

Chapter 4 - Conceptualization and Measurement

What is a concept?

A mental image that **summarizes** a set of similar observations, feelings, or idea.

What are some concepts seen in criminology?

Poverty

Social Control

Poverty

Strain

Social Control

Poverty

Economic Disadvantage

Strain

Social Control

Poverty

Race

Economic Disadvantage

Strain

Social Control

Poverty

Victimization

Race

Economic Disadvantage

Strain

Social Control

Poverty

Psychopathy

Victimization

Race

Economic Disadvantage

Strain

Social Control

Poverty

Addiction

Psychopathy

Victimization

Race

Economic Disadvantage

Strain

Social Control

Poverty

Rehabilitation

Addiction

Psychopathy

Victimization

Race

Economic Disadvantage

Strain

Social Control

Poverty

Gangs

Rehabilitation

Addiction

Psychopathy

Victimization

Race

Economic Disadvantage

Strain

Social Control

Poverty

Crime

Gangs

Rehabilitation

Addiction

Psychopathy

Victimization

Race

Economic Disadvantage

Strain

Social Control

Poverty

Conceptualization

The process of specifying what we mean by a term.

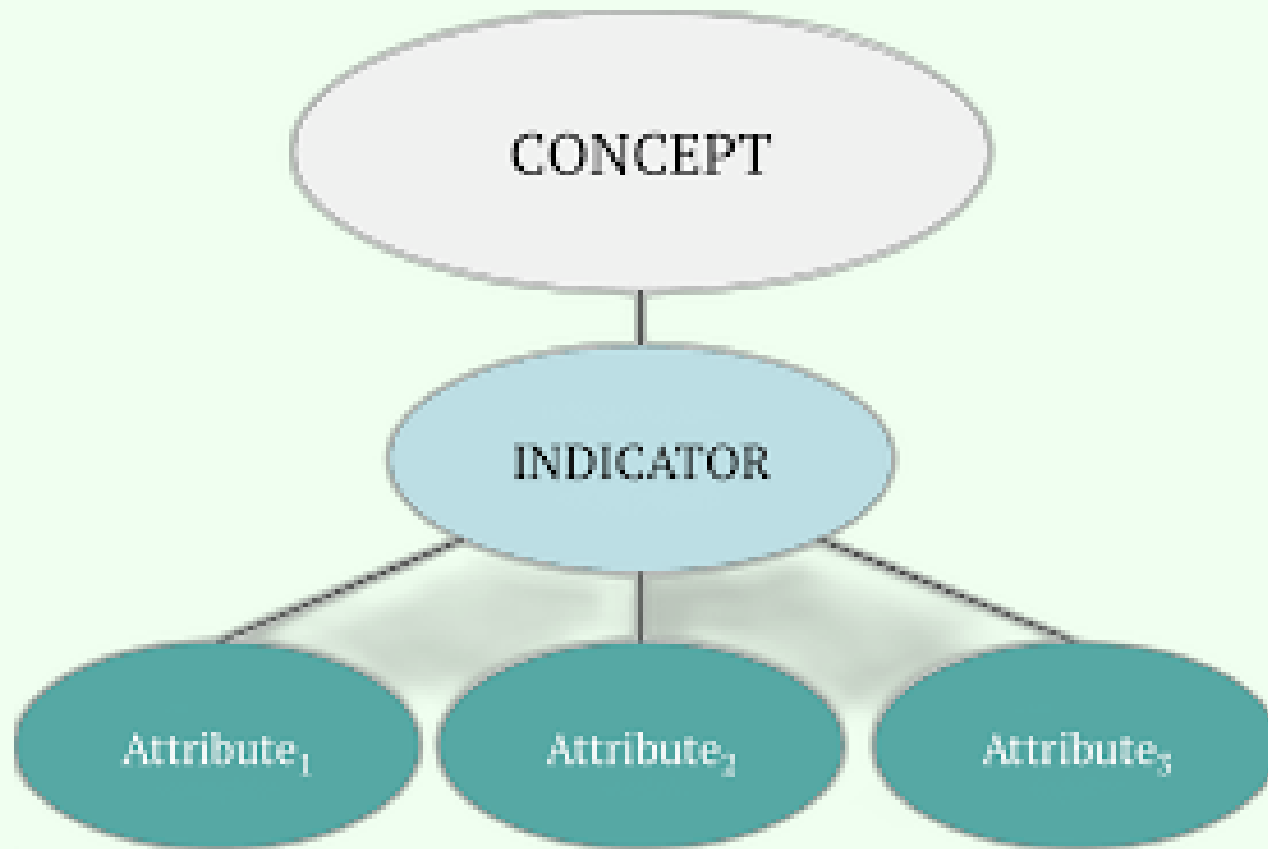
Helps translate the **abstract meaning** of our concept into something that is **testable**.

Operationalization

Operation is the procedure for **measuring** the concepts we intend to measure.

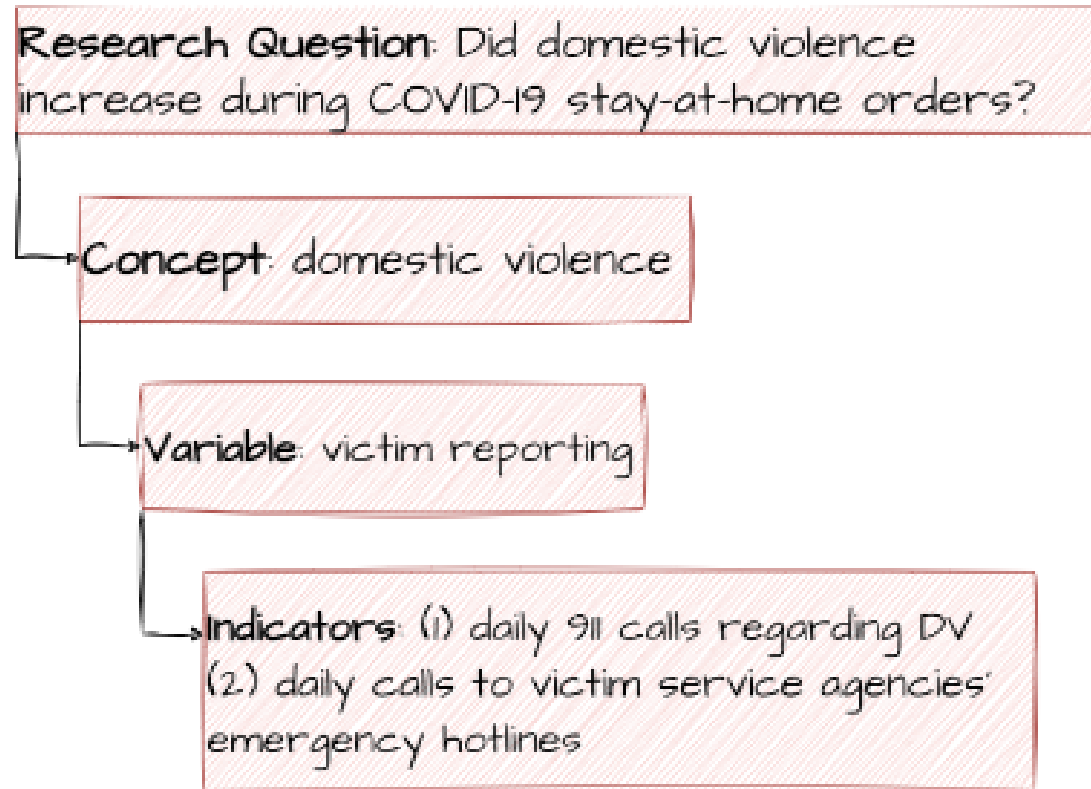
Operationalization is the process of specifying the operations that will indicate the **value** of a variable for each case.

Conceptualization to Operationalization



(image: AMA)

Conceptualization to Operationalization



Richards et al. (2021)

(image: Justin Nix's Lecture 4)

Identifying the Best Data

Types of Data

Two Types

- 1.) Original data
- 2.) Secondary data

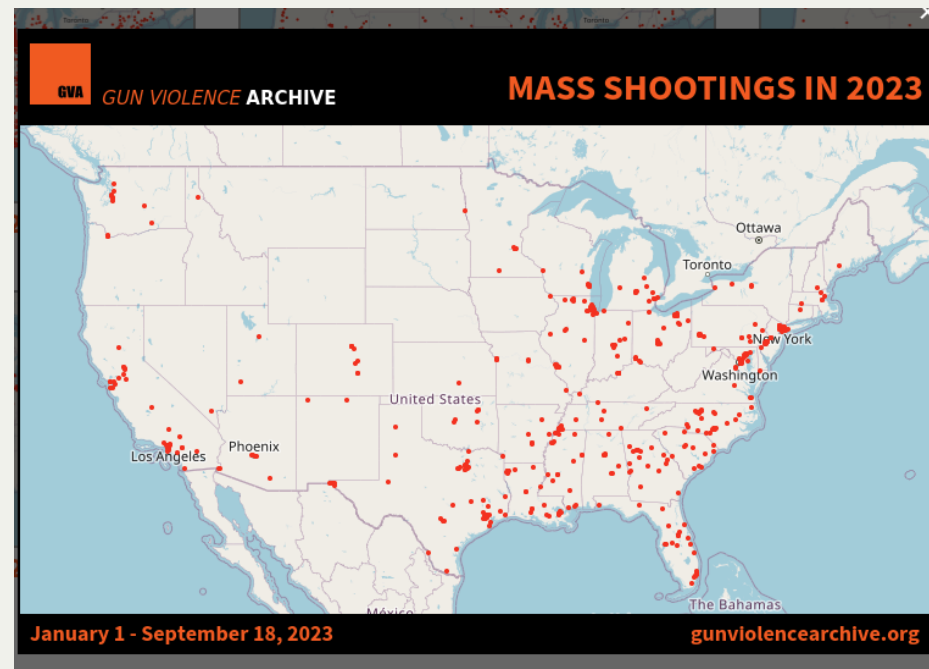


(image: Planon)

Identifying the Best Data

Secondary Data

Example: Gun Violence Archive



Identifying the Best Data

Perhaps secondary data doesn't exist.

What do we do?

Collect our own data.

Identifying the Best Data

Constructing Questions

Closed-Ended Questions

Respondents are offered explicit responses to choose from.

Imagine you are at a party with some of your friends. After a little while, another guest at the party—who you never met before—bumps into you and spills your drink. Rather than apologize, she stands in front of you and starts insulting you and calling you names in front of your friends. You ask her to step back, and she says, “make me.” One of your friends stands next to you and tells you she has your back if “anything goes down.” You can turn and walk away or push them away, but this will likely start a fight.

1. How UNLIKELY or LIKELY is it that you would be caught by the police if you decided to fight in this scenario? (Please circle the response that best represents your answer)

1

2

3

4

5

6

7

**Extremely
Unlikely**

**Extremely
Likely**

Identifying the Best Data

Constructing Questions

Open-Ended Questions

Used when the range of responses cannot be anticipated.

Ex. How would you say alcohol use on UNO's campus compares with that of UNL's campus?

Identifying the Best Data

Making Observations

Systematic Social Observation (SSO)

- Was used in the seminal study of *collective efficacy*
- Drove in an SUV at 5mph down every street in a sample of Chicago neighborhoods
- Video recordings were completed on over 15,000 blocks
- Trained observers completed over 23,000 logs of what they saw

Identifying the Best Data

Systematic Social Observation (SSO)



A. well kept neighborhood; children and amenities visible on the street; roads and sidewalks in good condition.



C. deprived residential area; vacant lot in poor condition; heavy amount of litter; sidewalks and road in poor condition.



B. evidence of graffiti; poorly kept sidewalk and trash container; sidewalks in fair condition.



D. comfortably-off residential area; roads and sidewalks in good conditions; no signs of litter, graffiti or other signs of disorder.

(image: Bold expert)

Identifying the Best Data

Collective Unobtrusive Measures

Allow us to collect data about individuals or groups without their direct knowledge or participation.

- Physical Trace Evidence
- Archives
- Simple Observation
- Contrived Observation

Recap

- Conceptualization to Operationalization
- Type of questions
- Systematic Social Observation
- Collective Unobtrusive Measures

Levels of Measurement

Nominal Variables

- *Categorical* or *qualitative* levels of measurement
- Values have no mathematical interpretation.
- Vary in kind or quality, not in amount.



(image: Depositphotos)

Levels of Measurement

Mutually exclusive attributes

Exhaustive attributes

Levels of Measurement

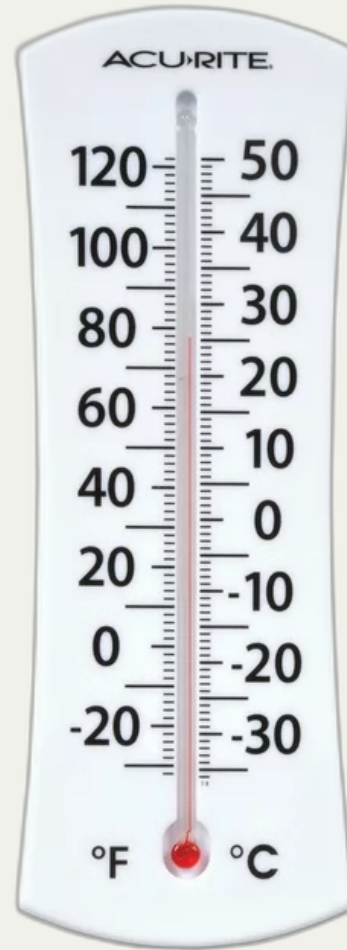
Ordinal Variables

8. Approximately what was your family's annual income when you were growing up (0 – 19)? If you do not know, select the closest estimate.

- ☐ Less than \$20,000
- ☐ \$20,000 - \$29,000
- ☐ \$30,000 - \$39,000
- ☐ \$40,000 - \$49,000
- ☐ \$50,000 - \$69,000
- ☐ \$70,000 - \$99,999
- ☐ Over \$100,000

Levels of Measurement

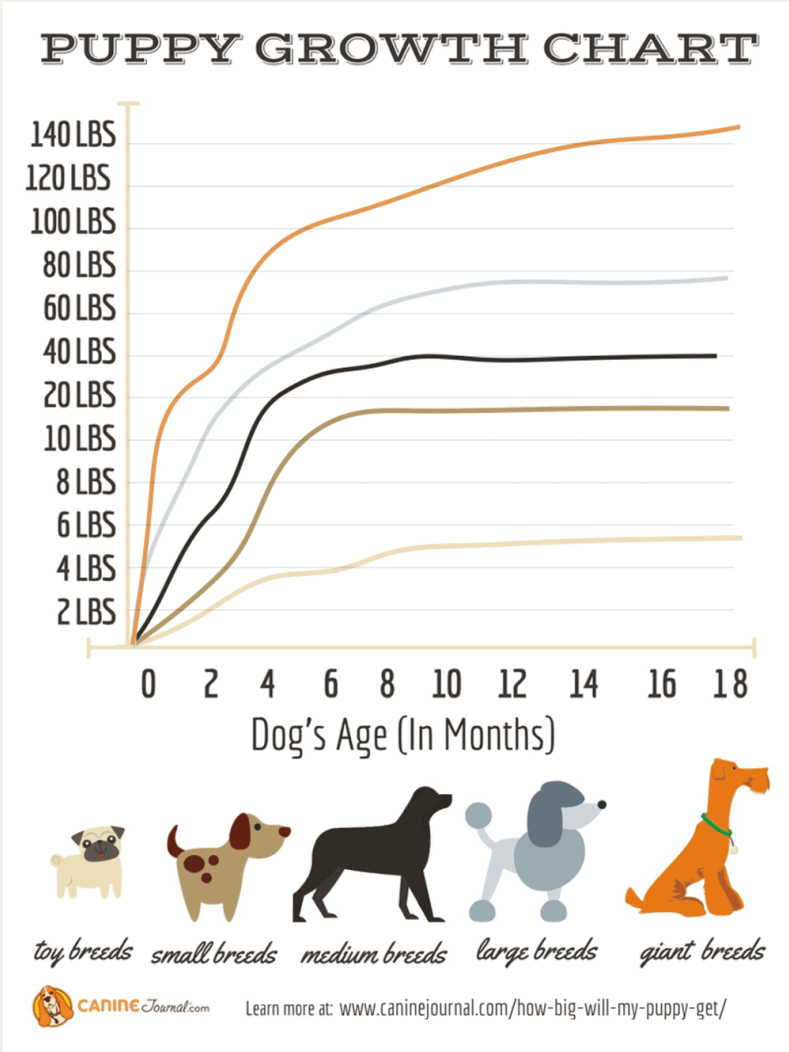
Interval Variables



(image: Research Method)

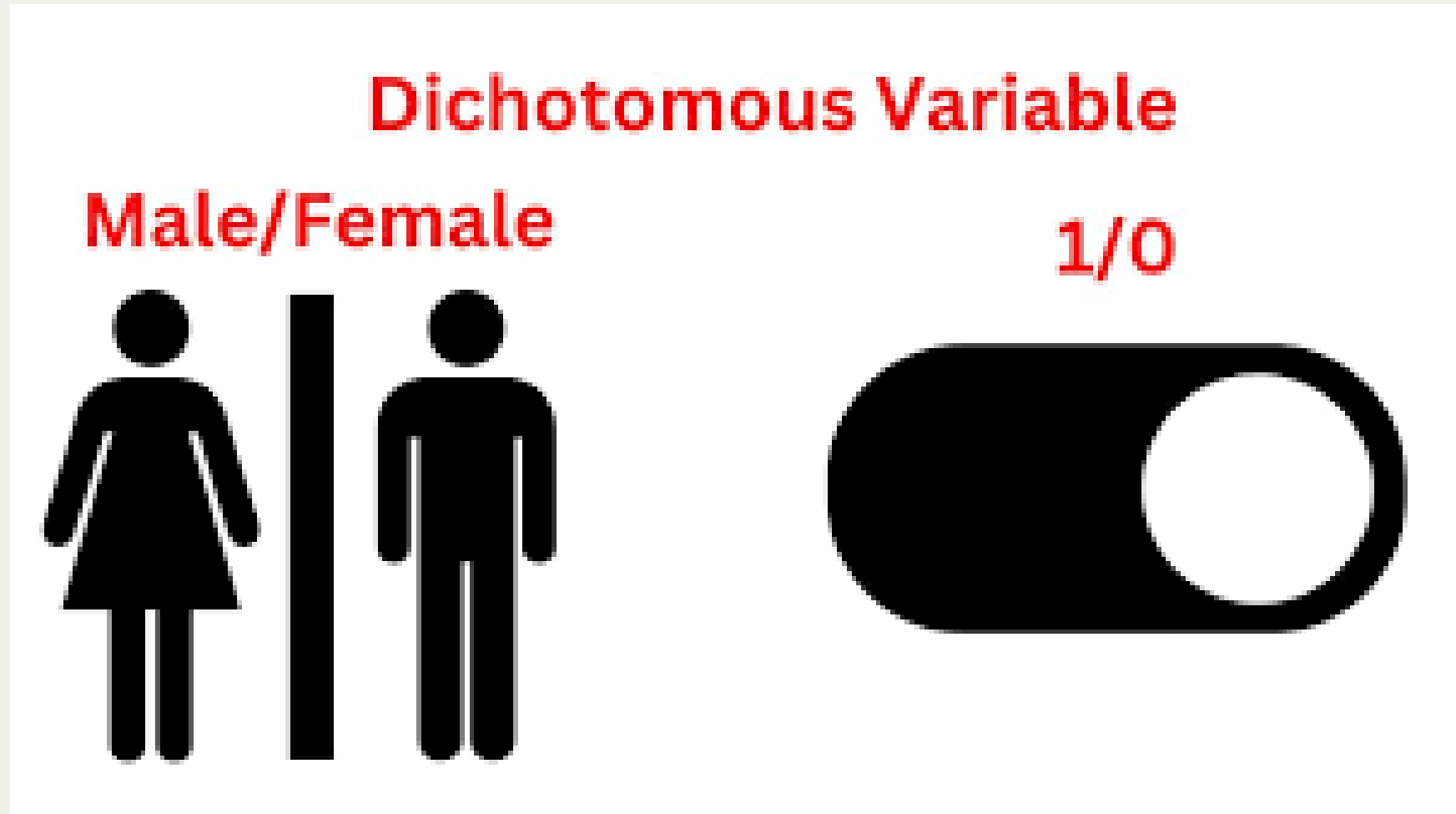
Levels of Measurement

Ratio Variables



Levels of Measurement

Dichotomous Variables



(image: Research Method)

Levels of Measurement

Comparison of Levels of Measurement

Example comparison statement	Appropriate math operations	Nominal	Ordinal	Interval	Ratio
A is equal/not equal to B	$= \neq$	✓	✓	✓	✓
A is greater/less than B	$> <$		✓	✓	✓
A is two more/less than B	$+ -$			✓	✓
A is twice/half as much as B	$\times /$				✓

(image: Justin Nix's Lecture 4)

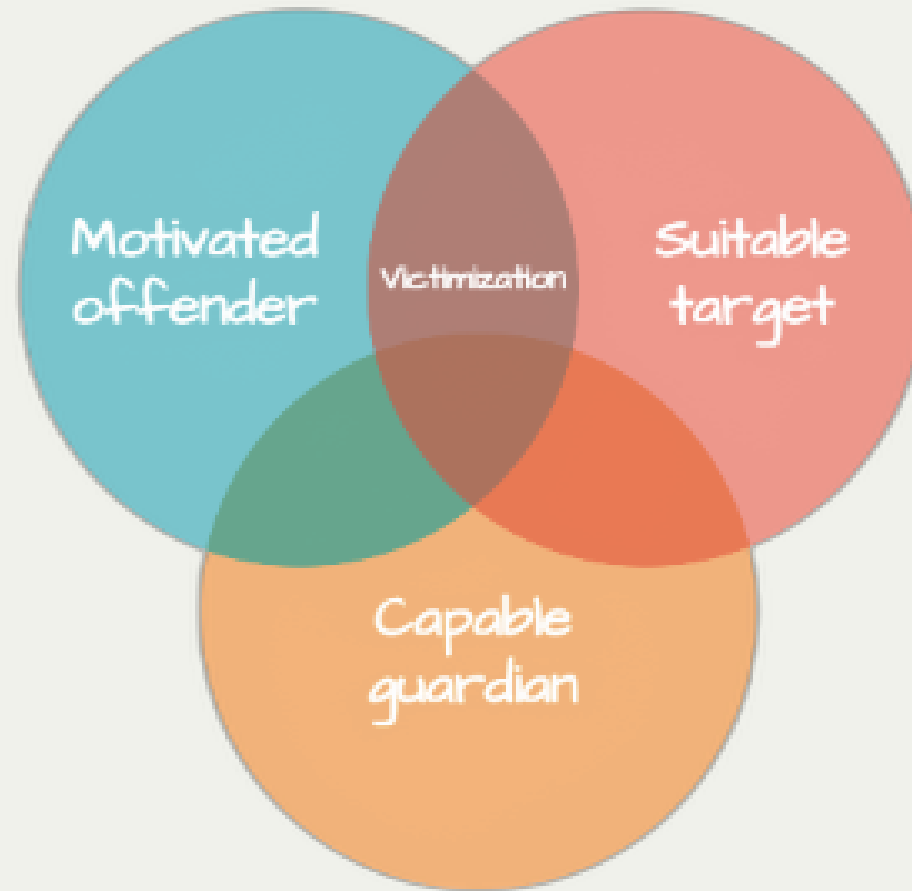
Measurement Validity

Face Validity



Measurement Validity

Content Validity



(image: Justin Nix's Lecture 4)

Measurement Validity

Criterion Validity



(image: Resident Advisor)

Measurement Validity

Construct Validity

Used when *no clear* criterion exist for validation purposes.

For example:

A study using an Addiction Severity Index (ASI) would validate the scores by comparing it with other variables associated with addiction (e.g., employment, legal, family problems)

Reliability

A measurement is producing a consistent score.

- As long the phenomena itself **does not change**

Reliability

Test-Retest Reliability

If we observe $X \rightarrow Y$ at two points in time, this increases our confidence in the reliability of our measures.

Reliability

Interitem Reliability (Internal Consistency)

TABLE 1 Factor Structure of the Inventory of Callous-Unemotional Traits	
Items	Factor Loadings
Callousness	
4. I do not care who I hurt to get what I want.	0.82
8. I am concerned about the feelings of others. ^a	0.78
9. I do not care if I get into trouble.	0.75
18. I do not feel remorseful when I do something wrong.	0.72
11. I do not care about doing things well.	0.68
21. The feelings of others are unimportant to me.	0.65
7. I do not care about being on time.	0.62
20. I do not like to put the time into doing things well.	0.58
2. What I think is right and wrong is different from what other people think.	0.55
10. I do not let my feelings control me.	0.52
12. I seem very cold and uncaring to others.	0.48
Uncaring	
15. I always try my best. ^a	0.75
23. I work hard on everything I do. ^a	0.72
16. I apologize ("say I am sorry") to persons I hurt. ^a	0.68
3. I care about how well I do at school or work. ^a	0.65
17. I try not to hurt others' feelings. ^a	0.62
24. I do things to make others feel good. ^a	0.58
13. I easily admit to being wrong. ^a	0.55
5. I feel bad or guilty when I do something wrong. ^a	0.52
Unemotional	
1. I express my feelings openly. ^a	0.72
19. I am very expressive and emotional. ^a	0.68
6. I do not show my emotions to others.	0.65
22. I hide my feelings from others.	0.62
14. It is easy for others to tell how I am feeling. ^a	0.58
NOTE: Values reported are rotated factor pattern using promax rotation method.	

Reliability

Alternate-Forms Reliability

Now, please consider your interactions with employees in your agency. How important or unimportant is it that you...

	Very Unimportant	Unimportant	Neutral	Important	Very Important
Consider your employees' viewpoints?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treat employees with kindness and consideration?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clearly explain the reasons for your decisions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clearly explain the reasons your agency makes policy changes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treat employees with respect?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make decisions that have the agency's best interest in mind?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Now, please consider your interactions with employees in your agency. How often do you...

	Never	Rarely	Sometimes	Often	Always
Consider your employees' viewpoints?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treat employees with kindness and consideration?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clearly explain the reasons for your decisions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Make decisions that have the agency's best interest in mind?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- Wolfe et al., *The measurement of organizational justice matters*

(image: Justin Nix's Lecture 4)

Reliability

Intra and Interobserver Reliability



(image:Relyence)

We want **both**
reliability and validity.

Alright, see you next week!

