PAI 705   Name:_____KEY_____
Exam 1
McPeak   March 9, 2016

Exam is 20 points. There are 10 questions. Each question is worth 2 points. If there are sub questions, each part is worth an equal share of the 2 points.

1) We discussed three purposes for social science research. We have also discussed different social science research sampling methods. Below are listed three short descriptions of social science research. For each, identify which is the main purpose of the research and identify the sampling strategy used in the research.

Research Description	Purpose	Sampling Strategy
The research team is trying to identify the incidence of infection for women aged 18-35 in areas where Zika is currently prevalent in Brazil. They have worked with local health centers to identify women resident in Región Nordeste who are in this age cohort. They used a random number generator to select names from the lists. They have sent out teams to interview these women to conduct retrospective interviews of past health history, experience with any prior births (if relevant), and to collect blood samples. The goal is to assess where different diseases and disease combinations are most prevalent in different parts of the Región as a preliminary step to deciding how best to deploy resources to combat the outbreak.	Descriptive	Random / Retrospective
The research team is trying to assess the impact of a Sustainable Rice Intensification (SRI) technology package extended last year to rice farmers in Madagascar. A random sample of households is drawn from the official list of households in the area within 20 kilometers of Ranomafana National Park, which is surrounded by rice fields. Last year, some farmers in this area were given extensive training followed by comic books that illustrated the techniques that are associated with the SRI technology. Another group in this area was given access to credit to buy SRI inputs in advance of the season. Most farmers in this area did not have any training or special treatment regarding SRI. The research team is trying to identify any impact on adoption rates this year that the training or credit access interventions conducted last year have had.	Explanatory	Random
The research team is trying to understand the phenomenon of street children in Nairobi. Working through a church in Nairobi where many of the kids go for a noon meal, the research team is trying to understand where the kids come from and how they came to be in Nairobi. From these interviews, the team hope to be able to formulate a more structured set of questions that would allow them to more systematically contrast different factors that have led to kids in Kenya becoming street children in Nairobi in a larger sample.	Exploratory	Convenience

2) Elements of social theory.

a) Describe how observations led to conceptualization of *anomie* as developed by Durkheim in his study of Suicide.

Durkheim looked at official records of the incidence of suicides for different parts of France and compared them to the demographic profile of these regions. From the variation and the correlation to the underlying demographics, he formulated a theory that placed the causal mechanism that led to suicide in the condition of rootlessness that he called *anomie*. The observations of suicide incidence were the basis for his theory.

b) Describe how a paradigm shift in the natural sciences influenced Spencer's conceptualization of social science.

Darwin developed the theory of selective adaptation and survival of the fittest leading to a paradigm shift in natural science. Spencer followed this line of thought in social science by articulating a theory of 'social Darwinism' that postulated that societies behaved like biological organisms in the process of evolution.

c) Describe a structural functionalist theory of crime.

A structural functionalist theory of crime looks at all the interconnected pieces of the social structure that surrounds the issue of crime. It explores the connections between the roles played by the criminals, the roles played by law enforcement, the roles played by the media, the public, the penal system....It seeks to understand the whole of the issue of crime by looking at all the interconnected pieces of the social structure that surrounds the issue of crime.

3) Research Ethics.

    a.   What are the three basic ethical principles of the Belmont Report?

1. Respect for Persons. Voluntary participation, and special care for those who lack complete autonomy.
2. Beneficence. Do no harm and if possible some good. Contemplate and state risks.
3. Justice. Burdens and benefits of research should be shared fairly within society

    b.   Describe the research conducted by Humphreys that was written up in the book *Tearoom Trade*, and the ethical issues of concern that are associated with the study.

Humphreys dissertation study of homosexual acts between strangers meeting in public restrooms in parks, called 'tearooms', led to the publication in 1970 of the book *Tearoom Trade*. In the study there was a focus on how individuals not living life as homosexuals were participating in the 'tearooms'. Typically, three people were involved in tearoom encounters, the two in the act and a lookout. Humphries showed up and played the role of the lookout. He then wrote down the license plate numbers of the cars and traced their names and addresses from the police. He disguised himself and visited the people at their homes and interviewed them saying he was doing a survey, not mentioning that he had traced them down from observing them in the park.

    c.   Identify two different categories of research subjects that are identified as needing special care in assessing the ethics of subject selection.

Special care of institutionalized, minors, minorities (select 2 of these 3).

4) Measurement Issues.

Measured item	Category of this measured item (circle one)		
Weight measured by a bathroom scale I have with me to measure your weight.	**Direct observable**	Indirect observable	Construct
Roofing material of a house I am standing in front of and looking at.	**Direct observable**	Indirect observable	Construct
Your answer to my question about the names of all pets you have had since you were 5 years old.	Direct observable	**Indirect observable**	Construct
Answers to questions to identify whether your personality type more a 'cat person' or a 'dog person'.	Direct observable	Indirect observable	**Construct**
Your response to my question about the number of times you have received a stamp in your passport in the last 12 months.	Direct observable	**Indirect observable**	Construct
Your assessment of the overall professionalism of TSA agents in Syracuse you have dealt with over the past 12 months.	Direct observable	Indirect observable	**Construct**
I look at you and answer the question do you have braces on your teeth currently?	**Direct observable**	Indirect observable	Construct
Your response when I ask you, did you ever have braces on your teeth?	Direct observable	**Indirect observable**	Construct

5) Index and scale issues.

Assume you have results from 4 survey responses to questions about the importance of research methods in graduate education.

Approach A

Statement	Responses (Circle One)	
A research methods class is an essential to the graduate education curriculum in all social sciences.	Agree	Disagree
A research methods class is essential to the graduate education curriculum in International Relations.	Agree	Disagree
A research methods class is a useful class for students who intend to understand International Relations at the graduate level.	Agree	Disagree
A research methods class is useful class for IR students who intend to conduct research professionally following their education.	Agree	Disagree

a) Explain how you could use these responses to construct an index and how you could use them to construct a scale.

An index would aggregate the number of 'yes' responses to these questions. It would measure the degree to which a person responds that a class on research methods is important to graduate education as an aggregate score across these different questions. A scale would make use of the fact that there is a logical order to these questions that a person agreeing to one item is likely to have responded positively to a less intense question. A person who thinks it is essential for all social sciences is likely to have agreed it is essential for IR and a person who thinks it is 'essential' is likely to agree it is 'useful' as this is a difference in intensity.

b) What is the name of the type of scaling used in construction of the version of the question posed below?

Approach B

Statement	Responses (Circle one)
A research methods class is an essential to the graduate education curriculum in all social sciences.	Strongly Disagree Disagree Neutral Agree Strongly Agree
A research methods class is essential to the graduate education curriculum in International Relations.	Strongly Disagree Disagree Neutral Agree Strongly Agree
A research methods class is a useful class for students who intend to understand International Relations at the graduate level.	Strongly Disagree Disagree Neutral Agree Strongly Agree
A research methods class is useful class for IR students who intend to conduct research professionally following their education.	Strongly Disagree Disagree Neutral Agree Strongly Agree

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c) Contrast the way of posing the question using Approach A with Approach B in terms of advantages and disadvantages of each approach.

Approach A. Use the intensity of preferences in a way to construct the scale. There is an inherent ordering of responses that is potentially captured by approach A. On the other hand, people are not always predictable, so what seems evident to the author of the questions may not be apparent to the

respondent. The person may think that IR is not a social science for example. Approach B gives variation across different dimensions and is standardized, but one person's interpretation of 'strongly agree" compared to "agree' may not be the same as another person's interpretation of these nuances.

6) True or False.

Statement	Is it True of False (circle)	
Anonymity means a given response cannot be linked to a given respondent even by the researcher.	**True**	False
Nomothetic explanation seeks an exhaustive understanding of the causes producing events and situations in a single or limited number of cases.	True	**False**
A convenience sample is an example of an equal probability of selection method.	True	**False**
The inductive method begins by specifying a theory that leads to a testable hypothesis.	True	**False**
Concepts such as height and are weight measurable in tangible way.	**True**	False
The deductive method begins with a set of observations, and analyses these observations to find patterns in the data.	True	**False**
A trend study monitors a given characteristic of some population over time.	**True**	False
Comte argued society could be observed and explained logically and rationally though scientific study.	**True**	False

7) Measures.

Item measured	What kind of measure is it? (circle)			
Citizenship	**Nominal**	Ordinal	Interval	Ratio
IQ	Nominal	Ordinal	**Interval**	Ratio
Age	Nominal	Ordinal	Interval	**Ratio**
(Degree of) Support of Free Trade	Nominal	**Ordinal**	Interval	Ratio
Place of birth	**Nominal**	Ordinal	Interval	Ratio
Openness to allowing Syrian immigrants to settle in New York	Nominal	**Ordinal**	Interval	Ratio
Number of Graduate School Credits earned to date	Nominal	Ordinal	Interval	**Ratio**
Amounts in your checking accounts today.	Nominal	Ordinal	Interval	**Ratio**

8) Evaluating measures.

   a. Every Saturday for the past four weeks Siri has given me the same directions to where my daughter plays soccer on the weekend when I asked "what is the shortest route to Hopkins Road Soccer Facility from home". Siri's answer is always the same and is consistently NOT the shortest route to Hopkins Road Soccer Facility. Evaluate this experience in terms of validity and reliability.

      Siri is reliably giving an invalid answer. She gives the same answer time after time (reliable) but it is not the correct answer (it is not valid).

   b. The Pentagon is training rats to detect explosives for demining operations. In one of the first trials, Satin rats were found to be able to detect 14 out of 100 mines in the training field, while identifying what they thought were mines but were really rocks 54 times. African rats were able to detect 85 out of 100 mines while identifying what they thought were mines but were really rocks 5 times. Contrast the Satin rat with the African rat in terms of validity and reliability.

African rats are both more reliable (lower variation in predictions in repeated trials) and more valid (correctly identifying mines and not rocks) compared to Satin rats.

   c. Contrast the following concepts: Criterion related / predictive validity and content validity. The object in question is an application packet to the MAIR program. We are using materials from the application to make admissions decisions. We have GRE scores, transcripts, personal statements, recommendation letters. How do different elements of this application packet illustrate these two different concepts of validity?

The predictive validity is likely to be tied to the measures like GRE scores and GPA. These are likely to be predictive of future success in the program. The fact that we have letters from references and a personal statement is a recognition that the more standardized results might overlook essential elements of an application that predict future success like motivation, perseverance, and drive that are better captured in letters and statements.

9) Assign the name of the scale to the description.

Put name of scale here	Description of scale
Guttman	A scale that is based on the idea that people who support a strong indicator of a variable will also support weaker indicators of this variable.
Semantic Differential	Results from questions that pair two opposite adjectives and have respondents place their reaction on their degree of closeness to either adjective.
Bogardus	Captures the willingness of people to participate in social relations of varying degrees of closeness with other kinds of people.
Lickert	Symmetric scale centered on zero that captures a range of responses both negative and positive
Thurstone	A type of composite measure where weights are assigned by 'judges' to assess the strength of particular indicators

10) Definitions and contrasts.
   a. Contrast a longitudinal and a cross sectional data set.

Longitudinal has repeated observations of a given population over time. It allows analysis of what leads to change in the unit of analysis as conditions change over time. Cross sectional is a set of observations on a population at a given point in time. It allows comparison across different units of observations at a given point in time.

   b. Contrast a trend study and a panel study.

A trend study looks at a characteristic of a population as it changes over time. Something like the age at first marriage is captured by a trend study. A panel study gathers repeated observations on the same unit of observation as the unit progresses though time. Something like did marriage lead to improved household income is possible to answer with a panel study.

   c. Contrast a unit of observation and a unit of analysis.

Unit of observation is the thing you are looking at and recording information about. Unit of analysis is the thing you are trying to explain / investigate. The unit of observation becomes the unit of analysis when you move from observation to explanation.

   d. Contrast a necessary cause with a sufficient cause.
Necessary, one of the preconditions. A necessary cause is one of the conditions that must hold for an outcome to happen, but in and of itself it is not enough to guarantee the outcome. Sufficient, the precondition. If a sufficient condition holds, the outcome is guaranteed. It is not always the case that the condition must hold for the outcome to occur.