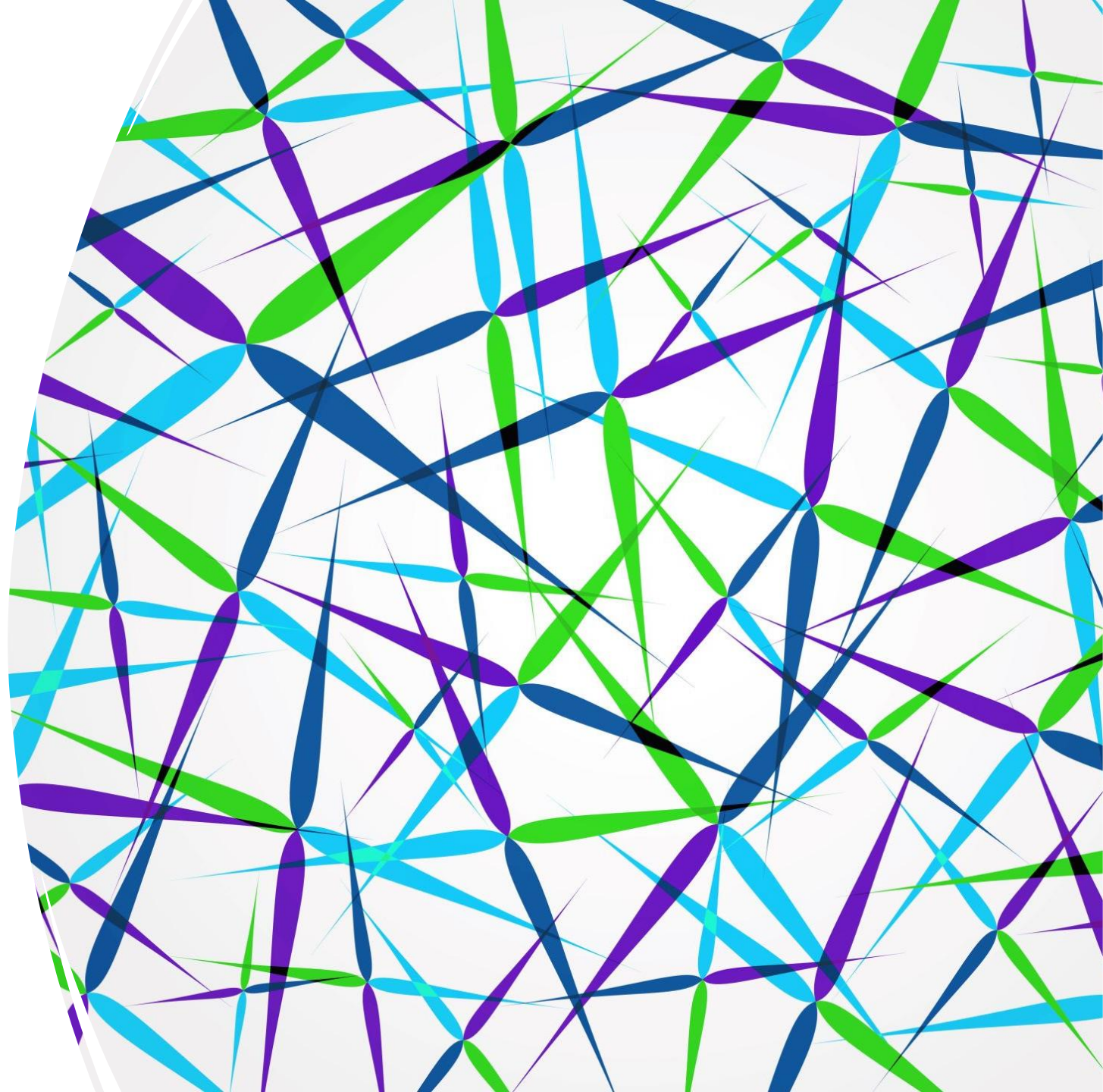


RESEARCH METHODS I

Introduction to Research
Methods

Stacey Coleman



CORE READINGS

1

Coolican: Research Methods and Statistics in Psychology

- 6th edition available online via Library system

2

Howitt: Introduction to Research Methods in Psychology

- 4th edition available online via Library system

3

Pallant: SPSS Survival Manual (7th ed.)

4

Brace et al: SPSS for Psychologists

- 6th edition available online via Library system

MODULE AIMS

- To introduce students to the basic principles of empirical research, including quantitative and qualitative research methods, the principles of sound data collection, and appropriate analysis and reporting of research findings.

LEARNING OUTCOMES

- Upon successful completion of this module, students should be able to:
 - demonstrate an awareness of the basic principles of empirical research in psychology for both qualitative and quantitative research methods, including the requirements of empirical report-writing
 - identify and apply the principles of the BPS code of Human Research Ethics and other ethical guidelines to qualitative and quantitative research studies
 - demonstrate competence in basic qualitative and quantitative data collection methods and analysis
 - take responsibility for their own learning and skill development; including effective personal planning, self-reflection and project management skills.

MODULE STRUCTURE

- Recorded lectures released online every Monday at 9am on Moodle
- On-campus sessions will take place four times across the semester; your module handbook and weekly planner will inform you which weeks you are expected to be on-campus for this module

Introduction of theory, elements of skill that you will learn, etc.

Practical! You will be 'doing' things every session in these workshops - collecting data, practising new skills and discussing issues with your peers

WHY DO RESEARCH METHODS AND STATISTICS MATTER?

- Important for your degree
 - You won't get one unless you develop these skills!
 - Psychology is a science - a way of thinking
 - BPS accreditation / QAA benchmarks
- Important for good research
 - Your career beyond your degree
 - Moral and professional responsibility
 - Satisfy funding bodies, e.g., charities, government, etc.

THE BRITISH PSYCHOLOGICAL SOCIETY (BPS)



The
British
Psychological
Society

- The BPS – professional body (incorporated by Royal Charter) for Psychologists in the UK
- Accreditation of education and training in Psychology for over 40 years
- Eligibility for Graduate Basis for Chartered Membership (GBC)
 - Accredited degree course
 - Degree classification of lower second degree with honours (2:2) or above

Biological psychology	E.g., biological bases of behaviour, hormones and behaviour, behavioural genetics, neuroimaging, neuropsychology, socio-biology and evolutionary psychology
Cognitive psychology	E.g., attention, perception, learning, memory, thinking, language, conscientiousness and cognitive neuropsychology
Developmental psychology	E.g., childhood, adolescence and life-span development, attachment, cognitive and language development
Individual differences	E.g., personality, psychological testing, intelligence, cognitive style, emotion, motivation, mood, mental health, gender and ethnicity
Social psychology	E.g., social cognition, attribution, attitudes, group processes, close relationships and social constructionism
Conceptual and Historical Issues in Psychology	E.g., psychology as a science, conceptual and historical paradigms and models, political and ethical issues in psychology, integration across multiple perspectives
Research methods	Research methods in psychology: • Research design • The nature and appropriate statistical analysis of data • Psychometric and measurement techniques • Quantitative and qualitative methods

IMPORTANCE OF RESEARCH METHODS

Psychology is regarded as a science

Science (at a basic level) attempts to answer questions through careful observation and collection of data

These answers can then be used to further our knowledge of us (humans) and of our world

As well as then helping us to predict subsequent events and behaviour

BUT to do this, we require a systematic/universal way of collecting and understanding data

SCIENTIFIC METHOD

Scientific method: General method of investigation using inductive and deductive methods of research

- Inductive methods:

- Used to analyse an observed event
- The process of moving from specific observations to broader generalisations
- Often associated with qualitative research

- Deductive methods:

- Used to verify an observed event
- Logical argument using rules to derive a conclusion from ideas
- Often associated with quantitative research

THE EMPIRICAL METHOD

- Empirical = "*through experience*"
- We never use the term prove.
 - We can only assume or infer what is happening
- Bacon's empirical method model (17th C) advocates observing events and recording descriptions
 - This information is then known as 'data'
 - When we organise and compare enough data, we see regularities that become laws through induction.

THE EMPIRICAL METHOD

- Issues?
 - It is difficult to simply record observations without asking *'why?'*
- Thus, psychologists set out to test ideas about why something happens/is observed
 - This becomes known as a theory; a belief about how something works, or how/why a particular phenomenon occurs.
- A theory required evidence to support it

THEORIES AND HYPOTHESES



Evidence for theories comes from the derivation of a hypothesis:

Hypothesis = A testable statement; an idea that is proposed as an explanation for a phenomenon

Hypotheses (plural) are used to test theories



Alternatively, we can pose a research question

Particularly in the case of inductive methods



From research questions and hypotheses, a precise research prediction can be formulated.

RESEARCH PREDICTION

- A precise prediction about how variables should be related in an analysis of data if a hypothesis is to be supported.
- These elements mean we can develop predictions in measurable terms and develop operational definitions
 - Definition of phenomenon in terms of the precise procedures taken to measure it

THEORIES, HYPOTHESES, AND RESEARCH PREDICTIONS

- The operationalised prediction follows from the hypothesis.
 - It is essential that the difference between a hypothesis and the test of it (i.e., the research prediction) are distinguished
- A hypothesis is a generalised claim about the world
 - E.g., caffeine shortens reaction times
- A hypothesis is usually a proposed fact about the world that follows logically from a broader background theory.
 - However, some theories in Psychology are also called hypotheses.

TESTING SCIENTIFIC THEORIES

The contemporary scientific method used by psychologists =
the hypothetico-deductive method

Observe, gather, and order data

Induction of generalisations/laws

Develop explanatory theories

Deduction of hypothesis to test theory

Test hypotheses / develop research prediction

Results of test support or challenge theory

REPLICATION

- Results from a single study may be the consequence of a fluke
- Need to replicate outcomes from research in order to draw more robust conclusions
 - And ensure support for the reasons being put forward as to why something occurs
- To do this, full details of a study should be communicated to the scientific community

DISCONFIRMING THEORIES AND FALSIFIABILITY

- Need to continue challenging findings and theories to demonstrate limitations of an effect.
- To learn more about causes behind effects, we need to find where it does not work.
 - Links to black swan argument
- Popper (1959): scientific investigation should be about falsifying theories
 - If it is not possible to find a way in which a theory could be falsified, then it is not a theory fit for science.

THE MAIN FEATURES OF PSYCHOLOGICAL INVESTIGATION: PLAN FOR ANSWERING A RESEARCH QUESTION



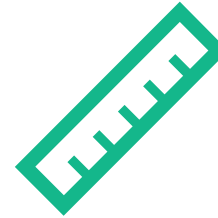
Variables

- WHAT is being measured?
- WHAT human characteristics and conditions are involved?



Samples

- WHOM shall we study?
- How will we find them?



Design

- HOW shall the question be answered?
- HOW can the research predictions be tested?



Analysis

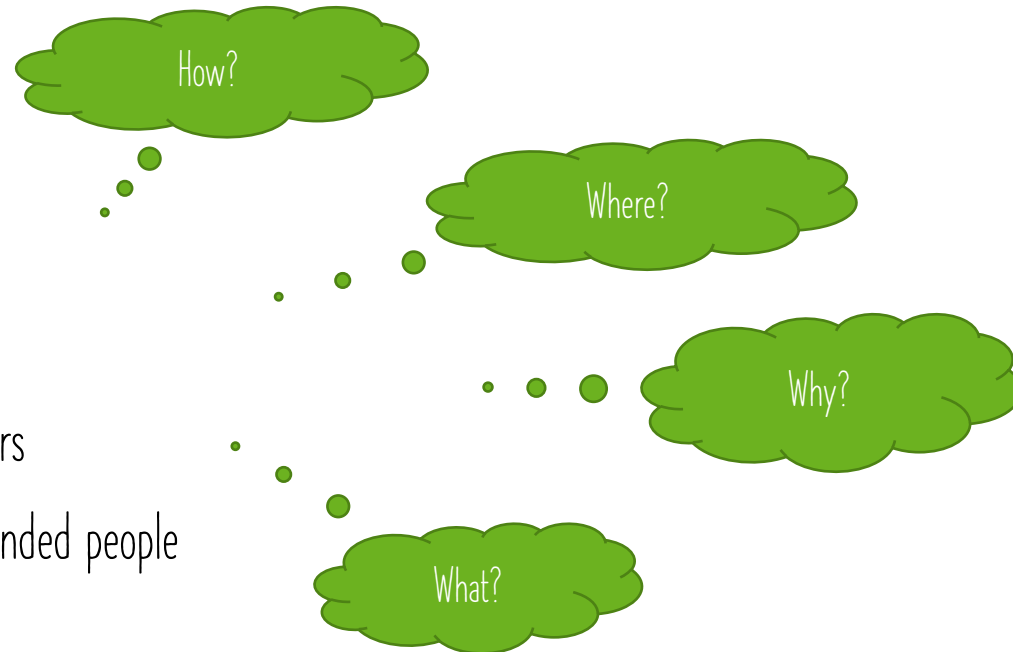
- WHAT evidence will be collected?
- In what form will it be?

IMPORTANCE OF RESEARCH METHODS IN PSYCHOLOGICAL SCIENCE

- Methodology helps us understand and evaluate the merit of all the information that we are confronted with every day

- E.g., do you believe the following?

- Chocolate makes children hyperactive
- Smoking is linked to poor grades in teenagers
- Right handed people live longer than left handed people



ANY QUESTIONS

