

MODULE 1

VARIABLE MEASUREMENT SCALES

OUTLINE

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Variable measurement scales

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Study questions

OUTLINE

1

Variable measurement scales

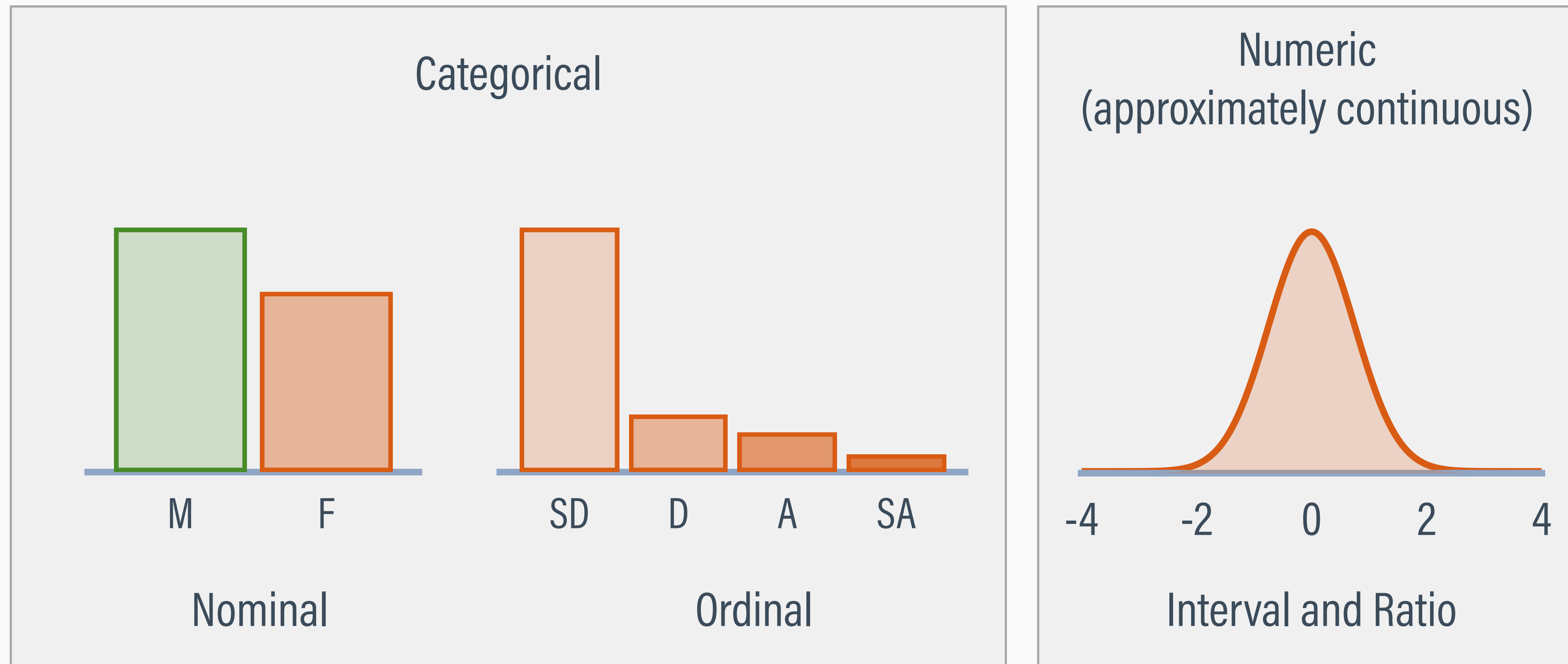
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Study questions

VARIABLES

- A **variable** is an attribute that takes on different values across persons
- Psychologists explore a wide range of variables related to the mind and behavior
- Emotion, personality, IQ, belief systems, interpersonal relationships, psychological functioning, reaction time, substance use, etc.

VARIABLE MEASUREMENT SCALES



NOMINAL SCALES

- Responses are grouped into mutually exclusive categories with no inherent rank order
- e.g., Gender identity (heterosexual, bisexual, pansexual, homosexual), depression history (prior diagnosis vs. none), treatment condition (treatment vs. control)
- Groups cannot be ordered from higher to lower, better to worse, etc.

ORDINAL SCALES

- Responses are grouped into categories that can be rank ordered
- e.g., Class standing (freshman, sophomore, junior, senior), letter grade (A, B, C, D, F), Likert-type scales (strongly disagree, disagree, agree, strongly agree)
- Categories need not be equidistant (the difference between a B and a C is not the same amount of knowledge as the difference between B and A)

NUMERIC (CONTINUOUS) VARIABLES

- Interval and ratio scales refer to numeric (continuous) variables that approximate a number line (e.g., response time, age, GRE)
- Any two adjacent score values reflect the same amount of the variable (e.g., the difference between GRE = 105 and 106 is the same amount of knowledge as GRE = 150 and 151)
- Many behavioral, emotional, and physiological variables in psychology approximate interval-level data (but not perfectly)

LIKERT SCALES = QUASI-INTERVAL

- Five (or six or seven) point rating scales are generically referred to as Likert-type scales
- Likert scales are technically ordinal variables
- Psychology researchers often view Likert scales as quasi-interval (i.e., we assume that any 1-point increase or decrease reflects same amount of attitude change)

SURVEY QUESTION

Do you agree or disagree with the Supreme Court's decision overturn its 1973 Roe versus Wade ruling concerning abortion?

5 = Strongly agree

4 = Agree

3 = Neither agree nor disagree

2 = Disagree

1 = Strongly disagree

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Study questions

STUDY QUESTIONS (1)

1. Give an example of a nominal variable.
2. Give an example of a ordinal variable.
3. Give an example of an interval or ratio (approximately continuous) variable.

STUDY QUESTIONS (2)

4. A smoking behavior survey classifies respondents as non-smokers, non-daily smokers, and daily smokers. What is the level of measurement for this variable?
5. The same study reports smoking behavior broken down by four ethnic groups: white non-Hispanic, black non-Hispanic, Hispanic, and other non-Hispanic. What is the level of measurement for this variable?

STUDY QUESTIONS (3)

6. A clinical researcher administers a new treatment for depression to a sample of patients, and she administers a placebo (fake) medication to another sample of controls. What level of measurement is the treatment assignment variable?
7. A polling company surveys national attitudes towards same-sex marriage using a six-point Likert scale ranging from "Strongly disapprove" to "Strongly approve". What level of measurement is this variable.