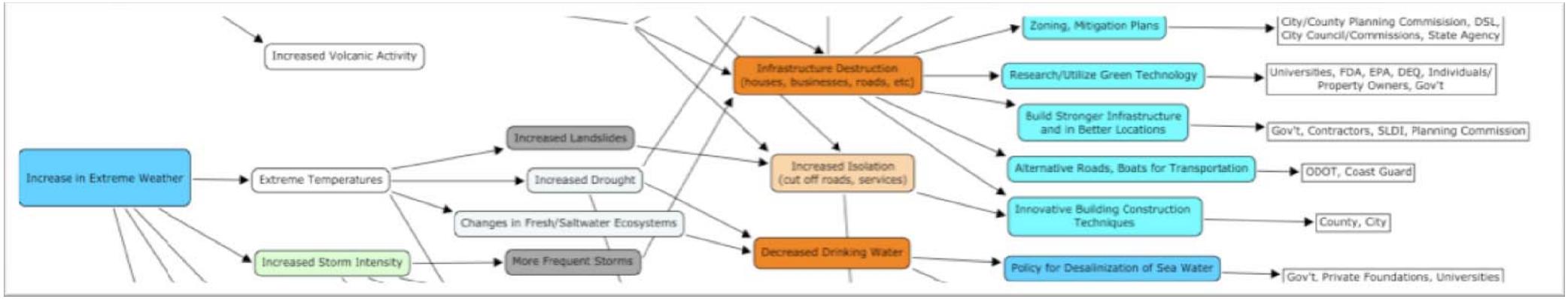


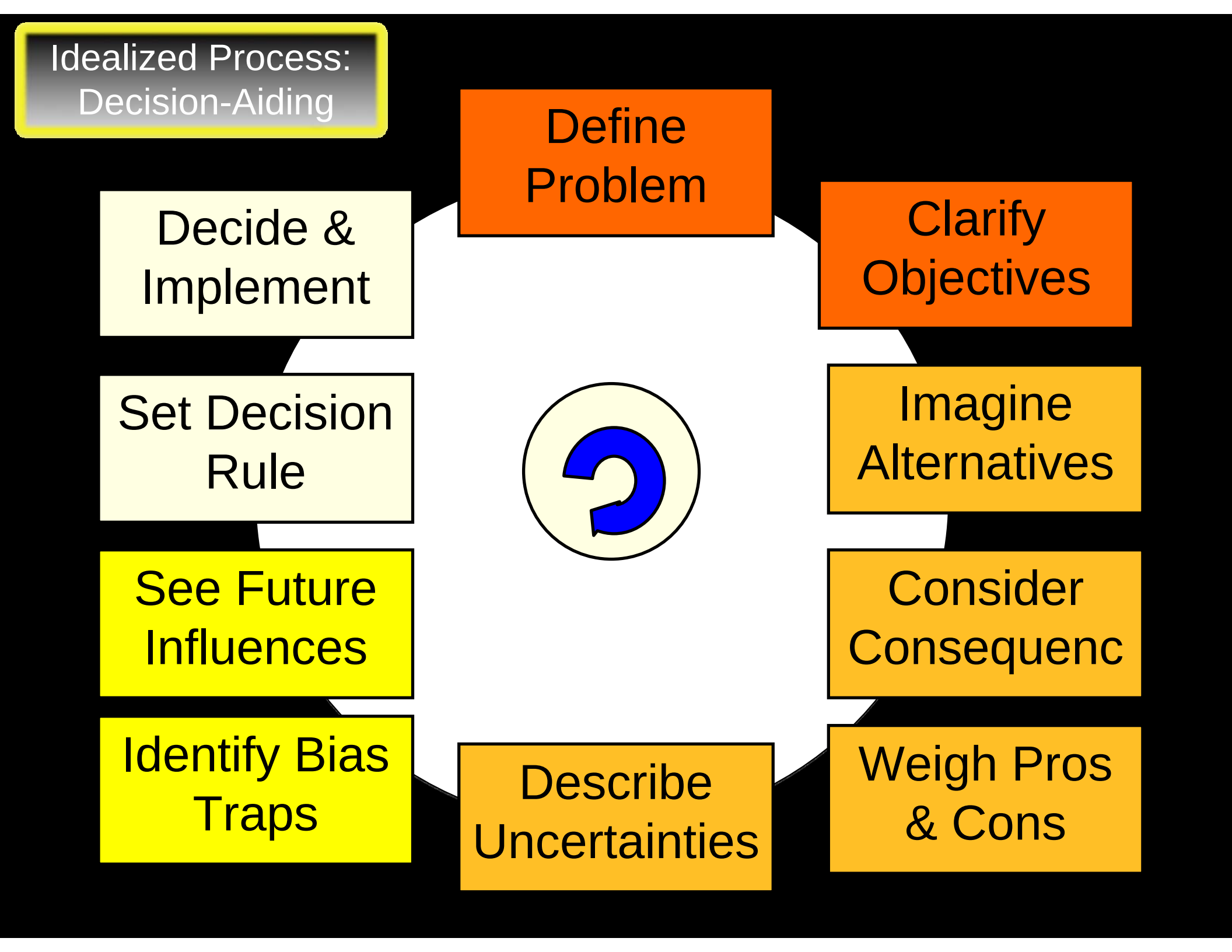
Collate Maps; Validate; Clarify Users



Select Concerns for Interim Decision

Make Decision

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Thanks!

Project Team: Shawn Rowe, Pat Corcoran, Michael Harte, Jenna Borberg, Joy Irby

NOAA Climate Program Office (SARP)

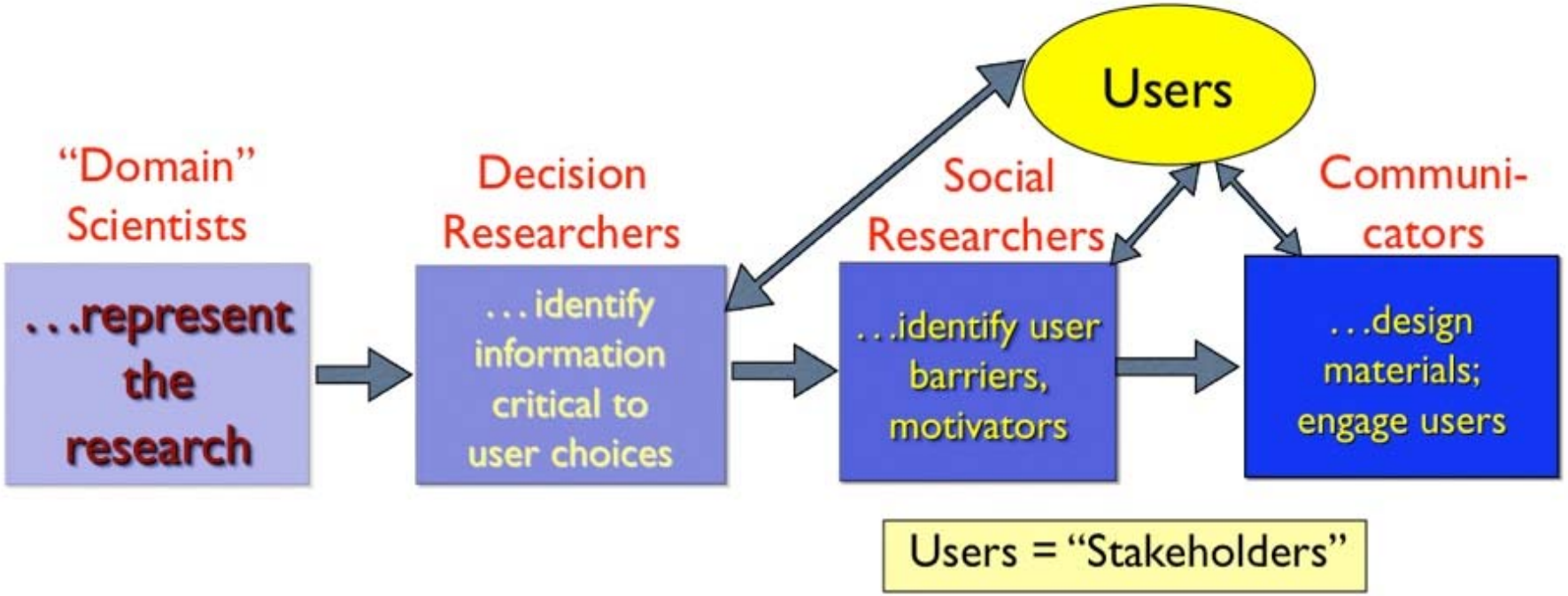
Project Web: http://seagrant.oregonstate.edu/themes/climat

Contact: Joe.Cone@Oregonstate.edu

Download @ http://seagrant.oregonstate.edu/sgpubs

Model to Aid User Decision-Making

"Nonpersuasive" Communication



Adapted from Fischhoff, Baruch (2007). "Nonpersuasive Communication About Matters of Greatest Urgency: Climate Change." Environmental Science & Technology A-Page Magazine 41(21): 7204-7208.

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Morgan, M. Granger, et al. (2002). Risk Communication: A Mental Models Approach New York: Cambridge University Press.

Olson, Randy (2009). Don't Be Such a Scientist: Talking Substance in an Age of Style. Washington, D. C.: Island Press.

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Influence of Framing on GW & CC Views?

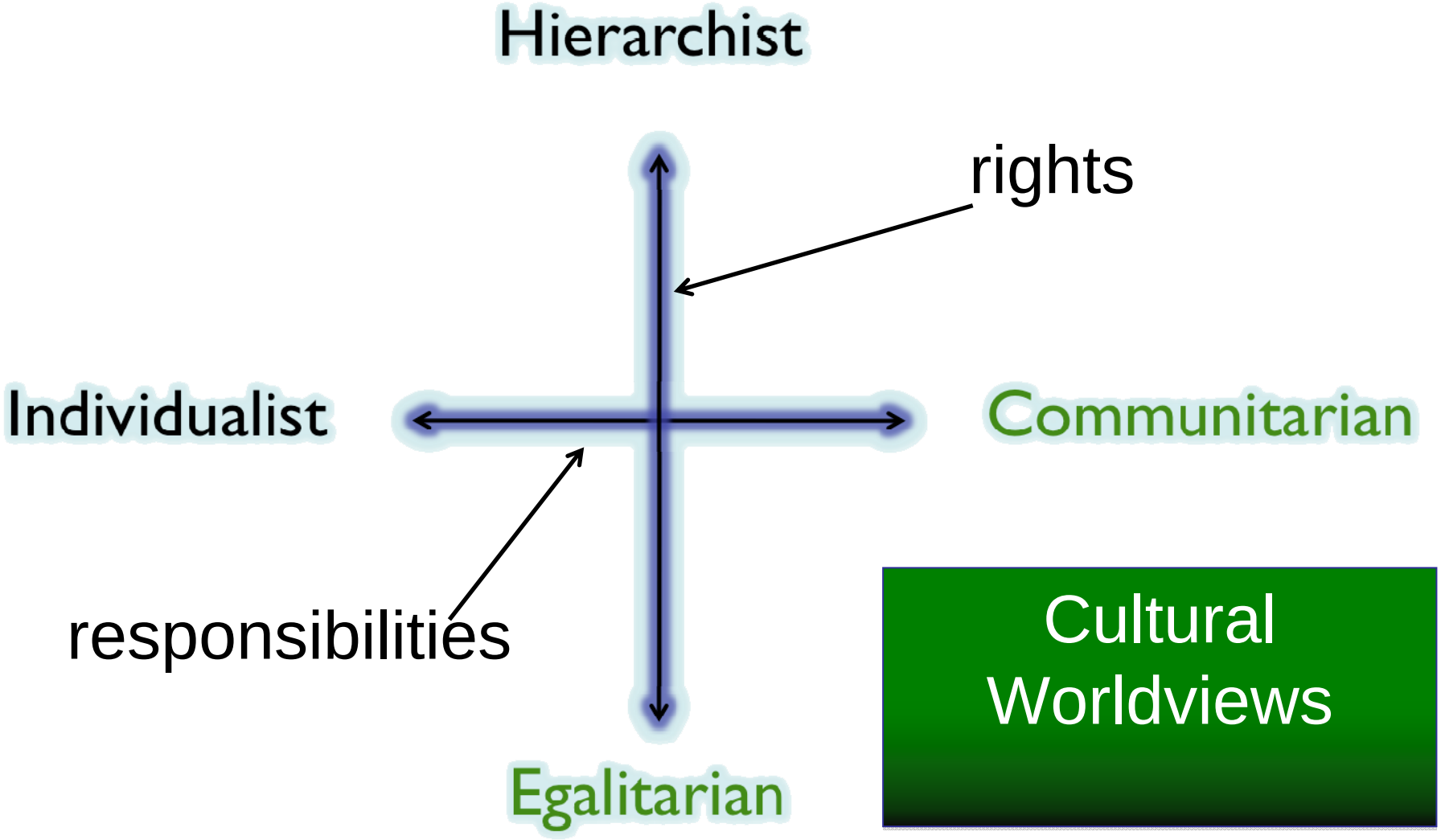
Statement[1]	% who Agree or Strongly agree[2]	N
I am concerned about how changes in the Earth's climate might affect THE OREGON COAST during this century.	82	219
I am concerned about reported changes and variability in the Earth's climate.	81	217
It's important FOR INDIVIDUALS to prepare for THE EFFECTS of climate change that are predicted to occur IN OREGON by reducing local vulnerability.	80	210
It's important FOR INDIVIDUALS to take immediate steps to reduce the apparent CAUSES of global climate change.	78	209
It's important FOR GOVERNMENTS to prepare for the EFFECTS of climate change that are predicted to occur IN OREGON by reducing local vulnerability.	77	205
It's important FOR GOVERNMENTS to take immediate steps to reduce the apparent CAUSES of global climate change.	75	200

1 Statements were rated on a five-point scale from 1=Strongly disagree to 5=Strongly agree.

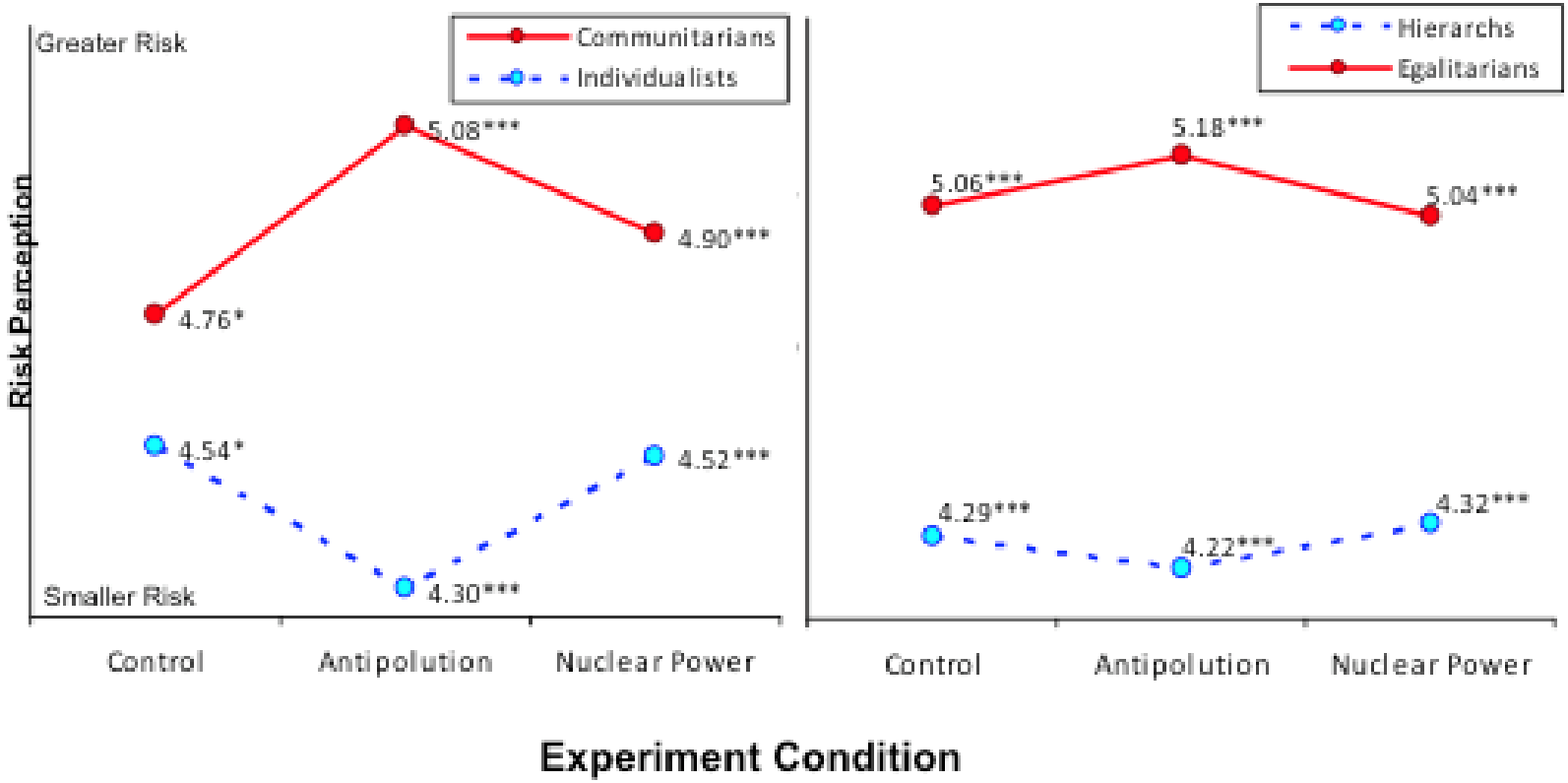
2 Percent Agree and Strongly agree were combined.

Note: Words in ALL CAPS appeared as such in the original survey to help make distinctions between statements.

Cultural Cognition Framework



Cultural Values Drive Risk Perceptions



$n \approx 160$ per condition. Global warming risk perception measured with 4-point scale *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$ for differences in means across conditions.

Eight Questions to Aid Decisions

1. **What's the question or problem your decision will address?**
2. **What objectives do you want your decision to achieve?**
3. **What potential solution alternatives can you imagine?**
4. **What are the consequences of each alternative in meeting the objectives?**
5. **What tradeoffs exist among objectives, and how do you evaluate them?**
6. **How does uncertainty affect your decision?**
7. **Are traps of thinking and emotion biasing your choices?**
8. **How will this decision influence future decisions?**

Adapted from: Elements of a well-structured decision process, Gregory, McDaniels, and Fields (2001), based on Hammond, Keeney, and Raiffa (1999).