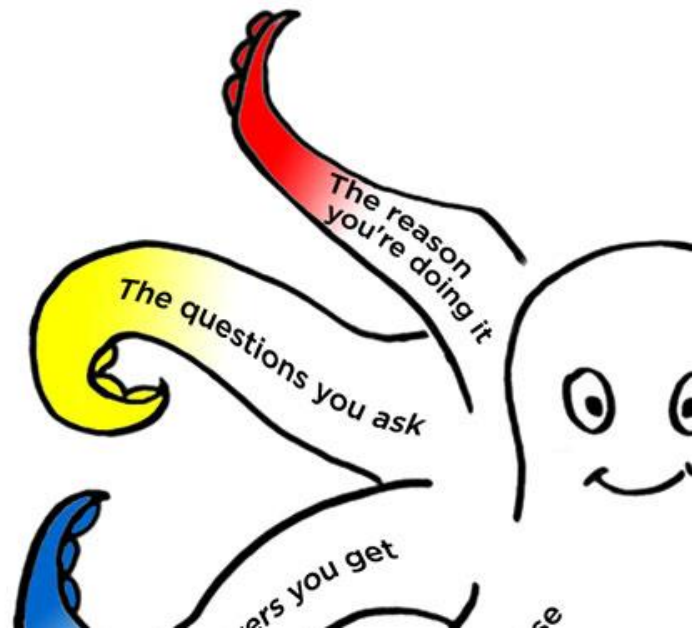


Surveys that work

An introduction to
the Survey Octopus
and Total Survey Error

Caroline Jarrett
@cjforms
#UXPA2021

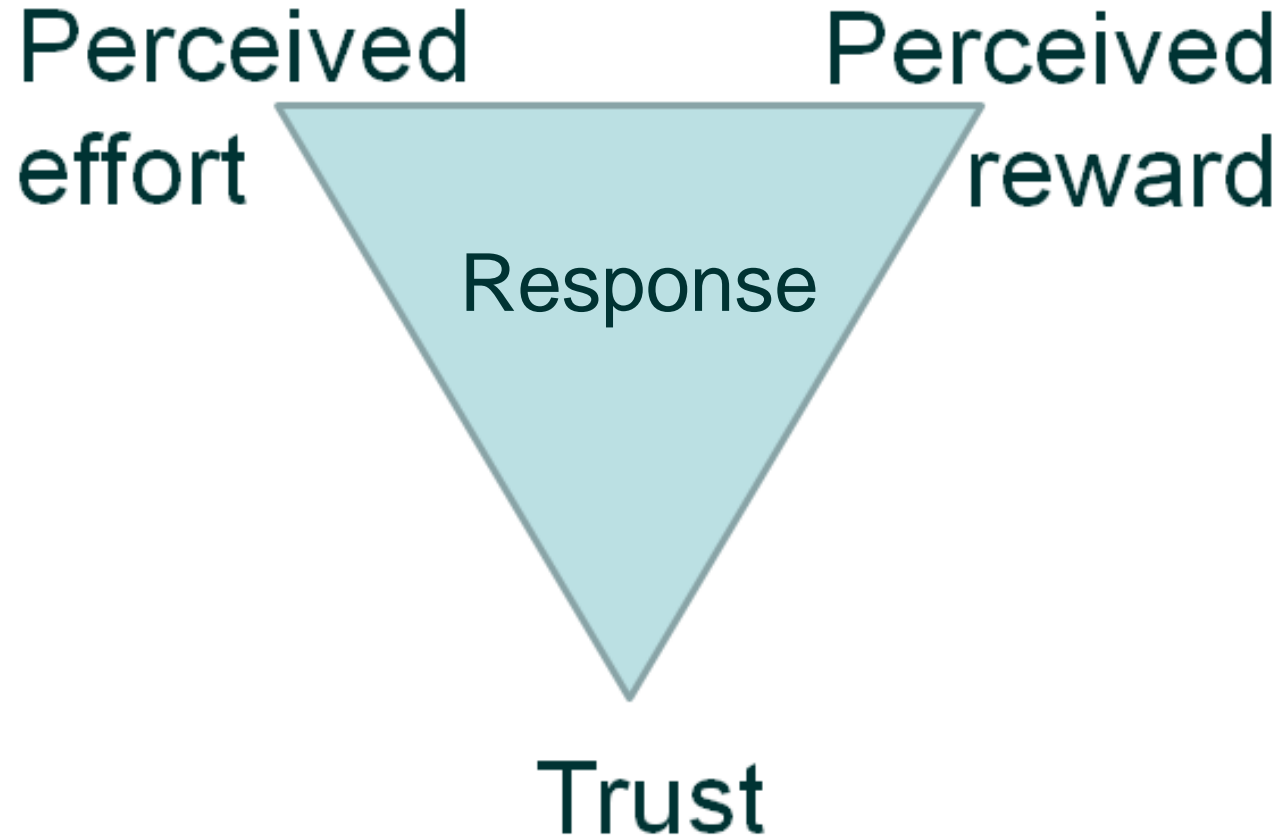


What would you do for a dollar?

\$1 in the envelope beats \$10 guaranteed later



references to



Would you answer this survey?

Luton Business Survey 2011 - YOUR HELP IS NEEDED

Adams, Orchid <Orchid.Adams@luton.gov.uk>

Sent: Mon 06/06/2011 09:49

To:

Message

image007.gif (841 B)	image009.jpg (2 KB)	image011.jpg (2 KB)	image002.gif (841 B)	image003.jpg (2 KB)
image004.jpg (2 KB)	image005.gif (841 B)	image006.jpg (2 KB)	image007.jpg (2 KB)	image002.gif (845 B)
image003.jpg (2 KB)	image004.jpg (2 KB)	image005.gif (845 B)	image006.jpg (2 KB)	image007.jpg (2 KB)

We want Luton to be a great place to do business.
We need your help to make this happen.



Luton Borough Council, alongside BMG Research, are currently conducting a business survey about the needs of local businesses. This will help the Council to effectively shape and deliver services that support long term economic growth. We would be grateful if you could participate in this online survey and help us to help you. The survey will expire on 26th June 2011

[Click Here to Complete Survey](#)

I'm the forms specialist



Why do people answer questions?



People ask me about surveys

“Please have a look at this survey”

“Tell me whether this is a good question”

“How many people do I need in my sample?”

“Will that be statistically significant?”

I wrote a book

It seemed easier than
continuing to answer
lots of survey questions

<https://rosenfeldmedia.com/books/surveys-that-work/>



Let's think about these topics today

“Please have a look at this survey”

“Tell me whether this is a good question”

“How many people do I need in my sample?”

“Will that be statistically significant?”

The survey is a
systematic method
for gathering information from
(a sample of) entities
for the purpose of
constructing quantitative descriptors
of the attributes of the larger population
of which the entities are members.

Groves, Robert M.; Fowler, Floyd J.; Couper, Mick P.; Lepkowski, James M.; Singer, Eleanor & Tourangeau, Roger (2004). *Survey methodology*. Hoboken, NJ: John Wiley & Sons.

I change the definition a bit

systematic method	becomes	process
gathering information	becomes	ask questions
entities	become	people
quantitative descriptors	become	numbers
attributes of the larger population	become	make decisions

The survey is a process
for getting answers to questions
from (a sample of) people
for the purpose of
getting numbers
that you can use to
make decisions

Let's rearrange that somewhat

To make decisions

From people

The survey is a
process for getting
answers to questions

getting numbers

Start with why and who; end with the number

Why you want to ask

Who you want to ask

The survey is a
process for getting
answers to questions

The number

A survey is a quantitative method

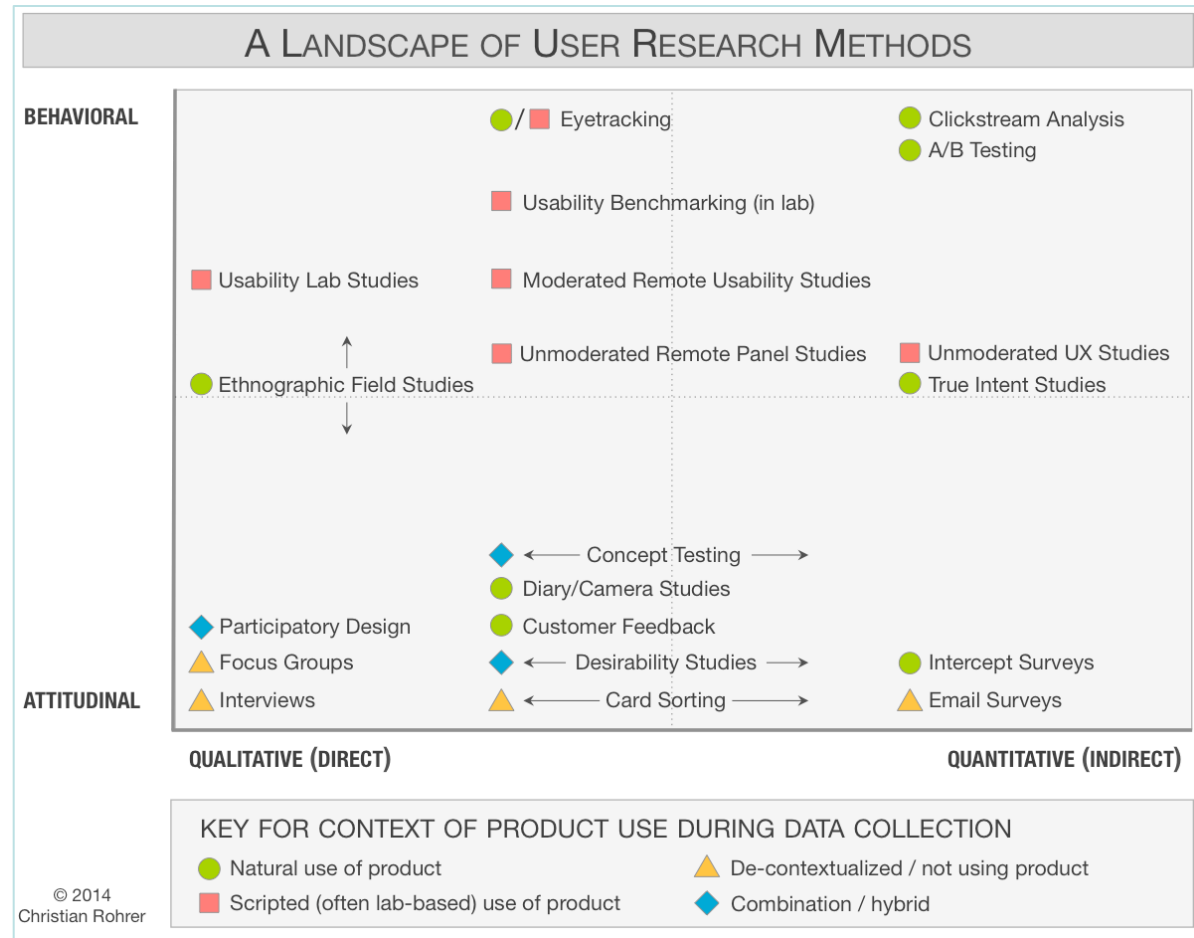
Observe	Usability Test Field Study	Analytics A/B tests
	Interview	Survey
Ask	Why? qualitative	How many? quantitative

Key Point 1

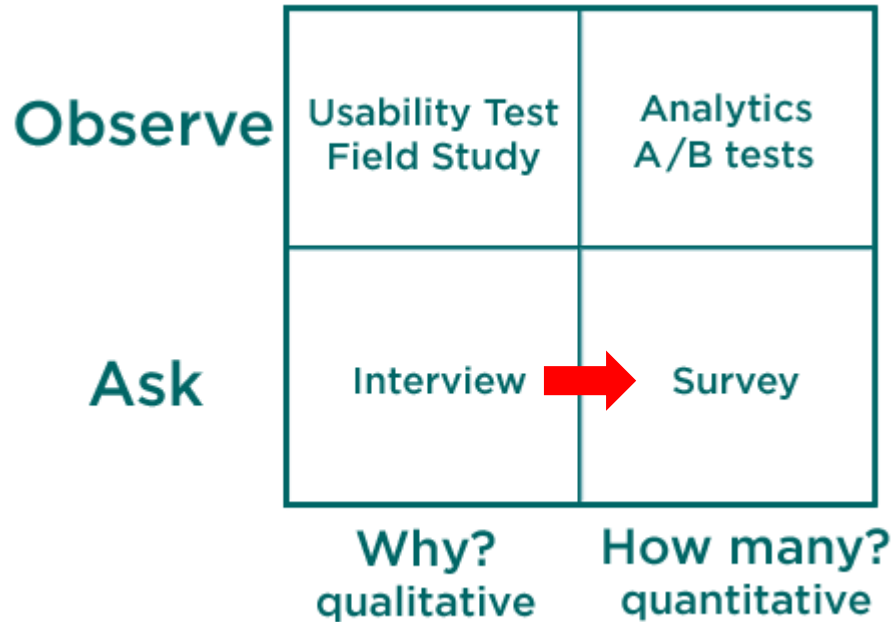
A survey is
a quantitative method

The result of a survey
is a number

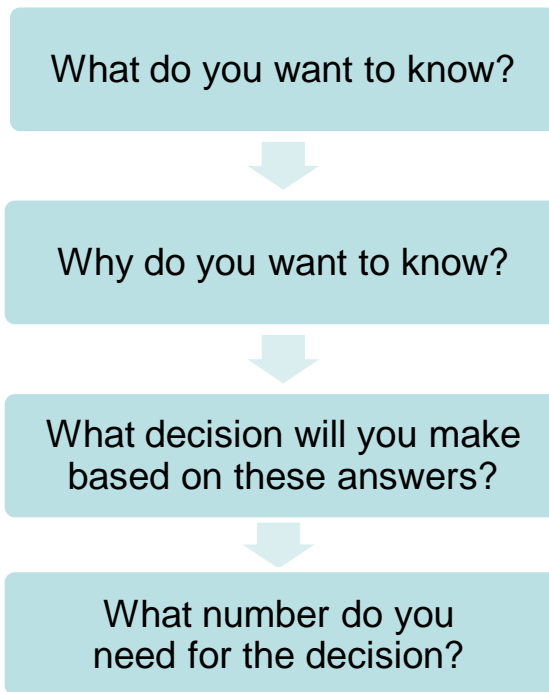
Christian Rohrer mapped many more methods



Survey methodologists interview first



Establish your goals for the survey



Key Point 2

The aim of a survey is to get a number that will help with a decision

Let's have a good look at that process

Why you want to ask

Who you want to ask

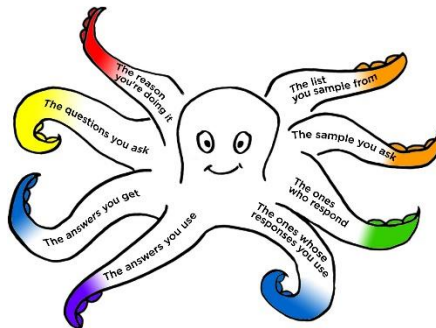
The survey is a
process for getting
answers to questions

The number

The Survey Octopus has things to think about

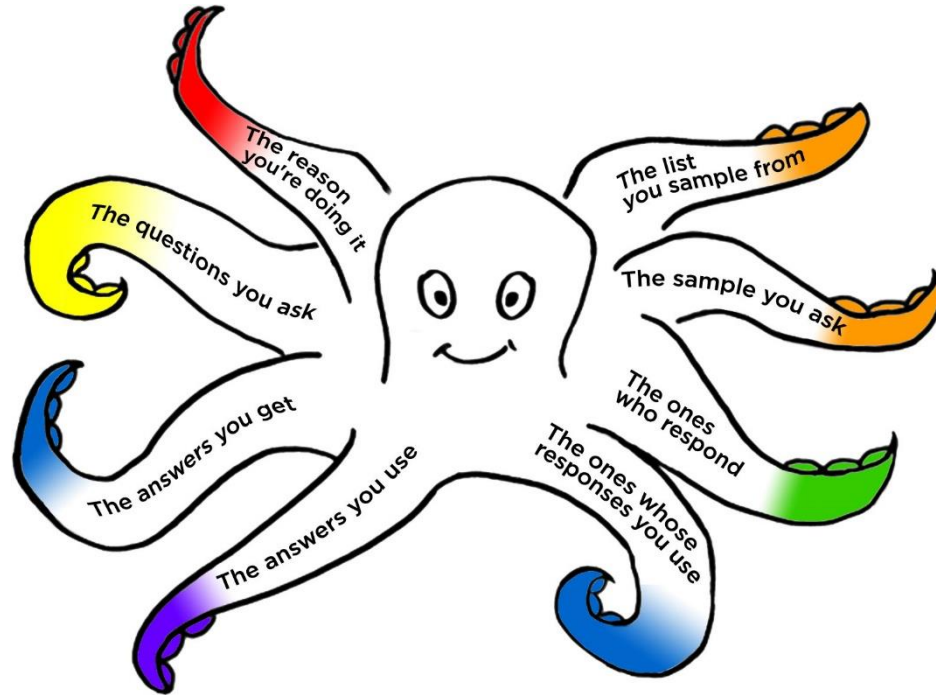
Why you want to ask

Who you want to ask

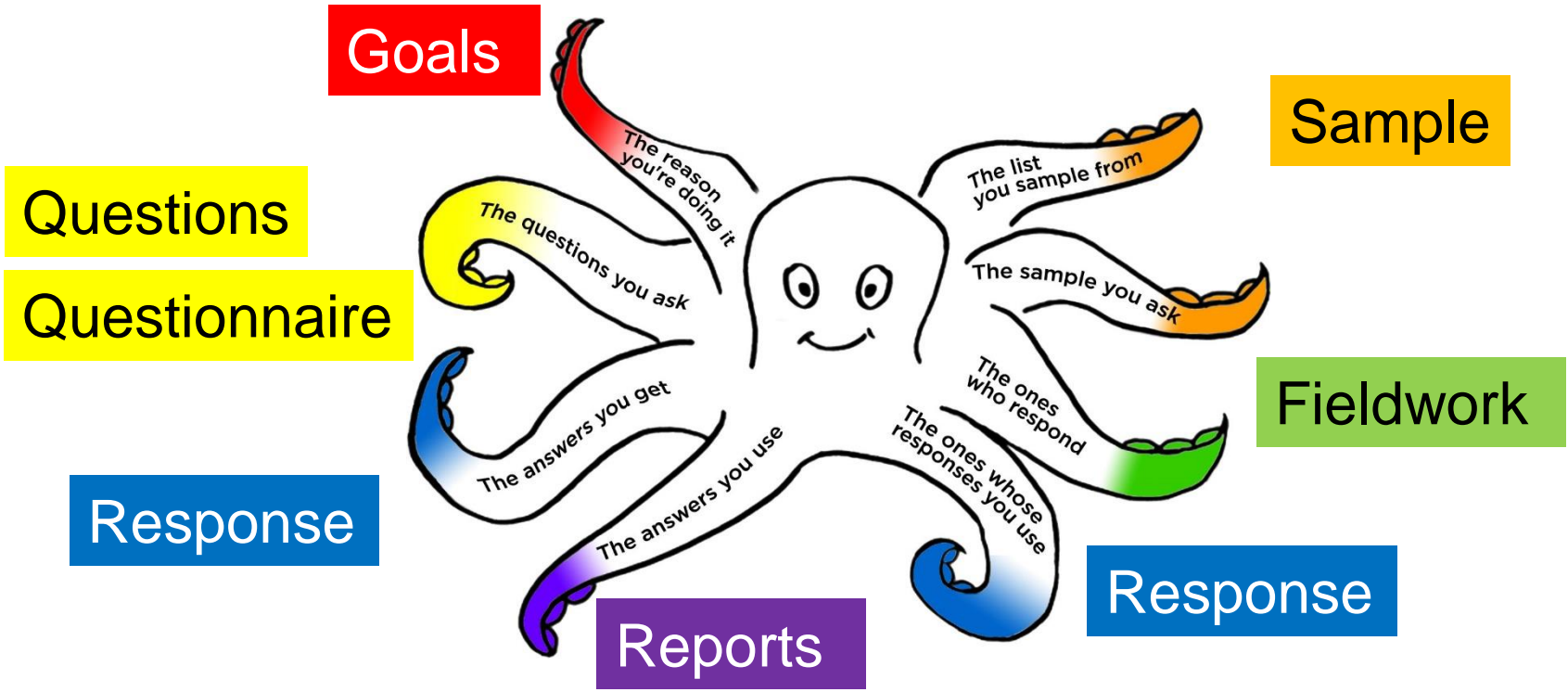


The number

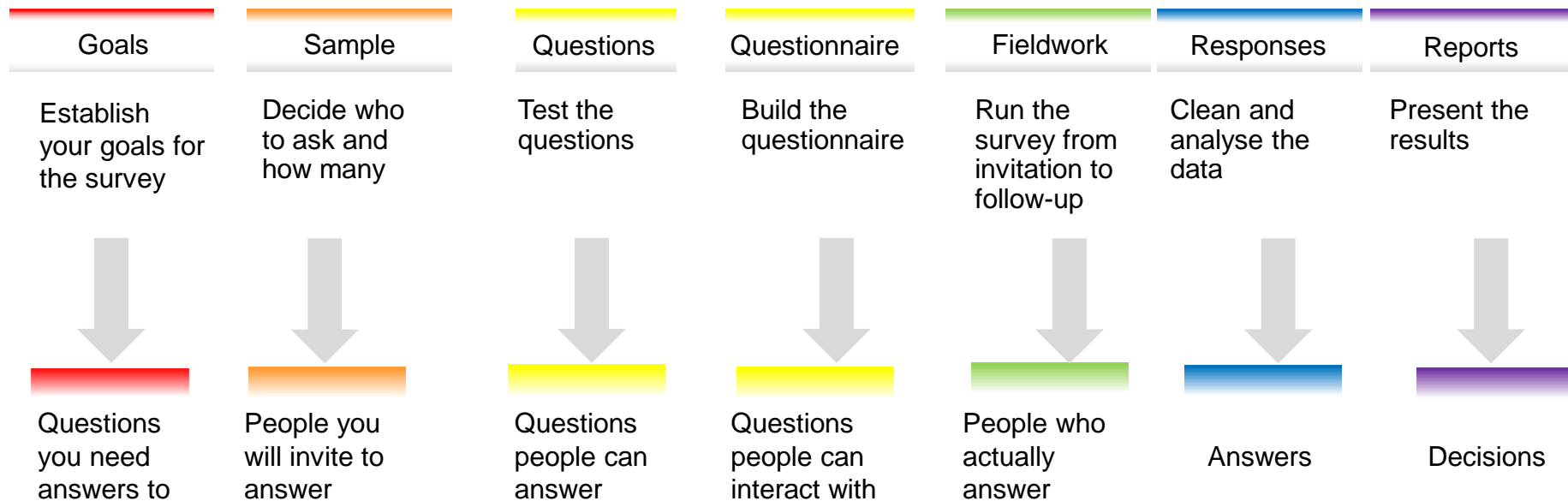
The topics are all somewhat connected



I made a process from the things to think about



Here are the 7 steps as a linear process



People ask me about surveys

“Please have a look at this survey”

“Tell me whether this is a good question”

“How many people do I need in my sample?”

“Will that be statistically significant?”

Is this a good question?

Would you recommend us to
a friend or family member?

“Recommend to friend/family” can be OK

	A shop selling clothes	
What do you want to know?	Whether they will recommend	
Why do you want to know?	To compare numbers over time	
What number do you need to make a decision?	Some good reasons (investigate and fix problems) Some bad ones (punish staff)	

“Recommend to friend/family” can be very weird

	A shop selling clothes	A hospital ward
What do you want to know?	Whether they will recommend	????
Why do you want to know?	To compare numbers over time	Because someone said they had to ask
What number do you need to make a decision?	Some good reasons (investigate and fix problems) Some bad ones (punish staff)	???? What decision?

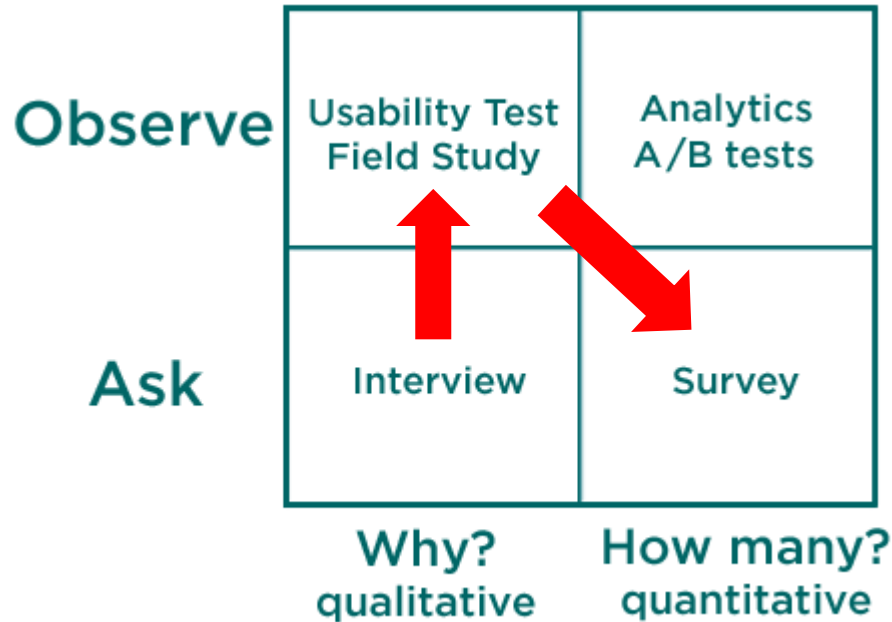
Questions can go wrong in other ways

vodafone UK 14:50 87%
surveys.automatesurvey.com

And how frequently do you take part in the following craft(s)? Please select one answer per row.

	Every day	Several times a week	About a week	About once a month	About once every 2-3 months	About once a month
Sewing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Make sure that you test your questionnaire



Key Point 3

To find out whether a question is a good one, test it with people who will answer it

People ask me about surveys

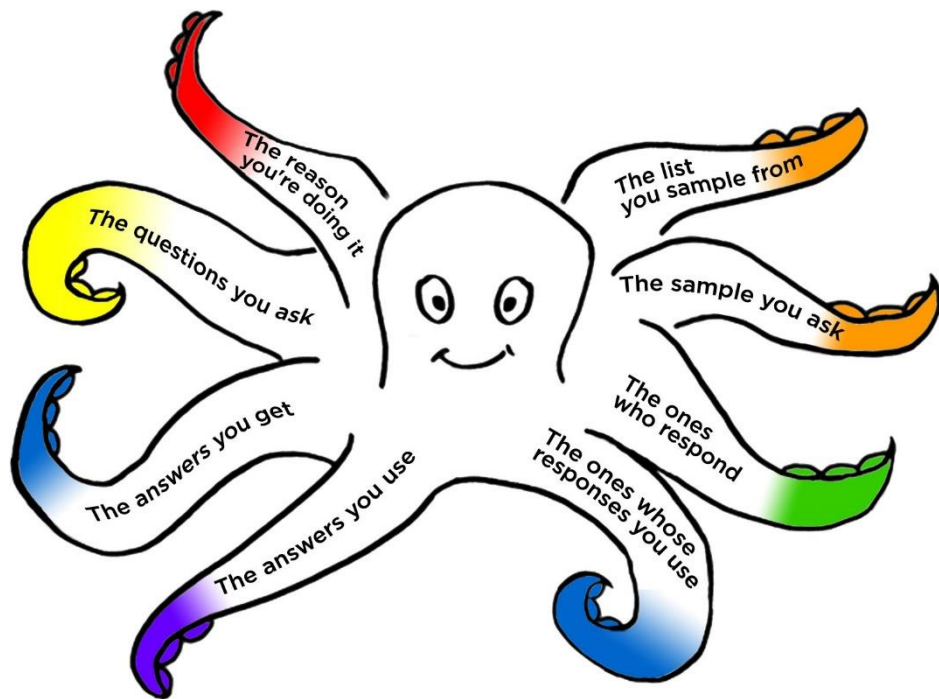
“Please have a look at this survey”

“Tell me whether this is a good question”

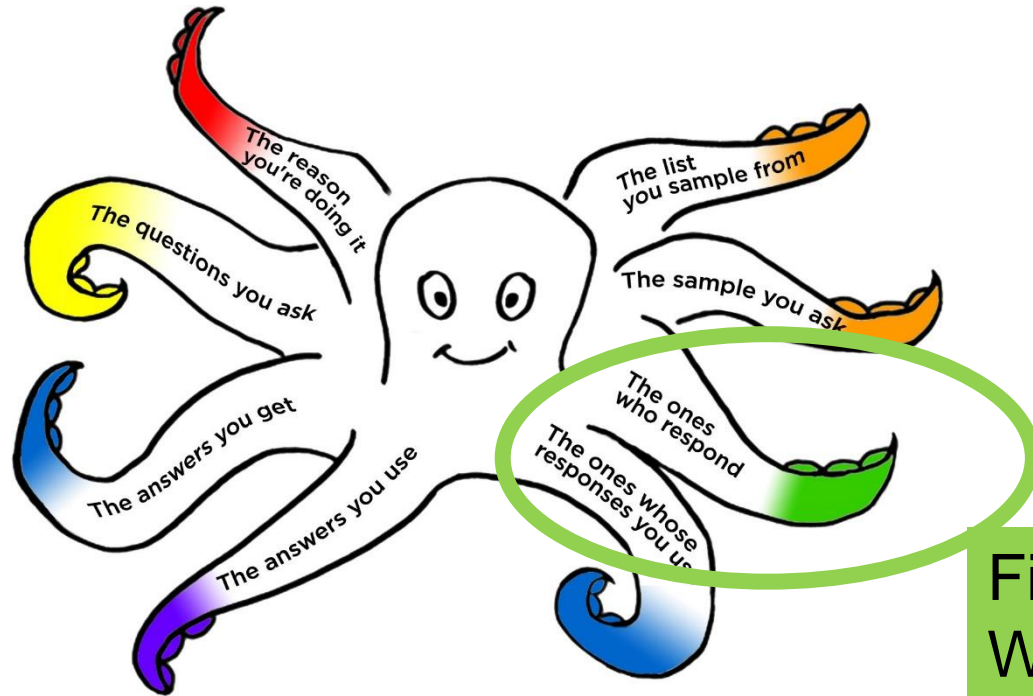
“How many people do I need in my sample?”

“Will that be statistically significant?”

To work that out, let's visit the Octopus

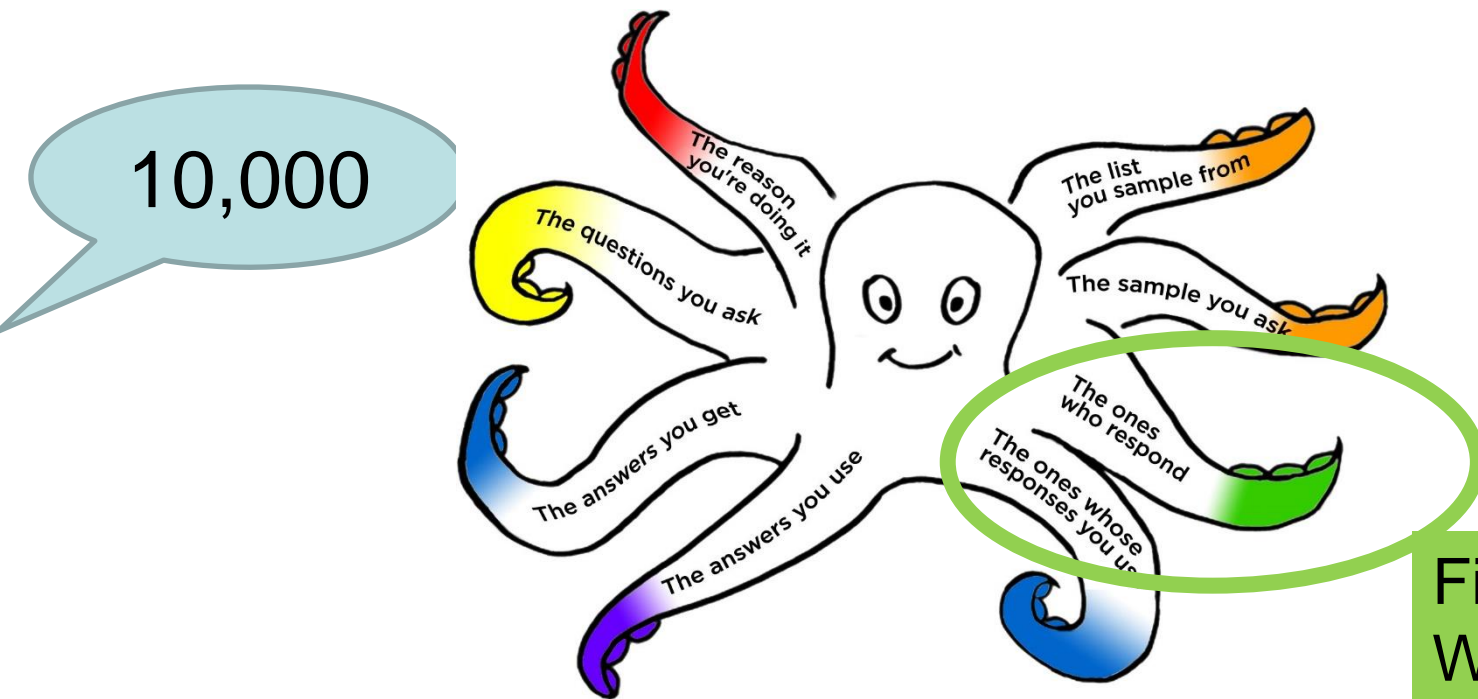


Start with the number of answers you need



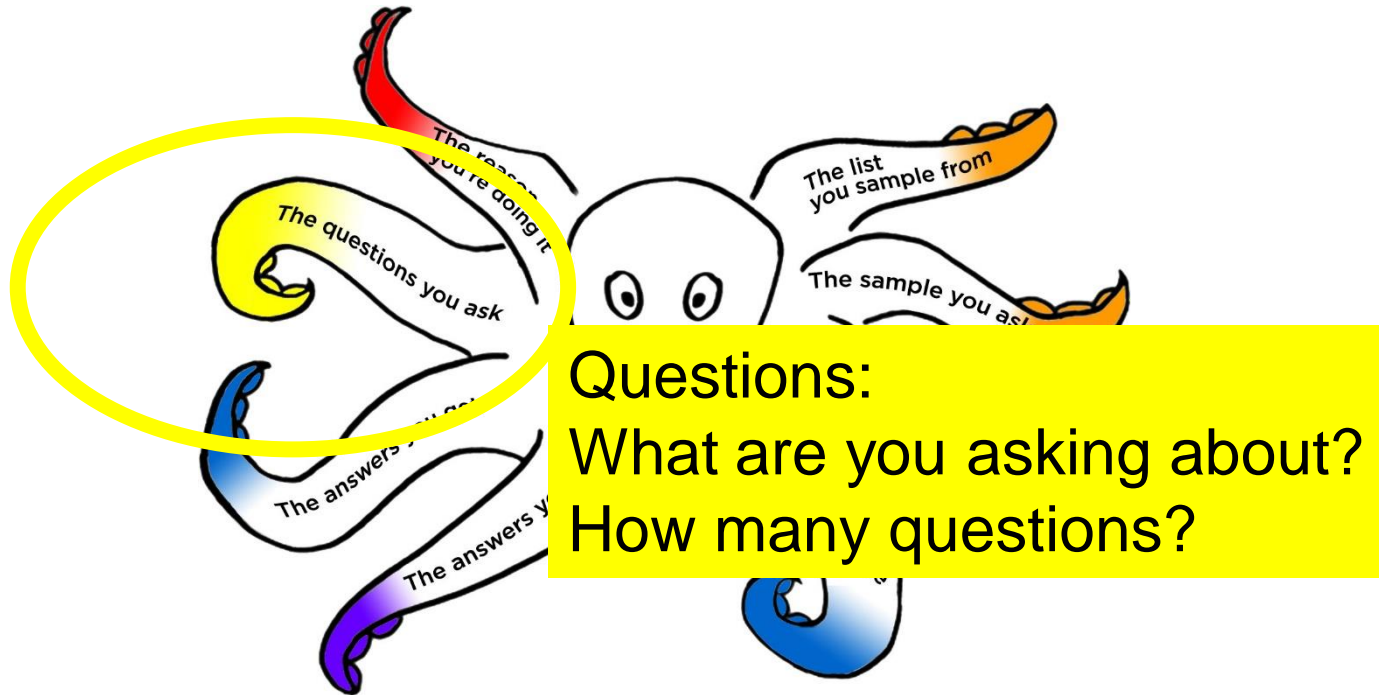
Fieldwork:
Who answers?

Start with the number of answers you need



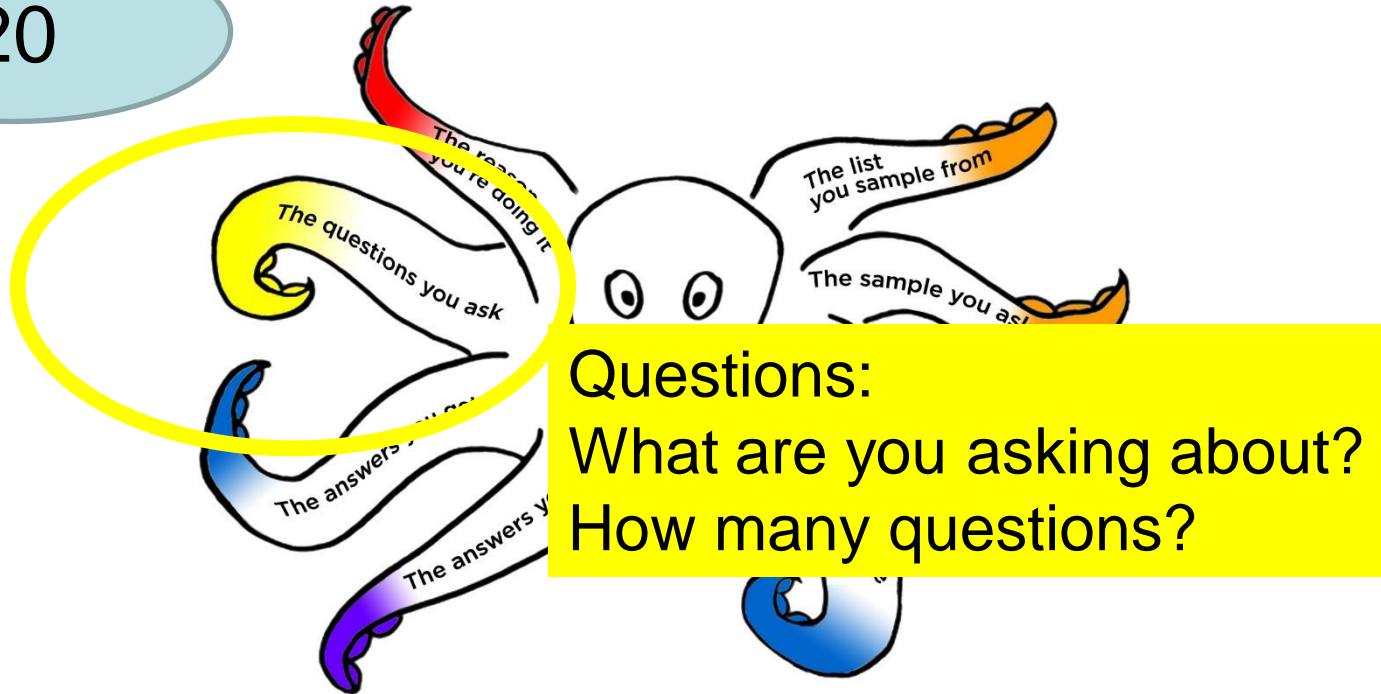
Fieldwork:
Who answers?

Whether they'll answer depends on effort



Whether they'll answer depends on effort

20



And on the reward you're offering



Goals:

Why are you asking?

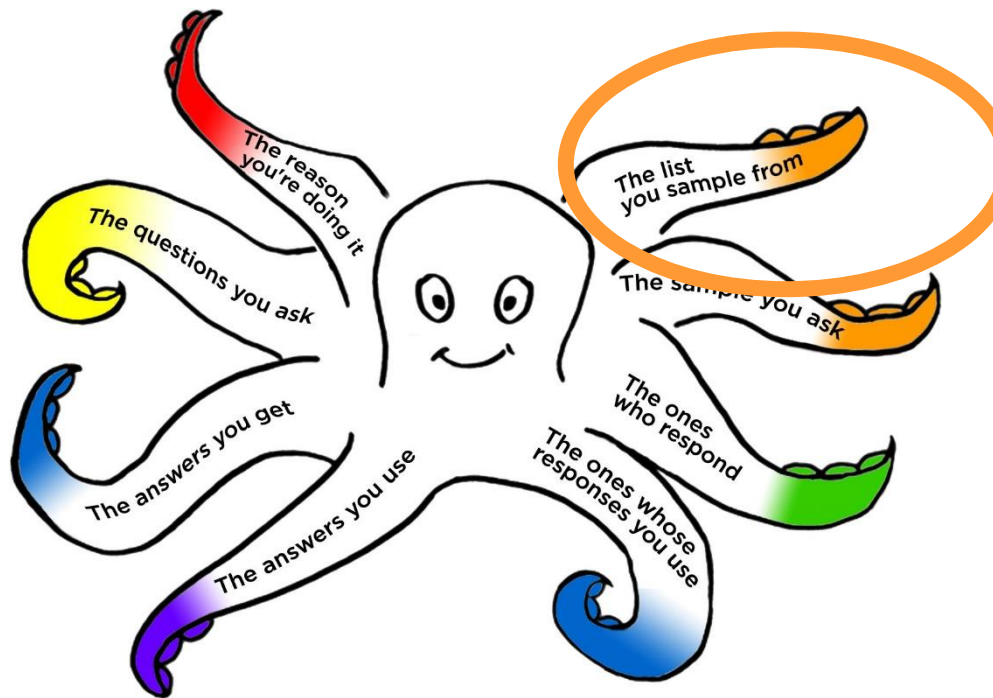
Is helping you a reward in itself?

Are you offering any other incentive?

And on the reward you're offering

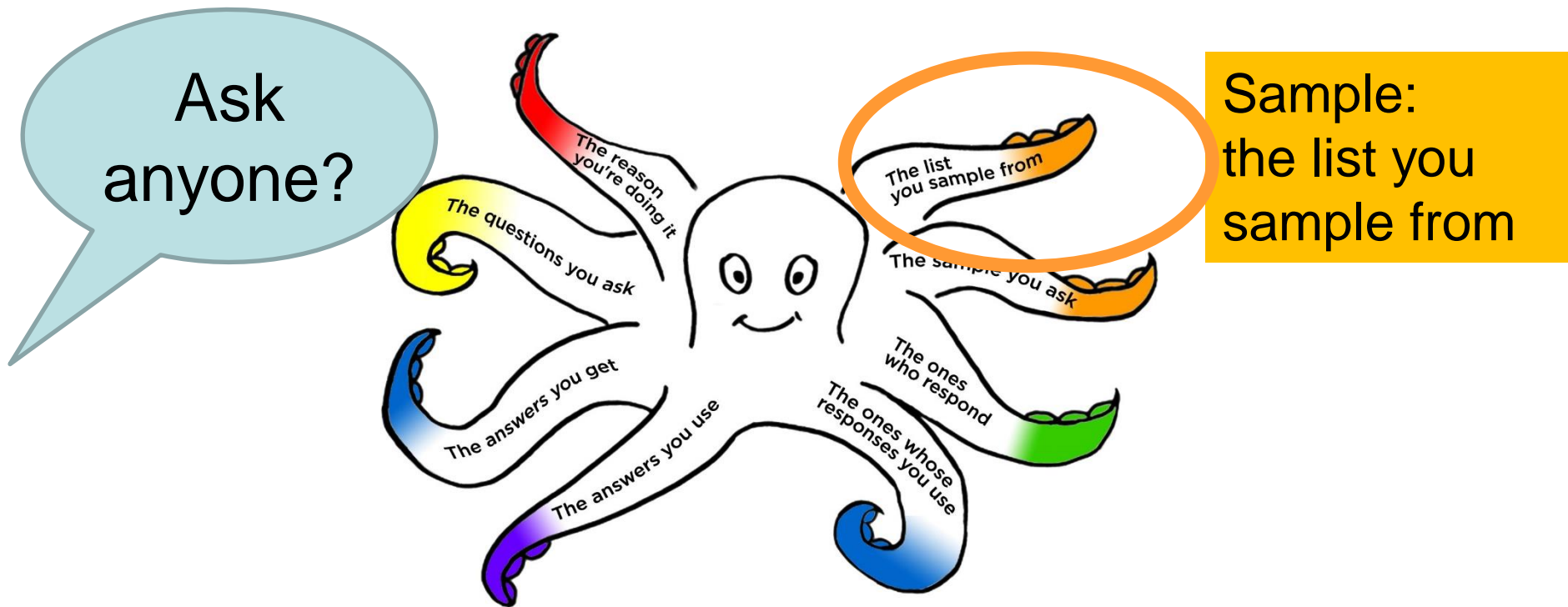


How do our users feel about this?

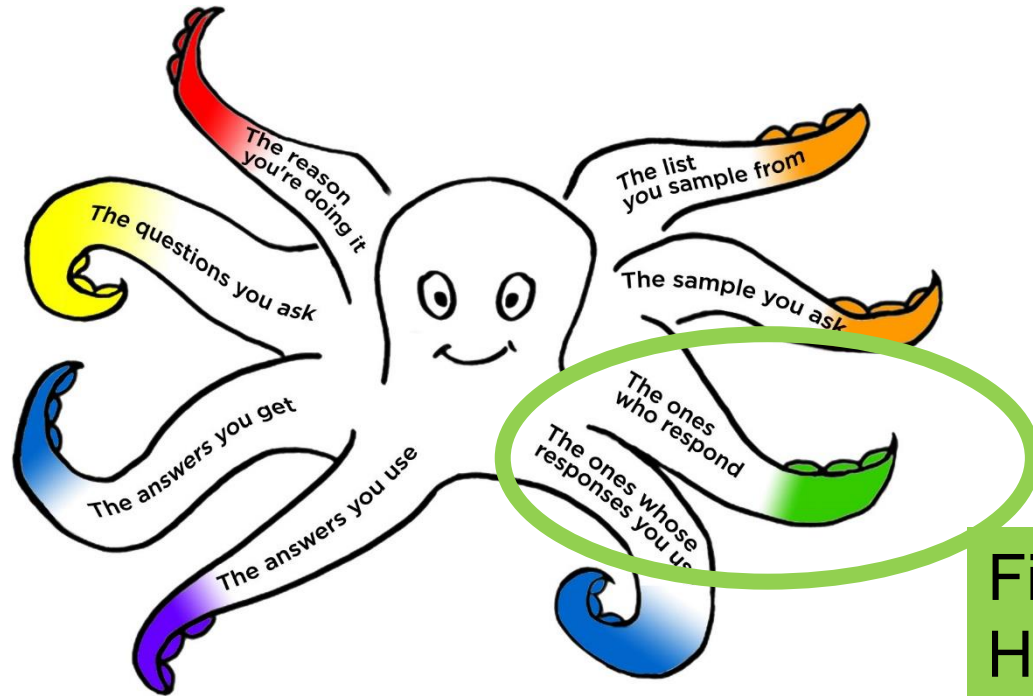


Sample:
the list you
sample from

How do our users feel about this?



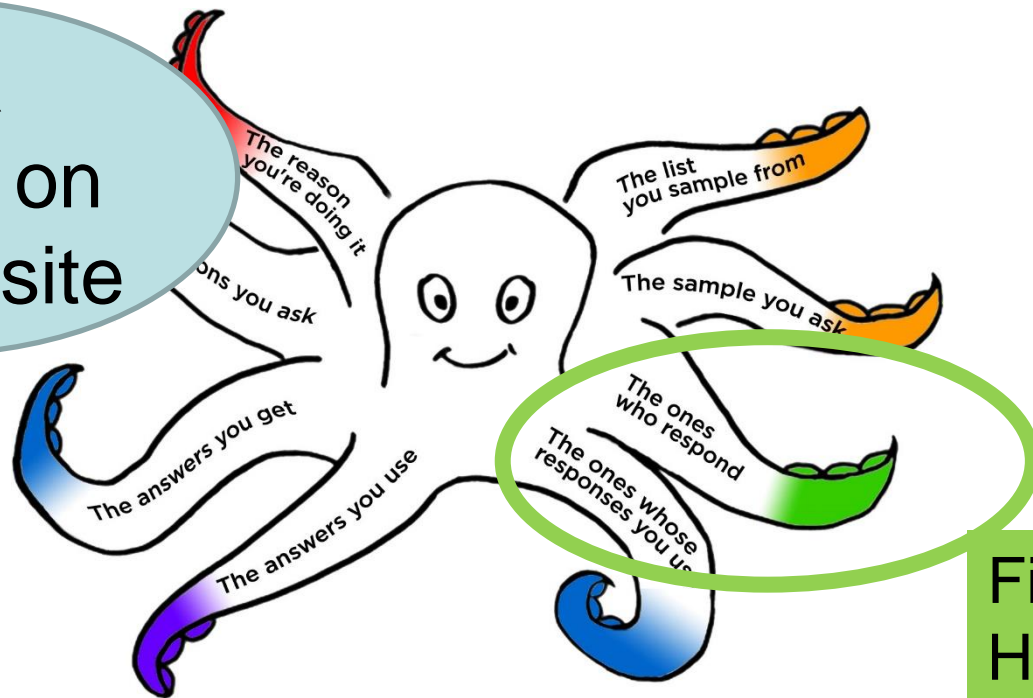
How are you delivering the questionnaire?



Fieldwork:
How are you
asking?

How are you delivering the questionnaire?

As a
banner on
the website



Fieldwork:
How are you
asking?

Response rates vary by method of asking

Method of asking	Possible response rate	Possible replies for 1000 invitations
Mailed paper survey	Up to 70%	700
Email invitation to selected group, specific one-off survey	Up to 20%	200
Routine email after every transaction	Maybe 5%	50
Banner invitation on a website	Less than 0.1%	1

There are many influences on response rate

It depends on

- How you're asking
- Why you're asking
- What you're asking and the type of questionnaire you make
- Who you're asking

Fieldwork

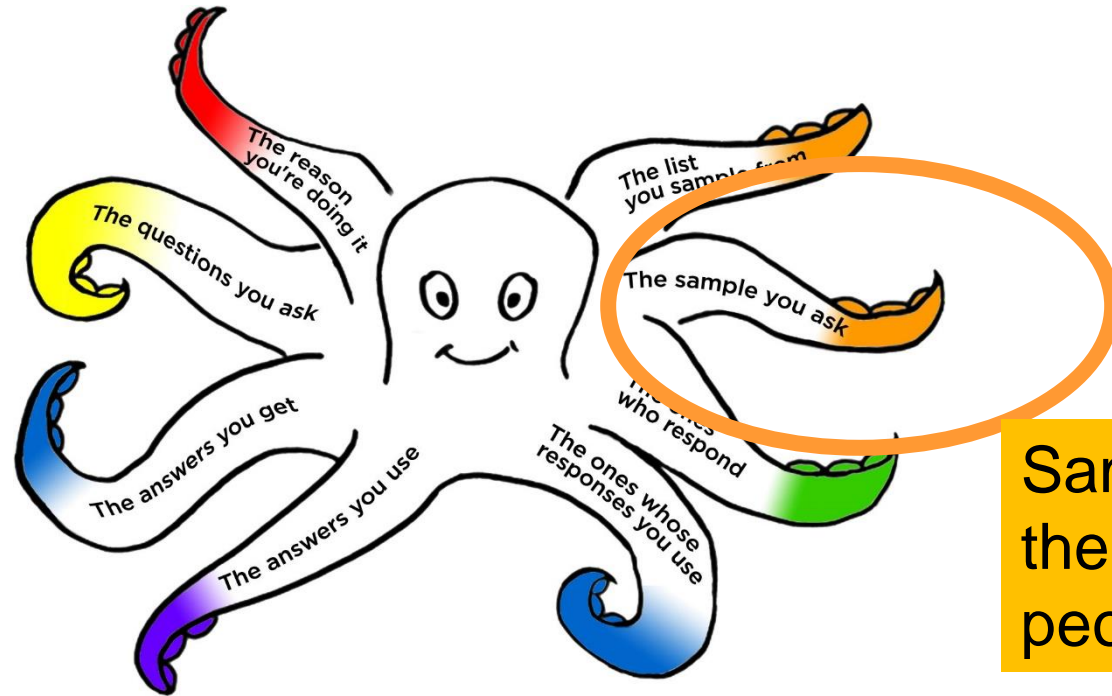
Goals

Questions

Questionnaire

Sample

And now it's easy to work out how many to ask

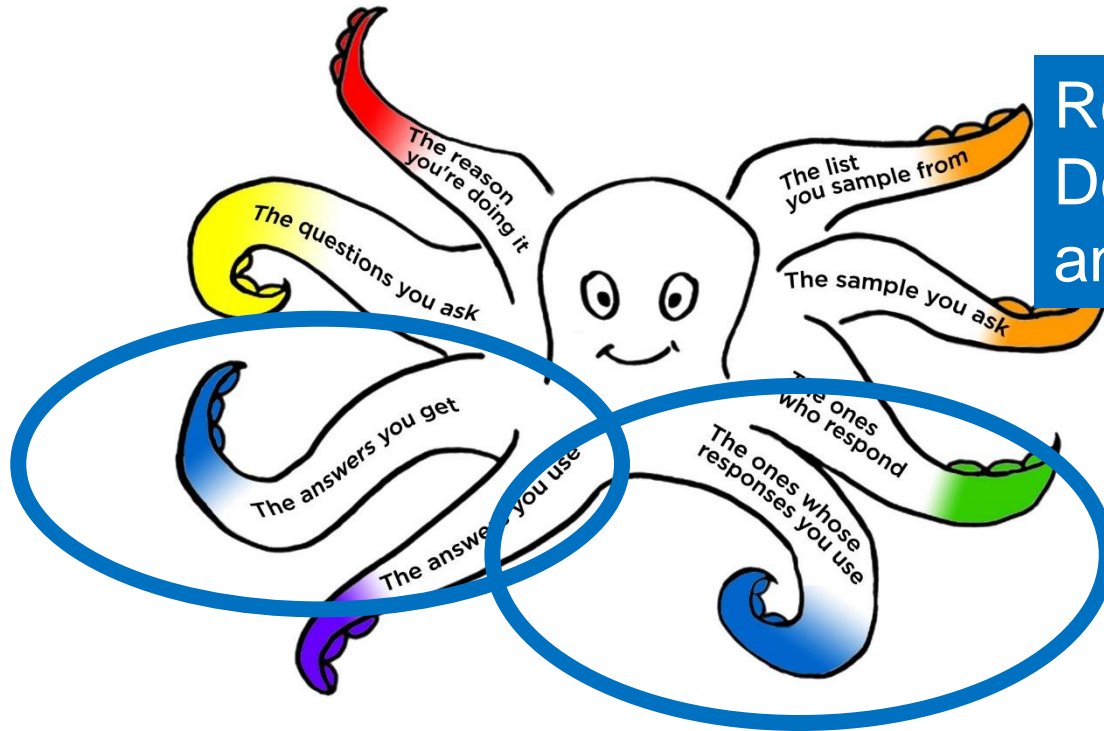


Sample:
the number of
people to ask

Work through from response rate

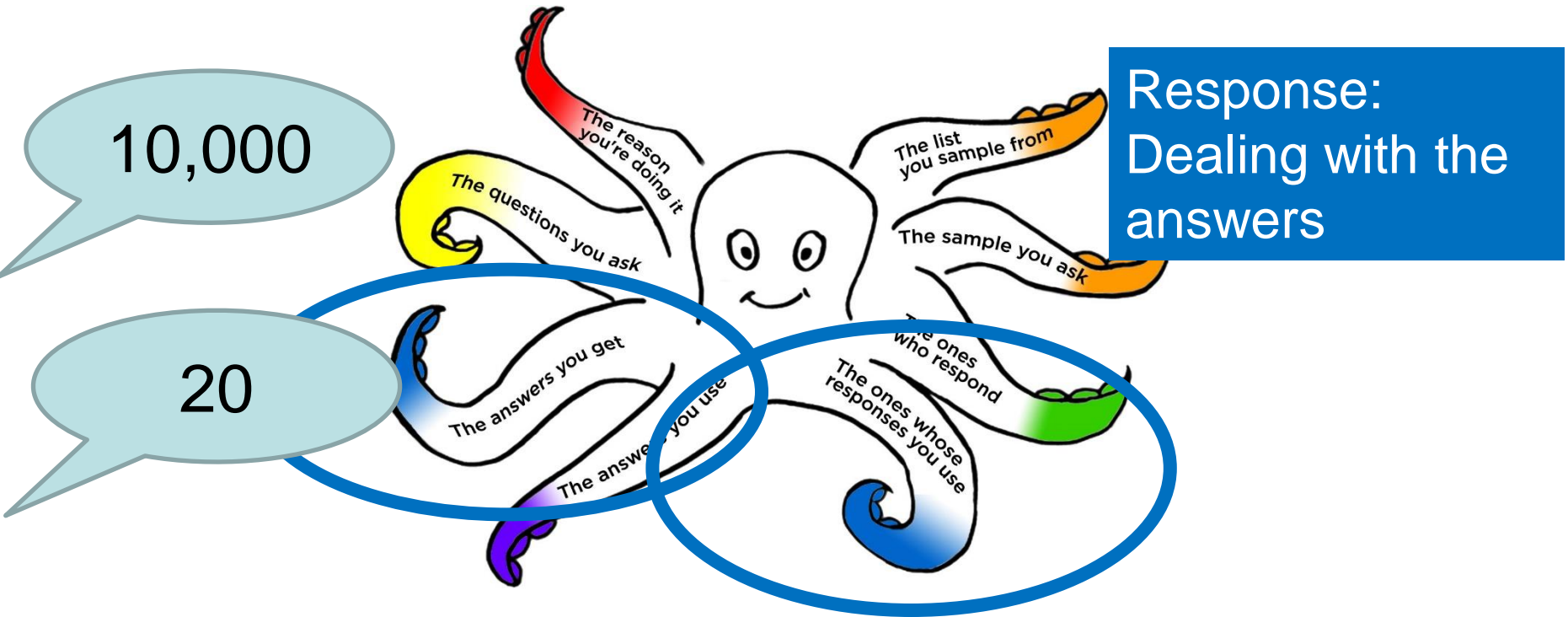
Topic	Answer	Effect on response rate
How you're asking	Website banner	Maybe 1 in 1000 (0.1%)
Why you're asking	Make improvements	OK, no change
What you're asking	20 questions	Quite long, reduces rate
The type of questionnaire	Pops up from banner	OK, no change
Who you're asking	Any website visitor	Not personal, reduces rate
Possible eventual rate		Maybe 1 in 2500 (0.04%)

But wait, there's more!

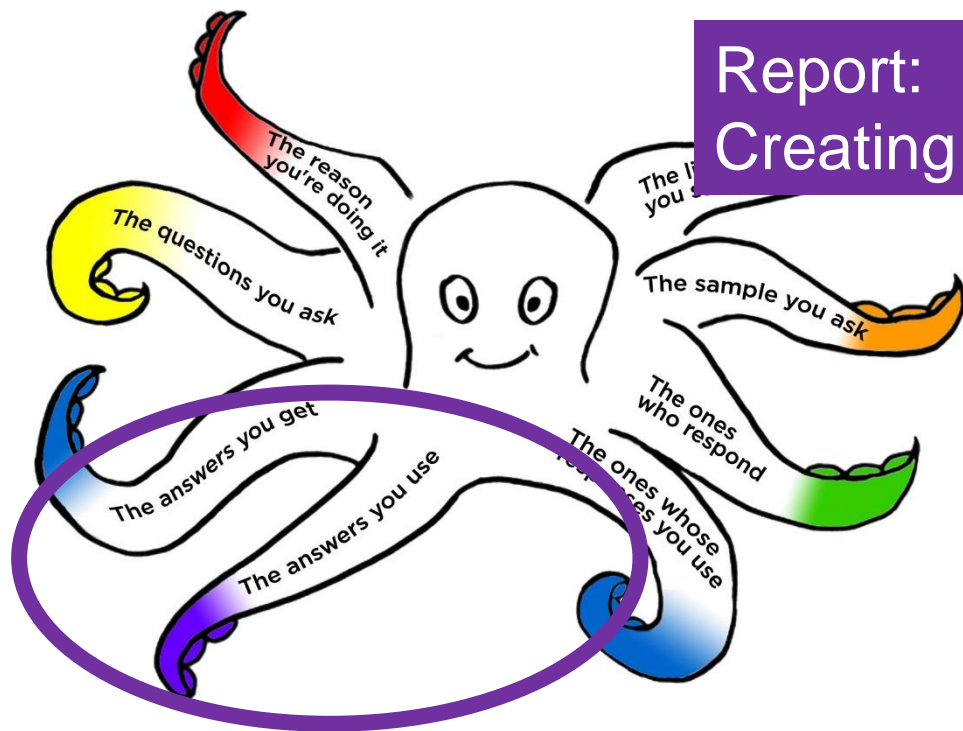


Response:
Dealing with the
answers

Who will process those 200,000 data items?



And do you really need all of them?



Report:
Creating the decision

Key Point 5

A sample size calculation
needs
the entire Survey Octopus

People ask me about surveys

“Please have a look at this survey”

“Tell me whether this is a good question”

“How many people do I need in my sample?”

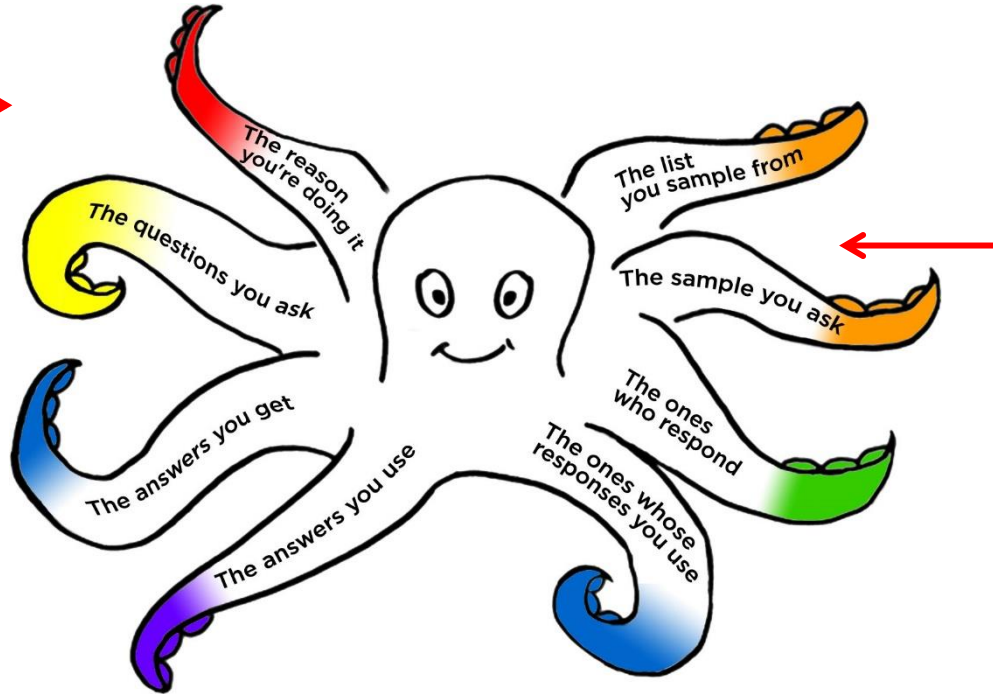
“Will that be statistically significant?”

What type of significance do you need?

- A result that is *statistically significant* is one that is mathematically unlikely to be the result of chance
- A result that is *significant in practice* is one that is meaningful in the real world

If you ask the wrong questions, you'll fail at validity

(Lack of)
validity



Sampling
error

Key Point 6

Asking one person
the right question

gets better results

than asking 10,000 people
the wrong question

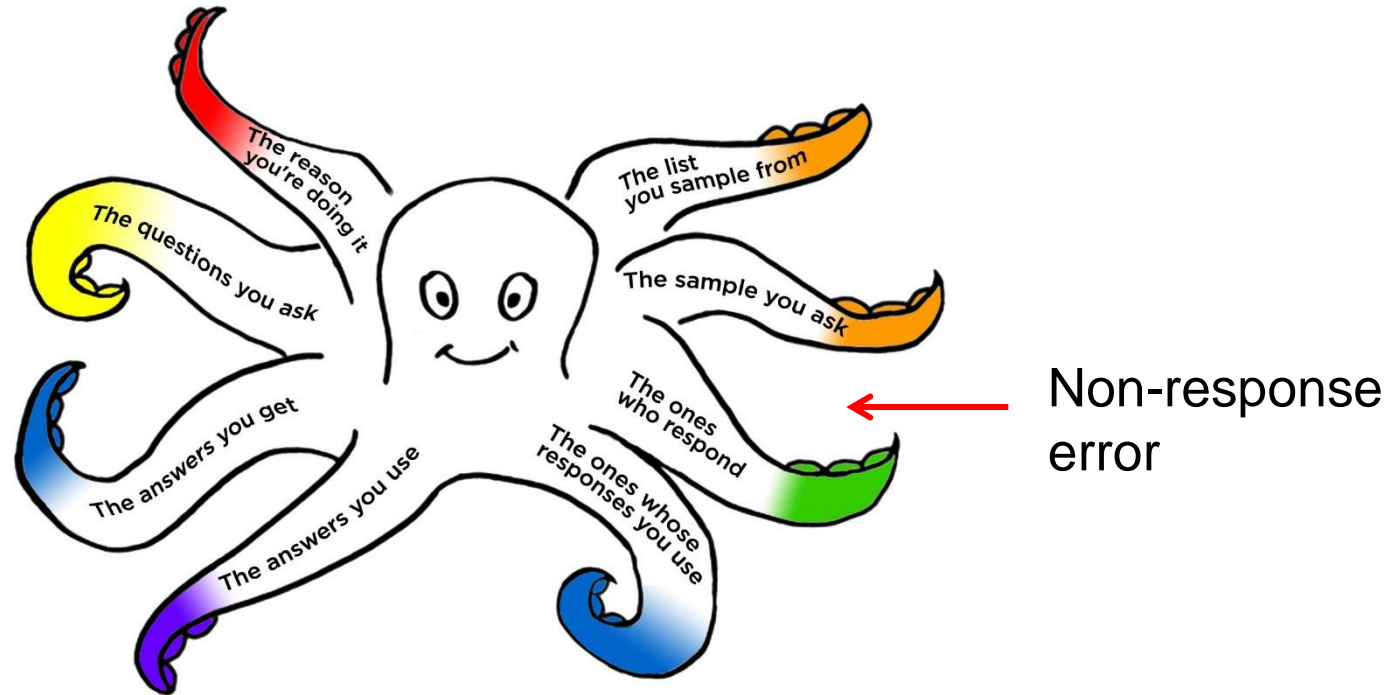
Many statisticians aren't keen, either

Scientists rise up against statistical significance

<https://www.nature.com/articles/d41586-019-00857-9>



Let's look at another crucial error



Non-response error happens when the people who do not respond are different to the people who do respond in a way that affects your decision

Jane Matthews told me a story

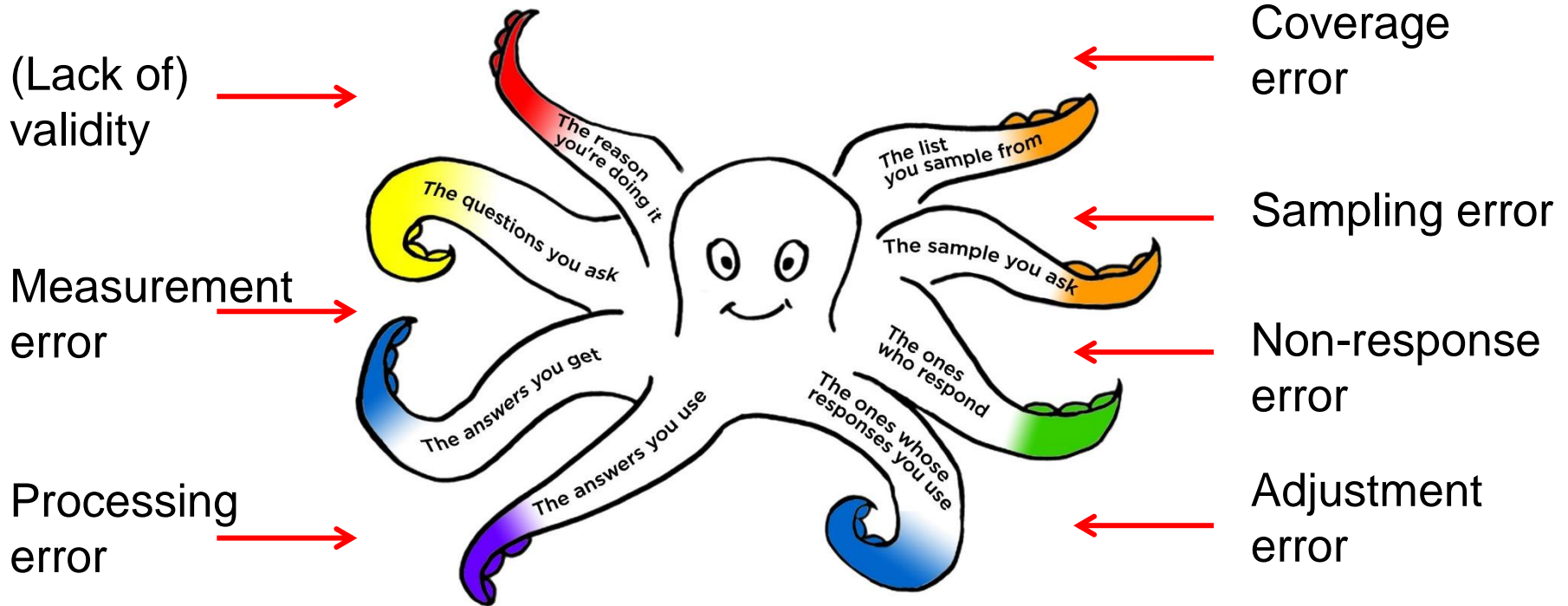
- 20 people attend a workshop; they all seem to enjoy it
- Only get 3 or 4 back from a web survey

*“If we rely on those responses,
we might be at risk of making bad decisions”*

- Now changing to phoning half the people



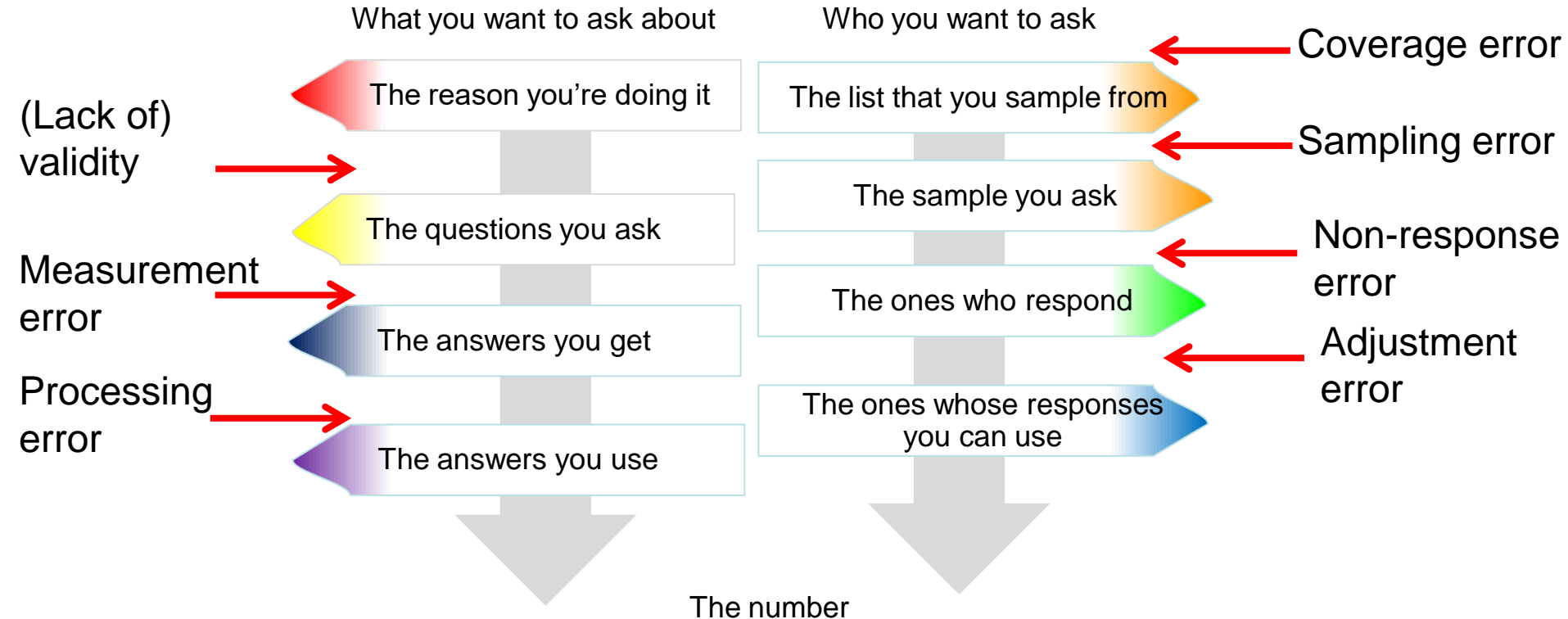
There are errors all around the Survey Octopus



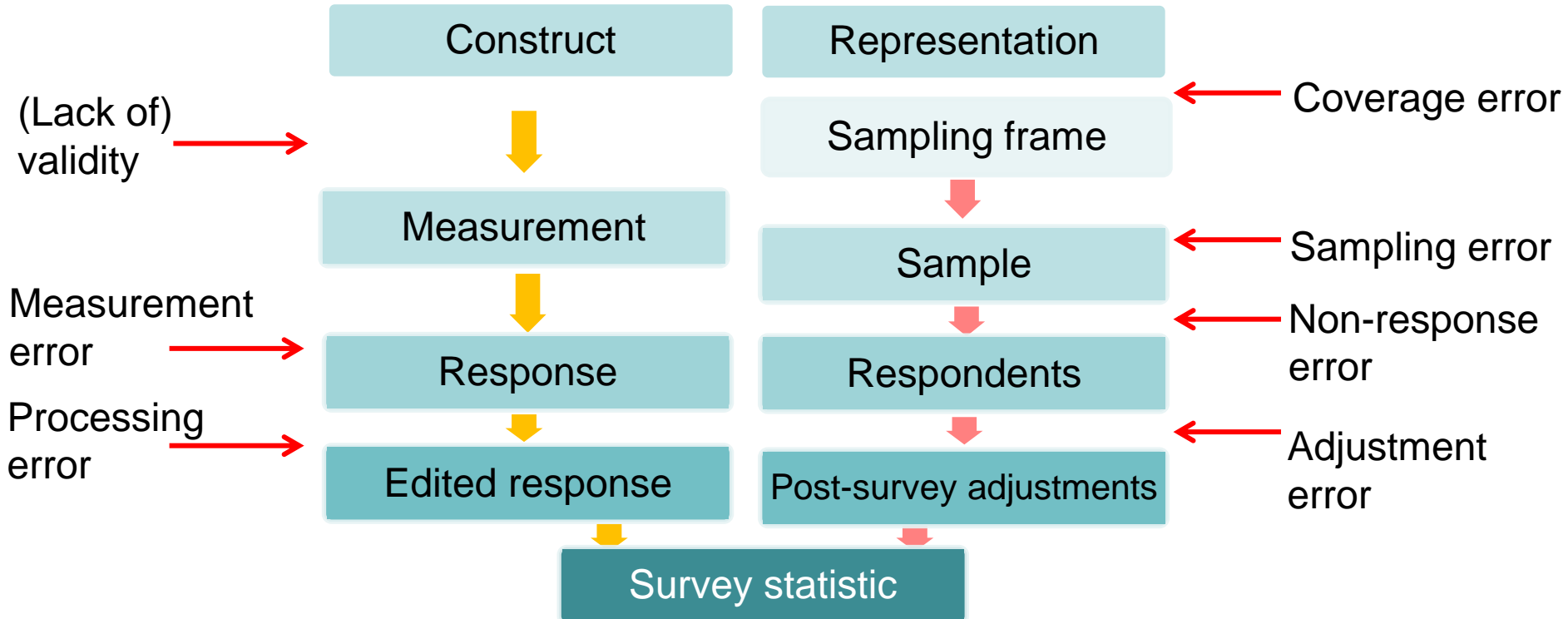
Key Point 7

Significance in practice
comes from
making good decisions
throughout the survey

The aim is to get the best number you can, within the resources you have



This version uses terms from survey methodology



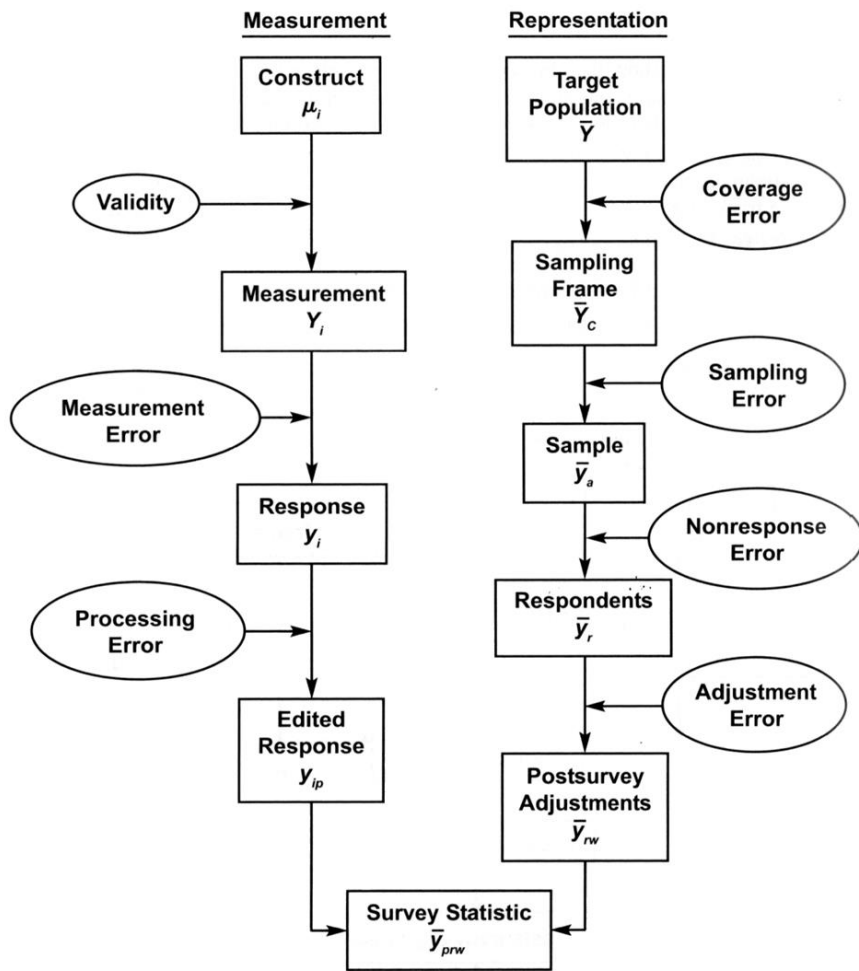


Figure 2.5 Survey life cycle from a quality perspective.

Total Survey Error diagram as presented in Groves, R. M., F. J. Fowler, M. P. Couper, J. M. Lepkowski, E. Singer and R. Tourangeau (2009). Survey methodology. Hoboken, N.J., Wiley.

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