Strategic Science Communication: A Social Scientific Approach to Public Engagement

John C. Besley
Ellis N. Brandt Professor
Communication Arts and Sciences
Michigan State University

Anthony Dudo
Associate Professor
Moody College of Communication
The University of Texas at Austin

This material is based upon work supported by the National Science Foundation (NSF, Grant ARL 1421214-1421723). Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the NSF.
Background

- Research on public’s views about science and scientists
- Research to help science community communicate more effectively
  - Interviews with key actors
  - Surveys of scientists
Interviews with science communication trainers …
2014 (n=24) and 2017 (n=33)

De-Jargonizer
How accessible is your work, paste your article … to analyze the amount of jargon in your writing.

Expertise on tactics of ‘translation,’ dialogue, and storytelling

Little use of social science research

Little sharing of best practices (i.e., silos)

Limited depth of evaluation efforts

Limited focus on teaching of strategy
What do we mean by strategic?

Communication Behaviors/Tactics
- Context (e.g., values, background)
- Behaviors
- Messages
- Tone/Intensity/Style
- Channels
- Sources

Communication Outcomes/Objectives
- Factual knowledge/Awareness
- Interest/Affect/Emotion
- Cognitive schema/Framing
- Warmth/Benevolence Beliefs
- Honesty/Integrity Beliefs
- Willingness to Listen Beliefs
- Identity/Shared Value Beliefs
- Competence/Ability Beliefs
- Perceived Risk/Benefit Beliefs
- Normative Beliefs
- Response/Self Efficacy Beliefs

Consequences/Goals
- Context (e.g., values, background)
- Policy support/opposition
- Policy acceptance/non-opposition
- Individual behavior (Including career choice)
What do we mean by goals?

What do you hope will happen from the time, money, and energy you put into communicating?

Would you be happy if you only ...
What do we mean by goals?

What do you hope will happen from the time, money, and energy you put into communicating?

- Buying/donating
- Acting/behaving
- Supporting
- Legitimacy/Do nothing

Policy support/opposition
Policy acceptance/non-opposition
Individual behavior
(Including career choice)
Scientists have goals …

AAU Scholar Importance Ratings of Potential Engagement Goals (Range 0-100)

- Ensuring policy makers use scientific evidence: 86
- Ensuring our culture values science: 82
- Getting more young people to choose scientific careers, including youth from diverse backgrounds: 72
- Ensuring adequate funding for scientific research: 72
- Fulfilling a duty to society: 70
- Helping people use science to make better personal decisions: 69
- Strengthening my own professional reputation: 38

Fall 2018, 11% Response Rate, n =~516
What do we mean by tactics?

Behaviors
Messages
Tone/Intensity/Style
Channels
Sources

Who says or does what to/with who in what way and through what channel?

De-Jargonizer
How accessible is your work, paste your article ... to analyze the amount of jargon in your writing.

Most training … Emphasis on ‘translation,’ storytelling, and dialogue (+ lots more)
Scientists are open to many potential tactics …

AAU Scholar Willingness to Prioritize Various Communication Tactics
(1 = Strongly disagree, 7 = Strongly agree)

Message/Style: Speak in a way that helps connect with an audience - I would be willing to make this choice.
Message: Frame a topic in a way that resonates with one’s audience. - I would be willing to make this choice.
Behavior: Make sure [audience feels] …listened to by the scientific community. - I would be willing to make this choice.
Message: Tell first person stories in a way that connects with an audience - I would be willing to make this choice.
Behavior: Talk about the role that a desire to help their community or society plays in shaping their research. - I would be willing to make this choice.
Message: Talk about science [as] hope. - I would be willing to make this choice.
Behavior: Organize a group of scientists to work together to … send common message. - I would be willing to make this choice.
Behavior: Have professional communicators help create a high-quality presentation. - I would be willing to make this choice.
Behavior: Publicly question the credibility of those who disagree with a scientific consensus. - I would be willing to make this choice.
Behavior: Commit to spending about 10% of their project budget to support communication efforts. - I would be willing to make this choice.
Behavior: Try to get people angry about a science topic. - I would be willing to make this choice.

Message/Style: Speak in a way that helps connect with an audience - 5.87
Message: Frame a topic in a way that resonates with one’s audience. - 5.73
Behavior: Make sure [audience feels] …listened to by the scientific community. - 5.27
Message: Tell first person stories in a way that connects with an audience - 5.25
Behavior: Talk about the role that a desire to help their community or society plays in shaping their research. - 5.21
Behavior: Have professional communicators help create a high-quality presentation. - 5.21
Message: Talk about science [as] hope. - 5.21
Behavior: Organize a group of scientists to work together to … send common message. - 5.00
Behavior: Have professional communicators help create a high-quality presentation. - 4.91
Behavior: Commit to spending about 10% of their project budget to support communication efforts. - 3.80
Message/Style: Try to get people angry - 2.77

Fall 2018, 11% Response Rate, n =~516
What do we mean by strategic (Redux)?

Communication Behaviors/Tactics
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- Channels
- Sources

Communication Outcomes/Objectives

Consequences/Goals
- Context (e.g., values, background)
- Policy support/opposition
- Policy acceptance/non-opposition
- Individual behavior (Including career choice)
The central role of communication objectives ...

Communication effects researchers study the ‘outcome’ of communication (i.e., tactics) and the impact of these outcomes on behaviors (goals)
How do we think communication as “engagement” works?

Many communication effects occur quickly and automatically (system 1) but some are also the result of slower but deeper amounts levels of cognitive engagement (system 2).

Also know as ...
Systematic processing
Central route processing.
See also ...
How do we think slow communication works?

Over time, efforts to foster deeper engagement with science and scientists should lead to cumulative changes to the evaluative beliefs of all communication participants’ (including the scientists)

\[ A_o = \sum_{i=1}^{n} b_i e_i \]

Attitudes are the sum of available beliefs \((b)\) and the evaluation \((e)\) of those beliefs.
Many different types of ‘beliefs’ (and feelings and frames) can result from communication.

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Relational</th>
<th>Behavioral</th>
</tr>
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What do we mean by objectives?

**Communication Behaviors/Tactics**
- Context (e.g., values, background)
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**Consequences/Goals**
- Context (e.g., values, background)
- Policy support/opposition
- Policy acceptance/non-opposition
- Individual behavior (Including career choice)

**Strategy**
- Implementation
- Implementation
- Strategy

**Department of Advertising + Public Relations**
**The University of Texas at Austin**
**Stan Richards School of Advertising & Public Relations**
**Michigan State University**
The traditional communication objectives ...

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“Available research does not support the claim that increasing science literacy will lead to appreciably greater support for science ...”
Sharing research will always be part of science communication.
Communication ≠ Translation, Distillation, Explanation, etc.
What else is there besides knowledge?

We can try to communicate to build real trust

- Warmth/Benevolence Beliefs
- Honesty/Integrity Beliefs
- Willingness to Listen Beliefs
- Identity/Shared Value Beliefs
- Competence/Ability Beliefs
Imagine you want those with whom you are communicating to believe scientists are the type of people who are willing to listen. **What tactics could you prioritize?**

Why we focus on objectives …

Note that these beliefs will form and have an effect even if you don’t plan for them …

- Behaviors
- Messages
- Tone/Intensity/Style
- Channels
- Sources

Relational

- Warmth/Benevolence Beliefs
- Honesty/Integrity Beliefs
- Willingness to Listen Beliefs
- Identity/Shared Value Beliefs
- Competence/Ability Beliefs
Do these sorts of things help build trust?
An additional set of objectives …

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What’s the cost/benefit, what do the people you care about think and do, and can it even be done?
Training focused on clearly articulating research benefits
Normative Beliefs

Campaign to shape/correct hidden descriptive norms

Slam Duck
it’s tournament time!

9 out of 10 MSU students either drink moderately or do not drink on NCAA Tournament Days

Data Source: 2018 MSU U Celebrate Survey; N=832
Response/Self Efficacy Beliefs

QUITTING STARTS NOW.
MAKE A PLAN.

Quitting is tough, but BEING PREPARED boosts your chances of success. Build a quit plan to get ready and find out what to expect along the way. Complete 7 easy steps to get your personalized quit plan.
Researchers are willing to prioritize a range of objectives.

AAU Scholar Prioritization of Potential Communication Objectives (Range 0-100)

- Helping to inform people about scientific issues (factual beliefs) - 82
- Getting people interested or excited about science (affect/emotions) - 78
- Showing that the scientific community cares about society's well-being (warmth beliefs) - 74
- Demonstrating the scientific community's openness and transparency (integrity beliefs) - 72
- Showing the scientific community's expertise or ability to solve problems (competence beliefs) - 72
- Discrediting people who spread myths or incorrect scientific information (integrity beliefs) - 66
- Hearing what others think about scientific issues (willingness to listen beliefs) - 61

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Two great things about objectives:
Part I, Evaluation

Clear objectives enable evaluation

<table>
<thead>
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<td>Thank you for coming to today’s event. Before you go, we’d like to hear from you about a few things ...</td>
</tr>
</tbody>
</table>

### First, how would you rate the overall event?  
- Poor  
- Fair  
- Good  
- Very Good  
- Excellent

### Prior to this event, how much did you know about the topic[s] of the event?  
- Nothing at all  
- Only a little  
- A moderate amount  
- A lot  
- A great deal

### How much, if anything, did you learn from the event that you participated in?  
- Nothing at all  
- Only a little  
- A moderate amount  
- A lot  
- A great deal

### How interesting or uninteresting did you find the event?  
- Very uninteresting  
- Somewhat uninteresting  
- Neither Interesting nor uninteresting  
- Somewhat interesting  
- Very interesting

### And thinking specifically about the main scientist you heard from ...  

| How much did they seem to care or not care about helping others?  
| Hardly care at all  
| Mostly don’t care  
| Couldn’t Tell/Neither  
| Care a fair amount  
| Care a great deal

| How sincere or insincere did they seem?  
| Very insincere  
| Somewhat insincere  
| Couldn’t Tell/Neither  
| Somewhat sincere  
| Very sincere

| How open-minded or closed-minded did they seem?  
| Very closed-minded  
| Somewhat closed-minded  
| Couldn’t Tell/Neither  
| Somewhat open-minded  
| Very open-minded

| How willing or unwilling did they seem to consider others’ point of view?  
| Very unwilling  
| Somewhat unwilling  
| Couldn’t Tell/Neither  
| Somewhat willing  
| Very willing

| How competent or incompetent did they seem?  
| Very incompetent  
| Somewhat incompetent  
| Couldn’t Tell/Neither  
| Somewhat competent  
| Very competent

| How intelligent or unintelligent did they seem?  
| Very unintelligent  
| Somewhat unintelligent  
| Couldn’t Tell/Neither  
| Somewhat intelligent  
| Very intelligent

| How informed or uninformed did they seem?  
| Very uninformed  
| Somewhat uninformed  
| Couldn’t Tell/Neither  
| Somewhat informed  
| Very informed
What makes dialogue so great as tactic for engagement?
Two great things about objectives: Part II, Clarity

What makes stories so great as tactics for engagement

The Hero’s Journey
1. In an ordinary world
2. A flawed protagonist
3. Has a catalytic event that upends his/her world
4. After taking stock
5. The protagonist commits to action
6. But when the stakes get raised
7. The protagonist must learn a lesson
8. In order to stop the antagonist
9. To achieve his/her goal
A thing I worry about:
Is it okay to emphasize a range of beliefs, feelings, and frames (assuming I am always telling the truth, as best I can and am open to changing my own views)?
The challenge of objectives is prioritizing the ones that are ethical, possible and will make the most difference, given the context. You can’t have everything.
An example of why objectives/goals matter ...

“We want to decrease misunderstandings about ________?”

Why do you want to decrease misunderstandings? What do you think will happen if you succeed?


Why frame in terms of misunderstandings? What might you want people to believe and feel about the issues and people involved?

(The goal questions) (The objectives questions)
Final Thoughts

• Engagement is about cumulative effects

• Being strategic requires choices about tactics, objectives, and goals

• You also need to be open (eager?) to being affected

• We’re all in this together
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