Some knotty problems in communicating wind energy

Jean Goodwin
Professor, Speech Communication (English)
The basic rules of communication
The basic rules of communication:

1. Understand your audience.
The basic rules of communication:

1. Understand your audience.
2. Adapt to them.
1. Understand your audience.

2. Adapt to them.
1. Understand your audience.

2. Adapt to them.

W. Haman
Renewable Energy Program
Manager, Iowa Energy Center
Audience ➔
What do they know?
Power in the wind;

\[ \text{Power} = \frac{1}{2} \rho AC_p V_{\infty}^3 \]

\[ C_{P_{\text{max}}} \approx 0.59 \]
# Wind Assessment and Calculator

## Wind Turbine Output Calculator

Currently Viewing Cities For Story County

Select **Town**

Select **Period**

(hold down Shift, Ctrl, or Command to Select Multiple)

Select **Turbine Size:**

Select **Type:**

Select **Units** of Measurement:

Enter Tower **Height:**

(meters/feet):

(Enter in meters if "Metric" was selected.
Enter in feet if "English" was selected)

Enter **Number** of Turbines:

Enter **Loss Factor** (%):

Display **Frequency** Distributions:

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### Switch To a Different County

<table>
<thead>
<tr>
<th>Period</th>
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<tbody>
<tr>
<td>All</td>
</tr>
<tr>
<td>Annual</td>
</tr>
<tr>
<td>January</td>
</tr>
<tr>
<td>February</td>
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</tbody>
</table>

**Metric:**

165

**English:**

1

12

No

---

**Calculate**
Wind Assessment and Calculator

Wind Turbine Output Calculator
Currently Viewing Cities For Story County
Select **Town**
Select **Period**
(hold down Shift, Ctrl, or Command to Select Multiple)
Select Turbine Size:
Select **Turbine** Type:
Select **Units** of Measurement:
Enter Tower **Height**:
(meters/feet):
(Enter in meters if "Metric" was selected.
Enter in feet if "English" was selected)
Enter **Number** of Turbines:
Enter **Loss** Factor (%):
Display **Frequency** Distributions:

Switch To a Different County

<table>
<thead>
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<th>Zearing</th>
<th>English</th>
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<tbody>
<tr>
<td>All</td>
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<tr>
<td>January</td>
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<tr>
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</tbody>
</table>

Metric:  English:  

<table>
<thead>
<tr>
<th>165</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>12</td>
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</tbody>
</table>

Calculate
DEFICIT

ENGAGEMENT
I am thinking of a rule for a sequence of numbers. Your job is to guess what the rule is.
I am thinking of a rule for a sequence of numbers. Your job is to guess what the rule is.

2 4 8
I am thinking of a rule for a sequence of numbers. Your job is to guess what the rule is.

What I did:

2  4  8

3  9  27
I am thinking of a rule for a sequence of numbers. Your job is to guess what the rule is.

What I did:

2  4  8
3  9  27  😊
5  25  125  😊
I am thinking of a rule for a sequence of numbers. Your job is to guess what the rule is.

Rule: Each number is bigger than the one before.
I am thinking of a rule for a sequence of numbers. Your job is to guess what the rule is.

**Rule:** Each number is bigger than the one before.

What I should have done:
- Taken a guess.
- Thought of a sequence that **DISconfirms** that guess.

**SCIENTIFIC METHOD**
I am thinking of a rule for a sequence of numbers. Your job is to guess what the rule is.

**Rule:** Each number is bigger than the one before.

What I did:
- Took a guess.
- Thought of a sequence that *confirms* that guess.

**CONFIRMATION BIAS**
Rule: Each number is bigger than the one before.

80% of the guessers made their guess without receiving even one "no" answer.
Rule:
If a card has an even number on one side, it has red on the other side.

Which cards do you turn over to test whether the rule is being obeyed?
(Don’t turn over more than absolutely necessary)

Wason Selection Task
Rule:
If a card has an even number on one side, it has red on the other side.

80% of people say
Rule:
If a card has an even number on one side, it has red on the other side.

80% of people say confirmation bias.
Rate your agreement with the following statements.

strongly disagree......strongly agree

I am having a good day. 1 2 3 4 5 6 7
Rate your agreement with the following statements.

I am having a bad day. 1 2 3 4 5 6 7

strongly disagree......strongly agree
Rate your agreement with the following statements.

**confirmation bias**

strongly disagree......strongly agree

I am having a **good** day. 1 2 3 4 5 6 7

I am having a **bad** day. 1 2 3 4 5 6 7
Confirmation bias

Our brains automatically seek out information that **confirms** our beliefs.
Audience → confirmation bias
DEFICIT

ENgAGEMENT
• More facts ≠ more impact
• Lead with agreement*
• Stress common values*

*if you can do it sincerely!
GMOs
GMOs

confirmation bias
GMOs

confirmation bias

"identity-protective motivated reasoning"

Dan Kahan
Cultural Cognition Project @Yale
Books:
- The Immigrant Invasion: Threatening the American Way of Life
- The War on American Manhood
- Selfishness Is Not a Vice: Individual Freedom and the Public Good
- Why Big Government Doesn't Work

Books:
- Community First: Fighting Selfishness in American Society
- The Limits of Individual Rights

Books:
- Against Race and Sex Discrimination, For Individual Freedom!
- A Free Market Defense of Workplace Equality
- Respect for Individual Choice: the Cornerstone of a Free and Equal Society
- Stop Treating Us Like Infants: Why Government Shouldn't Tell Adults What to Do

Books:
- Three Social Evils: Sexism, Racism, and Homophobia
- Raising Children: Avoiding Sexual Stereotypes
- People Before Profit! Fixing Corporate America
- Society as Family: One for All and All for One
GMOs

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Evolution

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Climate Change

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People work to hold onto beliefs that maintain
• their personal sense of "who I am" and "how the world should be"
• their membership in their community
People work to hold onto beliefs that maintain:

- their personal sense of "who I am" and "how the world should be"
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**Identity-protective motivated reasoning**

*your face here*
People work to hold onto beliefs that maintain
- their personal sense of "who I am" and "how the world should be"
- their membership in their community

In a "polluted science communication environment," science can become tied to identity, too.
Wind Energy?

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Wind Energy?
Don't "pollute the science communication environment"!

- Don't tie wind energy to any specific way the world should be —tie it to every vision of the world.
Don't have enemies.
Don't "pollute the science communication environment"!

- Don't tie wind energy to any specific way the world should be—tie it to every vision of the world.

- Present multiple options with the advantages and disadvantages of each. Be an "honest broker" (Pielke).

- Offer multiple faces.
Knotty problems:

Your audience may know quite a bit, and quite a bit of that may be wrong—but tied to their identities
Knotty problems:

Your audience may know quite a bit, and quite a bit of that may be wrong—but tied to their identities;

just like you.
1. Understand your audience.

2. Adapt to them.
Thanks!