

Some thoughts about surveys 2024

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#SurveysThatWork



Olin College
of Engineering

Today's agenda

My survey process

Goals: Focus your survey on a specific decision

Sample: Don't obsess over sampling error

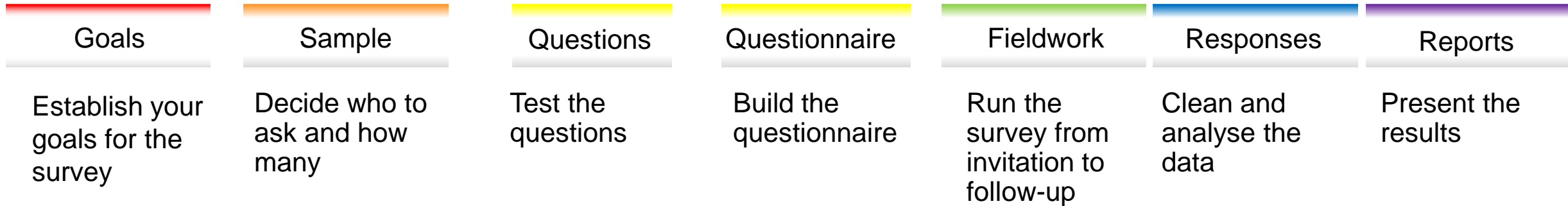
Questions: Ditch the rating scales

Responses: Lose your fear of open answers

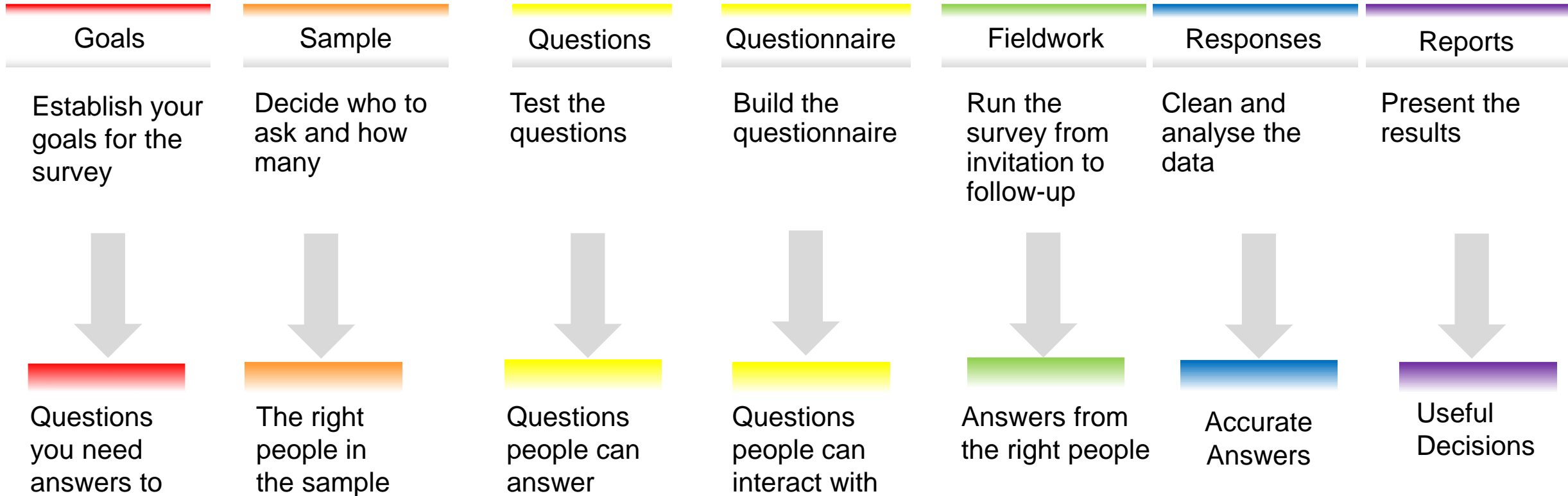
Recap and questions

My survey process has 7 stages

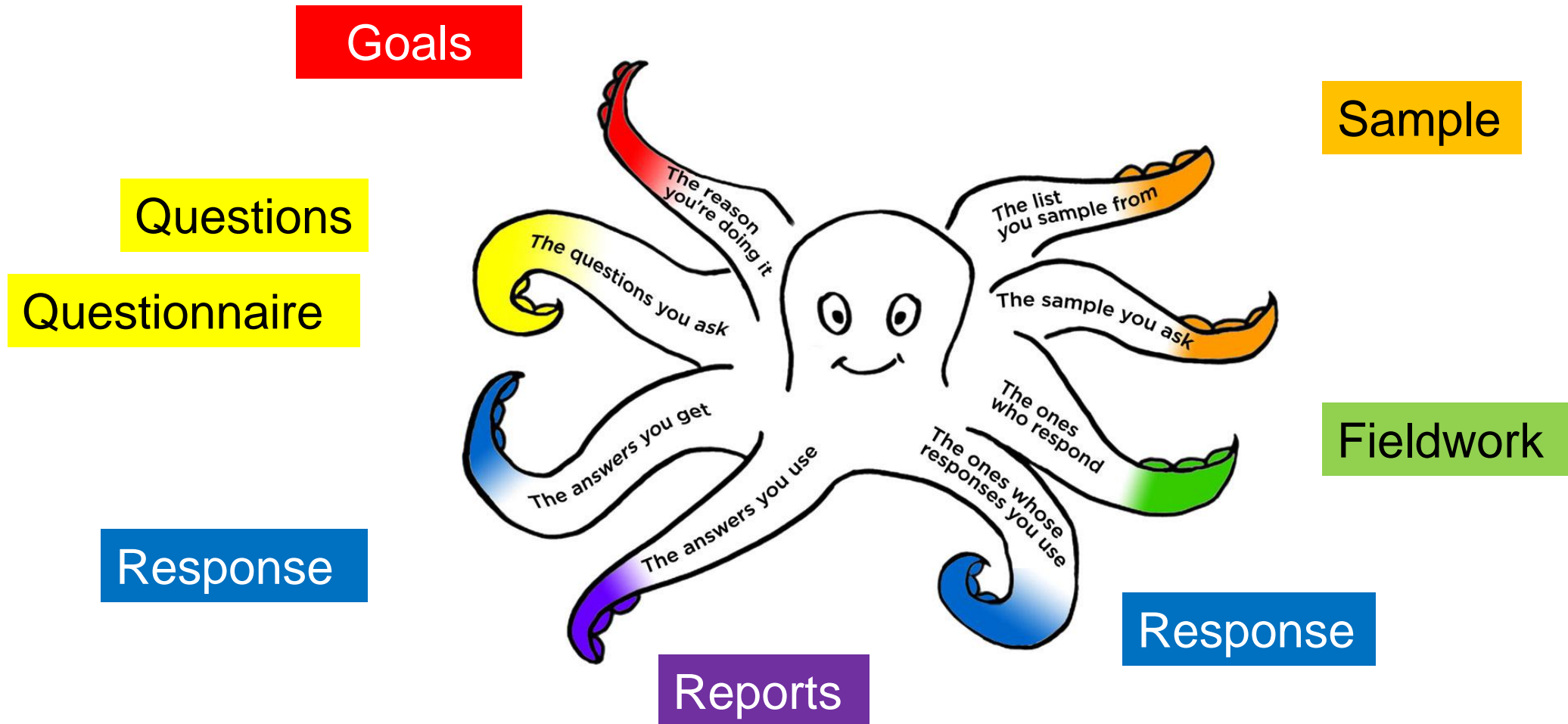
Here is my process in stages



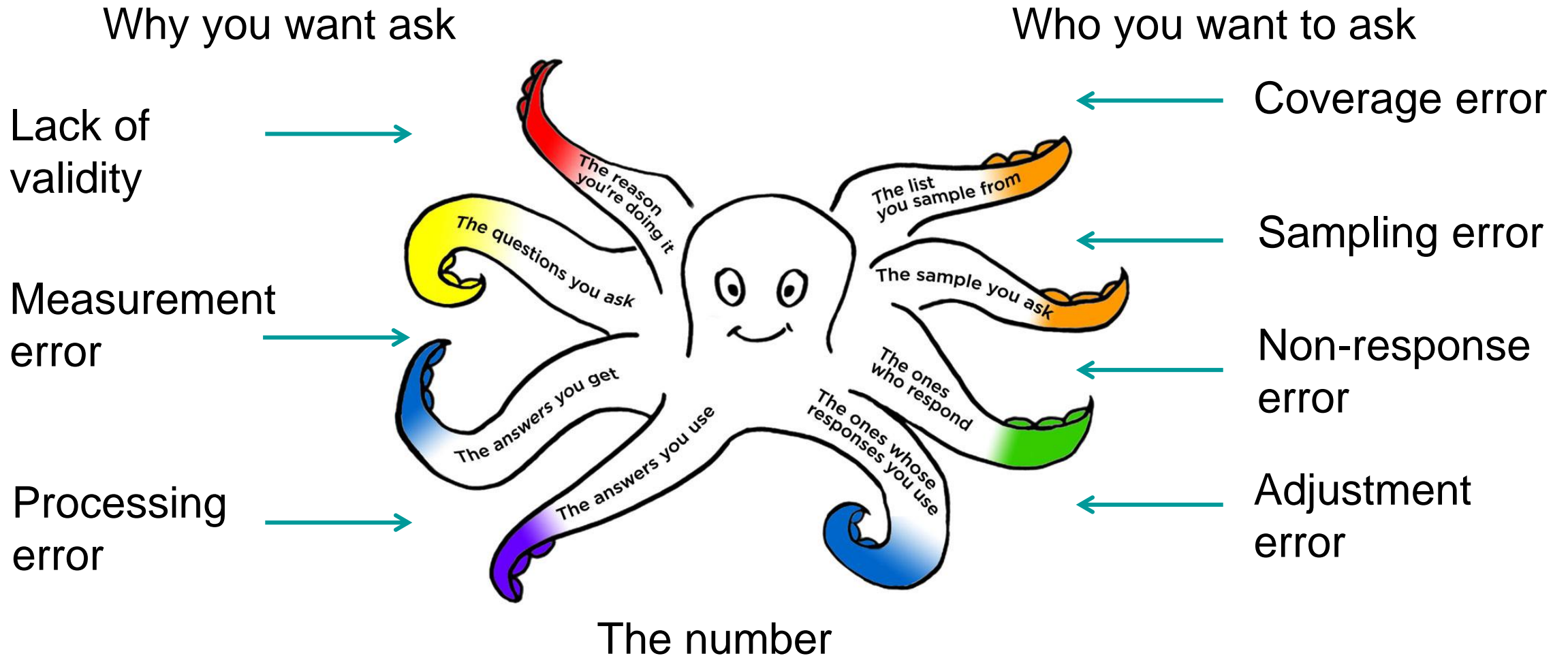
You get a better survey by doing many things well



The process is connected in many ways



There are errors all around the Survey Octopus



Today's agenda

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Recap and questions

Goals

Focus your survey on a specific decision

The goals set the scene for the survey

Goals

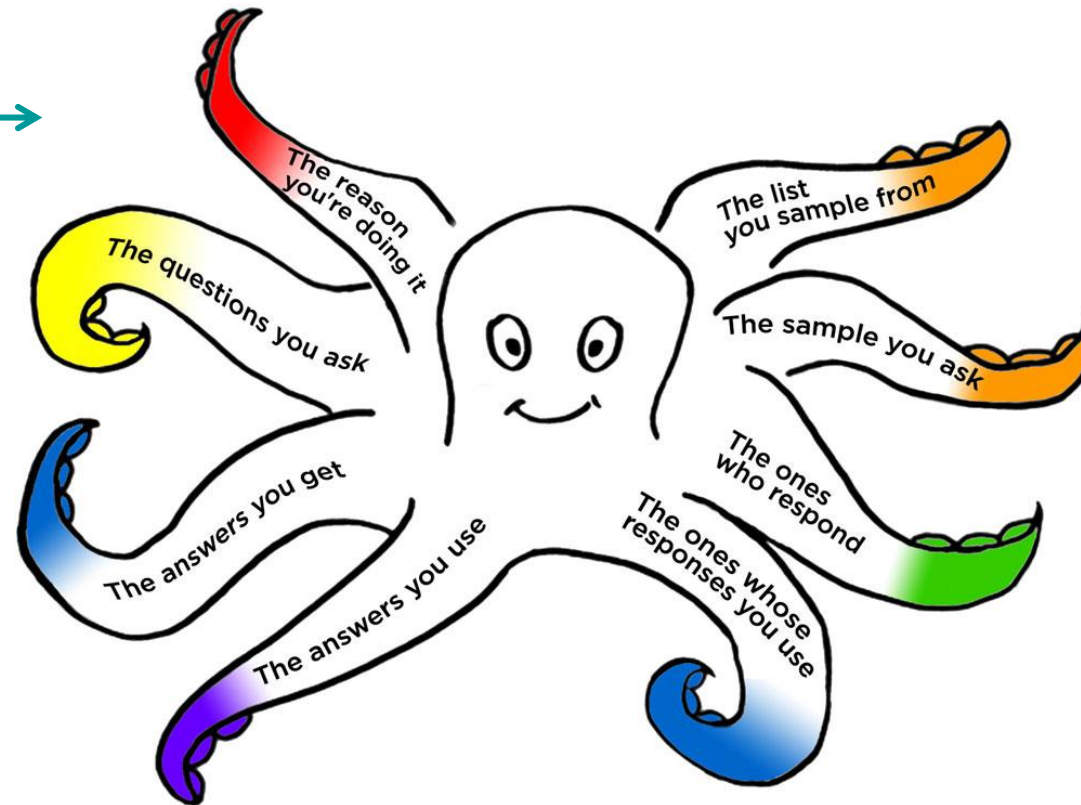
Establish your goals for the survey



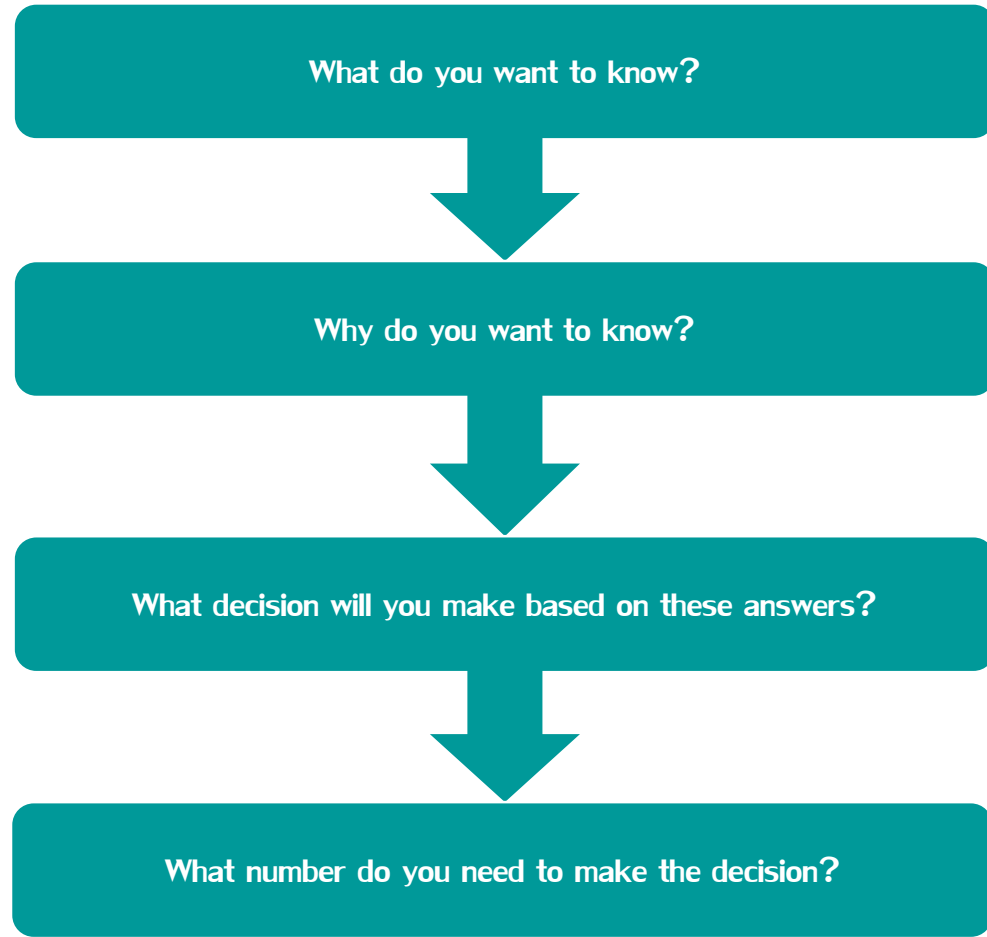
Questions you need answers to

The error to avoid: Lack of validity, when the questions you ask don't match the goals

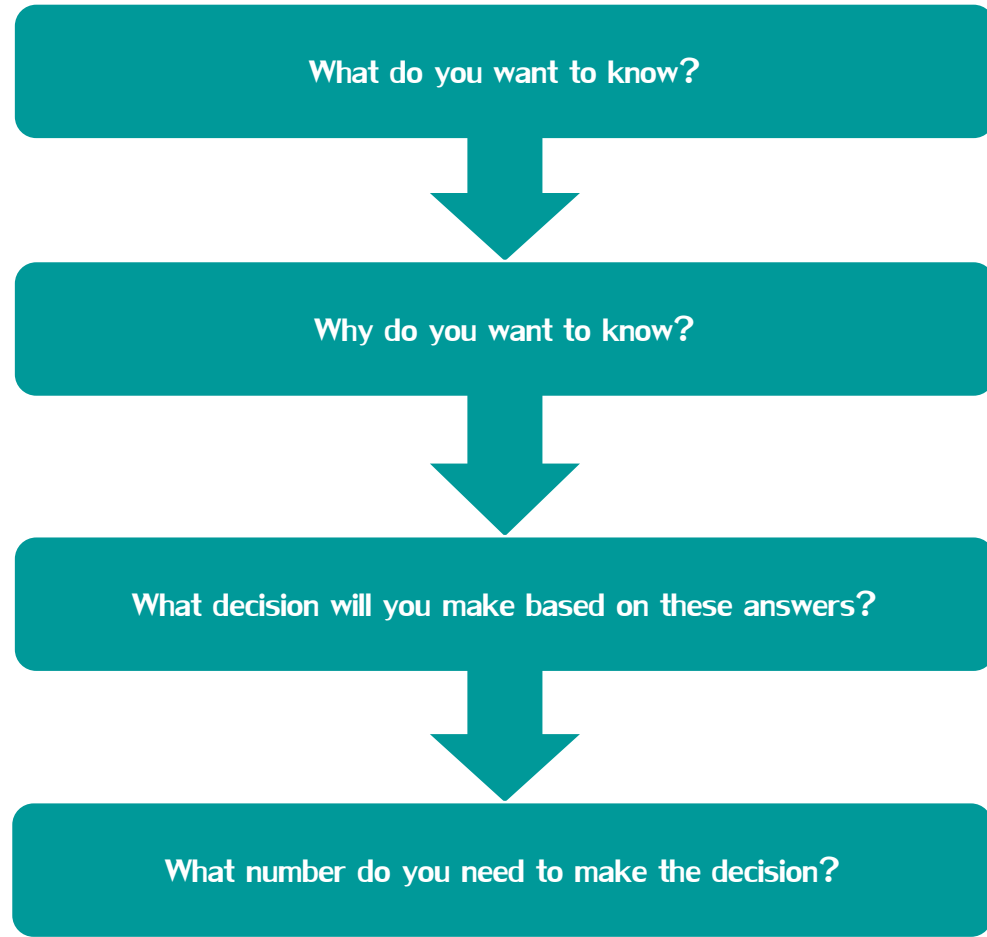
Lack of
validity



Establish the goals for your survey



A survey is a quantitative method.



← The result of a survey is a number

Don't confuse two sorts of number

10,000 individual answers to the question



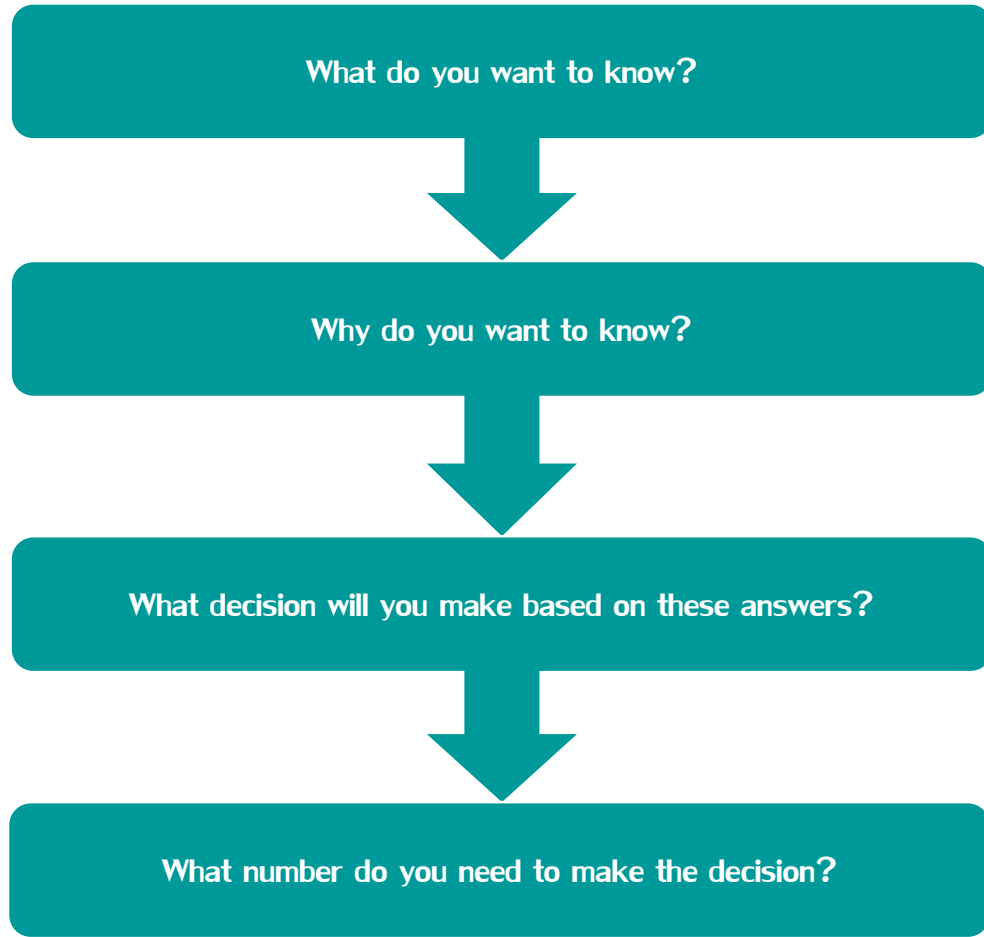
The number which is the result of the survey

“which is your preferred candy bar”



“18% prefer Snickers”

For example, I was writing a blogpost



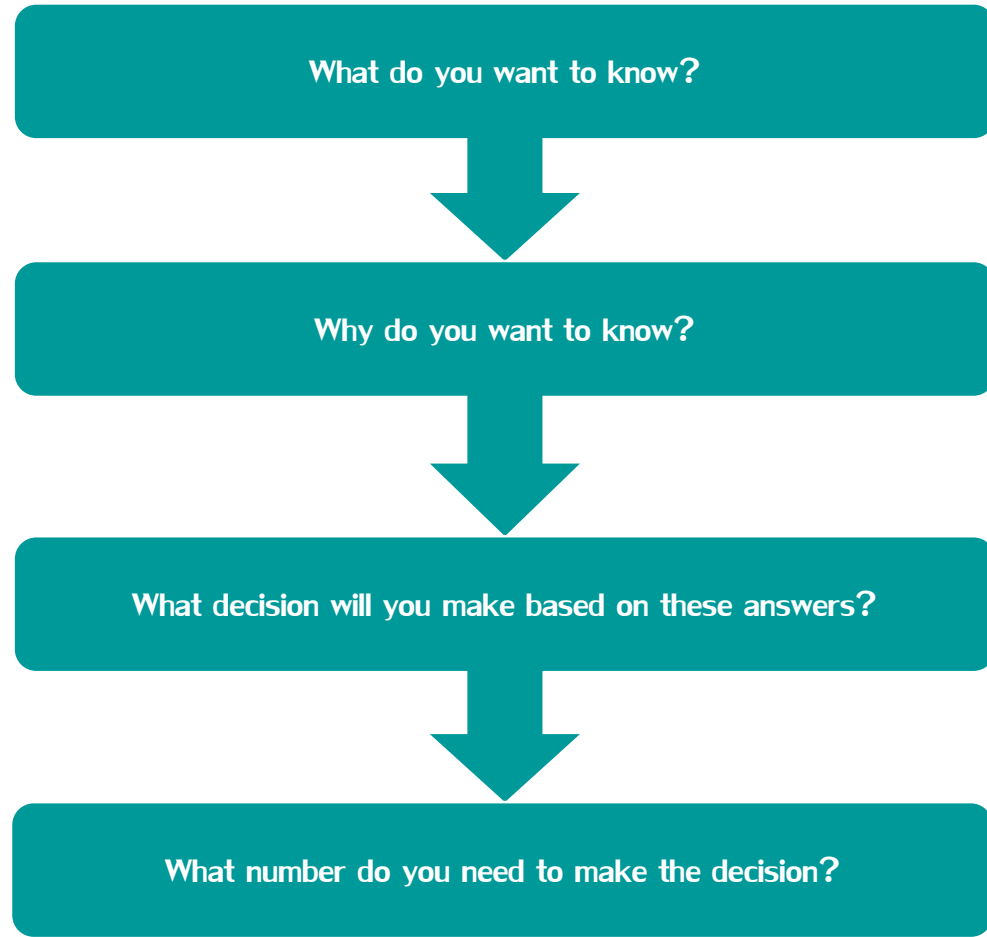
“Which topic is most interesting?”

“To write the most useful blog post”

“Pick one of the available topics”

“I’ll pick the topic with most votes”

Here's a (bad) example of thinking about goals



“We want to know how our customers are feeling”

“We want to provide great telephone support”

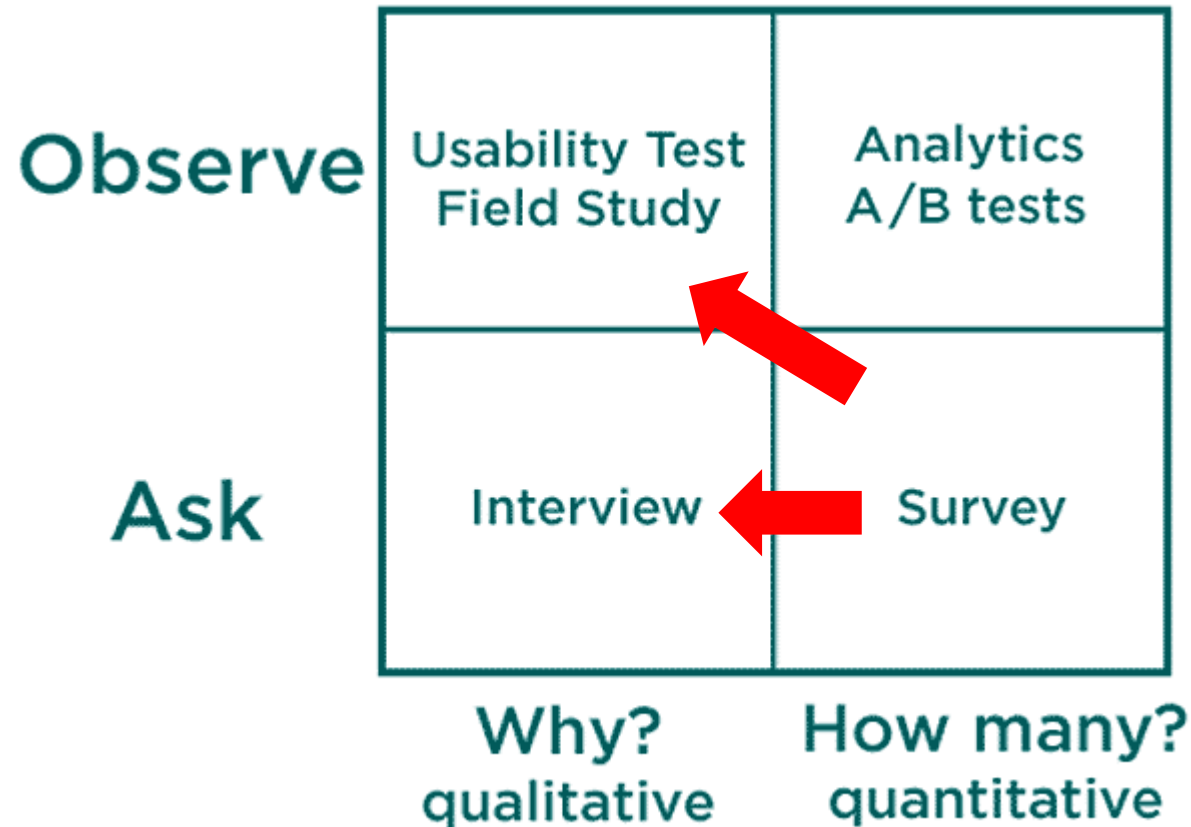
“We will decide whether to replace the call centre staff with AI”

“If more than half are unhappy, we will change to AI”

A survey is a quantitative method

Observe	Usability Test Field Study	Analytics A/B tests
Ask	Interview	Survey
	Why? qualitative	How many? quantitative

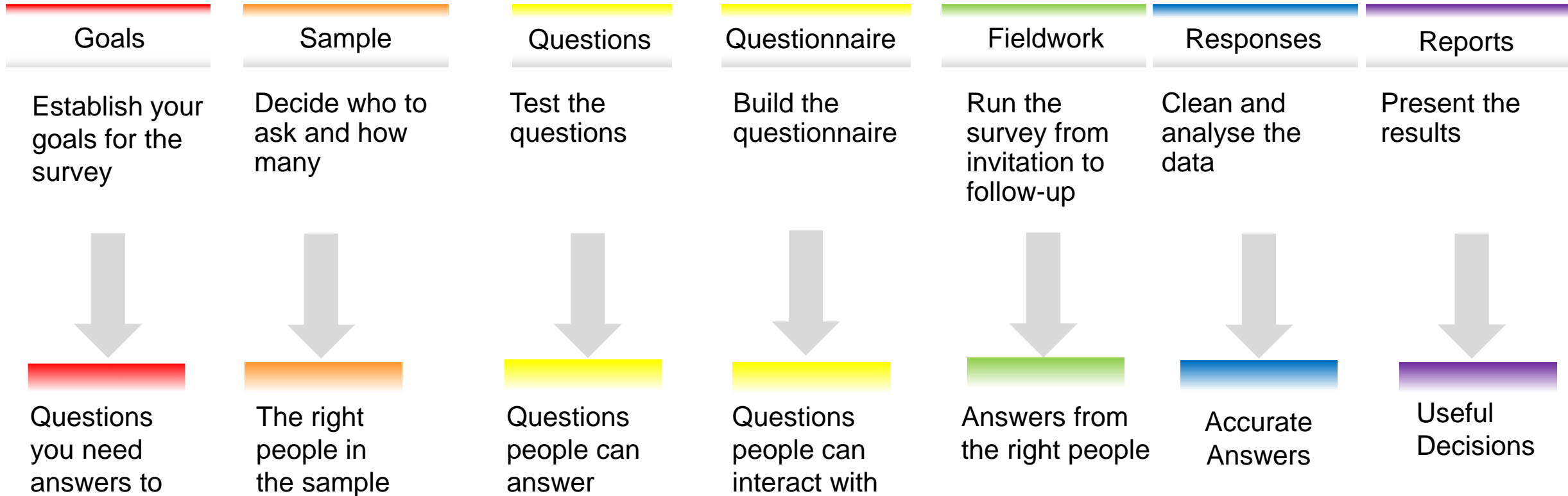
If you don't need a number yet, switch methods



Takeaway

If you don't yet need a number to help you to make your decision, choose a different method to do first

Overall, we're aiming for useful decisions



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Questions: Ditch the rating scales

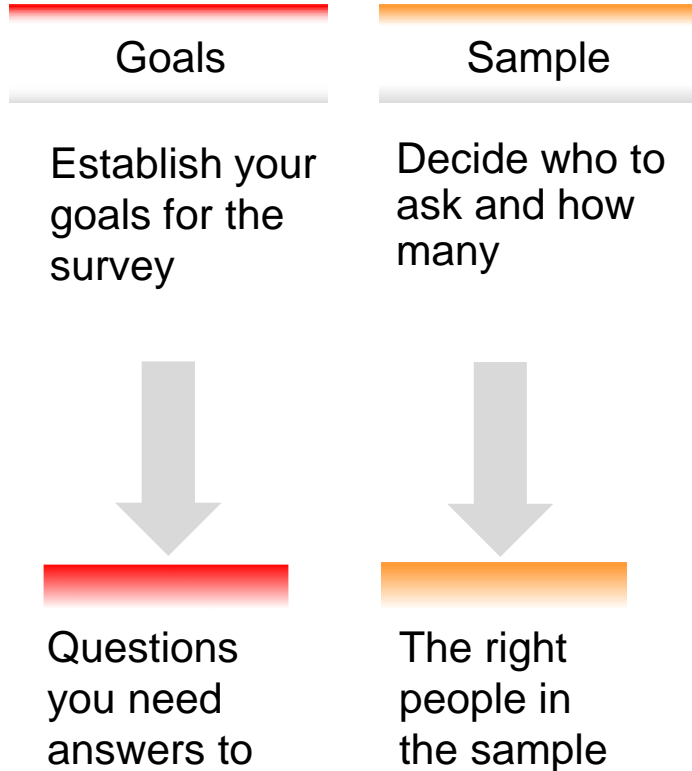
Responses: Lose your fear of open answers

Recap and questions

Sample

Don't obsess over sampling error

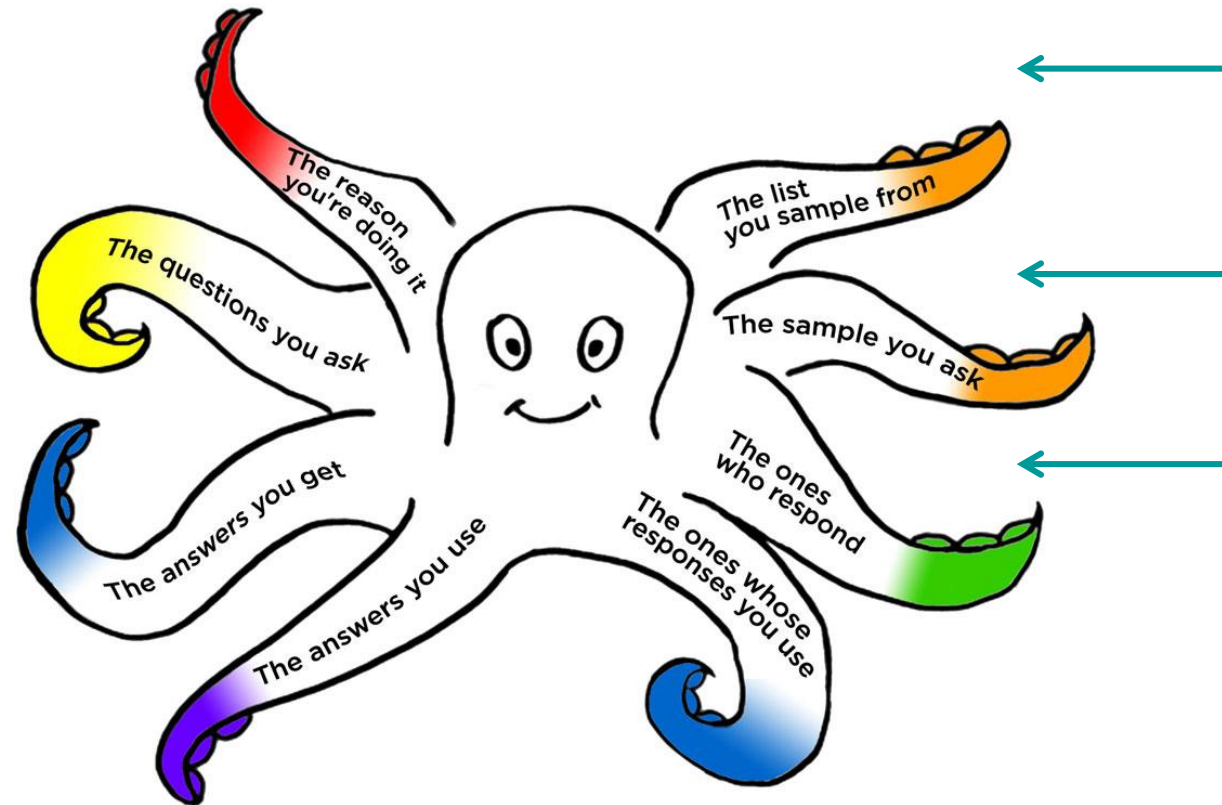
You get a better survey by doing many things well



There are three errors to look out for

Why you want ask

Who you want to ask



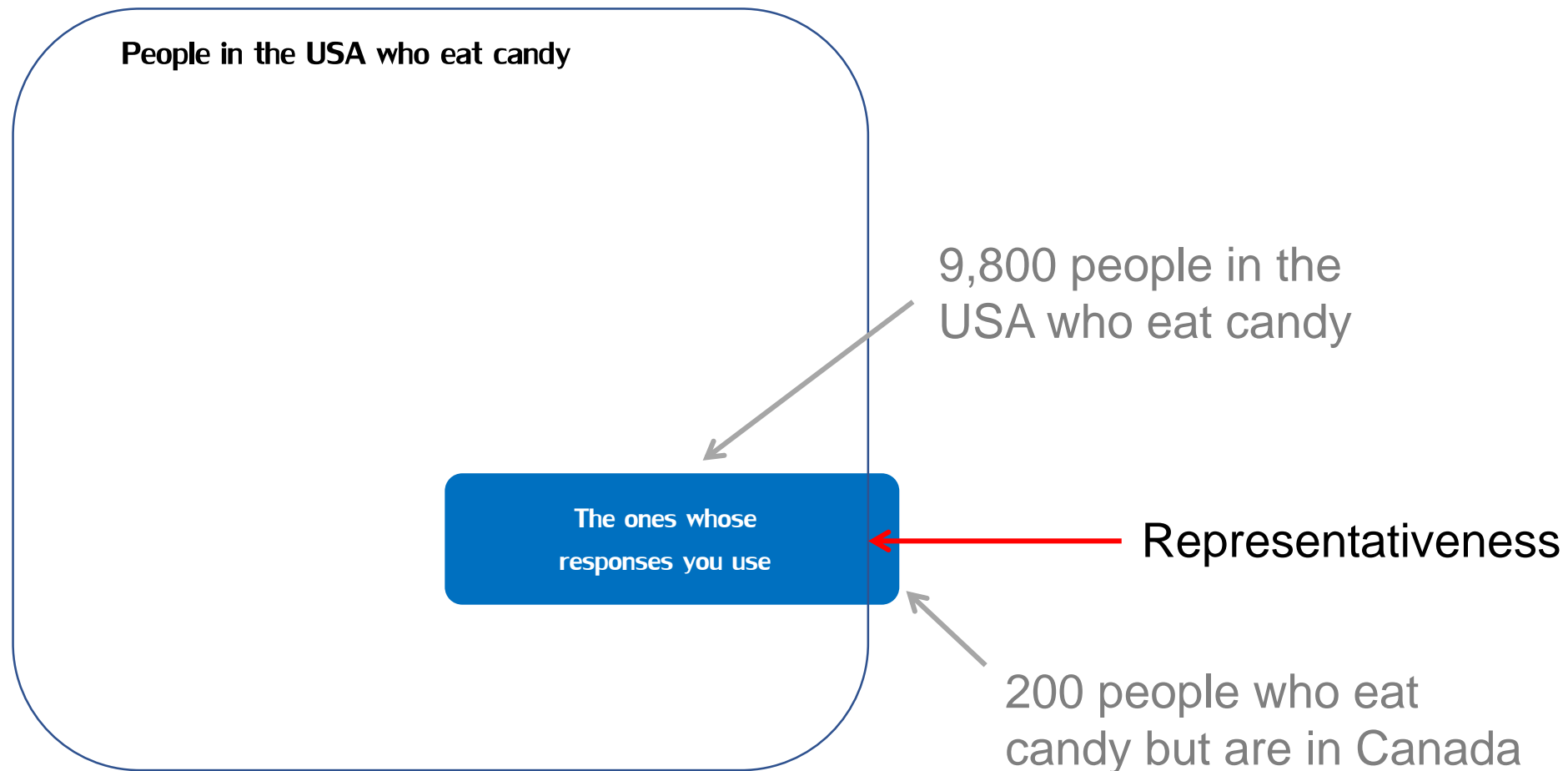
Coverage error

Sampling error

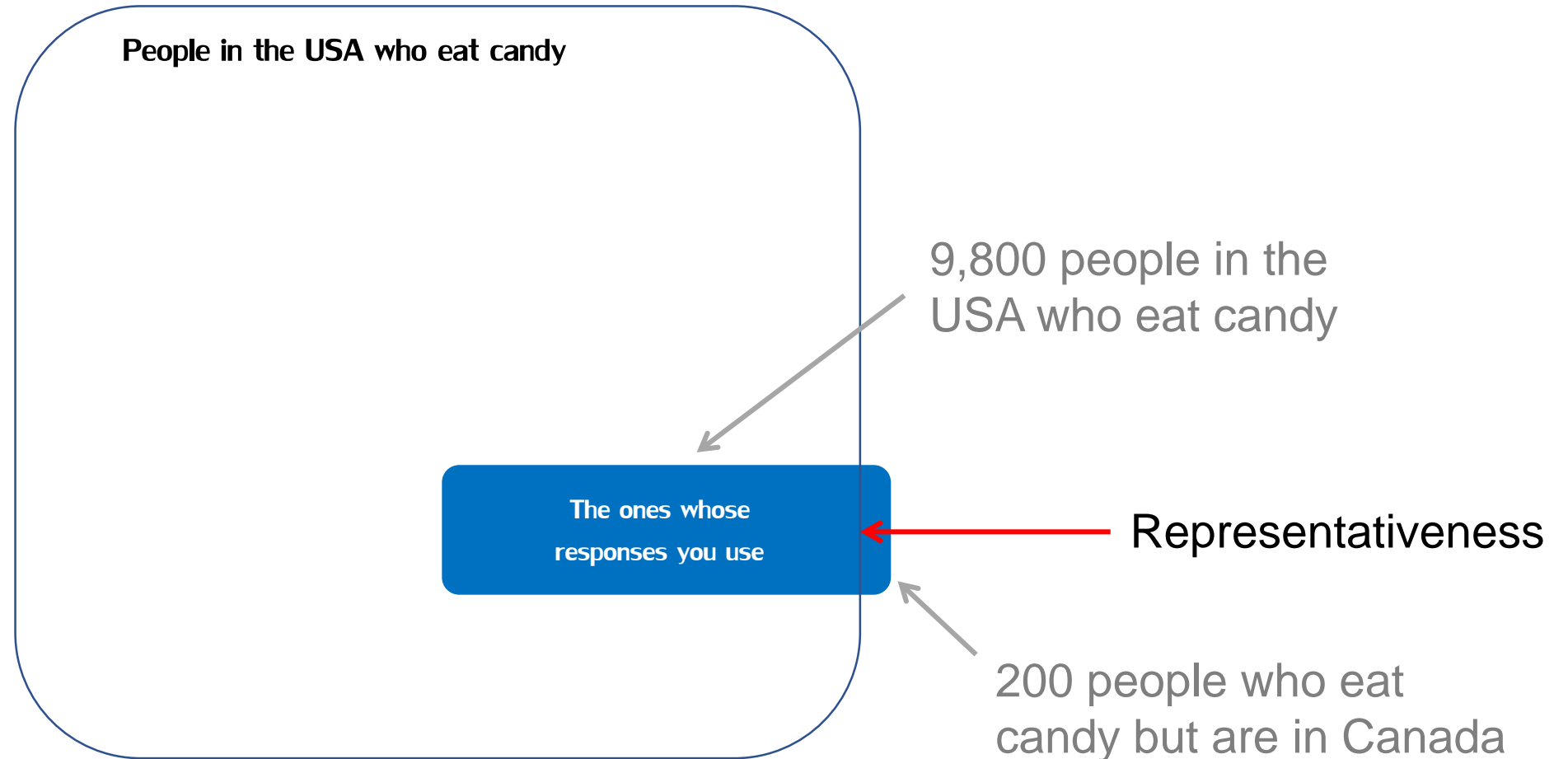
Non-response error

The number

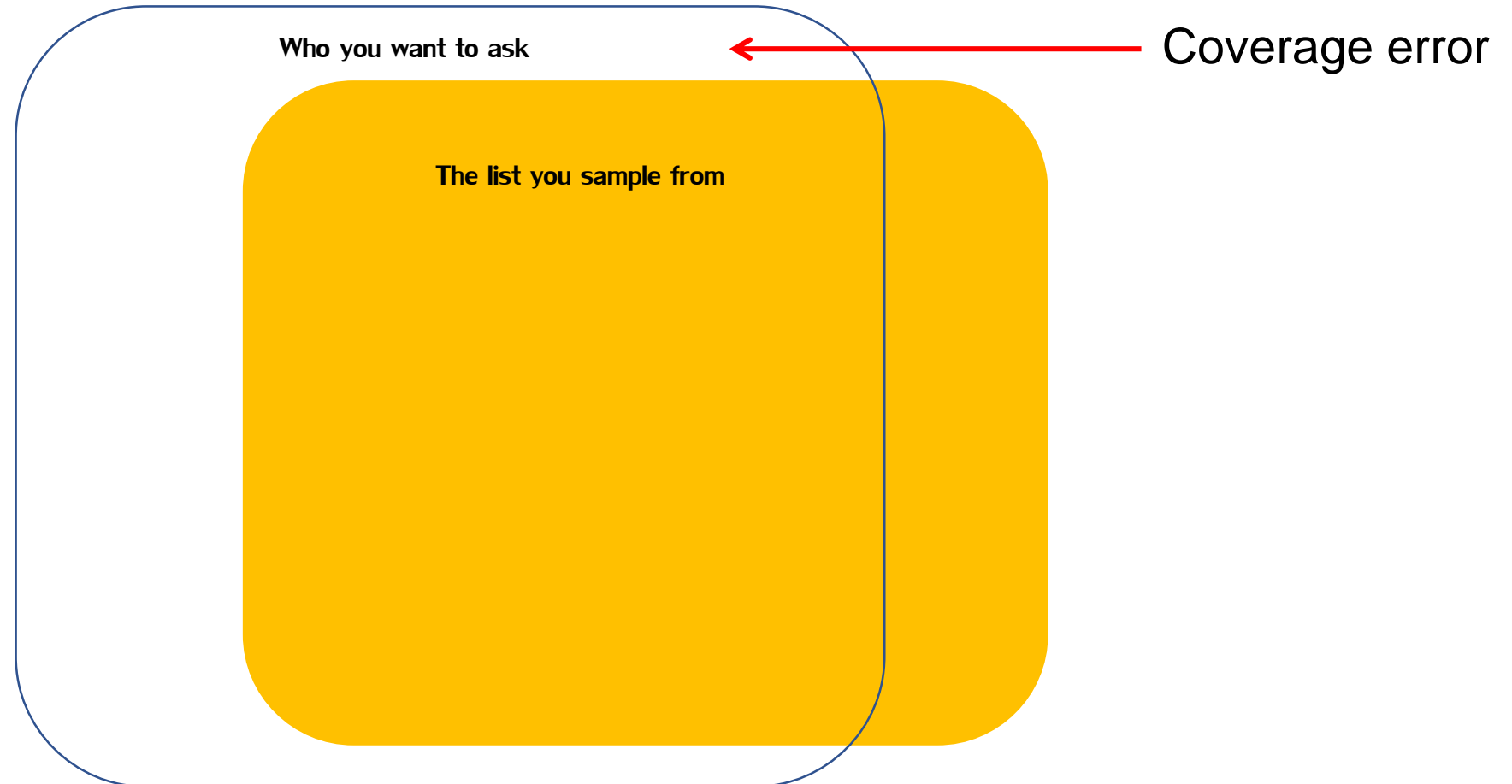
We want the final group to be representative



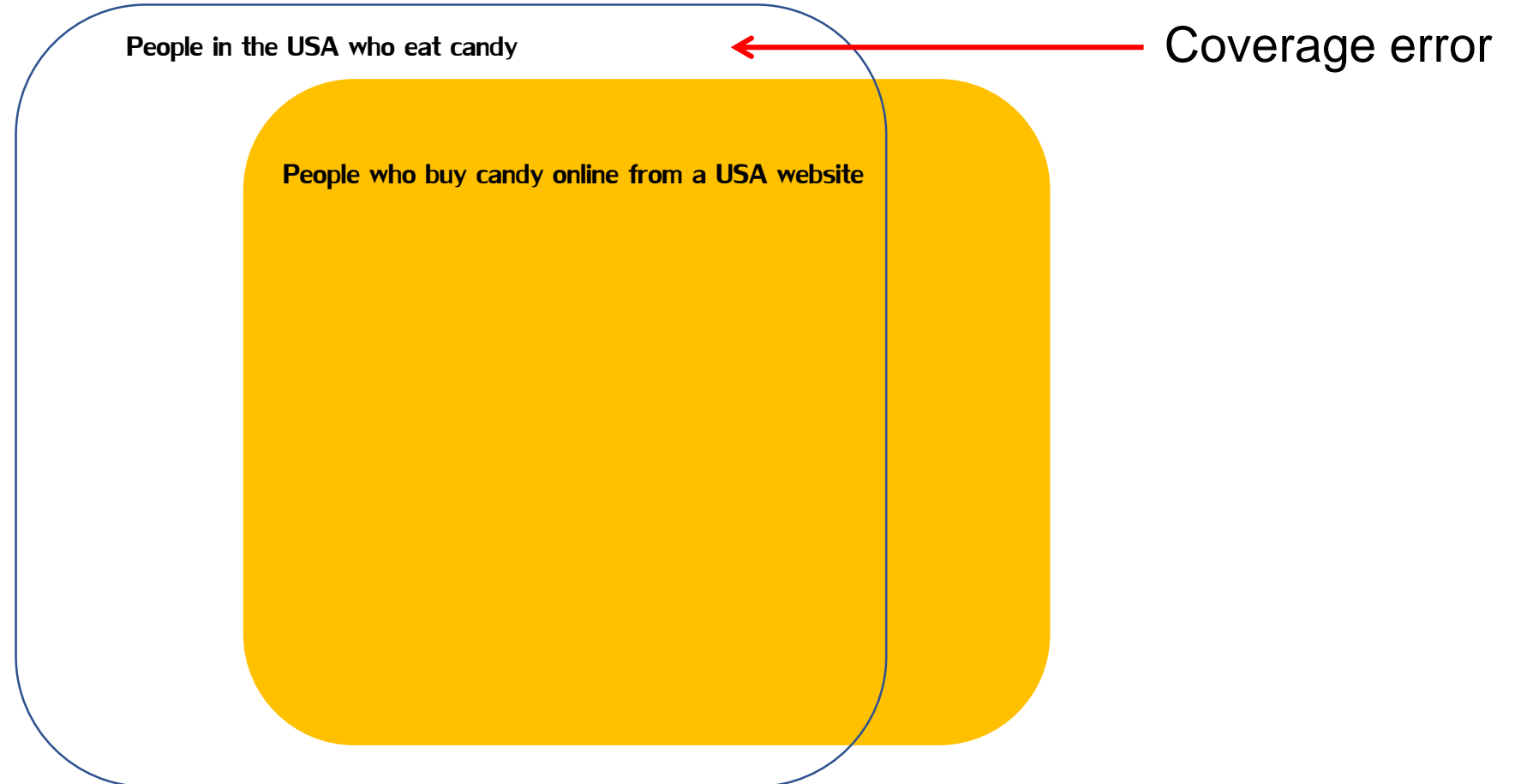
Let's try that with 10,000 answers about candy



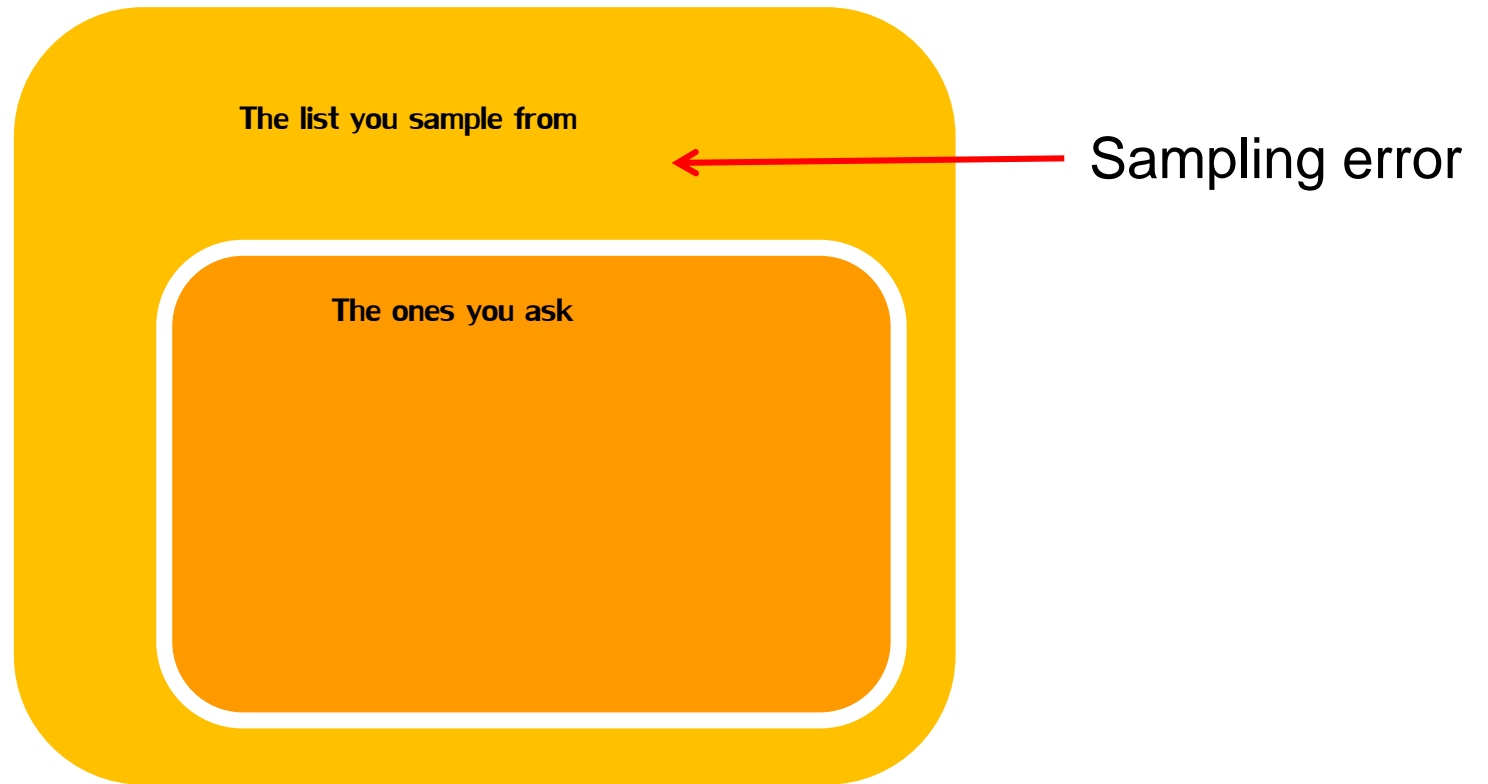
Coverage error happens when the list you sample from doesn't exactly match “who you want to ask”



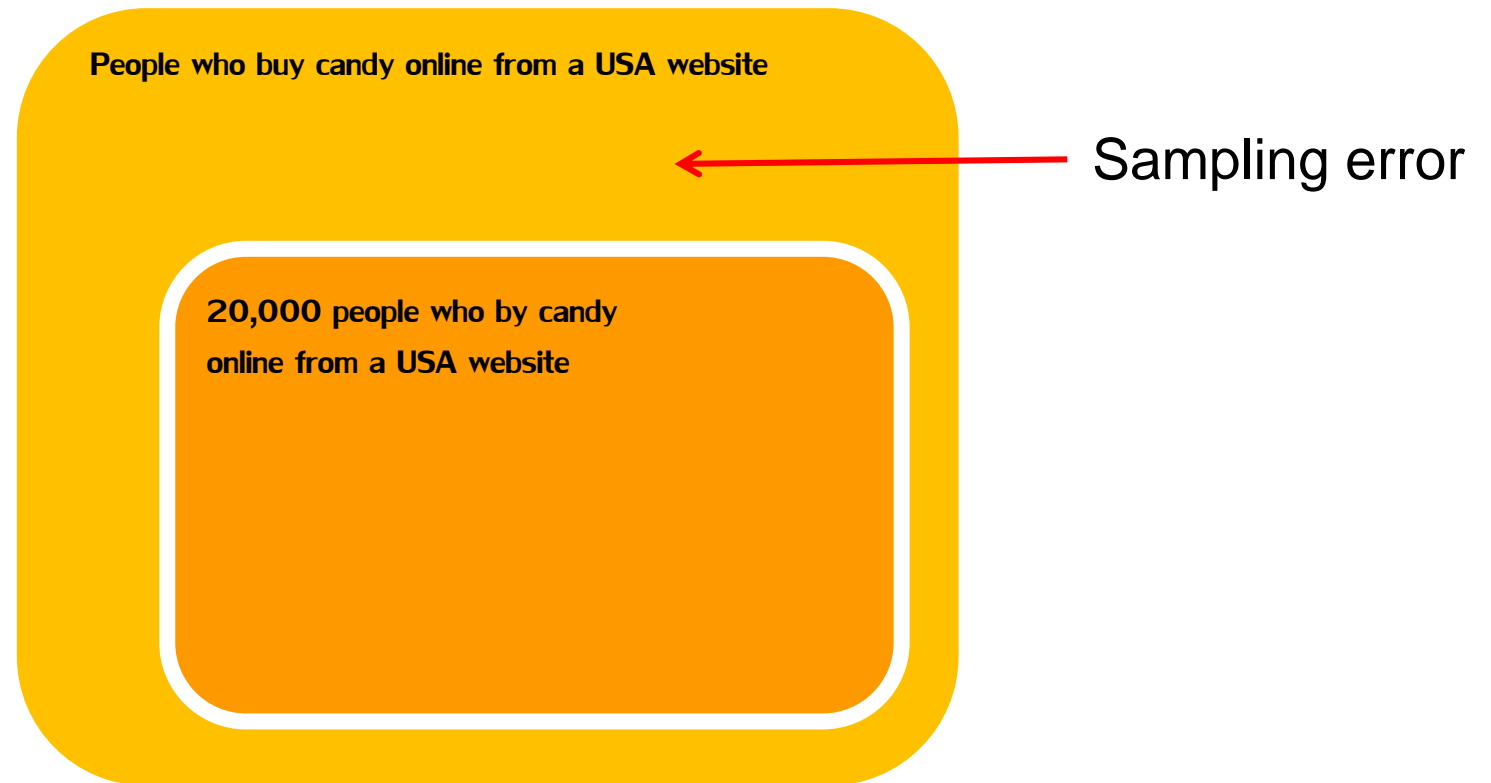
Coverage with candy may not be perfect



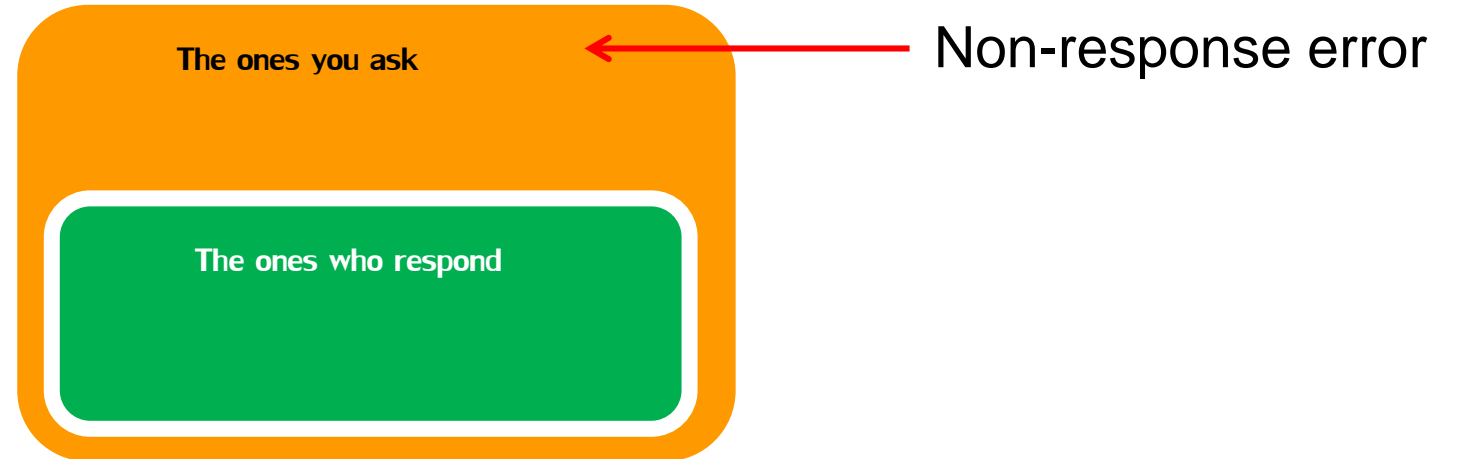
Sampling error happens when you ask a sample



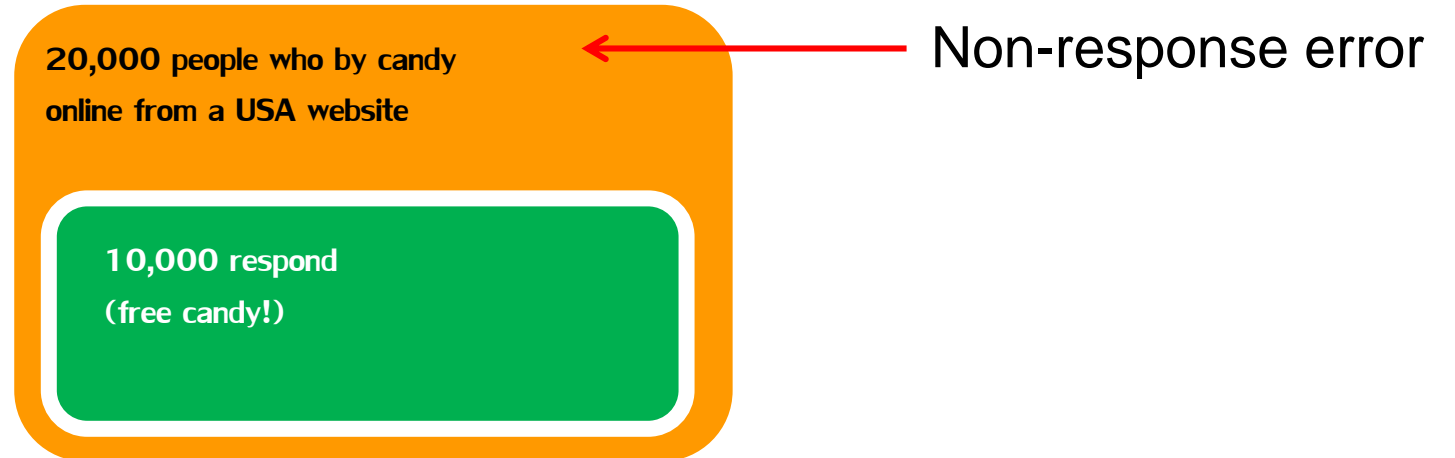
It's a big website, let's not ask everyone



Non-response error happens when the ones who respond are different from the ones you ask in a way that affects the final number

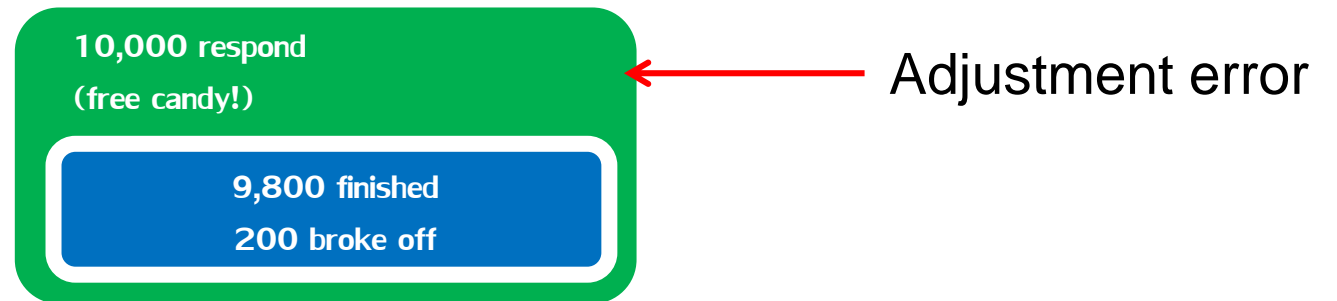


We don't expect everyone will respond to our candy survey



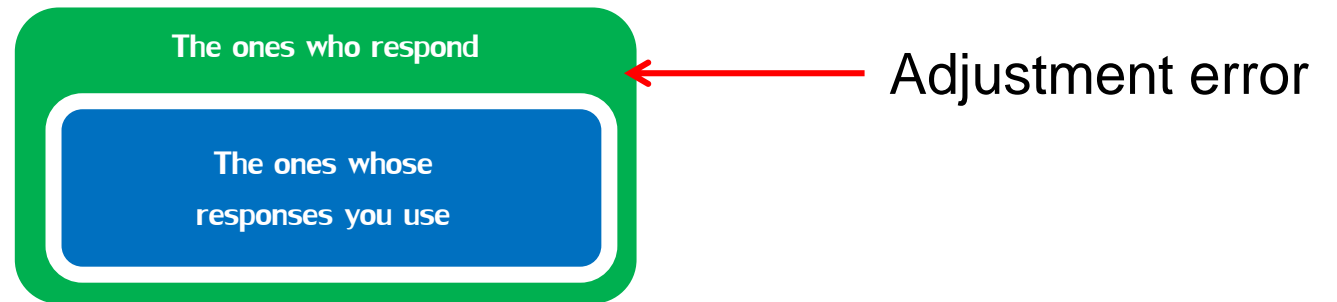
Adjustment error happens when the decisions you make about whose responses you use are not completely ideal*

*usually you'll be OK on this, it's not an error I worry about too much in practice

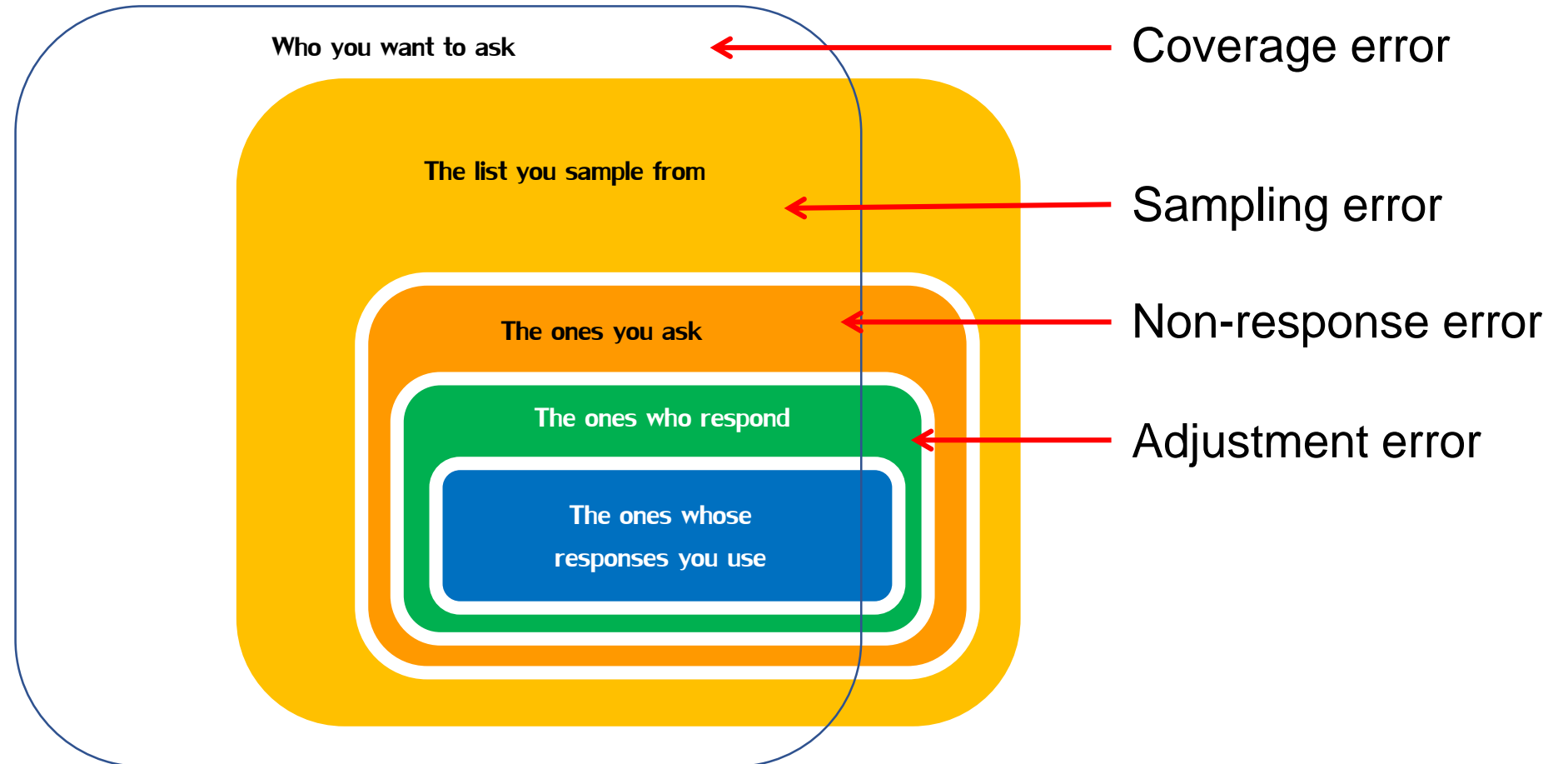


Adjustment error happens when the decisions you make about whose responses you use are not completely ideal*

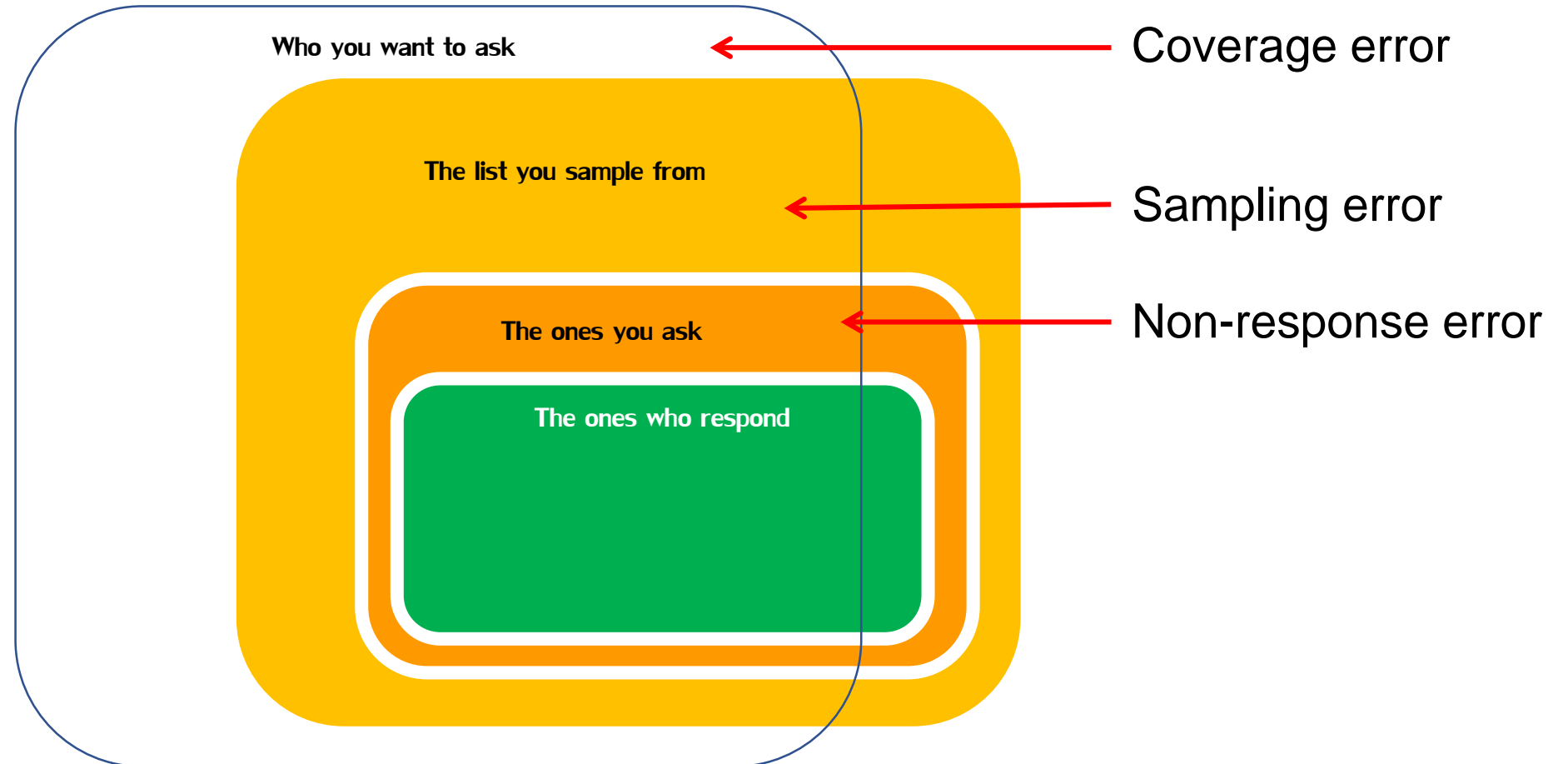
*usually you'll be OK on this, it's not an error I worry about too much in practice



We don't get exactly the respondents we want



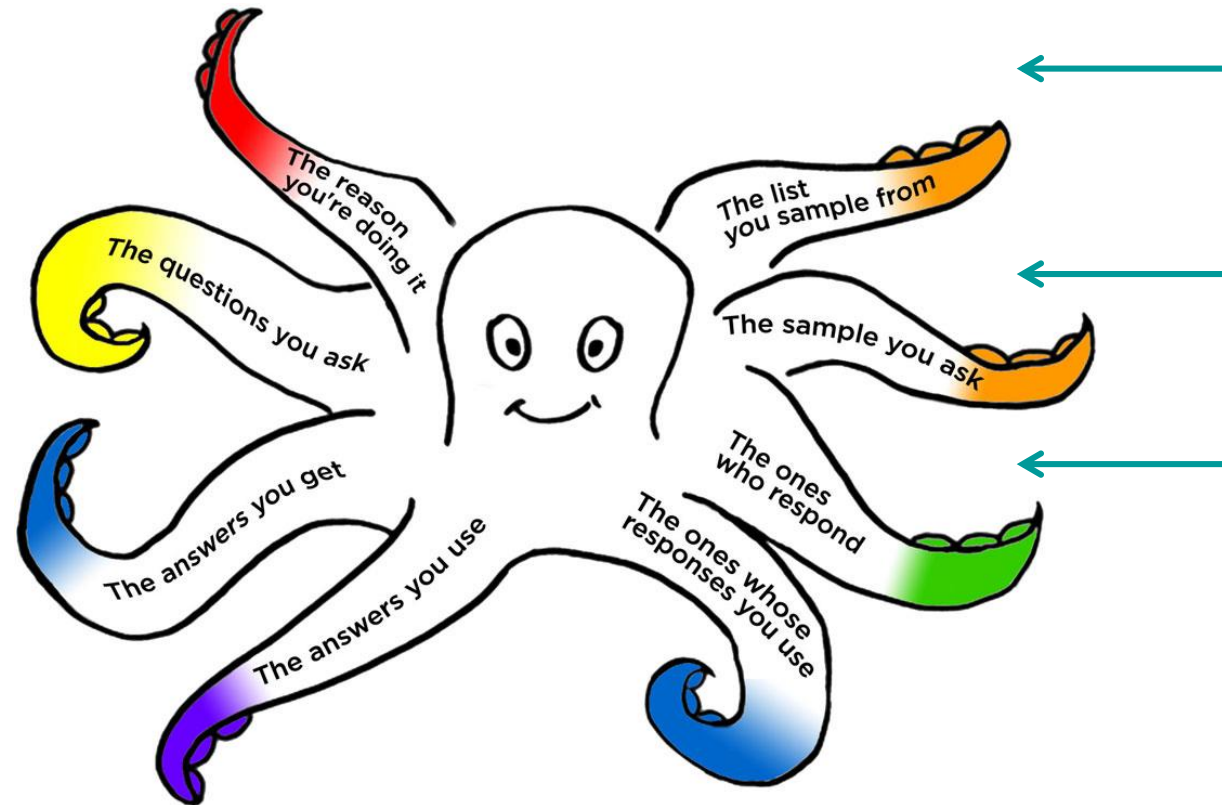
Sampling is when we worry about three errors



Here they are with the Survey Octopus

Why you want ask

Who you want to ask



Coverage error

Sampling error

Non-response error

The number

Takeaway

Think about sampling error,
but do not neglect coverage
error and non-response error

Today's agenda

- ✓ My survey process
- ✓ Goals: Focus your survey on a specific decision
- ✓ Sample: Don't obsess over sampling error

Questions: Ditch the rating scales

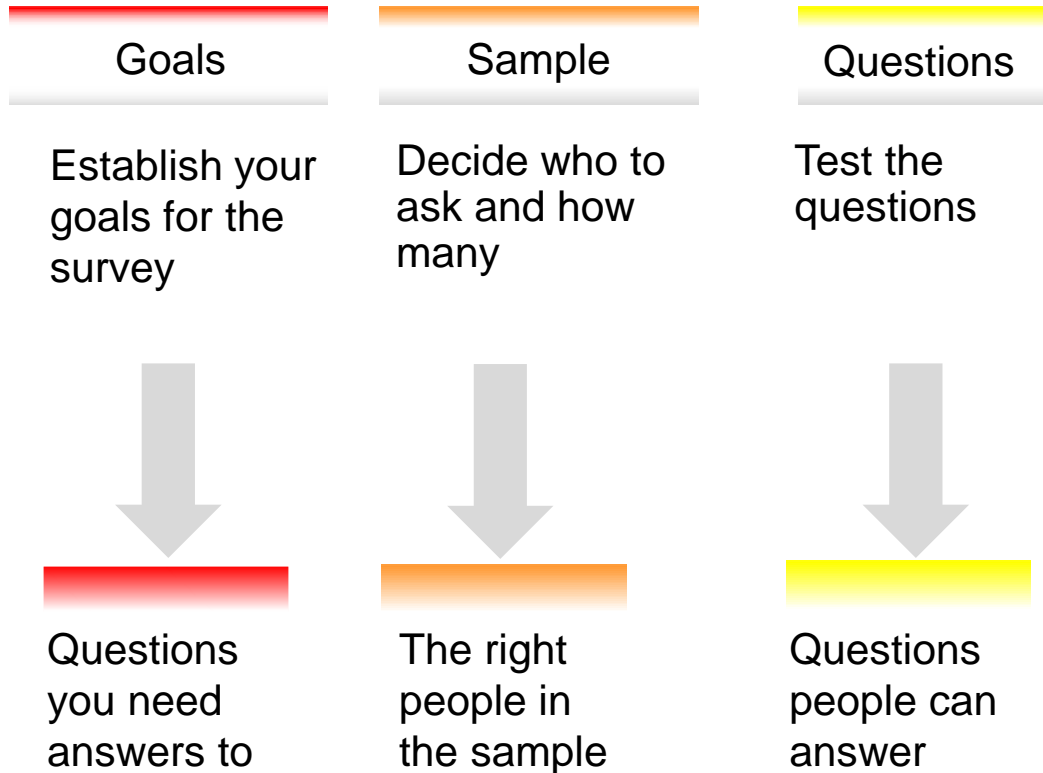
Responses: Lose your fear of open answers

Recap and questions

Questions

Ditch the rating scales

We need questions that people can answer

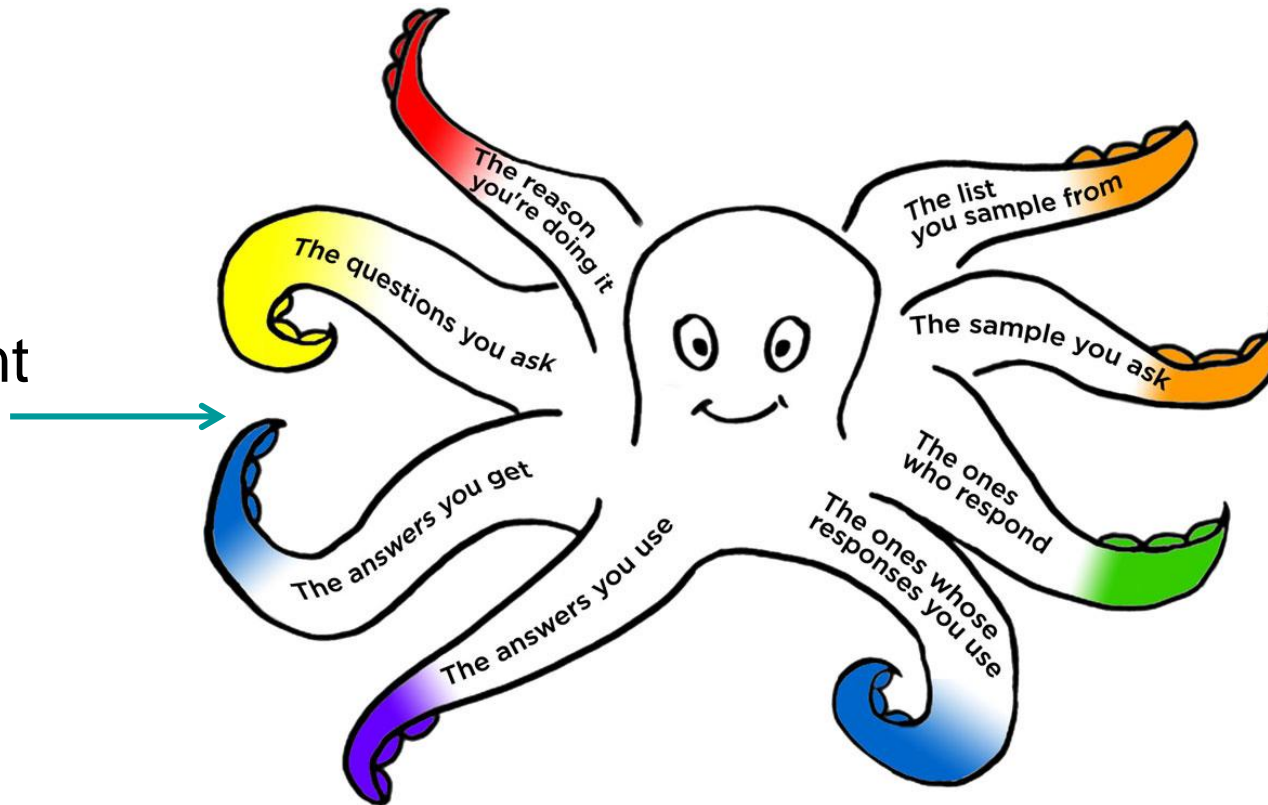


Bad questions create measurement error

Why you want ask

Who you want to ask

Measurement error



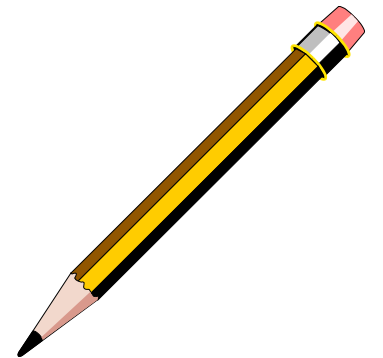
The number

Let's try an example.

- Think of a time you stayed at a hotel
- What ONE thing would have created a better experience?

Thank you for being our guest

Thanks to feedback from guests like you, we can give you an even better experience next time!





Can you place that answer on this questionnaire?

Thank you for being our guest

Thanks to feedback from guests like you, we can give you an even better experience next time!



On a scale of 0 to 10, what is the likelihood that you would recommend us to friends and family?

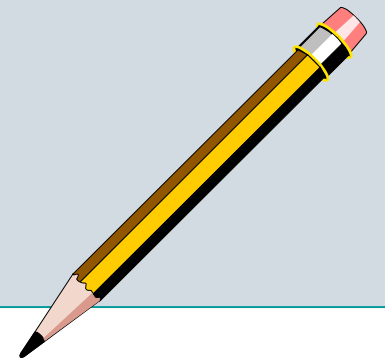
 0 1 2 3 4 5 6 7 8 9 10 

Not likely at all Very Likely

How would you rate the following Areas:

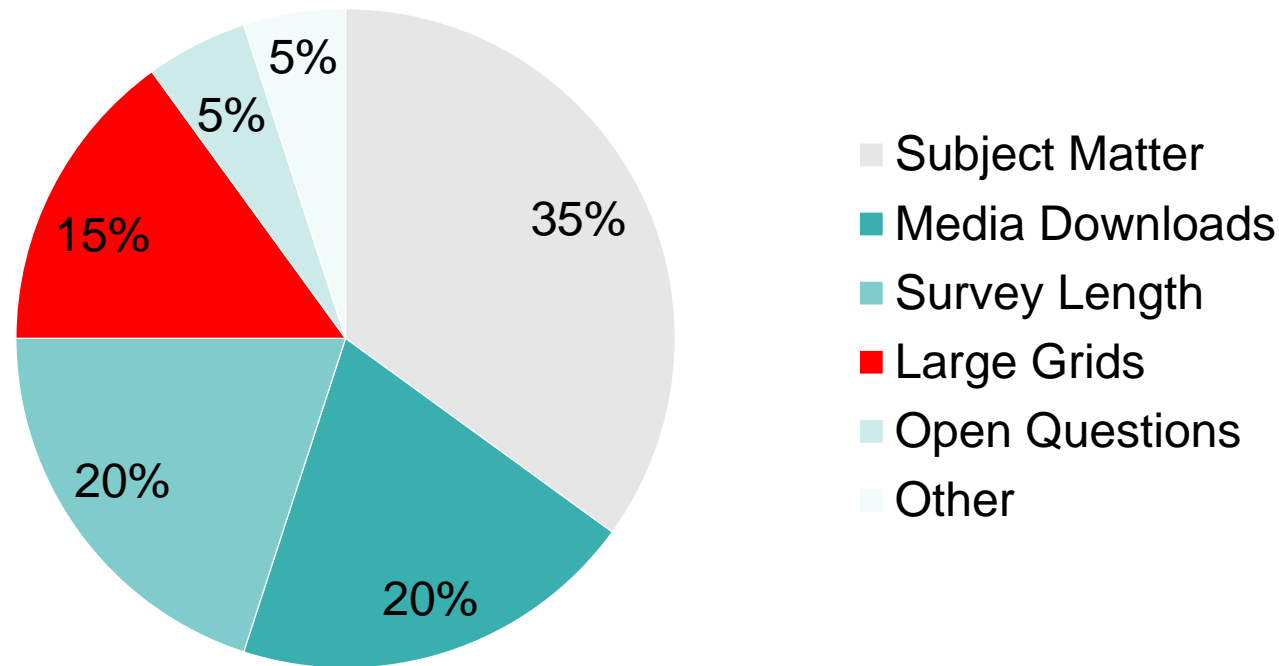
1 = poor, 5 = excellent. Please select N/A if you didn't use this facility

	 1	2	3	4	 5	N/A
Reservation Experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arrival Experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Grids are a major cause of survey drop-out

Total incompletes across the 'main' section of the questionnaire
(after the introduction stage)



Takeaway

Rating scales are hard.

Test your questionnaire with open answers first.

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- ✓ Sample: Don't obsess over sampling error
- ✓ Questions: Ditch the rating scales

Responses: Lose your fear of open answers

Recap and questions

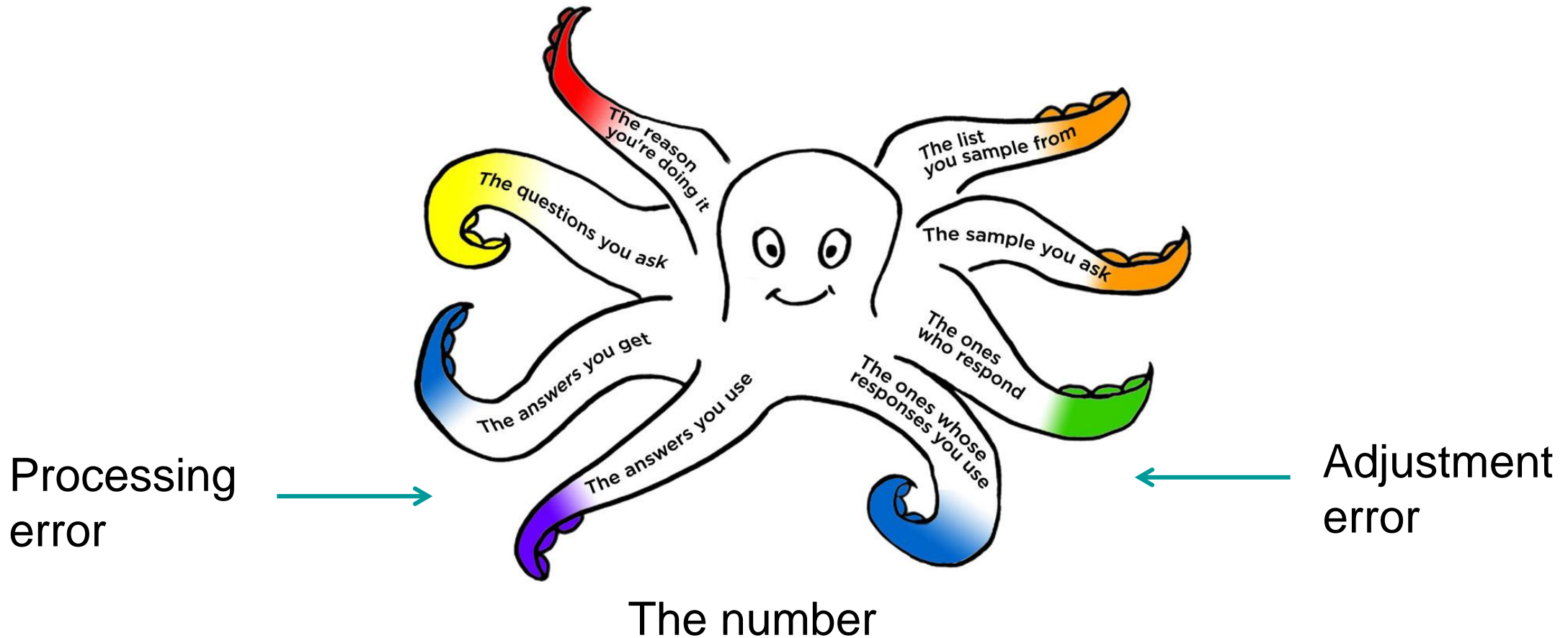
Responses

Lose your fear of open answers

There are two errors around responses

Why you want ask

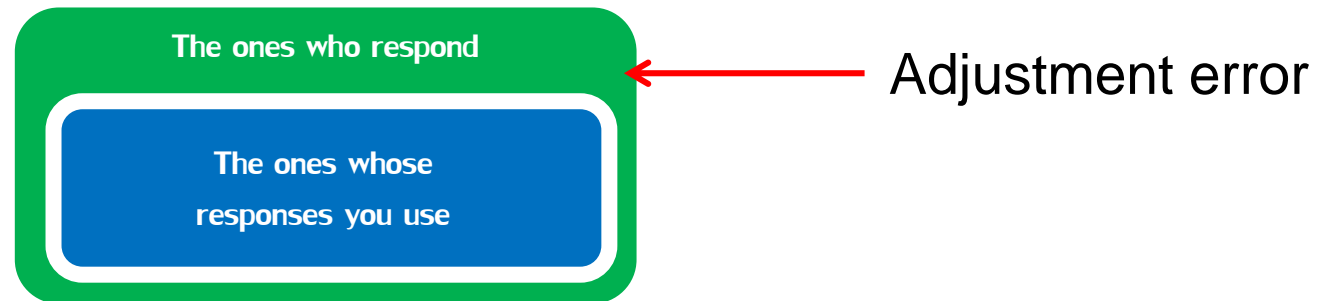
Who you want to ask



We met adjustment error before

Adjustment error happens when the decisions you make about whose responses you use are not completely ideal*

*usually you'll be OK on this, it's not an error I worry about too much in practice

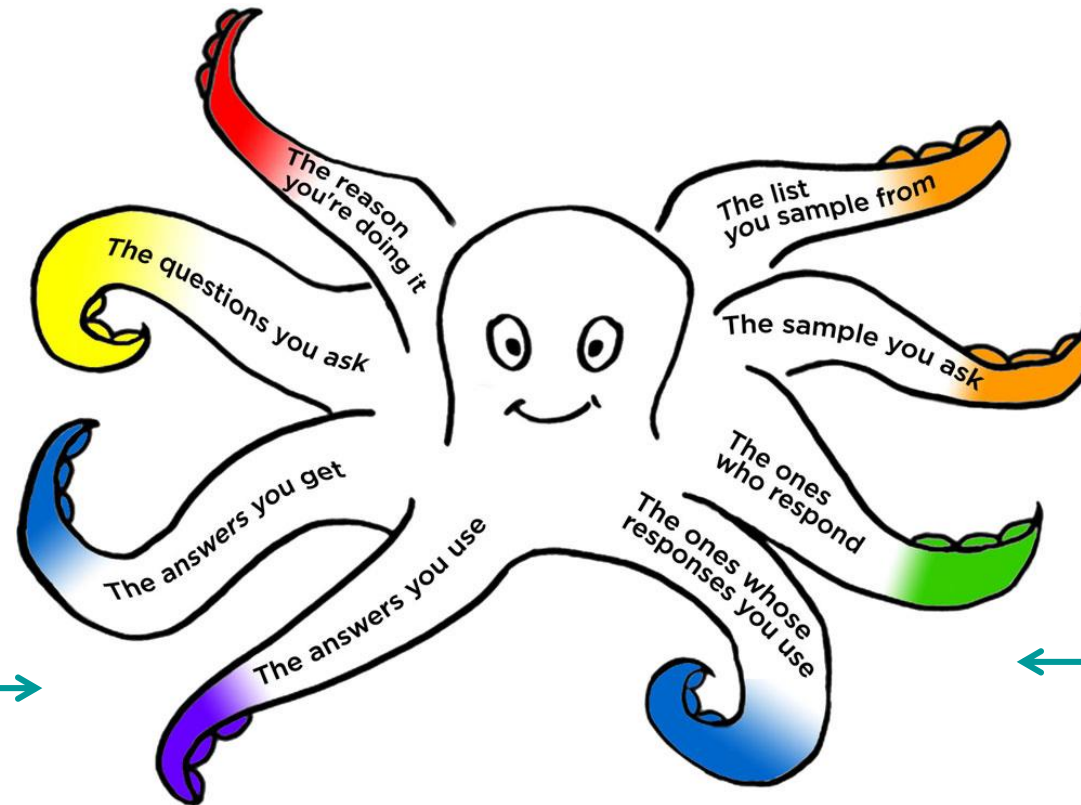


Processing error is very similar

Why you want ask

Who you want to ask

Processing error happens when the decisions you make about how you use the individual answers are not completely ideal



Processing error

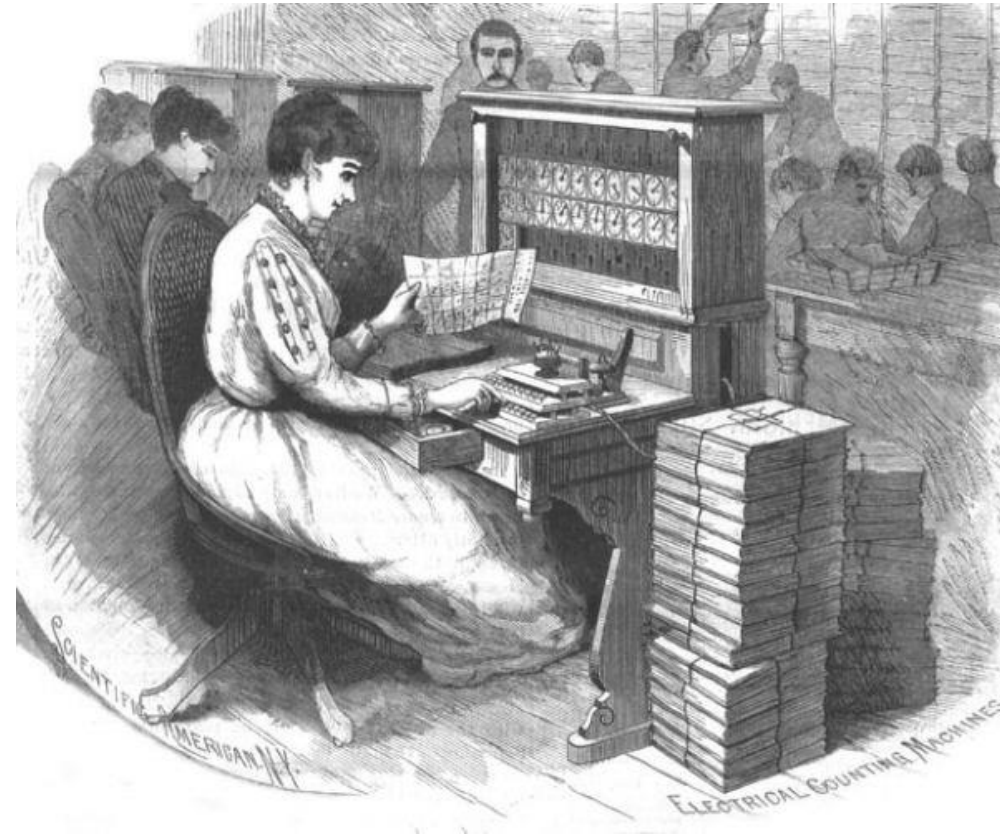


Adjustment error



The number

Typing in the answers is “coding”



These days, survey tools do a lot of coding for us

Type of question

- Radio buttons
(Yes, No, Not sure)
- Check boxes
- Numeric entry only
- Open box (text entry)

Results are likely to have

- Text of the option
(Yes, No, Not sure)
- A column for each of the checkboxes
- A number
- Text as typed

We're often too frightened of open answers

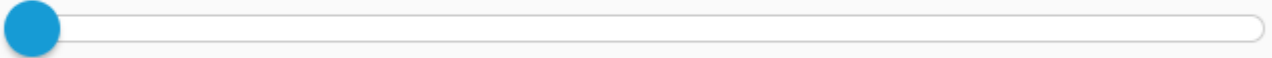
For example, here are some examples of asking for age

Date of birth


01 ▾ 01 ▾ 1900 ▾ 

How old are you?

Move the slider until it shows the correct number in the box on the left



Thanks for that! Now we'd like to get to know you a little bit better. So please select your date of birth from the drop downs below:

mm/yyyy 

← Apr ▾ 1999 ▾ →

OK

CONTINUE

We asked farmers for 'size of farm' with an open box

It took me 10 minutes to convert 781 text answers to numbers

Type of reply	Example	% of replies
Just a number	7	81%
with ha	87ha	4%
with hectares	125 hectares	1%
Other	(next slide)	1%
Did not answer/ answer is 'N/A'		12%

Here are the 1% 'other' answers

Farmer's answer	As coded by me
7+	7
~ 2800Ha	2800
Approx 32.37	32
843.65 + 67.	911

Takeaway

If the person who answers is likely to 'just know' their response as a number, give them an open box for it

But what about free-text responses?

If you ask for free-text responses, plan to read them and think about them

The screenshot shows the Suttons Seeds website interface. At the top left is the Suttons Seeds logo with the text "Est. 1806". To its right are two phone numbers: "0844 922 2899 (Customer Services) 8.30am to 5pm, Mon to Fri" and "0844 922 0606 (Orders only) 24hrs a day, 7 days a week". A "Plant Despatch Schedule" button is visible. On the top right, there are links for "Sign In / Register" and "My Account", and a shopping cart summary showing "1 item £1.45" with a "View Basket" button. A search bar with "Enter Search Here" and a "Go" button is located in the center. A navigation menu below the search bar includes "Home", "Vegetables", "Flowers", "Garden Equipment", "Fruit", "Perennial Plants", "Special Offers", and "Garden Advice and Help". The breadcrumb trail reads "Home » Gardening » Vegetables » New Vegetables for 2012 » Brussels Sprout Continuity Collection". The main product area features a large image of Brussels sprouts on the left and a product description on the right: "Brussels Sprout Continuity Collection", "Code: 216121", "Harvest October-February", and "Collection contains 18 plants (6 of each variety): Nautic (a vigorous, high-yielding early variety with good standing)". A quantity selector shows "1" and an "Add to Basket" button with the price "£6.99". A feedback pop-up titled "Help us improve" is overlaid on the page, containing the text "We value your opinion. What do you like about our site and what can we improve on?" and a text input field with the placeholder "Click here to type...". A "SUBMIT" button is at the bottom of the pop-up.

SUTTONS SEEDS
Est. 1806

0844 922 2899
(Customer Services)
8.30am to 5pm, Mon to Fri

0844 922 0606
(Orders only)
24hrs a day, 7 days a week

Plant Despatch Schedule

Sign In / Register | My Account

1 item £1.45
View Basket

Enter Search Here Go

Home | Vegetables | Flowers | Garden Equipment | Fruit | Perennial Plants | Special Offers | Garden Advice and Help

Home » Gardening » Vegetables » New Vegetables for 2012 » Brussels Sprout Continuity Collection

Brussels Sprout Continuity Collection

Code: 216121

Harvest October-February

Collection contains 18 plants (6 of each variety): **Nautic** (a vigorous, high-yielding early variety with good standing

Pack of 18 Plug Plants (6 of each variety)

Quantity: 1

Add to Basket £6.99

Add to wish list

to grow your own. Even the smallest patio or
at will give you a bumper crop of delicious fresh

Help us improve

We value your opinion.
What do you like about our site and what can we improve on?

Click here to type...

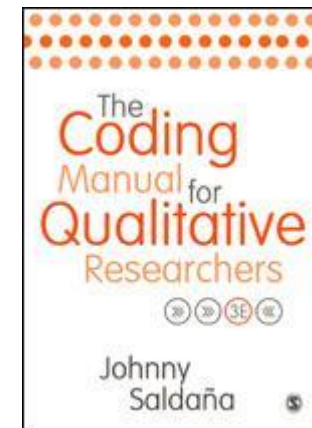
SUBMIT

But what if we need to do more?

You can choose from many different coding frames

- Topic
- Who is responsible for doing something (department)
- Positive or negative about something (sentiment)
- Nuggets for the report (cherry-picking)

Johnny Saldaña lists many more in his book



I do coding for each question in five steps

- Step 1 Read a sample of the open answers
- Step 2 Decide on a coding frame
- Step 3 Apply the coding frame (phase 1 coding)
- Step 4 Think about it
- Step 5 Revise the coding frame and repeat (phase 2 coding)

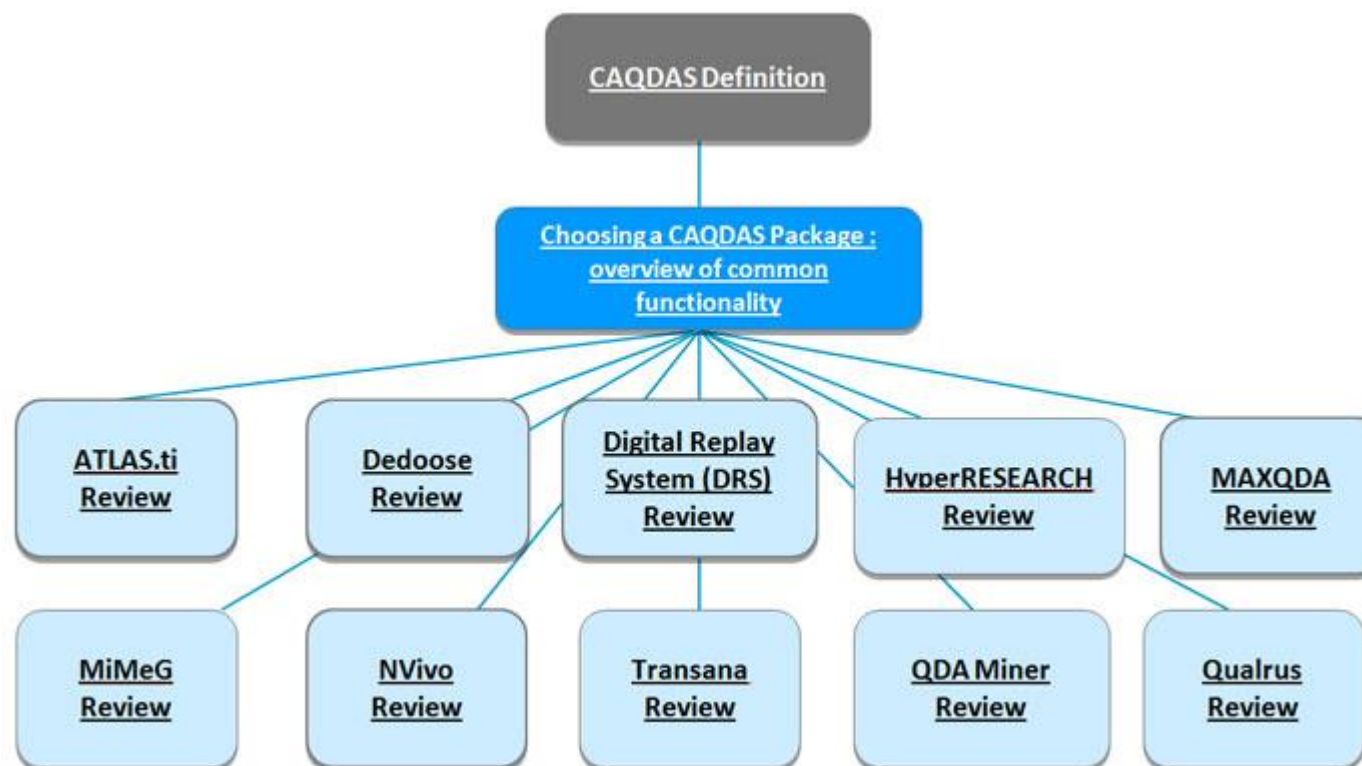
What I ought to do is different

Goals	Decide on a coding frame.
Fieldwork	Apply the coding frame to the first few responses. Think about it. Revise.
Responses	Apply the better coding frame (phase 1 coding). Think about it.
Reports	Revise the coding frame and tweak it all again (phase 2 coding).

CAQDAS tools can have hefty learning curves

computer-assisted qualitative data analysis software

Before buying one, look at this: [Choosing a CAQDAS package | University of Surrey](#)



I made a word cloud from an example dataset



I got a summary from ChatGPT

- Used Playground - OpenAI API
- Chose model: text-davinci-003
- Pasted in all the comments with tl;dr at the end

“Overall, I experienced long wait times and confusion on the website and helpline, however, the staff were friendly and helpful, and I'm glad I eventually got the product I needed.”

The minimum respect is to read every answer

- You ask your respondent to give their time to craft their answers
- You owe them your time to read and think about every answer



Takeaway

Don't wait until the report is due to think about coding

Today's agenda

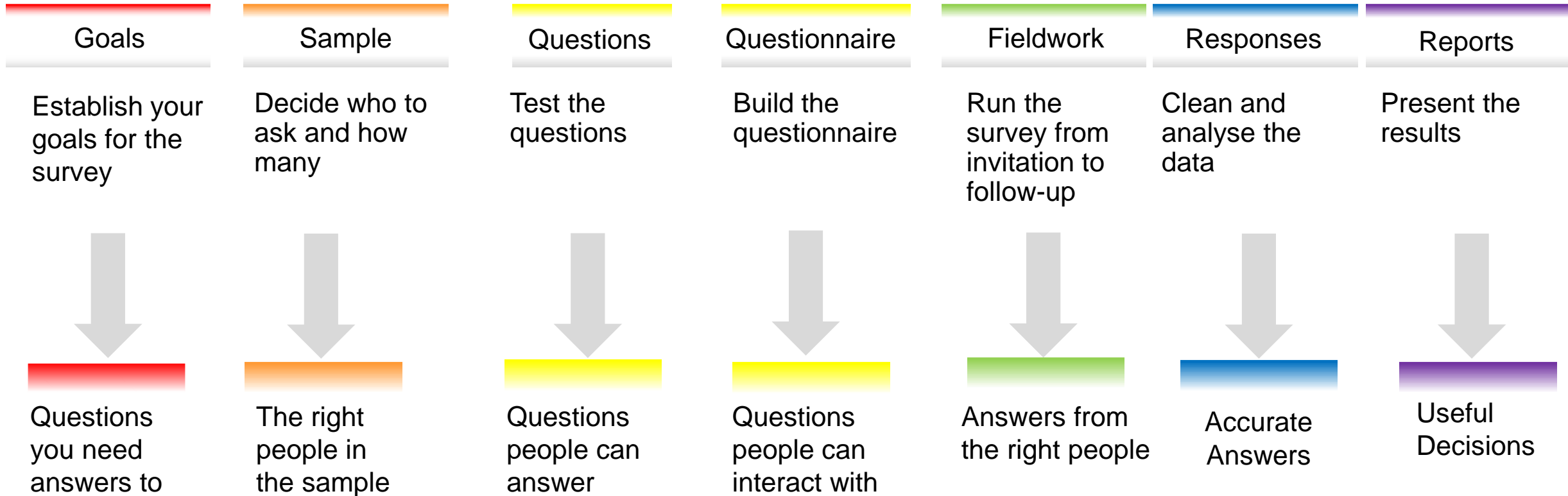
- ✓ My survey process
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- ✓ Sample: Don't obsess over sampling error
- ✓ Questions: Ditch the rating scales
- ✓ Responses: Lose your fear of open answers

Recap and questions

Recap

The Survey Octopus and the errors

You get a better survey by doing many things well



All these errors add up to Total Survey Error

Why you want ask

Who you want to ask

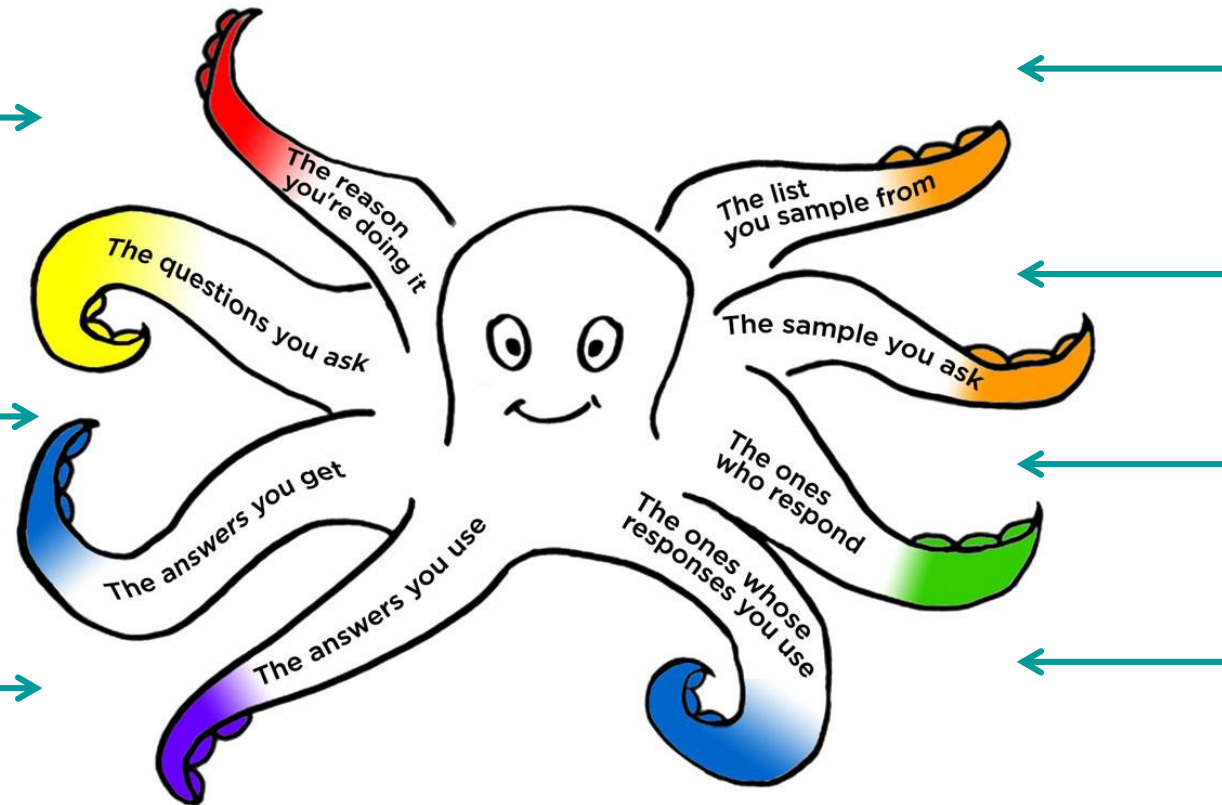
(Lack of) validity



Measurement error



Processing error



Coverage error

Sampling error

Non-response error

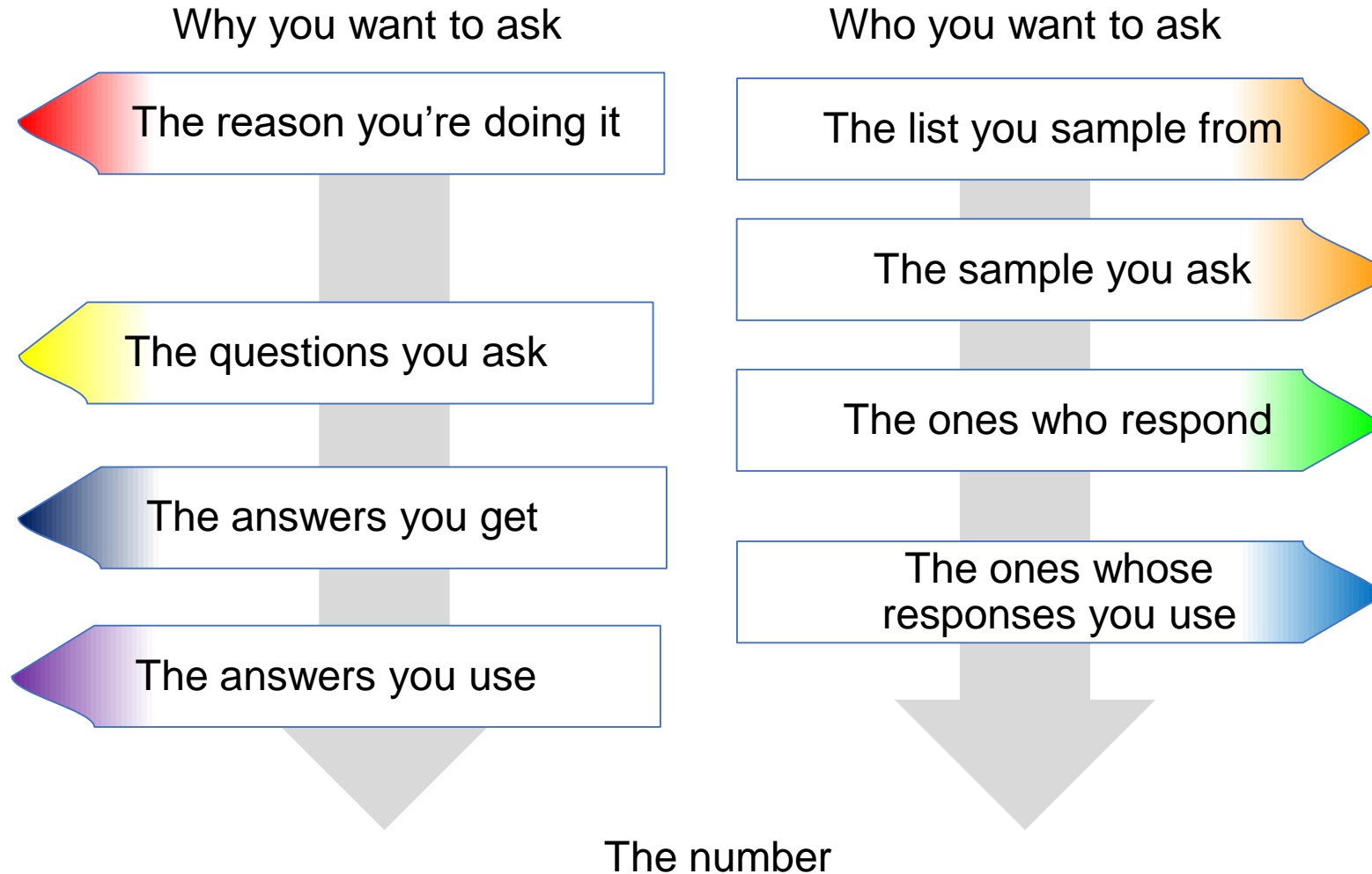
Adjustment error

The number

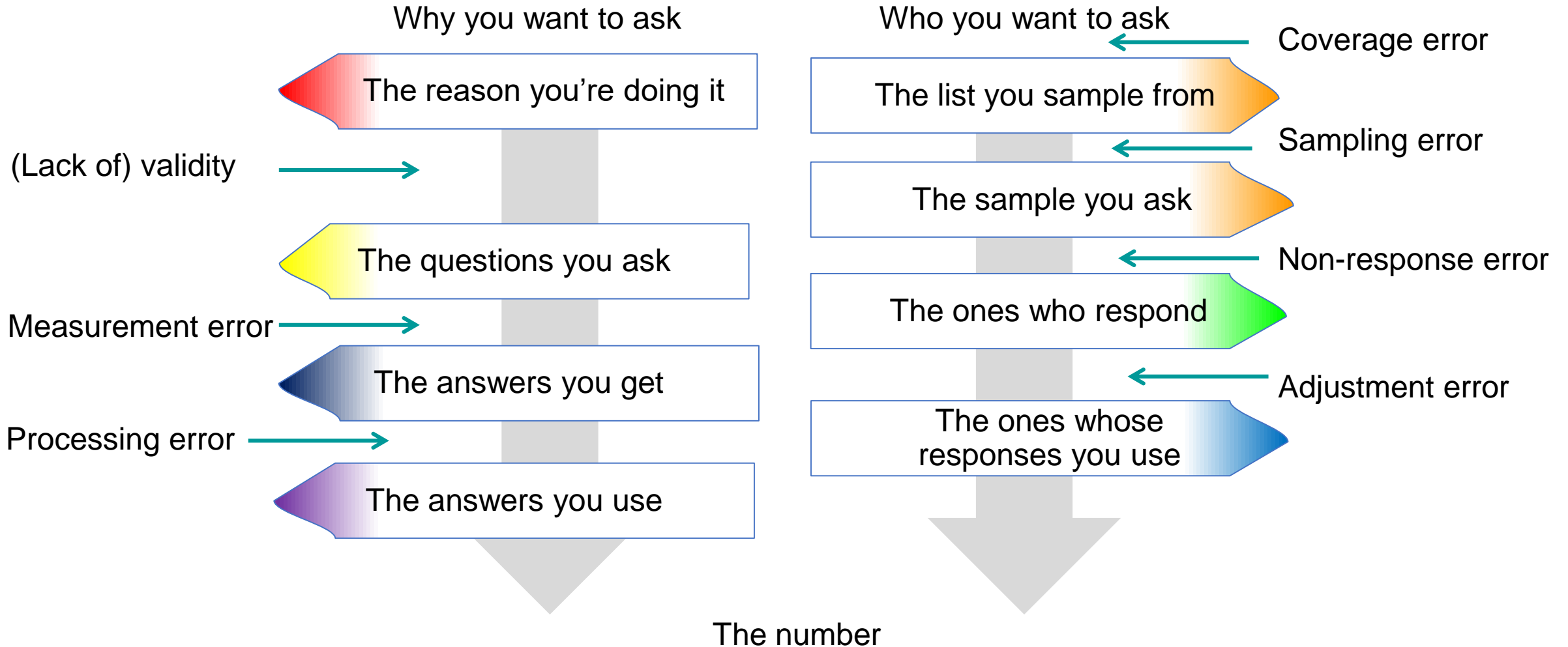
Takeaway

Your aim with a survey is to make choices that keep Total Survey Error as low as practical, overall

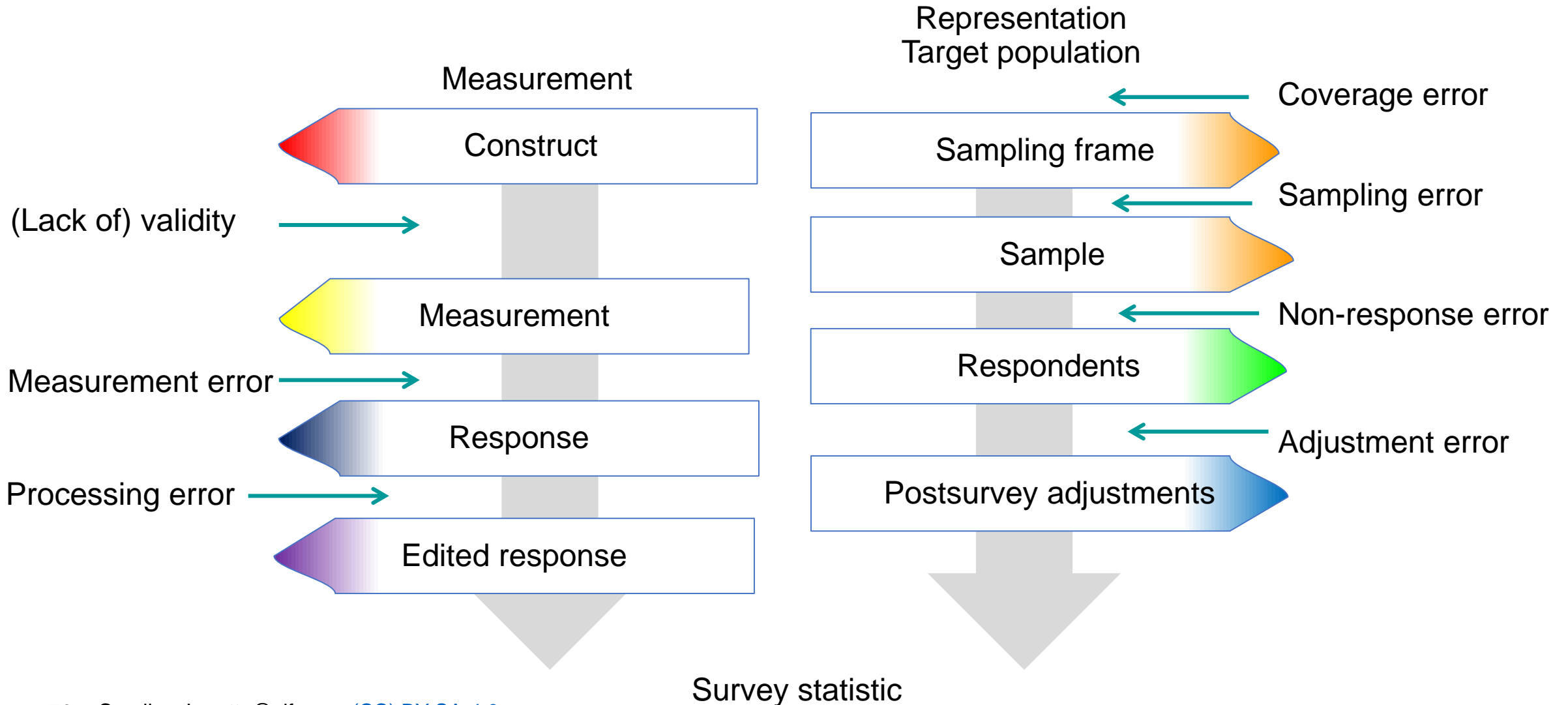
The aim is to make good choices at each step



The aim is to minimise Total Survey Error



Survey methodologists use more searchable terms



Total survey error is a central concept in survey methodology

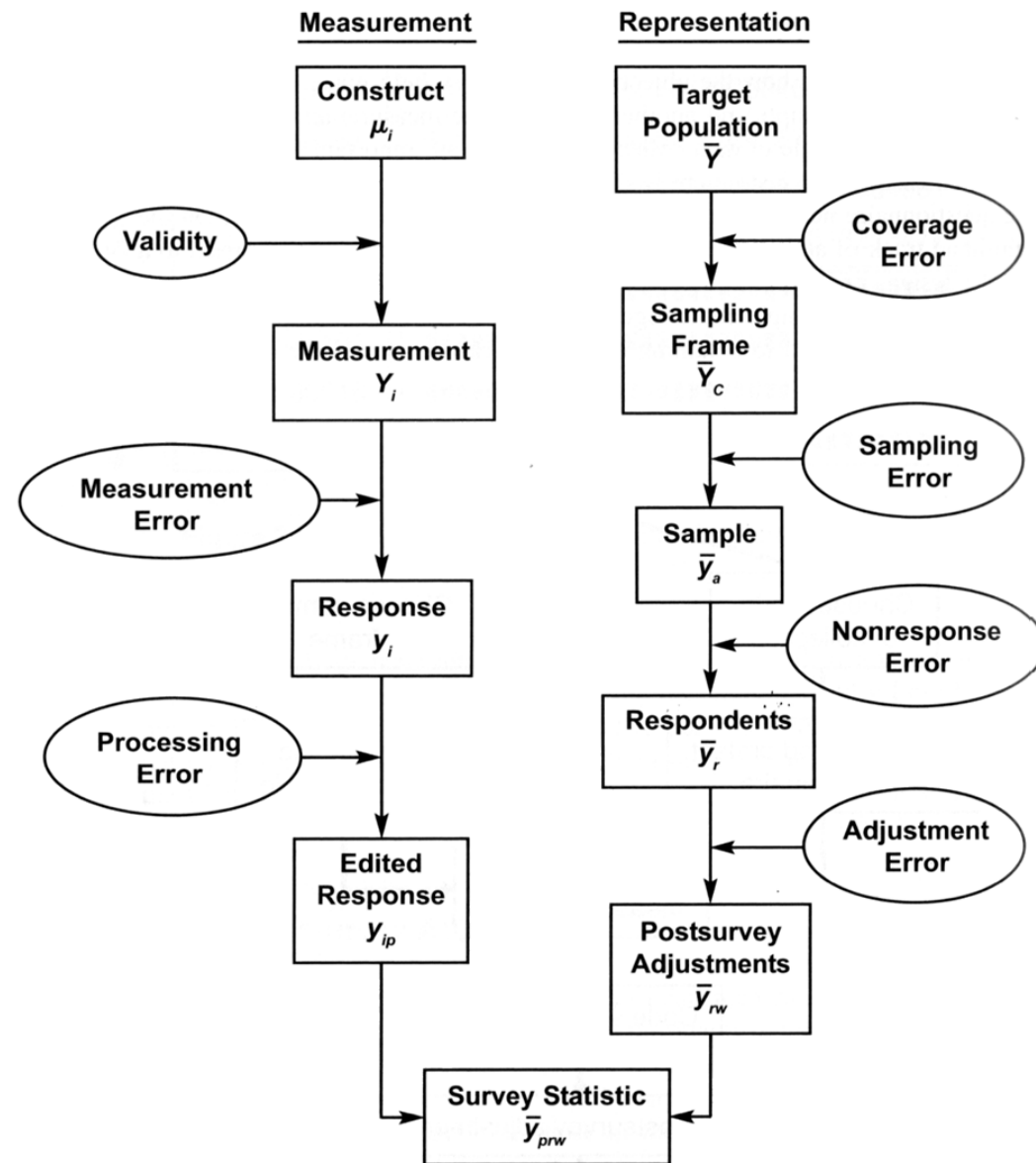


Figure 2.5 Survey life cycle from a quality perspective.

A Likert scale has several Likert items

System Usability Scale

© Digital Equipment Corporation, 1986.

	Strongly disagree				Strongly agree
1. I think that I would like to use this system frequently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
2. I found the system unnecessarily complex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
3. I thought the system was easy to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
4. I think that I would need the support of a technical person to be able to use this system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
5. I found the various functions in this system were well integrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
6. I thought there was too much inconsistency in this system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
7. I would imagine that most people would learn to use this system very quickly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
8. I found the system very cumbersome to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
9. I felt very confident using the system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5
10. I needed to learn a lot of things before I could get going with this system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5

Likert scale

Statement

Likert item

Response points

Likert had three formats in his scales

1. Do you favor the early entrance of the United States into the League of Nations?

YES	?	NO
(4)	(3)	(2)

13. How much military training should we have?

- (a) We need universal compulsory military training. (1)
- (b) We need Citizens Military Training Camps and Reserve Officers Training Corps, but not universal military training. (2)
- (c) We need some facilities for training reserve officers but not as much as at present. (3)
- (d) We need only such military training as is required to maintain our regular army. (4)
- (e) All military training should be abolished. (5)

17. The United States, whether a member or not, should co-operate fully in the humanitarian and economic programs of the League of Nations.

Strongly Approve	Approve	Undecided	Disapprove	Strongly Disapprove
(5)	(4)	(3)	(2)	(1)

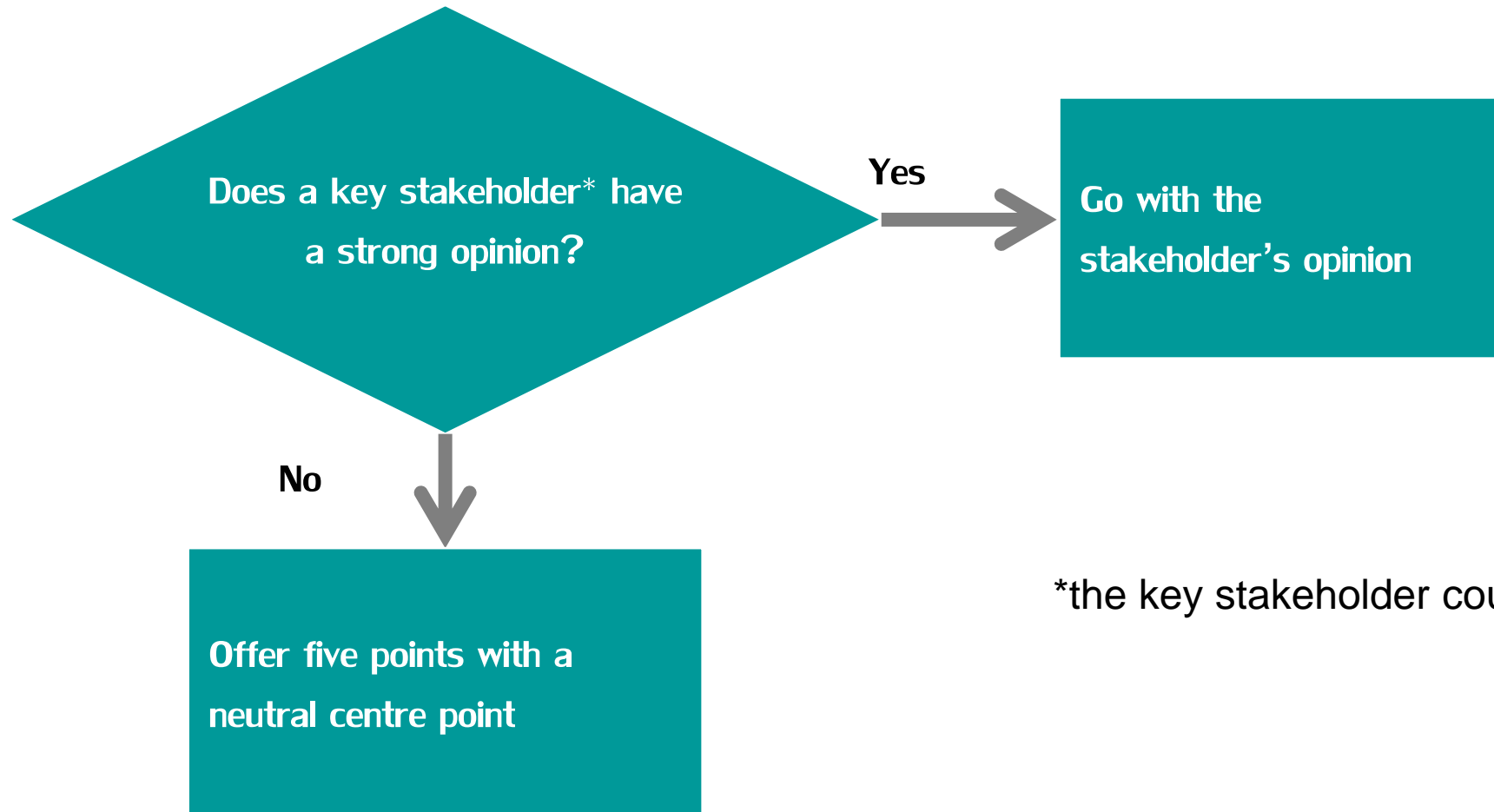
You can find an academic paper to support almost any number of response points

Krosnick and Presser refer to about 87 papers on response points

The image displays several examples of survey response scales:

- 7-point Likert scale:** A horizontal scale with seven points: Completely satisfied, Very satisfied, Quite satisfied, Neither satisfied nor dissatisfied, Quite dissatisfied, Very dissatisfied, and Completely dissatisfied. It is used for items like "Your outward journey with easyJet" and "Your whole experience with easyJet on this latest occasion".
- True/False scale:** A horizontal scale with two points: True and False. It is used for items like "I usually get what I want in life" and "I need to be kept informed about news events".
- 5-point Likert scale:** A horizontal scale with five points: Strongly Agree (5), Agree (4), Neither Agree nor Disagree (3), Disagree (2), and Strongly Disagree (1). It is used for the item "Overall, I was satisfied with my experience in Hayward Dining Room".
- Comparison scale:** A scale comparing "John Lewis" to other retailers. It has three points: "John Lewis is WORSE", "About the same", and "John Lewis is BETTER". It is used for the item "Please tell us how your experience at John Lewis compares to each of the other retailers you have visited?".
- 4-point Likert-type scale:** A horizontal scale with four points: Very Unimportant (1), 2, 3, and Very Important (4). It is used for the item "1: *Please rate how well the site is organized.".
- 10-point Likert-type scale:** A horizontal scale with ten points: 1=Poor, 2, 3, 4, 5, 6, 7, 8, 9, 10=Excellent, and Don't Know. It is used for the item "1: *Please rate how well the site is organized.".

I have a flowchart to help you to decide



*the key stakeholder could be you

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