



A First Look at Challenging Claims

Facilitator Instructions

Overview

Participants identify fact-based claims by industry or government, and consider the different strategies for challenging those claims using data.

When to Use It

Anytime a community group wants to respond to a claim made by an industry or government spokesperson about environmental pollution. Claims could be in:

- a news story or press conference
- a proposal for a new or expanded project
- an environmental impact study
- a public statement or press release

After this workshop, follow up with other activities in *Drawing Your Own Conclusions*.

Skills

- Identify numbers and units involved in claims, both explicit and implied
- Identify relationships between numbers in claims
- Brainstorm predictions of how claims might be challenged, and identify additional information needed
- Decide which claims are best to challenge

Smart Moves

- Slow down.
- Talk it out.

Time: 60-75 minutes

Preparation

See *Workshop Options*, next page. Decide which option best fits your situation. Read through all relevant materials.

If using your own community situation (instead of a case study/role play) make sure you have copies of the claims you potentially want to challenge: a newspaper article, a press release, a permit document, etc.

Materials

Strategies for Analyzing Claims (1 per participant)

Analyzing Claims Worksheet (2-3 per small group, plus 1 example worksheet)

Easel and flip charts (or whiteboard)

Pens, markers, and highlighters as needed

Tables, desks, or clipboards, so participants can write on their worksheets.

If using case studies:

Role Play Instructions (1 per pair or participant)

One of the two case studies (1 participant instructions per participant, one facilitator supplement per facilitator)

- *Dangerous Fumes* (claims already chosen)
- *Trash Facility* (claims need to be identified)

Workshop Options

With a community group just getting started

1. Gather sources that have any claims you might want to challenge. For example, a company's press release, or a summary from an environmental impact statement, or a statement made by a public official.
2. Pick any claims that can be challenged. Put them in a handout or on poster paper for everyone to read.
3. Have your group read through the list of claims, and choose 4 - 6 claims they want to challenge. Then...

With a community group with a ready list of claims

4. Review *Strategies for Analyzing Claims* with the group.
5. Divide into groups of 2 - 4 people. Assign each small group one claim to analyze using the *Analyzing Claims Worksheet*. Each small group should report back to the whole group.
6. Decide which are the most strategic challenges.
7. At a later date, follow up with other *Statistics for Action* activities to help the group understand, analyze, and communicate about the issues involved in the claims. See *SfA in Action* on the SfA web site for more.

For a training or conference workshop: Using a Case Study

1. Choose one of the *Case Studies* to use, or create a similar case study with your own data.
2. Make enough copies for all participants of the *Participant Handout* for that case study, as well as *Strategies for Analyzing Claims*, and the *Analyzing Claims Worksheet*.
3. Hand out and briefly review *Strategies for Analyzing Claims* with participants.
4. Hand out the case study to all participants. Then, choose either...

Option 1: Discussion

5. Divide participants into groups of 2 - 4 people. Assign each group one claim from the case study.
6. Each group should use the *Analyzing Claims Worksheet* to analyze their claim. They can use *Strategies for Analyzing Claims* as a resource.
7. Have each small group report back what they decided about their claim. If there is time, have the whole group decide which claims they think are most worth challenging.

Option 2: Role Play

8. Hand out the *Role Play Instructions* to all participants.
9. If the workshop is small, everyone can participate in the role play. If it's large, ask for 5 - 6 volunteers to perform the role play for the rest of the group.
10. The discussion in step (4) of the role play should involve the whole workshop. If the group is struggling for ideas, you can use the facilitator resource for the role play to prompt them.
11. Debrief the activity with the group: What did you learn? What do you still wonder?

Strategies for Analyzing Claims

1) What are the numbers, even if they're hidden?

A measurable claim will talk about something that can be quantified. The real number may be implied but not shown.

Strategy: Push to get the claim as specific as possible. There's a number there somewhere. If not, justification is needed.

2) What are the units?

What is being measured and how is it being measured? Units can be simple: feet, tons, jobs. They also could be a rate or ratio of other units, using "l" or "per", like *truck trips per day* or $\mu\text{g/L}$.

Strategy: Learn about the units, common abbreviations and symbols, and how different units relate to each other. Practice converting strange units to familiar ones. It might be easier to imagine *pounds per day* than *tons per year*.

3) Do any numbers represent a larger set of data?

Sometimes one number is calculated from a much larger set of data. Then that number is then presented as "typical" of that data. There are different "typical" calculations: *average, mean, median, mode*. There are also ways to show variation in the data: *margin of error, standard deviation*.

Strategy: Get the original data. Find out how it was calculated, what was and was not included. Learn about the different terms and when they should be used. A median may be more representative than an average. The data might be too variable or too unreliable to summarize with one number. They may have ignored important data. Decide if the number represents what is most important in the data – you may care more about a maximum than what is "typical."

4) Are they making an estimate or prediction?

An estimate should be based on real numbers and calculations, and should account for many scenarios.

Strategy: Find the data, calculations, and assumptions they used to make the estimate. Did they assume best or worst case? Did they include what *you* care about most?

Mercury levels in the soil tests were all below the legal limit.

Can you spot the two missing numbers? *Mercury levels* means they tested for mercury in the soil and got numbers, even if they're not listed. *The legal limit* is a number published by a regulating agency; you can look it up.

The new power plant will reduce residential electricity rates.

Units might not be explicit. *Electricity rates* means what you pay for power. Look it up; it's usually in dollars per kilowatt-hour (\$/kWh).

Average smokestack emissions are below the 30 ppm monthly limit.

What if the plant only operates in the summer? An average over the whole year won't show how bad it is in July. Also, if they looked at the whole county instead of just the area that was sprayed, they might not detect much pollution.

"Officials estimate that a typical resident doesn't eat more than five fish from the stream per year."

Strategies for Analyzing Claims

5) Is there a comparison to a maximum or minimum?

The claim might compare one or more measured numbers to a fixed maximum or minimum - like a legal limit, or a promised benefit. Look for language like “did not exceed” or “will be at least”.

Strategy: Are they using the most appropriate limit or standard for comparison? Even if there is a limit, does that guarantee safety? If they’re making a promise about the future, how did they make their calculations? Look out especially for “typical” numbers (see #3 above)... sometimes an average will not exceed a legal limit, but individual data points will.

There will be no more than 150 truck trips to the landfill per month.

6) Is there a claim about an increase or decrease?

They may claim that “X” will increase or decrease with time.

Strategy: Ask, “Compared to what?” They might choose a number that makes their plan look good. They may say an increase is because of something they did, but maybe it would have happened anyway. If it’s a claim about the future, find out what is and is not included in their forecast.

The new factory complex will add 3 acres of new open space and \$1 million in tax revenue for the city.

Is that “open space” mostly parking lots? Does the increase in revenue account for a decrease in home values next to a dirty factory? Or maybe the increase in tax revenues is just from population growth, and has nothing to do with the factory.

7) What else is missing?

There may be other things about the claim that you will need to know before you challenge it. The numbers may be...

Unspecific: Someone knows the number, it’s just not shown.

Ambiguous: It’s not clear anyone knows the number.

Incomplete: The number includes some things but not others.

Subjective: Words like *reasonable*, *feasible*, and *acceptable*.

Strategy: Without any numbers, you can’t know if the claim is true, or if it will have an impact in the community. Push for precise numbers, or for a range, like “between X and Y”.

Pesticide use did not cause any increase in illness.

We will give low-interest loans and incentives to weatherize homes.”

The risk of any kind of leak from the landfill is negligible.

8) Now, list them all!

Look at all the possible challenges and missing information you’ve identified. Write it all down. Decide which challenge will be the easiest and most useful to you.

Analyzing Claims Worksheet

1. Fill out a worksheet for each claim you think is suspicious.
2. Analyze the claim:
 - What are the **numbers and units**? They might be hidden or implied.
 - Do any numbers represent a **larger set of data**?
 - Are there **words that compare**, like *minimum, standards, limit, exceed, decrease...*?
 - Is there anything **estimated, ambiguous, subjective, or missing**?
3. How might you challenge the claim?
4. What other information do you need to know before challenging the claim?
Where can you find that information?
5. How hard or easy will it be to challenge this claim? Rate it from 1 to 10.
Would a successful challenge hurt or help your campaign? Rate it.

Claim

Analysis

Possible Challenge

Information Needed

Easy challenge? (circle)	Very Hard	1	2	3	4	5	6	7	8	9	10	Very easy
Help our campaign?	No Help	1	2	3	4	5	6	7	8	9	10	Big help

Analyzing Claims Worksheet

Example

Claim: The average levels of arsenic in the groundwater tests were all below the legal limit.

Analysis:

Levels of arsenic are numbers in the report of test results that we got last month.

The legal limit is how much arsenic is allowed in groundwater. Results are below that limit.

An average is for a lot of data - individual test results could be more than the limit.

What is the average based on? Is it over time, or is it the average of all tests?

Possible Challenge:

Maybe the average is below the legal limit, but individual results are above the legal limit.

Information Needed:

Look up federal and state standards for arsenic in groundwater.

Look through test results. Did any exceed the standards? Make sure units are all the same.

Find out how the average was calculated.

Easy challenge? (circle) Very Hard 1 2 3 4 5 6 7 8 **9** 10 Very easy

Help our campaign? No Help 1 2 3 4 5 **6** 7 8 9 10 Big help

Role Play

1. Read through the case study. Imagine you live in this community.
2. Choose a few people to play different roles, like community activist, parent, town council member, school nurse, factory owner, etc.
3. For 10 minutes, role-play how these people might interact at a public meeting where the claims are first presented, *before* the community is able to strategize or research data.
4. Now your whole group is a concerned community after that public meeting. You want to know how you can challenge those claims. Discuss:
 - What data would the *company* need to provide to prove their own claims?
 - How would *you* challenge each claim?
 - What data would you need to support your challenge?
 - Where would you find that data? How would you use the data?
5. Now the role-players from step 3 (above) are back at a new public meeting. This time, the community has found the data they need to make a challenge. Role-play the new public meeting.

Dangerous Fumes

The Concern

A community in Chicago is concerned about odors – possibly dangerous fumes – coming from a nearby factory. The community wants the company to address the problem. The company does not want to change anything, and claims there is no problem.

The Claims

1. Any air pollution is mostly from the highway, not from our facility.
2. Any complaints about odor are from a few sensitive people. The majority aren't disturbed.
3. The odor/fumes might smell bad, but they aren't harmful to people's long-term health.
4. Installing odor/fume control systems is too expensive/impossible. Who would pay?
5. If you are noticing fumes/odor in the summer, it's probably because of the weather. Under different wind or temperature conditions, you wouldn't be able to smell anything.

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The Claims — and Possible Challenges

1. *Any air pollution is primarily from the highway, not from our facility.*

Find out what chemicals highways typically put in the air. Find out what kinds of chemicals might be coming from the chemical plant. Test the air for contamination when odors are strong. Show that the odors must be coming from the plant and not the highway. (Very helpful, but very difficult, time-consuming, and expensive.)

2. *Any complaints about odor are from a few sensitive people. The majority aren't disturbed.*

Do a door to door survey of people in the area. Count how many people are bothered by the odor. Have a petition for them to sign if they want. (Somewhat easy, potentially very helpful if this is their key claim.)

3. *The odor/fumes might smell bad, but they aren't harmful to people's long-term health.*

Find out what chemicals the plant uses or makes, and which ones are most likely to go into the air. Find out if these chemicals are dangerous or not. (Very helpful, and very easy for people who know how to use the Internet.)

4. *Installing odor/fume control systems is too expensive/impossible. Who would pay?*

Try to find other similar companies or plants where they have installed fume control systems. How much did it cost? What were the benefits? (Somewhat easy, possibly helpful, but possibly not helpful if it is actually very expensive.)

5. *If you are noticing fumes/odor in the summer, it's probably because of the weather. Under different wind or temperature conditions, you wouldn't be able to smell anything.*

It doesn't matter what the weather is. We have to live here all year. Your plant should not harm our health any time of year. (This is not really a measurable claim. It requires a moral answer rather than a factual answer.)

Trash Facility

The Concern

The company Casella owns a trash incinerator in Biddeford, Maine. They want to build a facility in nearby Westbrook that will separate recyclables from trash, and convert the remaining trash into pellets for the incinerator. Westbrook residents are concerned that the facility will add traffic and pollution. They worry it will create demand for new out-of-state trash to be trucked to Westbrook, increasing the use of the incinerator, which they want to see closed.

From “Zero Waste is Casella’s Goal”

Thursday, January 21, 2010. By Leslie Bridgers

[...] Casella’s plans to build [the] facility in Westbrook surfaced last month. Moving the trash-processing operations out of downtown Biddeford provided an incentive for that city to keep working with Casella. And, according to [Casella Development Officer Jim] Bohlig, the \$15 million facility would be an asset for Westbrook, which would benefit from its tax revenue and the creation of some 30 jobs.

The facility would take in the trash that now goes to the incinerator, and, with cutting-edge technology, would sort it so that everything recyclable would be removed and the remaining waste would be condensed into pellets. The pellets would then be trucked back to the Biddeford incinerator and burned as fuel. According to Bohlig, the sorting process would remove much of the material that makes the trash emit odor and dioxins into the air - two major sources of contention

Biddeford and Saco have with the incinerator. Also, by condensing the trash at a facility in Westbrook, fewer trucks would come through Biddeford’s downtown.

Bohlig insists that the burdens being lifted from Biddeford won’t cause undue harm to Westbrook. The site on County Road where the facility is being proposed already has several permits for a construction and demolition processing facility that Casella had planned to start building there in October. A traffic permit for that plant allowed 253 trucks per day. With the change in use, Casella estimates that only 167 trucks would be coming through there daily. Westbrook can also feel good about being a leader in “the clean tech revolution,” Bohlig said. Because of the technology that would be used in the new facility, he said, an additional 25,000 tons of recyclable material will be removed from the waste stream every year.” [...]

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Callout bubbles contain the following questions:

- How much more will it cost to pave the roads every year because of all the trucks? How much revenue would the town lose if residential property values go down 10% because of the nuisance?
- What kind of jobs? Paying how much? Will they go to us, or people from out of town?
- The facility will create a demand for even more trash, to keep the incinerator running
- "undue harm" - Can you quantify this? Exactly how much harm are we "due"?
- Then Westbrook will get all those trucks, and more, both hauling trash in and hauling pellets out! And if the facility creates new demand, even more.
- "much of..."? Be specific, we want a %.
- What are the calculations and tonnages involved here? Does it include truck trips in and truck trips out? Trucks for trash, pellets, recyclables?
- On what data and calculations is this number based? Is this probable, or a best-case scenario? And how many trucks will haul these 25,000 tons?