

Chapter 1: Reasoning About Reasoning

BIG IDEAS

Background

Reasoning is an all-pervasive activity at play in any and all inquiry, including philosophical inquiry. But what exactly is reasoning? Reasoning involves assessing ideas for their truth or falsehood, be they one's own ideas or those of others. It also involves the construction of new ideas or new ways of thinking in order to solve problems or answer questions. As a process, reasoning involves making logical connections between ideas and, according to some philosophers, it also involves adherence to some basic principles or laws of thought. In reasoning about reasoning, this chapter briefly examines these general principles and laws of thought, and also describes three basic types of arguments employed in the process of reasoning.

About Chapter 1

Chapter 1 introduces some basic principles or laws underlying our reasoning processes and, after defining the basic structure of an argument, introduces three types of argumentation: deduction, induction, and abduction. This chapter invites students to reflect on, and be more conscious of, both the nature of their reasoning processes (metacognition) and the types of arguments that are employed when reasoning. This chapter is preparatory to Chapters 2 and 3, which delve more deeply into two types of logic at play in reasoning: informal logic and formal logic. The chapter concludes by acknowledging that reasoning can be distorted as a result of psychological and cultural biases.

Features

Not applicable.

- Reasoning is used in everyday life as well as in all areas of high-school study, including philosophy. (SE pp. 22-23)
- Some general principles and laws of reasoning include the law of identity, the law of non-contradiction, the law of the excluded middle, the principle of sufficient reason, and Ockham's razor. (SE pp. 24-26)
- Reasoning involves arguments, and arguments are constructed from propositions. (SE pp. 27-29)
- There are three basic types of argumentation: deductive, inductive, and abductive. (SE pp. 30-36)
- Reasoning can be distorted in various ways (e.g., Bacon's four idols); acknowledging this may enable people to be on guard against such distortions in order to reason more clearly. (SE pp. 37-39)

Teaching Plan 1 (SE pp. 20-29)

Activity Description

Working in small "expert" groups, students will learn about and deepen their understanding of a particular law or principle of reasoning—that is, they will become an "expert" on a specific principle or law. Then, using a jigsaw approach to regrouping, wherein students from different "expert" groups meet each other, students will teach other members of the group about the law or principle that they are an "expert" on. Individually and in groups, students will do the exercises in the student textbook.

Assessment Opportunities for Chapter Questions

The table below summarizes assessment opportunities for selected chapter questions, which are relevant to this teaching plan.

Assessment Type	Assessment Tool	Feature Questions	Section Questions
Assessment as Learning	Text answers		1 and 2, SE p. 26 1 and 2, SE p. 29

Learning Goal

Students will be introduced to some general laws and principles of reasoning: law of identity, law of the excluded middle, law of non-contradiction, principle of sufficient reason, and Ockham's razor. Students will also be introduced to the basic structure of an argument.

Timing

150 minutes
(two 75-minute classes)

Learning Skills Focus

- Collaboration (group work in jigsaw activity)
- Independent work
- Responsibility (taking on role of “expert” in jigsaw activity)

Resources Needed

Make copies of these Blackline Masters:

- BLM 1.2 The Law of Identity
- BLM 1.3 The Law of Non-Contradiction
- BLM 1.4 The Law of the Excluded Middle
- BLM 1.5 The Principle of Sufficient Reason
- BLM 1.6 Ockham’s Razor

Possible Assessment of Learning Task

See Teaching Plan 2 for this chapter’s assessment of learning task.

Assessment (For/As Learning)

As teachers move through each chapter, opportunities will be highlighted to provide assessment for/as learning in preparation for assessment of learning at the end of each chapter.

Task/Project	Achievement Chart Category	Type of Assessment	Assessment Tool	Peer/Self/Teacher Assessment	Learning Skill	Student Textbook Page(s)	Blackline Master
Laws and principles of reasoning jigsaw	Thinking; Communication; Knowledge	For	Discussion	Peer; self	Independent work; col-laboration; responsibility	20-26	BLM 1.2 BLM 1.3 BLM 1.4 BLM 1.5 BLM 1.6
Laws and principles of reasoning questions	Thinking; Knowledge; Application	As	Text answers	Self; teacher	Independent work	27-29	

Prior Learning Needed

No prior learning is required for this chapter.

Teaching/Learning Strategies

1. Assign students SE pp. 20-26 as reading in preparation for the lesson. This could be done as homework. The following group activity is designed to elaborate on the concepts introduced in the assigned reading, so it is important that the reading be done first. The group activity uses the jigsaw approach and can be adjusted by, for example, using only four of the five BLMs.

First, place students into groups of four and assign one of the BLMs (1.2, 1.3, 1.4, 1.5, or 1.6) to each group, giving a copy of the BLM to each group member. These groups are the “expert” groups. Each member of an “expert” group reads about the concept in their assigned BLM and then the group discusses the talking points, making sure that each member understands the ideas. The group also discusses the questions in the BLM, making any necessary notes in the space provided.

After each group has had a chance to discuss the concept elaborated on in their BLM, new groups are formed by having one member of each “expert” group meet with one member from each of the four (or three, if using only four BLMs) other “expert” groups, so that in each new group there is one “expert” on each of the five (or four) concepts. In each of these new groups there should be one student assigned

the task of moderating the discussion. Each member of the group gives a presentation on the concept in their BLM, teaching the other members of the group about the concept and raising the questions for group discussion. Approximately five minutes should be spent on each concept, during which time each group member takes a turn teaching the group about their concept, allowing for some discussion.

At the conclusion of this activity, ask if there are any questions or comments regarding the laws and/or principles of reasoning, and discuss as a class.

DI If students struggle with group work, an alternative activity would be to discuss the ideas on each of the five BLMs as a class. If students do complete the jigsaw activity in groups, take the opportunity to work one on one with any students who are struggling with the concepts.

2. Now that students are familiar with the five basic laws and principles of reasoning, they should answer questions 1 and 2 on SE p. 26. They could do this in pairs, followed by a whole-class discussion where the teacher asks different pairs each of the following question: Which law or principle did you choose? What would be the implication for reasoning if that law or principle were not honoured?
3. Next, have students read SE pp. 27-28 and, in pairs, answer the questions on SE p. 29. Solicit answers from different pairs and compare their answers to the answers given below.

Text Answers

Page 26: Section questions

1. This is an open-ended question for which numerous answers are possible. Some students may point out that a contradiction is simply an absurdity: a proposition simply cannot be both true and false, especially if it references some fact about the world. Other students may try to point out that a proposition could be both true and false; for example, “It is a glorious day” may be true for some people and not for others. But this does not really violate the law of non-contradiction if one qualifies it by identifying for whom it is a glorious day: “It is a glorious day for Nancy, Nicholas, Henry, etc., but not for Elizabeth, Tim, Melanie, etc.”
2. This is an open-ended question for which numerous answers are possible. Assuming these laws are indispensable to the reasoning processes, here are some possible responses if the laws are violated:
 - The law of identity: It would not be possible to assert anything about anything, for in doing so, a particular thing or proposition would both be what it is and not what it is. Lacking identity at a moment in time, or across time, we could not make a particular thing a subject of intelligible discourse.
 - The law of non-contradiction: See response to question 1, above.
 - The law of the excluded middle: If propositions are, for example, sort of true, then they are ambiguous. As such, communication would lack clarity. This can be remedied by qualifying the sense in which a proposition is true.
 - The principle of sufficient reason: To the extent things happen for no reason, things would be beyond rational comprehension. As such, we would not be able to talk about such things in a meaningful way.
 - Ockham’s razor: We could potentially conjure up all kinds of complex theories that use all kinds of entities to explain an event that could otherwise be explained very simply. For example: Person A: “Why does the light in the fridge go on when you open the fridge door?” Person B: “Because there is a little person who lives inside the fridge and switches the light on just as the door opens and then quickly scurries

away. This person is so good at hiding in the fridge you will never find her.” This would violate Ockham’s razor whereby a simpler explanation is that there is an automatic switching mechanism. No need to posit a living entity in control of the switching mechanism, since this raises more questions than a simpler explanation.

Page 29: Section questions

1. For an argument, there should be an identifiable premise(s) and conclusion. For each argument in the question, a set of premises and a conclusion have been identified below.
 - a) Argument. P1: Segregation distorts the soul and damages the personality. P2: Statutes that distort the soul and damage the personality are unjust. C: Segregation statutes are unjust.
 - b) No argument. This sentence simply explains how Socrates died.
 - c) Argument. P1: If we define a human as a featherless biped, then a plucked chicken is a human. P2: But it is not the case that a plucked chicken is a human. C: We should not define a human as a featherless biped.
 - d) No argument. This passage simply describes aspects of Descartes’ life.
 - e) Argument. P1: A prime number has exactly two factors. P2: The number 1 has exactly one factor. C: The number 1 is not a prime number.
 - f) Argument. To reconstruct this argument, we must use a hidden premise—that is, a premise that is not explicitly stated but is implied by the chain of reasoning that connects a stated premise to a stated conclusion. P1: The laws of logic are laws that govern human reasoning. P2 (hidden premise): Laws cannot be violated. C: The laws of logic cannot be violated. Although this is a poor argument, poor arguments are arguments nevertheless. The problem with the argument is that it uses two different senses of the word *law* in one sense only. The two different senses of law are: a) Law as in *a rule* (laws of logic are rules of logic) which can, of course, be violated just as a rule can be broken; and b) Law as in *a law of nature*, which is fixed and determinate and cannot be violated. Notice that this second sense is used in the illustrative analogy comparing laws of logic with laws of nature (apples cannot violate the law of gravitation). This argument commits the fallacy of equivocation (see Chapter 2, SE p. 53). If we were to take this argument seriously, then we would conclude that no person is capable of being illogical, which is clearly not true.
2. “If...then...” statements are simply that—statements, not arguments. This statement is not arguing that evil is only apparently so, it is simply stating that if God exists then evil is only apparently so (presumably because God would not permit evil to truly exist).

Teaching Plan 2 (SE pp. 30-41)

Activity Description

Students will read about the three types of arguments in our reasoning and then do exercises whereby they try to recognise the argument types. After reading about Bacon's four idols, students are invited to discover and research other ways in which our thinking can be distorted.

Assessment Opportunities for Chapter Questions

The table below summarizes assessment opportunities for selected chapter questions, including questions in the Chapter Review, which are relevant to this teaching plan.

Assessment Type	Assessment Tool	Feature Questions	Section Questions	Chapter Review Questions
Assessment for Learning	Text answers		1-6, SE pp. 35-36	1-5, SE p. 40
Assessment as Learning	Text answers		1-4, SE p. 39	6-9, SE pp. 40-41

Resources Needed

Make copies of this Blackline Master:

- BLM 1.7 Reasoning About Reasoning Quiz

Possible Assessment of Learning Task

Students write a quiz at the conclusion of this teaching plan. See BLM 1.7.

Assessment (For/As Learning)

As teachers move through each chapter, opportunities will be highlighted to provide assessment for/as learning in preparation for assessment of learning at the end of each chapter.

Learning Goal

Students will be introduced to three basic types of arguments used in our reasoning processes: deduction, induction and abduction. Starting with Francis Bacon's four idols, the chapter concludes with acknowledging, and briefly describing, some ways in which our reasoning is distorted or biased. The idea here is that the more we are aware of types of distortion in our thinking, the more we may be able to guard against them.

Timing

150 minutes
(two 75-minute classes)

Learning Skills Focus

- Collaboration (playing 20 Questions, answering questions in pairs)

Task/Project	Achievement Chart Category	Type of Assessment	Assessment Tool	Peer/Self/Teacher Assessment	Learning Skill	Student Textbook Page(s)	Blackline Master
Types of arguments questions	Knowledge; Application	For	Text answers	Self; peer	Collaboration	30-36	
Types of arguments 20 Questions	Thinking; Communication; Knowledge; Application	As	Discussion	Self; peer	Collaboration	30-36	
Four idols questions	Thinking; Knowledge; Communication; Application	For	Text answers; brainstorming	Self; peer	Collaboration	37-38	

Prior Learning Needed

No prior learning is required.

Teaching/Learning Strategies

1. Students need to be informed about the three types of arguments at play in our reasoning processes. To do this, they should read SE pp. 30-35 and answer, in pairs, questions 1-4 on SE pp. 35-36. After soliciting answers from various pairs, compare their answers to those provided below and discuss as a class.

Organize students into groups of three and have them answer question 5 on SE p. 36 by playing 20 Questions (see the description in the question). Have two students play the game while a third observes the kinds of arguments at play in the reasoning of the person who is trying to determine the object that the other person is thinking of. At the conclusion of the game, rotate the roles so that a different student has an opportunity to determine the kinds of arguments at play. If time permits, rotate the roles again. At the conclusion of the three rounds of the game, have students discuss what kinds of arguments they thought were at play in the reasoning of the person trying to determine the object. They should try to come to a consensus.

Now have students complete question 6 on SE p. 36 in their groups of three. Give them about five minutes to make their deductions, if any, and then solicit answers from different groups. Some groups will erroneously deduce that Steed was the murderer because, as the question states, he was in Appleby on the day of the murder and we are also told that “If Steed was the murderer, then Steed was in Appleby on the day of the murder.” However, using these two pieces of information to infer that Steed was the murderer is an abduction, not a deduction. Take up and discuss students’ answers.. Anticipate that some groups will make an incorrect deduction, and let them know that Chapter 3 includes a study of deductive logic that will enable them to identify valid (correct) and invalid deductions.

2. Now that students have been introduced to some general ideas about reasoning, briefly look at ways in which our thinking can be distorted. To introduce this idea, show the following YouTube video, which describes a fascinating experiment from psychology that shows that people have a tendency to preserve their beliefs in light of counterfactual information. The video is an example of *belief perseverance*, the tendency to maintain an existing belief. This is also known as *confirmation bias*. Start the video at 3:23:

Psychology of Belief, Part 3: Confirmation Bias

The following YouTube video introduces the psychological phenomenon of *cognitive dissonance*, a tendency to reduce a conflict between how we think we should act and how we actually do act by either changing our thinking or changing our behaviour. The five-minute video shows a clever psychology experiment, from the late 1950s, where subjects rationalize to themselves that a very boring task is enjoyable.

A Lesson in Cognitive Dissonance

As an example of cognitive dissonance, students may be familiar with the story of the fox and the grapes from Aesop’s Fables. The fox covets grapes that he cannot reach, although he makes several attempts to jump up and get them. Here, then, is a conflict between a strong desire and an inability to satiate the desire. To overcome this tension, or cognitive dissonance, the fox declares that the grapes are sour and not worth troubling over. He changes his beliefs to stop the tension.

Another YouTube video is from TEDTalks; in it, a pilot recounts his personal experience with cognitive dissonance as a student pilot using instruments to

navigate his plane. The pilot then gives interesting, thought-provoking examples of cognitive dissonance in real life, and he also gives examples of confirmation bias. At 19 minutes, the video is a bit long and some points are belaboured. However, one interesting and highly plausible suggestion in this video is that George W. Bush may have committed a string of confirmation biases when trying to prove that Iraq had weapons of mass destruction, this being the pretext for the U.S. invading Iraq in 2003. Such weapons were never found. So a good talking point is the extent to which confirmation bias may have resulted in a U.S. president misleading himself, and other nations allied with the U.S., into justifying war.

TEDxCanberra - Ash Donaldson - Cognitive dissonance

3. At this point, have students read SE pp. 37-38 and answer questions 1 and 2 on SE p. 39. Students could work in groups of four, brainstorming ways in which thinking can be distorted. Students could also create a concept map with the phrase *Distortions in Thinking* in the middle, surrounded by ways in which thinking can be distorted (e.g., cognitive dissonance, peer pressure, stereotyping, prejudice) along with examples of such distortions for each (e.g., sour grapes because of cognitive dissonance, style of dress because of peer pressure, racial profiling because of stereotyping).
4. Students are now ready to review the chapter by completing the Chapter Review questions on SE pp. 40-41. They could answer them independently or discuss them in groups in preparation for a quiz (see BLM 1.7).

Acc Note that Chapter Review question 7 is ambitious, asking students to research the argument from design and then judge if Ockham's razor would favour "naturalistic" accounts of the origins of the universe over "theistic" accounts involving a supernatural entity, God. This is a challenging and very involved question that is probably best left as a query.

DI As a mini research project, interested students could further research the Asch conformity experiments, cognitive dissonance, and/or confirmation bias, and report their findings to the class.

Text Answers

Page 35: Section questions

1. a) Abductive. The inference is a best guess. The abductive inference goes as follows:
P1: If balls were taken from that bag, then they will be red. P2: The balls on the table are red. C: The balls were taken from that bag.
b) Inductive. Induction generalizes from a pattern. The inductive inference goes as follows: Ball 1 from that bag is red; Ball 2 from that bag is red; Ball 3 from that bag is red; Ball X from that bag is red. Therefore, all future balls from that bag will be red.
c) Deductive. The conclusion is logically entailed in the premises. The deductive inference goes as follows: P1: All balls in that bag are red. P2: A ball has just been removed from that bag. C: The removed ball is red.
2. Using the qualifier *likely* in the conclusion makes the argument stronger because the conclusion is less committal in that it expresses the possibility that Gottfried may not believe in an absolute spirit. As to whether the argument is deductive, this hinges on the meaning of the word *likely*. If we stipulate that *likely* means *at least 95 percent of the time*, then the conclusion is entailed in the premises and the argument is deductive.
3. Deductive. P1: All the students at Hegel High School believe in the existence of an absolute spirit. P2: Gottfried attends Hegel High School. C: Gottfried believes in the existence of an absolute spirit.

4. There are no well-defined rules for judging inductive arguments as strong or weak, so answers to these questions are open to debate. These answers, then, are suggestions.
- a) Strong, especially given the qualifier *likely*, which makes the conclusion less committal.
 - b) Strong with certain assumptions. If all we know is that the three individuals (Socrates, Demosthenes, and Artemis) drank hemlock and we know little about the effects of drinking hemlock, then it would be prudent to avoid drinking it, given that all three died shortly after. It is reasonable to infer that hemlock kills and that it will kill Seneca, too. In this case, we take the argument at face value. If the argument used water instead of hemlock, then, given our background knowledge of many instances of drinking water not leading to death, the conclusion that water kills would be weak. In this case, we would not take the argument at face value by allowing our background knowledge to influence our judgment. As a matter of historical record, Seneca, an advisor to the Roman Emperor Nero, was ordered to die, but survived the drinking of hemlock. He was then executed by other means.
 - c) Weak. Aristotle fails to enumerate the number of cases he has observed and, given the numerous cases of wild animals, his examples are few by comparison. Our background knowledge may also influence our judgment.
 - d) Weak. If we take the argument at face value, it is actually counter-inductive, in that it concludes the very opposite of what an inductive argument would conclude. Again, background knowledge may influence our assessment of this argument; for example, we may be aware of growing social initiatives to increase the number of women in positions of responsibility, concluding that since men have dominated the position in question, it is likely that a woman will be chosen. In this case, we may well have reasons for thinking the conclusion is correct, but not for the reasons offered in the argument alone.
 - e) Strong, assuming the arguer has made many such predictions. (Of course, all of the arguer's predictions may have been highly conservative and therefore successful, such as "I predict the sun will rise tomorrow.")
5. This game involves abduction (a lot of best guessing) or deduction (logical entailment) but not induction (generalizing from patterns). An abductive inference might go as follows: P1: If it is something edible, then it would not be a person. P2: It is not a person. C: It is something edible. But the inference could go as follows: P1: If it is not a person, then it might be something that is edible. P2: It is not a person. C: It might be something that is edible. If so, then the reasoning used is deductive. Also, if the answerer is able to establish an exhaustive list of mutually exclusive options, then it is possible for him or her to use deduction. For example, suppose at some point in the game, the answerer establishes that the object is an animal. The answerer could then argue as follows: P1: It is either a human or a non-human animal. P2: If, as a result of asking if it is a human animal, the answer is no, then it is a non-human animal. P3: The answer is no. C: It is a non-human animal.
6. From III and V we can deduce that Percival was the murderer. Suppose, however, that Percival was not the murderer. Then from III we would conclude that the weapon was a candlestick holder. But V informs us that the weapon was not a candlestick holder (it was a car jack), contradicting our supposition that Percival was not the murderer. Therefore, Percival was the murderer. Note that we cannot deduce from II and IV that Steed was also a murderer. This is because II states that *if Steed was the murderer then he was in Appleby on the day of the murder*. However, we cannot use

this statement to claim that *if Steed was in Appleby on the day of the murder* (see IV) then *he was the murderer* (this would be an abductive argument). So the only claim we can deduce is that Percival was the murderer. (It may turn out that Steed assisted Percival and was a co-murderer, but this cannot be *deduced* from the information given.) Students may find this exercise challenging. Chapter 3 will discuss deductive logic and provide techniques for making deductions from given statements.

Page 39: Section questions

1. Many responses are possible. Here are some ideas: optical illusions such as mirages (idol of the tribe), gossip (idol of the cave), use of ill-defined terms or terms open to interpretation, like *communism* (idol of the marketplace), assuming the world is round without direct proof (idol of the theatre).
2. Many responses are possible. Temperament—that is, a tendency to optimism or pessimism—may influence how we view things. Emotions such as jealousy, love, or hatred may distort how we see others. A need to impress others and belong to a group may influence our thinking so that it aligns with that of the group. Stereotyping others may also distort our thinking.

The Asch conformity experiment is actually a series of experiments that were conducted by psychologist Solomon Asch in the 1950s. The experiments typically involved one subject and several confederates (people posing as subjects but who were coached beforehand to give particular answers to questions). In one version, an experimenter asked questions of eight people in a room. One of the eight was a subject and the other seven were confederates. The group was asked to identify which of three lines were equal in length to a given line. The seven confederates give an incorrect answer before the subject gives his response. The experiment reveals a tendency for the actual subject to respond incorrectly even when the correct answer is clear. The experiment shows that people tend to conform to other people's views even when those views are wrong. There are many variations of the experiment (e.g., varying the number of confederates or varying the number of incorrect versus correct responses given by the confederates). In one variation, one of the confederates gives the correct response while the others give an incorrect response. When this happens, the number of subjects who also give the correct response increases significantly. This seems to show that one dissenting voice in a crowd that is perceived to be correct can have a significant influence on the willingness of others to say what they really think. This experiment illustrates Bacon's idol of the cave, in which thinking is distorted by "conversation with others."

3. Cognitive dissonance refers to a person's holding two conflicting thoughts at the same time, but also refers to situations where a person acts opposite to how she thinks she should act. Such dissonance creates tension that can be reduced by, for example, changing one's beliefs, adding new beliefs, or by rationalizing one's actions. Aesop's fable of the fox and the grapes illustrates cognitive dissonance: the fox wants to eat grapes that are out of reach, creating a tension between a strong desire for something and the impossibility of getting that thing. The fox overcomes this tension by declaring that the grapes are probably sour and not worth getting. This is an example of Bacon's idols of the cave, where distortion occurs due to a person's "own proper and peculiar nature"—that is, arises from her own belief system.

Pages 40-41: Chapter Review

1. The law of identity states that A is A—that is, that something is what it is, and not something else. The law of non-contradiction states that a proposition cannot be true and false at the same time in the same respect. The law of the excluded middle states that a given proposition is either true or false, not some combination of the two.

2. An argument is a set of reasons given to support a conclusion. Arguments are built upon propositions, which the arguer takes to be true. The conclusion of the argument is a proposition that is argued for by use of the other propositions, which are called premises. Students' examples of arguments will vary, but they should all meet the basic criteria for an argument.
3. Students' answers should include the following points:

Deductive arguments	Inductive arguments	Abductive arguments
If the premises are true, the conclusion must be true.	If the premises are true, the conclusion is probably true.	If the premises are true, the conclusion may be true, but there are other possible conclusions.
It is impossible for all the premises to be true and the conclusion to be false.	It is unlikely that the premises are true and the conclusion is false.	The conclusion assumes the simplest explanation (Ockham's razor).
It is logically inconsistent (contradictory) for the premises to be true and the conclusion to be false.	It is possible for a conclusion to be false even if all the premises are true.	The conclusion is the most plausible explanation of the possible alternatives.
If the conclusion is false, one or more of the premises must also be false.		The conclusion can be false even if all the premises are true.

4. In a valid deductive argument, the conclusion necessarily follows from or is logically entailed in the premises. In an invalid deductive argument, the conclusion is not logically entailed in the premises. In a strong inductive argument, there is confidence in the conclusion. In a weak inductive argument, there is little confidence in the conclusion.
5. Idols of the tribe are biases held by all humans because of their human understanding (e.g., biases based on sensory information). Idols of the cave are those based on an individual's own experiences, education, interests, and patterns of thought. Idols of the marketplace are those based on poor word choice or ambiguous phrasing. Idols of the theatre are those caused by the unquestioning acceptance of established systems of thought.
6. Students' answers will depend on their background beliefs (i.e., belief in God). In answering this, have students consider propositions such as: "The universe just is"; "God just is"; "The fact that there is something rather than nothing cannot, itself, be explained"; and "The physical laws of the universe just are."
7. Students should research the argument from design and then decide if Ockham's razor favours "naturalistic" accounts of the origins of the universe over "theistic" accounts involving a supernatural entity. This is a challenging question, and students' answers will vary. They may not generate a definitive opinion. They could refer to SE pp. 141-142 for a discussion of the argument from design.
8. Students' answers will vary. The following are some discussion points:
 - If a friend has met the criteria of rationality as claimed in the question, then her answer to a philosophical question would be compelling. But would this make it true? It is possible that while you are both in agreement about things, you are both in error. Shouldn't one keep an open attitude regarding one's beliefs?
 - It is, of course, possible to doubt the entire enterprise of reasoning just as one can reject the rules of a game. But at what cost does one do this? Wouldn't the consequence be the end of inquiry, the end to seeking meaning and truth? Isn't it better to take the journey and try to formulate rational responses to fundamental questions to see where one gets, rather than give up at the outset?

9. Consider the argument that Wilson did manual labour. Holmes' thinking may run as follows: "If Wilson did manual labour, then one of his hands would be larger and more developed. One of his hands is larger and more developed. Therefore, Wilson did manual labour." This would be an abductive argument (a best guess), as would his arguments that Wilson takes snuff, has been in China, and has done a considerable amount of writing. However, Holmes' thinking may run as follows: "If one of Wilson's hands is larger and more developed, then he did manual labour. One of his hands is larger and more developed; therefore, he did manual labour." This would be a deductive argument that uses a premise that is arrived at by induction, the premise being: "If one of Wilson's hands is larger and more developed, then he did manual labour." Similarly with his other arguments. It is an open question as to whether Holmes' logic is abductive or deductive.