**CHAPTER 1**

**The Scientific Approach to Politics**

**Multiple Choice Questions**

1. Intersubjectivity requires that more than one observation occur; in the scientific process this practice is known as \_\_\_\_\_\_\_\_.

a) replication

b) normative analysis

c) empirical analysis

d) knowledge

2. An empirical statement presents \_\_\_\_\_\_\_\_.

a) preferences

b) observable facts

c) values

d) intersubjectivity

3. Science is \_\_\_\_\_\_\_\_.

a) a set of rules that help us understand the world around us

b) a set of facts

c) the study of empirical analysis

d) the study of normative analysis

4. \_\_\_\_\_\_\_\_ is *not* one of the differences between research in the natural versus social sciences.

a) The amount of control that the researcher has over the research setting

b) The level of agreement within scientific communities about the meaning/measurement of concepts

c) The degree of determinacy of the results

d) The level of commitment to research

5. The scientific method is often referred to as \_\_\_\_\_\_\_\_.

a) modernism

b) post-modernism

c) a principle

d) positivism

6. Epistemology refers to way of thinking about \_\_\_\_\_\_\_\_\_.

a) the scientific method

b) knowledge

c) history

d) social movements

7. The belief that everything has a cause, that nothing is random, is known as \_\_\_\_\_\_\_\_.

a) a theory

b) a paradigm

c) determinism

d) positivism

8. Evidence-based policy making is best supported by a body of research, a quality known as \_\_\_\_\_\_\_\_.

a) determinism

b) interpretivism

c) intersubjectivity

d) objectivity

9. Methodology refers to

a) an alternative to the scientific method

b) a way of getting knowledge

c) making normative arguments

d) a framework for understanding

10. Which of these is not a core belief of the scientific approach?

a) objectivity

b) interpretivism

c) determinism

d) replication

11. Which of these is a limit of the scientific approach?

a) Perfect objectivity is impossible.

b) Not everything can be interpreted as quantitative data.

c) Different people have to repeat the same research.

d) The social sciences are different from the natural sciences.

12. Political philosophy typically focuses on \_\_\_\_\_\_\_\_ questions.

a) normative

b) empirical

c) investigative

d) social

13. Empirical political science is generally concerned with \_\_\_\_\_\_\_\_.

a) prescribing the way things ought to be

b) discovering why things are as they are

c) the way politicians behave

d) the way politicians think

14. The first step in conducting research using the scientific approach is to:

a) replicate the results

b) gather empirical evidence

c) craft a research question

d) communicate the results

15. A type of research where more than one different data collection method is used is called:

a) qualitative research

b) mixed-methods research

c) quantitative research

d) multi-method research

16. A type of research where textual and numerical data is integrated into the same analysis is called:

a) mixed-methods research

b) multi-method research

c) qualitative research

d) quantitative research

17. Qualitative research is:

a) Research that is very high quality.

b) Research that uses numerical data.

c) Research that reuses data from another project.

d) Research that uses textual data.

18. Quantitative research is:

a) Research that focuses on historical data.

b) Research that uses textual data.

c) Research that uses numerical data.

d) Research that focuses only on one case.

19. Research that focuses on only two cases would be called:

a) multi-method research

b) quantitative research

c) small-n research

d) poor quality research

20. Research that is based on a database of three thousand survey responses would be called:

a) mixed-methods research

b) qualitative research

c) replication research

d) large-n research

21. Normative analysis is \_\_\_\_\_\_\_\_ in nature.

a) descriptive

b) prescriptive

c) empirical

d) truthful

22. Science is composed of rules that describe \_\_\_\_\_\_\_\_.

a) what we know

b) why we know

c) how we know

d) who we know

23. Practitioners of the scientific method share

a) an epistemology

b) a methodology

c) both an epistemology and a methodology

d) neither an epistemology nor a methodology

24. A paradigm is \_\_\_\_\_\_\_\_.

a) an argument

b) a fact

c) a framework for understanding

d) a hypothesis

25. “People with a higher level of education are more likely to vote than those with lower education.” This is an example of a \_\_\_\_\_\_\_\_.

a) normative statement

b) empirical statement

c) theory

d) paradigm

26. The scientific belief that scientists should repeat each other’s research to ensure that the findings are correct is referred to as

a) objectivity

b) methodology

c) replication

d) epistemology

27. The chief characteristic of interpretivism is the idea that \_\_\_\_\_\_\_\_.

a) it is possible to objectively measure most social and political phenomena

b) every event has an explanation or cause

c) total objectivity by researchers is impossible

d) positivism is the wrong approach to research methods

28. If you chose to conduct a research project where you investigated three different things that happened, you would say that your project had three \_\_\_\_\_\_\_\_.

a) arguments

b) cases

c) data

d) texts

29. In the scientific approach to politics, evidence is

a) information that is observed and measured in the world.

b) the values and beliefs that a project is based on.

c) a set of principles and rules for understanding the world.

d) integrated sets of explanations about the political world.

30. “Democracy is the best type of political regime for human societies.” This is an example of \_\_\_\_\_\_\_\_.

a) a normative statement

b) an empirical statement

c) an observation

d) a paradigm

**True or False Questions**

1. Normative analysis addresses how society and political life should be.

2. Empirical facts must be independently observed and agreed upon by many people. This quality is known as objectivity.

3. The more people who observe a phenomenon and the more times it is observed, the more willing we are to accept it as fact.

4. Empiricism requires observation and therefore measurement.

5. Interpretivists rely on replication to verify the accuracy of their results.

6. The scientific method attempts to maximize the effect of the observer on the observed.

7. The scientific method cannot be used to predict outcomes.

8. The core beliefs of science can be empirically verified.

9. Political scientists focus on studying cultural norms and values.

10. According to the scientific approach to politics, if the evidence does not support the argument or is of poor quality, the argument should be rejected.

11. “It is better that policy be based on evidence about the world that has been produced in valid ways” is an empirical argument.

12. Whether or not something is science is determined by what it studies.

13. An approach to knowledge is called an epistemology.

14. The scientific belief in empiricism means that scientists are continually developing new and more accurate ways of measuring and recording the world.

15. Interpretivists agree with positivists that objectivity is a good goal for social research.

16. The scientific approach is a perfect means of learning about the world.

17. Indigenous research methods emphasize maintaining a separation between the researcher and the community they are studying.

18. The last stage of conducting scientific research is communicating your results.

19. A research question always must ask about a causal relationship.

20. Only quantitative data can be used in scientific research.

21. Most small-n studies use qualitative data.

22. Mixed-methods research combines qualitative and quantitative data to study the same question.

23. Interpretivists and positivists don’t share any methodological conventions.

24. Research design strategies are dependent on the question being asked.

25. The belief that everything has a cause is known as determinism.

**Short Answer Questions**

1. Compare and contrast political philosophy and empirical political science.

2. Briefly describe some criticisms and limitations of the scientific approach to politics.

3. Briefly discuss the role of replication in scientific research.

4. Briefly explain whether science is a method or a subject matter.

5. Identify the major distinctions between positivist and interpretivist approaches to research in political science.

6. While very different, normative and empirical approaches are not necessarily opposed, or “in conflict.” Briefly discuss how researchers combine both approaches in a variety of ways throughout the course of their research.

7. Briefly explain the core practices of Indigenous research.

8. What does it mean to say that the scientific approach is based in a shared epistemology and methodology?

9. Briefly describe the three phases of scientific research.

10. Explain the difference between multi-method and mixed methods research.

**Essay Questions**

1. Describe the two forms of political analysis. Using examples, explain the weaknesses and the strengths of both.

2. Discuss the differences between research in the natural and social sciences.

3. How are intersubjectivity, objectivity, and replication related, as elements of the scientific approach?

4. List the four core beliefs of the scientific approach to politics and explain what they mean for the methodology of political science research.

5. Let’s say you wanted to study the political preferences of visible minorities in Alberta. How would you apply the three steps of scientific research to create a good, evidence-based argument?

**Answer Key**

**Multiple Choice Questions**

1. **A**

2. **B**

3. **A**

4. **D**

5. **D**

6. **B**

7. **C**

8. **C**

9. **B**

10. **B**

11. **B**

12. **A**

13. **B**

14. **C**

15. **D**

16. **A**

17. **D**

18. **C**

19. **C**

20. **D**

21. **B**

22. **C**

23. **C**

24. **C**

25. **B**

26. **C**

27. **C**

28. **B**

29. **A**

30. **A**

**True or False Questions**

1. **T**

2. **F**

3. **T**

4. **T**

5. **F**

6. **F**

7. **F**

8. **F**

9. **F**

10. **T**

11. **F**

12. **F**

13. **T**

14. **T**

15. **F**

16. **F**

17. **F**

18. **T**

19. **F**

20. **F**

21. **T**

22. **T**

23. **F**

24. **T**

25. **T**

**Short Answer Questions**

1. Political philosophy typically focuses on normative questions: What is the good life? What is the meaning of justice? What is the most desirable social order? It often focuses on questions of what is right and wrong, good and bad. Empirical political science, in contrast, is generally more concerned with discovering why things are as they are. Why are some countries more stable than others? More successful at managing their national economy than others? Why do people vote as they do? Although values may underlie some questions of empirical research, the research itself cannot and does not claim to provide insight into normative issues.

2. There are several limits to the application of the scientific approach to the study of the social and political world. For instance, determinism can be interpreted to mean that no choice exists, while most of us know that humans have free will. Thus, we cannot with certainty predict the actions or reactions of an individual. This means that, in the social sciences, determinism can only ever be probabilistic, saying that something is more or less likely.

A second criticism is that not all aspects of reality can be empirically measured. How does one measure beliefs, thoughts, and attitudes? We cannot get inside people’s heads and see exactly what is going on; therefore, we must rely on the information they give us, either through their words or their actions. Even when we can access information about beliefs, there are difficulties in quantifying such beliefs and comparing this information across individuals.

The objectivity of the scientific method is also called into question by some critics. It is argued that true neutrality is impossible and that there is no value-free system of study. It is argued that the beliefs and values of the observer will always play a role in the interpretation of the facts. Thus, research always contains a measure of subjectivity.

3. By requiring that more than one person observe and give a similar account of the event, we can increase objectivity. Intersubjectivity also requires that more than one observation occur; in the scientific process this practice is known as replication. Researchers seek out evidence that confirms the findings of other researchers, thus checking the latter’s observations. The more people who observe a phenomenon and the more times it is observed, the more willing we are to accept it as fact. In short, replication goes together with intersubjectivity, the idea that empirical facts can be independently observed and agreed upon by many people.

4. At its root, science is a set of rules that help us understand the world around us. The rules describe how we know, not what we know. Science is a method for acquiring knowledge rather than the knowledge itself. We would call something science not because of the subject that was being studied but because of the way in which it was being studied. If a study is done according to the rules of science, it is science.

5. The scientific method is often referred to as positivism. Positivism is based on empiricism and determinism: it is believed that almost everything can be objectively measured (empiricism) and that every event has an explanation or a cause (determinism). From a positivist perspective, the goal of research is to separate the researcher from the world being examined, to gather measurable evidence with which to test hypotheses, and to build theories based on the observed empirical tests.

Furthermore, the expectation is that other researchers, observing the world independently, can arrive at the same conclusion.

In contrast, the fundamental principle of interpretivism is that it is not possible, and may not even be desirable, to try to separate the observer from his or her observations. This perspective holds that human beings infuse the world with meaning, and this account of the social construction of reality stands in strong tension with empiricism. Interpretivists hold, therefore, that it is not reasonable to expect that independent observers would perceive events in an identical manner.

6. Empirical research is used to question the conclusions of normative analysis, and normative analysis often employs empirical facts in its arguments. Consider environmental debates. Environmentalists state empirical facts—changing climate conditions, endangered species—before stating normative positions: we should reduce emissions, clean up the oceans, and so on. Similarly, opposition to the environmental movement’s normative positions contains appeals to empirical fact. Some of the most contentious environmental debates occur when there is no concrete, agreed-upon empirical evidence. For instance, do harp seals really deplete cod stocks? Is the global temperature increasing, or are we just witnessing short-term fluctuations around a constant norm?

7. Indigenous research methods work to repair the damage done by settler researchers towards Indigenous communities in the past. The two major elements of Indigenous research are community engagement and inclusion of Indigenous cultural values. Community engagement involves respectful engagement with the community, seeking permission from leaders and working in partnership with a variety of members in the community. Inclusion of Indigenous cultural values means observing cultural norms, respecting values, and asking Indigenous communities about what kinds of research are most important to them.

8. What makes science is adherence to a shared epistemology and methodology. An epistemology, or way of thinking about knowledge, shapes what we know about the world. A methodology, or way of gathering knowledge, determines how we go about collecting information in order to answer our questions. Therefore, scientists share a way of thinking about the world, which influences the ways in which they choose to conduct research, connecting them to a shared community of scholars who will understand their work.

9. The first phase of scientific research is posing a research question. A research question should be empirical in nature, based in the state of the literature, and can be descriptive or explanatory. The next phase is to gather data, or empirical evidence, and analyze it to determine an answer to your question. Finally, the last stage is to communicate your results to other researchers, so that they can evaluate the quality of your work and learn from it.

10. Multi-method research combines two different types of research - qualitative research, which uses texts as data, and quantitative research, which uses numbers as data. Mixed-methods research combines more than one type of method, but they can both be qualitative or both quantitative. Some mixed-methods research is also multi-method research.

**Essay Questions**

1. Normative analysis is prescriptive in nature and addresses how society and political life should be. This is the realm of political theory and philosophy. Because it entails the discussion of ideals, normative political analysis is infused with value judgments and preferences. Normative discussions invoke convictions and feelings, things that are terribly important but are also difficult to measure and observe empirically in day-to-day life. In addition, people often disagree about the “truth” of normative statements, for they bring different values, priorities, and moral perspectives into play.

For example, consider the debate on capital punishment. Both sides of the debate are presented as fact, in statements such as “It is wrong to kill anyone, even murderers” and “It is wrong to allow those who take life to continue life.” Yet, which position one sees as true depends upon one’s own values and beliefs; the distinction is normative, not factual. We can identify normative analysis by the use of value-laden terms such as good, bad, right, wrong, should, must, and ought. Many political debates concern normative issues because people often disagree about what ends should be sought and the best means for reaching them.

The second branch of political analysis is empirical research. Empirical political analysis is descriptive in nature; the goal is to describe and to explain the political world as it is, rather than as it should be. Whereas normative analysis is self-consciously value based, empirical research purports to be more fact based. Factual evidence is gathered from the physical and social worlds. Knowledge obtained from methods other than observation—such as faith, intuition, or common sense—is not considered empirical knowledge.

Empiricism requires observation and therefore measurement. Empirical facts must be independently observed and agreed upon by many people. This quality is known as inter-subjectivity. How one observes an event or a phenomenon is ultimately subjective. By requiring that more than one person observe and give a similar account of the event, we can increase objectivity. Intersubjectivity also requires that more than one observation occur; in the scientific process this is known as replication. Researchers seek out evidence that confirms the findings of other researchers, thus checking the latter’s observations. The more people who observe a phenomenon and the more times it is observed, the more willing we are to accept it as fact. An empirical statement does not indicate preferences or values but presents observable facts.

2. One significant difference between much of the research in the natural versus social sciences is the amount of control that the researcher has over the research setting. The laboratory, a site for highly controlled experiments, remains a mainstay of much research in the natural sciences. As a result, researchers have a high degree of success in isolating the few variables selected for study. In the social sciences, by contrast, the laboratory is replaced for the most part by field research, whether through survey research, participant observation, focus group analysis, or other methods.

These methods provide a variety of ways in which researchers attempt to control for extraneous factors, but in general they are less efficient in doing so than are controlled laboratory experiments. The result is that alternative independent variables may confound the analysis.

A second difference between the natural and social sciences is the level of agreement within the scientific communities about the measuring and measurement of concepts. The social sciences are characterized by considerable disagreement over the definition and measurement of key terms. For example, disagreement persists—and perhaps always will—over the definition of terms such as *democracy*, *effective representation*, and *social class*.

A third difference between the natural and social sciences is the degree of determinacy of the results. In the natural sciences, the goal is to derive laws of behaviour. In the social sciences, though, the presence of human agency—free choice—means that outcomes are never completely determined. Thus, instead of deriving laws of behaviour, the social sciences use probability in stating the generalized form of causal relationships.

3. Objectivity and replication are both key beliefs of the scientific method. Intersubjectivity is a quality of knowledge that means that it can be agreed upon among different people. These three concepts are related because they all have to do with the ways that, in the scientific approach, we verify that information is correct.

Objectivity refers to the practice of minimizing the impact of the individual researcher on the outcome of the project. Objectivity means, that, no matter who conducts the research, the results should be the same. It is difficult to obtain pure objectivity in social science research, because researchers bring their own biases and preferences to their research. However, those who use the scientific approach try to minimize the effects of these biases and preferences.

Replication is where one researcher tries to get the same results as another researcher in order to check their results. Replication is only possible because of objectivity. If you believe that research should not be influenced by the biases and preferences of the researcher, then a different set of researchers should get the same or a very similar result. Replication increases our confidence in the results of any piece of research.

Intersubjectivity means that different people agree on what a result is. It helps us create better knowledge. Replication is a way of checking for intersubjectivity. If different people get the same results or agree on an outcome then we have evidence of intersubjectivity.

4. There are four core beliefs of the scientific approach: empiricism, determinism, objectivity, and replication. These four beliefs each influence how scientists conduct research.

Empiricism means that knowledge is derived from real world observation, rather than being derived a priori or by intuition. Because of this belief, empiricists use observation to how the world woks, and work to continually develop new techniques and measures to do a better job of collecting information about the world.

Determinism is the belief that everything has a cause. This means that events are not random but can be predicted. This core belief does not imply that all people respond identically when faced with similar situations, but rather than we can measure and assess probabilistic cause-and-effect patterns. This means that, when conducting research, researchers go beyond describing patterns in the political world to explaining the patterns within that world through the identification of causal relationships.

Objectivity means that scientists try to create an accurate representation of the world that others would agree with. Research findings should exist independently of the researcher, and not be distorted or biased toward or against individual or community values, interests, or perspectives. Because of objectivity, researchers try to find ways to remove or minimize any impact of their own biases or preferences on the outcomes of their research.

Replication means that researchers want other people to ‘check their work’ by trying to replicate it to make sure they got the right answers. The more people who observe a phenomenon and the more times it is observed, the more willing we are to accept it as fact. This can mean literally using the same data and conducting another analysis, or it can just mean doing similar research and seeing if the results are similar. In order to support replication, researchers make their methods and data public, so that others can both evaluate them and replicate their work.

5. The first step of learning about the political preferences of visible minorities in Alberta would be to form a research question. In this case, I would begin by reading other research on political preferences, including any previous research published about Canadian visible minorities, Alberta, or minority groups in general in democracies. Based on that, I would form a research question. That research question could be descriptive, asking what the preferences of visible minorities in Alberta are, or it could be explanatory, asking what causes visible minorities to have the preferences they do.

The second step would be to gather empirical evidence about what visible minorities political preferences are in Alberta. I would need to make sure that I gathered evidence that was linked to my specific question. I could choose to collect data that is qualitative, based in texts, such as newspaper columns, TV talk shows, interviews with people, or internet comment sections. I could also choose to collect quantitative data such as survey results or demographics of different ridings. I would then analyze this data in order to draw conclusions and determine an answer to my question.

Once I had some answers, then it would be time to communicate my results. This would mean asking other people who are also researchers to look at my work. This could be through a peer review process or through feedback from professors and supervisors. When I go through this process, I have to make my methods clear and ensure that my data can be understood so that other researchers can learn from it and possibly replicate my results.