CHIP-2

Concepts and history in psychology

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http://tiny.cc/CHIPdraper

http://www.psy.gla.ac.uk/~steve/courses/chip.html

Part 0:

Recap of lecture 1

What types of explanation and data does psychology use?

What kinds of data must psychology explain?

A. Behaviour: What people do.

B. Internal experience: What people think, feel, are aware of. Experiential.

C. Physiology: What their bodies do (physiology) related to this.

D. Functional: what any organism must do

E. Social: requires analysing a group, not an individual

Preferring theories that address all 3 kinds of data

Theories which don't, lack something we feel we want:

If it's just behaviour then it's not psychology but ethology (animal behaviour)

If it's just feeling then it's literature, not science.

If it's just physiology then it's medicine, not psychology.

Discussion questions for previous lecture

1. "What issues do you think that most people should expect psychology to answer, if they can?"
2. "Do you think psychology has answered these yet?"

Part 1:

Types of evidence in psychology (cont.)

Internal inconsistencies (0)

We could, then, see psychology as a whole as attempting to link, and make consistent, fundamentally different types of evidence.
Obviously it is interesting, often amusing, when they contradict each other e.g. when a person says one thing but does another (hypocrisy? unconscious motives?);
Or intend to do one thing but actually do another (psychology of human errors)

There is a somewhat unsavoury tendency in academic psychology to publish experiments that seem to sneer at the participants: demonstrating how silly they are. (Perhaps to get over objections that psychology is mostly just proving what already seems obvious to ordinary people.)

But an opinion that I have is that a large part of mental life is doing work to maintain and improve internal consistency.

Internal inconsistencies (1)

The broad category of thoughts we are aware of, and can report on in words, has many subdivisions.

And sometimes we observe contradictions even within that one category, besides contradictions between the broad categories (e.g. of what people say and what they do).

Even within the one evidence "type" of what people can be aware of, we quite often observe dissociations (contradictions).

This further elaborates the general point, that the wished-for, a-priori scope of psychology is to look for unified explanations that apply to all these types of data.

Internal inconsistencies (2)

- In researching children's conceptions of physics:
  - Predict
  - Explain
  - Behave (intentional behaviour)
- Slips and mistakes
- "Catalytic" assessment
- Attitudes and behaviour (expectancies, theory of planned behaviour)

Psychology and personal experience: elaborating on type B data (internal experience)

Abstract vs. experiential knowledge:
internal vs. external understanding

In all academic areas there is the important, if under-attended, issue of how to acquire both:

1. An understanding that is public, abstract, shared ("from the outside", "Third person perspective");
2. And personal, concrete, private ("from the inside"). E.g. linking a concept like "force" to a bodily experience like pressure on one's palms.

Theories which don't connect these 2 types lack something we feel we want:

If it's just behaviour then it's not psychology but ethology (animal behaviour)
If it's just feeling then it's literature, not science.
If it's just physiology then it's medicine, not psychology.

A double scoping issue:
Experiential: first or second person?

In psychology, uniquely, the experiential aspect has a double bearing:

- What does it feel like to <u>see</u> and recognise <u>someone else</u> behaving like X? My personal experience of witnessing someone else's psychology: the second person perspective.
- What would it <u>feel</u> like to experience / behave like X <u>myself</u>? My personal experience of my own psychology: the first person perspective.

Experiential double scope (2)

In forensic work, and psychiatry, the "observing others" is often the only one of the two "links to the personal" addressed.

In contrast:
Adelbert Ames [Ames room; 50 other demos]
Ames' view was that statistics should be unnecessary: if a phenomenon was real, you should be able to build a demo so that everyone could experience it directly and personally.

Some of science's most important advances do have this character: telescopes, microscopes, engineering

Brecht's view of science and democracy.
Science as the antidote to arbitrary opinions of authority as the basis of knowledge.

Experiential double scope (3)

This point, about whether the connection to personal experience has been well built, implies:

- It is a further demand on "scope" and the types of data that should be covered
- In psychology, it applies twice over (unlike other disciplines)

So, roughly:

A1 What other people's behaviour looks like.

A2 What my behaviour looks and feels like to me.

B1 What other people think, feel, are aware of.

B2 What I think, feel, am aware of.

C. What bodies, mine and others, do (physiology) related to this.

Experiential double scope (4)

Perception of others' emotion is a quite separate issue from the perception of one's own. Most theories presuppose there is no difference. Yet the mechanism must be quite different.

"You're getting angry about this."
[shouting] "NO I'M NOT"

This old but perceptive joke is revealing. Recognising one's own emotion and recognising other people's are clearly two quite different skills. It is also a problem (counterexample?) for the theory that emotion is about the agent switching attention: how could the agent not even notice an emotion in that case?

Part 2:

The Newtonian triad

This lecture addresses, in very different words, ch.9-10 of Brysbaert & Rastle.

Brysbaert & Rastle (2013) (2nd edition) Historical And Conceptual Issues In Psychology (Harlow : Pearson/Prentice Hall) [Lib: Psychology B351 BRY]

(or ch.8 of 1st edition)

Although almost everything I say I "got" from someone else, I'm not an expert, I have no proof (neither do others), and you have to decide what you yourself think. Put in terms of critical thinking, you have to assess what arguments seem most coherent based on what is available to you.

Why talk about philosophy of physics?

Some students object to material on the philosophy of science applied to physics: why not just to psychology?

- Most philosophy of science has been about physics: that's what there is to read, mostly.
- Physics is about the oldest, most developed part of science (say 4 times as old as psychology)
- Psychology traditionally, and perhaps still, has "physics envy": it wishes to say it is based on definitive experiments, not intuition and personal experience.

On the other hand:

- Different sciences are different in their underlying methods because of their different subject matter. So it's right to challenge whether arguments developed about physics apply to psychology.

The meta-issue

Not which theory is true, but why should there be any theories to discover?

Why should there exist, and why should we be able to discover, general scientific laws?

The essentially irrational or religious underpinning of Newton's programme, and hence of science. [Michael White, 1997]

Even if some kind of understanding is possible for an area, what kind of understanding is possible / best?

(For me, by far the biggest intellectual contributions are those that establish the answer to this for each discipline or area.)

Isaac Newton's schema for science

(the "Newtonian triad")

1. A theory
2. Calculation / prediction: generate testable consequences from the theory. (A theory that can explain anything implies we shouldn't think any more, or learn any more.)
   (Intuitions about explanation: Kieras & Bovair 1984.)
3. Observation, experiment

There are many questions about what does and doesn't count as cases of each of those.
But still more important: How do they relate to each other, how do you go from one to another?

Induction

Recipe 1: collect cases, invent a theory ("induction") that generalises and covers all of them (and excludes known cases that should be excluded). Observation —> Theory

Popper-1: a single counterexample defeats a theory.
So a theory can never be proven.
So recipe-1 can't be the whole story.
Implies: induction —> theory —> collect new cases as tests

N.B. in sciences such as zoology, astronomy, observing cases and discovering novelties is still the most important activity.

Falsifiability

Primacy of (grand) theory.
Theories that can explain anything, or are continuously adjusted to cover any new case, don't really add value
(they are just a self-abuse of our feeling of understanding).

Popper-2: it isn't a scientific theory unless it is falsifiable

This puts weight on the 2nd leg of the Newtonian triad: making "predictions" I.e. calculating new consequences of the theory.

Prediction: future or consequences? Predicting the past.

(Evolutionary psychology)

Part 3:

Experiments

Why experiment? (1)

The triad only requires observation, data, empirical studies for its 3rd leg. Why do some people (especially in psychology) think experiments are strongly preferred for the role of observation?

Aristotle's biology. Everything but the experiment (spontaneous generation of flies) [Armand Leroi]

We might, perhaps, distinguish 4 stages for the "triad leg" of observation:

1. Collect and remember any cases you come across
2. Enhanced: you go out of your way to do more: collecting trips, measure properties (not just remember seeing them), dissection.
3. Learn by exploration: fiddle with new and unexpected cases to reveal more of their properties [Henry Cavendish]
4. Full-on experiments to isolate causal factors.

Why experiment? (2)

Expt. does 2 things:

A] Isolates one factor from all others

B] Establishes causal direction.

Why experiment? (3)

A] Isolating one factor from all others

Expt. isolates one factor and varies it independently [the "independent variable"], and shows the effects of that factor independently of others.
For these purposes, demonstrating causation is only useful as one means to the end.
If you have established what factors are independently active, then you can consider creating new combinations which haven't occurred naturally (at least in your samples).

We never know all the factors.

Does this work even if it is not you manipulating, but pre-selecting subsets of people? [Discussion qu. 2]

Why experiment? (4)

B] Demonstrating causal direction.

Correlation vs. experiment.
Fixes the direction of causation.

BUT:
Bertrand Russell: the most advanced science does NOT talk about causes but relationships.

Causation (apart from establishing the independence of factors) is for applied projects.

Why experiment? (5)

How important is experiment? [ethology, spontaneous generation]

But: there are few experiments in astrophysics, or evolution, or epidemiology. So there is a lot of science that doesn't use expt.

Bertrand Russell: the most advanced science does NOT talk about causes but relationships. So arguably, causation is what engineers need to know, but isn't important in most pure science.

Homework: in what areas does psychology NOT use experiment? Is this OK?

Critical thinking tip

One way of thinking about CT is in stages; and perhaps the most advanced of these is (unlike Aristotle) proposing an experiment to get new knowledge which your CT analysis decides is not yet achieved, but needed.

- Note that there is more than one reasonable opinion or view
- Arrive at a judgement (EJ) on which view is, on balance, the best (don't sit on the fence, or suggest that no-one can ever know)
- Design and propose an expt. to resolve the issue.

Part 4:

Discussion questions for homework

Discussion questions for homework

1. What are the cases (the kinds of cases) where experiment is not used in psychology.
   How do the objections apply to each or not?

2. Does experiment have the same power if you don't manipulate causality, but just select different types of people for the two groups (e.g. different personality types)?

3. What examples can you think of or find, where statistics act like a telescope: to see things that otherwise we could never know.

A place to stop

For the slides, handout etc. see:

http://tiny.cc/CHIPdraper

or:

http://www.psy.gla.ac.uk/~steve/courses/chip.html