1. Goals of Research
2. Research Methods
   – Correlational research
   – Experimental research
Goals of Research

To “understand” human behaviour

• **Describe**
  – Identify and classify regularly occurring sequence of events

• **Explain**
  – Suggest why events occurred.

• **Predict**
  – Find regularities and predictable relationships that exist between variables

• **Control**
  – Regulate the occurrence of the phenomenon

Correlational Methods

• Goals:
  – Detect natural associations

• Some types of descriptive/correlational methods include:
  – Observation studies
  – Archival studies
  – Survey studies
Correlational research

• Correlation Coefficient
  – A measurement of the degree to which two variables are related.
    • Example: What is the relationship between being social excluded and aggressive behaviors?

• Scatterplot
  – A graphic representation of a correlation
Negative Correlation

Correlational Research

- correlation coefficients
  - range from +1.00 to -1.00
  - strength of the relationship: closeness to +1.00/-1.00, not by the valence (+/-)
Correlational Research

-1  -0.5  0  +0.5  +1

- Perfect Negative Relationship
- Moderate Negative Relationship
- No Relationship
- Moderate Positive Relationship
- Perfect Positive Relationship

- strengths
  - potential for numerous variables
  - good generalizability

- weaknesses
  - Causation often ambiguous
Problems with correlational studies

- They show that two things are related:
  - For example, social exclusion is related to aggressive behaviors.
- But is this because social exclusion makes people more aggressive?

```
Social Exclusion  →  Aggression
```

Problems with correlational studies

- Or because aggressive behaviors make people more likely to be excluded by others?

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Aggression  →  Social exclusion
```
Problems with correlational studies

• Or because both are effected by something else, like personality?

Addressing Problems with Correlational Research

• direction of causality problem
  – Does “social exclusion” lead to more aggression or does a propensity for aggression lead to more “social exclusion”?

  – solution: we manipulate one of the variables
    • Make people excluded or not by other people
Addressing Problems with Correlational Research

• but, we still have the 3rd variable problem
  – Solution: random assignment
    • if personality, like hurt proneness, has an effect on aggression, it should be equal for both groups

Experimental methods

• Causal relationship
• How do we know causation?
  – Covariation
    • The presumed cause (X) and effect (Y) are related to each other.
  – Temporal precedence
    • The X occurred before the resumed effect Y
  – Third variable
    • The relationship between X and Y is not explained by the presence of other plausible causal agents.
Experimental Methods

- **Independent Variable**
  The factor that is systematically manipulated so that the researcher can examine its effect on a dependent variable.

- **Dependent Variable**
  The variable (usually a behaviour) that is affected by the independent variable.

Experimental Methods, continued

- **Random selection or random sampling**
  - Every person in a given population has an equal chance of being selected for the sample

- **Random assignment to condition**
  - All participants have an equal chance of taking part in any condition of an experiment.
Experimental Methods, continued

• Construct Validity
  • The degree to which both the independent and dependent variables accurately reflect or measure the constructs of interest.

Experimental Methods, cont.

• Internal Validity
  • The extent to which conclusions can be drawn about the causal effects of one variable on another.
Experimental Methods, cont.

- **External Validity**
  - The extent to which the results of a study can be generalized to the larger context

**Example**

Effects of social exclusion and hurt proneness on aggression

- Low in hurt proneness
- High in hurt proneness

![Bar chart showing evaluation of aggression levels for Included and Ostracized conditions with different levels of hurt proneness.](chart.png)
Example

- Independent Variables?
- Dependent Variables?
- Main effects?
- Interactions?
- Internal Validity?
- External Validity?

![Bar chart showing effects of social exclusion and hurt proneness on aggression]

Effects of social exclusion and hurt proneness on aggression

- Low in hurt proneness
- High in hurt proneness

Included Ostracized