Transcripts

Note: Highlighting indicates a repeated listening sample.

Preview Test

01 Psychology

M: How many of you know what pseudopsychology is? OK, well, to put it simply, pseudo means false, or, uh, not genuine. So, pseudopsychology is basically a system of beliefs that sort of resembles psychology. However, it is completely unfounded, like astrology, or palmistry . . . you know, looking at a person's palm and suggesting that the lines there have some sort of meaning. Things like reading your horoscope, or getting your palm read—*those* are examples of pseudopsychologies.

Anyway, when we talk about pseudopsychology, you probably wonder why so many people believe it. Are they just gullible? Actually, scientists think that one of the reasons people believe in pseudopsychology is due to the Barnum Effect. What's the Barnum Effect? Well, it describes the tendency to believe personality profiles or horoscopes when they are worded ambiguously. Pseudopsychology got its name from Phineas Taylor Barnum. If the name sounds familiar, you probably recognize him as the famous circus master who believed that a grand circus is one that has "a little something for everybody." In the same way, a typical reading will have something about one's love life, at least one declaration of future financial prospects, and always something about personality.

Here's the thing . . . In pseudopsychology, providing something for everyone means telling people what they want to hear. For example, a typical description contains two extremes of one's personality, such as "Sometimes you are extroverted and sociable, while at other times you are introverted and aloof." Do you all see what I'm getting at here? The person can identify with at least one part of the reading because it is ambiguously worded and represents two extremes. A description like this makes it easy for the person to confirm that it's true!

So, what proof do we have that the Barnum Effect even exists? Well, in 1949, a man named B.R. Forer began to investigate the existence of the Barnum Effect. What he did was give thirty-nine undergraduate psychology students a personality test. Without them—I mean the students—without them knowing, they were all given the *exact* same result: an open-ended reading of their personality strengths and weaknesses. Next, Forer had them rate the reading on a scale of zero to five, with zero meaning the reading didn't accurately portray their personality at all, and five signifying that it was extremely accurate. The average rating the students gave was a 4.3, meaning that most students actually believed the ambiguous, open-ended personality descriptions. Just to see if the results could be replicated, Forer went on to try the experiment on others and, lo and behold, he came up with the same results time and time again. So, clearly, it doesn't matter that we're talking about an educated group of subjects here—an invalid personality assessment tool can be easily mistaken as being compellingly legitimate by anybody if it's vague enough. Does anybody have any questions about Forer's experiment? If not, we can move on.

Another important investigation took place at Lawrence University under the direction of Peter Glick, another psychologist. Glick wanted to find out how the content of readings might affect the way they're interpreted. So first, he separated his students into two groups based on whether they considered themselves skeptics or believers of horoscopes. Next, he gave each group some horoscopes, which were *all* the same, except that they were worded differently, so um, the same meaning but different words. When given their horoscopes, only the "believers" group confirmed that the negatively worded horoscopes were accurate. But here's the funny part: people from both groups rated their readings as accurate when the horoscopes were presented in a positive light. This shows that while the cynical participants wouldn't believe the negative readings, they were willing to accept the positive ones, because, as we all know, everybody wants to hear good things about themselves.

02 Art History

W: Hello, class. This week, we've spent some time talking about art in China. We covered the history of art in Chinese society and went over the Chinese um . . . aesthetic tradition. Anyway, as an extension of those topics, for today's discussion, I thought it could be helpful to talk about some common themes and symbols in Chinese art. Who can start us off?

M: Well, if you don't mind me kind of dodging your question, something that really caught my eye is the *lack* of certain themes that are so prevalent in a lot of Western art. I mean, like, war or death is almost never depicted in Chinese art. I thought that was interesting.

W: Good observation. Other themes that would never find their way into Chinese art are violence, nudity, or martyrdom. All big topics in Western art. Why don't we examine these themes, themes that *would not* be featured on a Chinese canvas, and explore *why* they're excluded. What do you think?

M: I would imagine it has to do with the way that the Chinese considered art. It wasn't the same as in Rome or Athens. For the Chinese, art had to have some kind of function, whether it be moral, social, or whatever. They wouldn't just paint anything. It had to make the artist and the viewer *better people* somehow.

W: That's absolutely right. So, in a broader sense, what is it about themes like war or death that made them unsuitable for Chinese artists?

M: I think the biggest problem is that it doesn't really give the artist room for symbolic representation. I guess I just mean that most Chinese art is symbolic. It seems to me that depicting a war doesn't afford the artist with the opportunity to paint symbols that represent some kind of bigger understanding about life, or death, or anything really. Does that make sense?

W: I think that's a good point. It has to do with the way the Chinese conceive art, and you really hit it right on the head when you mentioned symbolism. See, you might have also noticed that Chinese artists don't really preoccupy themselves with aesthetic notions like perspective or shading. For example, if you look at any early Chinese painting, you'll see that they couldn't have cared less about painting realistic-looking scenes. The reason for this is because they were primarily concerned with expressing harmony. This is why Chinese art looked so different from Western art. Are we all still on the same page?

M: So . . . what was the function of using so many symbols again?

W: Well, think of it this way: in using a lot of symbols, the artist depicts his or her more complete understanding of something that isn't really obvious and can't really be explained. And yet, they are completely aware of it. It's that intuitive aspect of using symbols that leaves no room for outright, realistic depictions.

M: It's true. You can even see that aspect in their portraits. You'd expect a portrait to be a realistic rendition of the person who paid to have it made, and yet, Chinese artists would always portray more than a person. They would show the person's social ranking or even their personality somehow. I think that the intuitive symbolism in Chinese art is precisely what makes it so expressive, and yet so difficult to interpret at times.

W: That's right. And now to get back to our original question, can you give some examples of themes or symbols that *are* frequently used in Chinese art?

M: I noticed that human relationships seem to be a pretty common theme. Chinese artists seem to enjoy depicting how people relate, or the reactions between them in different situations.

W: Good, that's absolutely right. And how about symbols?

M: They use a lot of symbols over and over again. Like bamboo shows up a lot, and that's supposed to be related to the spirit of the scholar.

03 Service Encounter

M: What can I do for you today?

W: Well, today is the deadline for seniors to change their major . . .

M: Let me guess. You're a senior, you would like to change your major, and you haven't done so yet?

W: Well, yes . . . It's just that it's, well, a daunting task. I honestly don't know what to do.

M: Let me help you. What field of study did you initially take interest in?

W: Well, when I got into college, I thought I would study psychology, but I ended up choosing biology as my major. Not only that, but I'm now also interested in things like astronomy, public health, and ancient art history. Now, I'm not so sure.

M: OK then, have you ever thought about combining your studies?

W: I've considered the possibility of linking health sciences with psychology and majoring in both, but it seems like too much of a commitment. Especially when I'm not even sure I'd like to do it.

M: Well, what is the appeal of these two areas of study?

W: What I like is that I could attend a class in health, and then attend a psychology class that discusses mental illness, and then later, as I think over what I've learned, I can make connections between the two. That's the only time I truly feel like I'm learning.

M: So why health? And why psychology?

W: I guess they're both practical. I like studying health because I'm interested in how the body functions and psychology because, well, I can learn about how the mind functions. But if I were to study just one, I would feel that my studies would be incomplete.

M: Well, then, it looks as though you're onto something: health and psychology. You can certainly do a lot with that.

W: Yes, but I'm also interested in so many other things. I feel so overwhelmed.

M: So, when was the last time you felt really intrigued by a subject?

W: Since the beginning of the semester. I'm currently taking an ancient art history class, and I love it.

M: There are two things you should consider. First, do you see yourself studying art history on a long-term basis? Also, think about how long you've been interested in both health sciences and psychology.

W: No, I suppose I don't see myself studying art history long term. As for health and psychology, I've been thinking about both for a long time, actually. But I hadn't really considered majoring in both until now.

M: Well, let me remind you that what you decide today doesn't determine your future forever. Although you'd have to go through all the paperwork again, you do still have the option of changing your major a second time.

W: That's reassuring. I guess I will do both health and psychology. Something about it feels right. Thanks so much for the advice.

Chapter 1 Main Idea Questions

01 Astronomy

W: We should move on now from our discussion on Mars and speak a bit about Mercury and the moon. There are a lot of features that we can compare between the two . . . that's probably the best way to understand them.

The second—I mean, the first thing I want to talk about today is a comparison between the, uh, the composition of—wait, not the composition—I mean the surfaces of the two bodies, in terms of some of the easily perceivable physical features. We'll start with the moon. Many of you have probably viewed the moon through a telescope. You'd have seen large dark areas that appear in many places on the surface. These were previously thought to be oceans—like our oceans. They were even given the name *maria*, which is Latin for seas. They're actually not oceans at all. They're flat areas that were caused by lava flow long ago in the moon's history.

Now, on the other hand, Mercury doesn't really have any of these *maria* to speak of. So what does this suggest? Well—and this is more of a side note—um, it suggests that lava flow wasn't really very routine in Mercury's history . . . at least not to the extent that we see it on the moon. Any questions about that? OK, now moving on to a similarity, well, this is again something you've probably noticed about the moon: craters—craters being the big circular marks . . . the holes on the surface of the moon. At first glance, Mercury and the moon are very similar in this sense. Both surfaces are simply *covered* in craters. But why? Well, it all has to do with the lack of an atmosphere.

Um, I really don't want to get into too much depth on this, but here on Earth, if a meteorite enters our atmosphere, it usually burns up before it can collide with the surface. Well, Mercury and the moon don't have atmospheres like the Earth does. So, well, there's really nothing

to stop the meteorite from slamming into the surface. Don't worry too much about that—it's a different discussion. Just remember that Mercury and the moon look quite similar because of their craters.

Earlier, I mentioned the *maria* on the surface of the moon that you don't really see on Mercury. Well, to be fair to poor Mercury, we should mention something that it has that the moon doesn't. One such feature is something called a scarp. You can think of a scarp as a cliff—uh, maybe a raised area is a better way to put it—well, OK, the best way to understand it is to think of a wrinkle on your skin. That's what these look like. And, well, the moon doesn't really have anything analogous to that. So, why would these form on Mercury? Well, scientists don't know for certain, but they suggest that after Mercury formed, the cooling process the planet undergo, I mean, underwent, caused the surface to shrink. This shrinking caused these wrinkles to form . . . just like loose skin, actually.

02 History

M: Good morning everyone. I was disappointed that we didn't have enough time to finish our discussion yesterday . . . and well, I'm not sure we're going to really have time for it, but I really want to return to Rome . . . not literally, of course. But I do want to speak more on the public baths in ancient Rome. It's such an interesting topic to me because they played such a big and surprising role in the culture of ancient Rome that . . . well, let me just get right into it then.

I guess it wouldn't hurt to talk for a moment about exactly what these public baths were. Well, the history of these baths is actually quite interesting. The public baths were privately owned. They were basically just a business like any other. The owners of the bathhouse would charge a fee for entrance. However, once the Roman government saw that the bathhouses were so popular and beneficial, they opened large ones all across the city. They weren't just for cleaning one's self, they were places for conversation, relaxation, uh, and even enjoying art. Any questions so far?

Moving on, the role of public baths is quite interesting. They actually formed a very large part of Roman culture. Today, uh, you know, bathing is just something that we do for the sake of our hygiene, and while the advent of public baths did lead to the, uh, to better Roman hygiene, it also became an essential part of the daily lives of the citizens. But, well, the hygiene thing is important, but it's kind of obvious, so I don't want to talk too much about it.

More importantly, people would spend all day socializing at the baths. So, really, the baths were much more of an entertainment activity than anything. And the people really loved it. There's an old story that says that when a Roman was asked by a foreigner why he bathed once a day, he responded by saying, "because I don't have time to bathe twice a day." So the baths were, well, just a part of daily Roman life.

The baths also included areas that the Romans called *palaestrae*, which were large fitness areas. They were very much like modern gyms. Some of the largest palaestrae would have areas for running, for playing ball games, for wrestling, for lifting weights . . . um and even larger pools for swimming. Now, this was another great source of entertainment for the Romans and gave them yet another reason to spend all day in these baths. It also contributed to better health among the citizens and helped make them more physically fit.

Last, and perhaps most interestingly, the baths served an important political role. Because they were so widely frequented, politicians hoping to gain support would often visit the baths and share their ideas with the population. Groups of politicians would meet in the baths to discuss laws, policies, or possible ways to improve Roman society. Politicians hoping to gain support often paid the admission for an entire day at a bath in order to gain political support from the visitors. Commoners would discuss politics as well. They might discuss the candidates for an election, or debate laws . . . or even use the baths to plot against a politician.

03 Office Hours

W: Excuse me, Professor Johnston? Are you ready to meet with me?
M: Sure Sarah, come on in. I was just finishing up with an outline for today's lecture. What was it you wanted to discuss?
W: Well, I'm actually planning to go on a trip this summer with my archaeology class.
M: Wait, I didn't know you were studying archaeology. I thought your major was computer science.
W: No, actually that's just my minor. One of them, at least. Anyway, I've been planning and everything, and I started thinking that, uh, that I wanted to create a computer program to help me out on the trip. We're going to be visiting a dig site that opened recently, and a lot of new artifacts will likely be found there. I thought it would look really impressive if I wrote a computer program that would help us all keep track of and, uh, classify the artifacts that we find.
M: That sounds great. And I agree; I think that would look really impressive to the group, and to any graduate schools or jobs that you might apply to in the future. So, did you need help writing the program?
W: No, actually, I already have all of that planned out. But, uh, I was thinking, it would be really nice if I could get some sort of credit for the work I'm going to do writing the program. Since I have a major and two minors, I'm starting to feel like I'm falling behind in my studies, so I'd like to catch up.
M: So, uh, you mean you'd like to do an independent study?
W: Would that work? I mean, I'm not really familiar with how the university does independent study credit. What would I have to do? And, I guess the big question is whether it would even be feasible or not.
M: Well, when it comes to independent study, the important thing is getting a professor that will sponsor the project. I've actually sponsored a lot of independent studies in the past, and I would certainly be willing to work with you on this one. Um, the department head also has to approve the project for you to get credit, but I don't really foresee that being a problem.
W: Great, that's good to hear. So, what should I do now?
M: Well, first off, I would want to see a proposal. Basically, just write down what you told me in here. It all sounded fantastic. After that, uh, I think there are some forms to fill out. Those are probably online. I know the university has an online checklist of all the necessary stuff, so check that out and we can go over everything after you've given me your proposal.
W: Thanks. I really appreciate your help with this.

04 Service Encounter

M: Excuse me, are you an RA here at the residence hall?
W: No, sorry, I just work at the front desk. Did you need help with something?
M: Well, yeah, actually. Maybe you can help me out. This is kind of embarrassing. I went to take a shower, and when I got back to my room, my roommate had left and locked the door behind him. Well, I didn't take my keys with me, so now I have no way to get back into my room. This has never happened to us before. You know, usually he's in there when I'm getting ready to go to class. He must have had to run off early for some reason this morning. Would have been nice of him to tell me . . . Anyway, is there anything you can do to help me out?
W: OK, well, we have a key back here that we can use to get you into your room. Do you have your student ID with you by any chance?
M: No, I don't . . . it's in my room, along with everything else.
W: OK. I don't think that's a big problem. I'm sure we can just take a look at it once we let you in. Just let me go grab the key . . . Oh, you know what? I just remembered that one of the RAs has the key right now. He checked it out just a few minutes ago. I think he said someone was locked out of their room, just like you.
M: Do you have any idea when he's going to be back? I really need to get my stuff from my room.
W: I'm not sure when he'll be back.
M: I have a midterm to get to in, like, twenty minutes. I have to be able to get into my room and get my backpack and my—
W: Well, I can tell you who has the key. Let me take a look here. OK, the list says that Keith has it. Maybe you could try to track him down. As long as he has the key, he'd be able to let you in.

M: OK, I guess I could try that. There's no other way? I'm really in a hurry and this place is pretty big. I doubt I'll be able to find him in time.

W: Well, the only other person I can think of that might have a key would be someone on the custodial staff. They have keys to pretty much everything, and they'd definitely have a key for all of the rooms. I don't know if there are any custodians around, but you could try that. Then you could just have me come with you so I can check your ID and everything.

M: And you're not sure where a custodian might be right now?

W: I have no idea. Sorry.

M: That's all right. I'll try to track one of them down. Thanks for your help.

05 Business

M: Today I want to focus on outdoor advertising. Now, the definition should be pretty clear: any advertising that happens outdoors. But to give examples . . . uh, billboards—like the big signs you see on the side of roads—and then transit advertising, meaning signs on busses, the subway, or on the side of a truck. OK, I think you get the idea. Anyway, you might be surprised to hear that outdoor advertising only accounts for about two percent of most firms' advertising budgets. However, there are some things about outdoor advertising that can be really attractive to a company, . . . and there are, of course, things that are not attractive. So, let's go ahead and discuss the good and bad points of outdoor advertising.

First, outdoor advertising obviously has the ability to reach a vast number of people. I mean, think of just any ordinary billboard on the side of a major road. How many people do you think go by that billboard on their way to work, or school? Well, quite a lot, depending on the road, of course. But if a company manages to get a large billboard off of the highway, well, then it's a definite way to make sure people see your ad. One particular outdoor campaign for a beverage company helped increase the company's revenue forty-four percent over the summer. That's a huge revenue increase! And, really, all they did was put up nice-looking pictures of their beverages. So exposure is a definite advantage, but this exposure isn't always what you want. So much of advertising is targeted toward specific people, but you'll have a lot of people viewing the ad that you don't necessarily need or want—they aren't part of the target audience. Therefore, you get what's called waste coverage. This means that you're actually wasting money by advertising to people that aren't interested. So, on TV, there are channels designed for specific age groups, right? Well, if a product is meant for young people, you can put an ad on a channel meant for young people. However, with billboards, you can't do something like that so easily.

OK, well moving on, there has been an increasing amount of creativity lately in terms of outdoor advertising, and consumers tend to like creative ads and, thus, pay more attention to them. So the ability to create very creative ads is the next advantage. Now, with TV you can be creative, sure, but you have to stick to the strict format of a message in video and voice.

With outdoor advertising, you can have billboards, blimps, flyers, clothing, or even the side of a truck or a bus. Um, for example, think of an advertisement on the side of a bus. Usually boring, right? Well, a recent TV network put a huge image of a shark on the side of a bus, and when the doors of the bus closed, the shark's jaw closed, making it look like the shark had just eaten whoever walked on to the bus. How's that for an attention grabber? This is just one example of some of the new advertising that's happening outdoors. You would definitely take note of an ad like that. Now, there's also a downside to that, too. Often, the most creative ads are extremely expensive to do. The really popular locations for ads are quite expensive, and you generally have to pay monthly to keep that signage. You want an ad in Times Square in New York City? You'd be looking to pay as much as two hundred thousand dollars per month. Add that to the cost of making a creative ad and you're looking at a lot of money.

06 Film Studies

M: OK everyone. We have a big animation project coming up soon. Before we get too far today, does anyone have any questions about the project?

W: Actually, I was looking at the assignment sheet last night, and I'm not sure I understand what we're able to use for the project. I mean, in terms of animation techniques. Does it have to be computer-based? Or can we do hand-drawn animation?

M: Well, if you'd like to give yourself extra work, feel free to do it all by hand. Otherwise, I'd recommend using the software on the lab computers. It's really easy to learn. OK, any other questions about that? Great. Today we're going to talk about early animation . . . not like cartoon animation. I mean, er, photographs forming what appears to be fluid movement. You all know what I mean, I hope.

W: You just mean early movies, right?

M: Yes, right. OK, so what I want to do today is talk about three of the earliest machines that helped bring these static pictures to life. They weren't movies by any means, but they helped set the stage for movies. Does anyone know what the first one was?

W: The Kinematoscope, right?

M: Not quite. That was actually the second . . . which we'll get to in a minute. The first was called the Phenakistoscope. Let me give you a second to write that down. OK, now the technology of these can be a little hard to understand, so I'll go slowly. Stop me at any time with questions.

Now, with the Phenakistoscope, the animator started with a disc. Different pictures were drawn all around the disc, which would correspond to the frames in the animation. Good so far? OK, after all of the frames were drawn, the disc was put in a, um, basically in housing with a handle. The viewer would rotate the handle, and the disc would spin. In the housing for the disc was a series of slits through which the viewer could look. As the disc passed the slits, one frame showed up at a time. When the disc spun quickly, it would appear that there was just one moving image. However, it didn't look great . . . It was small, and the image was really jerky. OK, that was a lot of information. Are there any questions?

W: Just to clarify, it's, um, it's basically like the movies where they show one frame at a time, but they're shown so fast that the image looks like it's moving?

M: That's right. That's the basic idea behind all animation, so keep that in mind and the next two won't be too hard to understand. So the next device is called the Kinematoscope. Really, this was just a more sophisticated version of the Phenakistoscope. It kept the same basic idea: still images on a wheel that rotated. But here, the viewer would look at the inside of a cabinet. The pictures were mounted to plates of glass, and the plates were moved by a chain connected to a crank that the viewer would turn. So, the image was bigger and a little clearer . . . but still jerky.

W: How well did these things work? I mean, it sounds like they're kind of difficult to operate.

M: You would be right about that. They, uh, they really didn't work too well. Imagine trying to keep a steady pace turning a crank, all while trying to watch the picture. And it didn't really allow the animators to make anything particularly complex, since there could be only a few frames in any animation. OK, I want to leave enough time to talk about the Praxinoscope.

It took the same ideas and changed them significantly to make a better product. Basically, instead of a wheel, the Praxinoscope used a circular drum, in which the pictures were on a long roll on the inside. It also used mirrors instead of slits to help keep the picture steady. Well, the picture was much steadier—by that I mean it appeared to be one picture staying in place, rather than shifting back and forth. Anyway, this was the last animation technique before film began to be used for moving pictures, and was the closest anyone got to good animation without the use of film. We'll discuss that more tomorrow.

07 Office Hours

M: Hey, Professor Jamison, can I talk to you for a moment?

W: Sure, come on in. I don't have all of the tests graded yet . . . Sorry about that. I think I do have yours graded, though. I can look up your grade in the book, if you'd like.

M: Oh, actually, that's not why I'm here. I'll just wait to get the test back. I came in to talk about my final paper.

W: Oh, OK. Um, remind me of the topic you submitted in your proposal.

M: I'm going to be talking about the influences of various types of art in Chilean literature in the early 20th century.

W: That's right . . . how could I forget? I remember reading your proposal and being very engaged. I took a class that had a very similar goal to what it seems like you want to do in your paper. So, how is your research going?

M: Well, it's actually going really well, I think, but I do have a couple of things I want to ask. I've found a lot of really interesting information that I can use in my paper, but some of it is on videos and CDs. Basically, I want to know if I can use stuff like that in my paper.

W: You mean to say that you want to use videos and CDs in a paper? I'm not sure I understand what you mean.

M: Oh, well, what I mean is . . . would it be all right if I used some of the information from those sources in my paper?

W: OK, I think I'm starting to understand. Can you give me an example?

M: Sure. Let me think . . . well, I actually found a CD of some music that was referenced in one of the novels we read this semester. After listening to the lyrics, I think I could prove a point about the author's influences if I can use those lyrics . . . and maybe describe the song a little bit . . . maybe something about how the melody makes you think of sadness and hopefulness at the same time.

W: I'd certainly be open to you using the lyrics. You could definitely allude to the lyrics within your paper . . . or you could quote them directly just as if you were providing part of the body of a poem. As for the musical stuff . . . I'll leave that one open to you. You don't want to spend too much time on it, but if you can mention it briefly and make it relevant to what you're discussing, I'd say that it should be fine. So I suppose with the videos you're talking about very much the same thing.

M: Well . . . I wish it was that simple. Actually, the video I found is of a popular Chilean dance. Now, the video basically shows the exact dance that one of the authors used in her novel. I really wish I could somehow use the video itself, because I know that if I just try to describe it, I don't think I could do it justice with words. It's really something that needs to be seen.

W: I see. With something like that, I would tend to agree. However, perhaps the novel did a pretty good job of describing it. Maybe you could just quote from the novel?

M: Well, that's what I thought before seeing the video. But the video shows the dance with so much . . . so much intensity. It really shows exactly what she was talking about in her novel. It shows the cultural importance of the dance in a way that I don't think even the author herself pulled off.

W: Wow! Let me think here . . . I can allow you to do a short presentation along with your paper. The only thing is . . . I can't really offer you any extra credit for it, since that would be unfair to the other students. So, it's really your choice here.

M: I'll think about that. I could probably come up with a short presentation without too much trouble. Yeah, I'll think about that and let you know before the due date. Thanks for your help.

08 Service Encounter

M: Hi, I was hoping you could help me out with something.

W: Sure, what do you need?

M: Well, OK, I really need to get into the library. I have this really big test tomorrow, and everything I need for the test is in there, and if I don't get to study then I'm probably going to fail.

W: Um, I'm sorry, I really can't let you into the library after hours. It's already, um, it's already past one a.m. We can't let students study in there when it's closed.

M: But if I don't get my stuff, I can't study, and if I don't study, I'll fail. It'll only take, like, five seconds, I promise.

W: Wait, what do you mean, "get your stuff"?

M: Oh, sorry . . . I'm a little panicked, as I'm sure you can see. Let me slow down. I was studying in the library earlier tonight . . . before the library closed. I realized it was getting late and I hadn't had anything to eat since lunch, so I decided to go to the café and grab some food.

Well, once I got back, the library had already closed, and I left my backpack in there, along with my notes, my textbook, all of that stuff.

W: Oh, OK, that makes a lot more sense now. Actually, I bet one of our guards already brought your stuff here. We do a meticulous inspection of every building nightly to check for lost items, and we bring them here to the Lost and Found. Let me check. Oh, I guess it would help to ask you what your backpack looks like. Was there anything else you left?

M: No, I packed everything in there before I left. And it's dark blue . . . the straps are black . . . or brown.

W: Let me check in the back. No, it doesn't look like we have it here. The only bag we have came from the science building, and it's pink.

M: So do you think it might still be in the library?

W: Well, I doubt it. Our security guards are usually really good about finding things at night. Where in the library did you leave it?

M: Just next to one of the tables. It was in a pretty obvious place. Can I just take a look in there for a few minutes? I know exactly where I left it. I'll be in and out in two minutes.

W: I really can't let you do that. Maybe one of our officers is on the way back here with it. You could hang around for a while to see if one of them comes back with it. I think we still have two or three guards doing their nightly rounds. They'll be back within . . . oh, maybe thirty minutes.

M: I really don't think I can wait that long. It's already late, and my test is at eight.

W: Well, let me see if I can radio any of the guards to ask if they've picked it up and are on their way back. One second. Well, none of them has seen it. I'm not really sure what to tell you. Are you sure you left it in the library?

M: Yeah, I'm positive. There's nowhere else it could be.

W: OK, well, the only idea I have is to see if one of the guards would be willing to take another look in the library. I think one of our guards should still be in the area. I'll radio him and ask him if he'd be able to look again. Where did you say you left the backpack?

M: Um, it's by a table, it's over in the north wing, by the reference section. Kind of to the left—uh, west of the computers there.

W: Let me contact one of the officers and see what I can find out. Hey, I have good news. The officer checking the library was actually still in there, and he found your backpack right away. He said he'd get here as soon as possible with it.

M: Oh, phew. When do you think he'll be back?

W: Hard to say for sure, but I doubt it will be more than a few minutes. You can feel free to have a seat over there if you'd like to.

M: OK, great. Thanks so much for your help.

09 Sociology

W: We had started yesterday with a lot of theories, I know, and before we get into anything new today, I wanted to ask you all if there was anything that you were unclear about? Anything you wanted me to expand upon? Anything?

M: Well, I don't want to derail the discussion or anything, but I found a theory in our book last night that we didn't go over. I don't know if it's really all that pertinent, but I thought it was kind of interesting. It was called the *Principles of Stratification*.

W: Ah, yes, Davis and Moore's *Principles of Stratification*. You know, I had actually taken that out of the syllabus at the last minute because I didn't think we would have enough time for it. I actually really like the theory, too. So, as long as we have time for it today, let's discuss it briefly. Since you were the one to bring it up, Brad, do you want to define the theory for us?

M: Um . . . sure. I'm trying to remember what I read. Basically, Davis and Moore were trying to figure out how—uh, why there's inequality in the distribution of wealth in society, right?

W: Yes, and to clarify for those who didn't read it, Davis and Moore wanted to know why some jobs have more prestige and why those jobs have higher salaries associated with them.

Now, the main function of stratification is to place and motivate people within our social structure. Some positions have more importance placed on them, and so people in these positions get paid more.

An example would be a doctor. Doctors usually earn quite a lot of money. But why? Why should doctors get paid a lot and not, say, teachers?

Hint, hint. Well, the theory that Davis and Moore came up with in their article *Principles of Stratification says* that some jobs have a higher salary associated with them because it encourages people to do the jobs that are the most difficult to do. Now, difficult can mean different things, right? Well, let me go ahead and give you some examples of this theory in work—uh, how it might work. And I'll let you all make your own decisions about whether this theory is viable or not.

Let's return to our example of the doctor. Is anyone here studying medicine? OK, well if you *were*, you would know what a commitment it is. Becoming a doctor is not easy. It requires significant financial investment, hours upon hours of training . . . You get the idea. So, if that job didn't pay well, why would anyone do it? We need doctors, right? So, the Davis and Moore theory would say that because we need doctors so pressingly, and because it is so difficult to become a doctor, doctors will receive higher salaries. It's kind of a reward system. You'll get rewarded for all your hard work training with a high salary when you become a doctor. Does that all make sense to you?

M: Well, I mean, your explanation makes perfect sense, but the theory doesn't. You said yourself that teachers don't get paid a lot, and where would we be without teachers?

W: That's a good point, and it'll serve as a good second example. Why would anyone want to become a teacher, then? It also has a lot of training associated with it . . . I mean, I went to school for what feels like half of my life, but teachers don't get paid nearly as much as doctors. Davis and Moore explain this by saying that teaching jobs are not hard to fill, and therefore they don't need to get paid as much. So, in essence, they mean that there are enough people who want to be a teacher for its own sake—not for the money involved—that teachers will always be easy to find. Considering that's why I became a teacher, I'd have to say they're right. I knew I wouldn't get a doctor's salary, but I did it anyway. There's still a reward, but in this case, it's the job itself. Now, many people think that being a doctor isn't also a reward in itself, so here we might begin to see some of the failings of the theory.

10 Biology

W: It looks like we're already halfway through class, so I want to move on now and speak about a pretty difficult concept. Are you all up for it? Of course you are. Well, then, let me get started. What I want to talk about now is a scientist from the late 19th and early 20th century named Robert Koch. More, uh, more exactly, I want to talk about his theory of disease, which is sometimes called the Germ Theory of Disease. Now, the reason I'm going to describe the theory itself is—well, not to make you think the theory itself isn't important—but the way that Koch applied the theory to tuberculosis changed our understanding of the disease forever. So, well, let me just tell you about the theory now.

To understand the theory, um, I'll—I mean, you'll need to understand Koch's Postulates. Now, this is just the larger part of his overall Germ Theory, which basically states that microorganisms can cause disease. We know this now, but it was only speculation until 1876, when Koch finally proved it. Anyway, let's talk about the four postulates, uh, meaning requirements, which Koch said were needed to prove that a specific microorganism caused a disease. Are you all ready to write? OK.

The first postulate said that the germ being studied must *always* be present in a sick subject, and *never* present in a healthy animal. This basically just assures that no oversights were allowed. Pretty simple, right?

The second requirement is that the culture—uh, culture here meaning a sample of the microorganism—the culture must be grown separately from the animal and from other microorganisms. This stresses the importance of isolation, just meaning that, to get accurate results, you don't want any other germs in there that could affect the results.

OK, moving on to number three. Postulate three says that the pure culture—the one in which the suspected organism is the only one present—the pure culture must cause the disease in a healthy animal. So, in doing the experiments, they would infect an animal that they know is healthy. Then, after infection, they would see whether the disease becomes present in the animal—whether the animal has become infected.

OK, ready for the last one?

The fourth postulate said that, after the animal has been infected, a sample should be taken from the infected animal—a blood sample, usually. Then, the germ must be found to be the same one as the germ from the culture. This just assures that it wasn't actually a different disease—or even a combination of diseases—that ended up infecting the animal. That was a lot of information . . . any questions?

OK, so how did this apply to tuberculosis, and why was it so revolutionary? Well, we don't think as much about tuberculosis anymore, but in 1881, one in seven deaths was caused by it. Tuberculosis is an infectious disease that often affects the lungs. What Koch wanted to do was use the postulates he created to identify the organism that caused it. Here's how he did it. Basically, the problem with identifying the tubercle bacillus—um, that's the organism that causes tuberculosis . . . um, it was hard to identify because previous techniques to view the organism using staining didn't work. Before, staining processes couldn't successfully color organisms with large amounts of lipid on their surfaces. Koch, however, used a new brown stain to successfully identify the tubercle bacillus. However, he had to follow all of his own postulates in order to prove that it really was *that* organism that caused the disease . . . rather than something else. Uh, so he went through all of his postulates, and they all checked out. He used guinea pigs as subjects . . . and after a lot of research, finally proved that tubercle bacillus caused the disease.

So, why was this such a big deal? Well, identifying the cause of tuberculosis led to measures to prevent and treat the deadly disease. Without the discovery, we might all hear much more today about tuberculosis, but luckily, it's not nearly as common as it used to be.

Chapter 2 Detail Questions

01 Art History

W: Today we're going to talk about the time in American history when photographs were first used to document an era. I'm talking about the Great Depression. The Great Depression had a major effect on the development of photography. I mean, if you look at pictures of people before this time, what do you see? Emotionless portraits of people dressed in their best clothes staring directly at the camera. That all changed during the Depression.

Before we begin, let's highlight some key points. The Great Depression was the period of massive unemployment from 1929 to around World War II, which was, for the US, around 1941. All America was affected, but um, rural people were the hardest hit. At the same time the Depression was happening, farmers in the West were getting hit by a bunch of terrible dust storms that destroyed their crops. Many were forced to sell everything they had and migrate to California to start a new life.

So, that's that. And, um, how did this era affect photography? Well, one important change was that the government began to get directly involved in art. See, at the time, the government was trying to create programs that would help farmers. A government program called the Farm Security Administration began to hire photographers to take pictures of what was happening across the nation. Many photographers decided to take pictures of the migrants as they traveled to California.

Also for the first time, we see photographers taking pictures of people wearing normal clothes and experiencing emotions. In other words, we start seeing photos of real people going through real situations. These photos of homeless migrants gave the rest of the nation a glimpse into the difficulties they faced during their arduous journey to California.

The photos would go on to become a lasting icon of the Depression. Let me give you an example: let's see if I can get Dorothea Lange's famous photo entitled *Migrant Mother* up on the overhead . . . There it is. As you can see, the photo shows a migrant mother and her two children on their journey from their farm to California.

Her children lean on her for support as she looks at a point off-camera. Notice how her ragged appearance and simple dress give this photo a strong sense of realism. The anxiety about her family is written all over her face. She is a perfect representation of the despair migrant farmers felt as they faced a troubled and uncertain future.

OK, touching photo, but what did it and thousands of others like it really do? They alerted Americans to the harsh reality people like this woman underwent daily during the Depression. Never before had photography been able to depict the reality of people and events as well as in these photos. Americans from all over the nation could identify with these people through photographs, initiating support for programs that would provide aid to farmers. These photographs would act as a model for documentary photographs produced in future generations.

02 Business

M: OK, students. Yesterday, we started to talk about conflict in organizations. Organizational conflicts happen all the time in business, and, uh, often disrupt employee satisfaction and workflow. So, if we're managing a business, and we encounter a conflict, what would our natural tendency be? Either suppress the conflict or try to solve it, right? After all, isn't conflict a bad thing? Well, it depends on what viewpoint you take. Today, we're going to discuss the opposing viewpoints of Frederick Taylor's traditional view of conflict versus the interactionist view of conflict proposed by Stephen P. Robbins.

In order to understand Taylor's views, we need to take a closer look at his contribution to scientific management. In the late 19th century, Frederick Taylor began searching for ways to make workers more productive. He began to break job tasks down into their components and spent his time measuring how long it would take for a worker to complete each part. He then set specific standards for performing each job. Uh, he called his method scientific management. Under his system, workers who were fast and efficient got paid more money, while workers who were slower and could not meet his standards were paid less or laid off. In other words, managers could get rid of slow workers until the workforce consisted of the best, most productive workers. Of course, by making his workers follow a set standard of production, he regarded them as little more than emotionless robots that could all produce at the same rate.

So, how does this relate to organizational conflict? When Taylor first applied scientific management to a company in 1893, he was able to get thirty-five people to do the work once performed by 120! Wages were increased for those workers by eighty to one hundred percent! He thought his theory was a success and decided to apply it to conflict management. Taylor was so confident in scientific management that he believed managers who applied his technique correctly could eliminate all conflict in the workplace. See, Taylor thought that conflict in organizations was *always* harmful because it hindered productivity. He believed that organizational conflict was unnecessary and could be avoided.

However, as time passed, views of conflict began to change. During the 1970s, a man named Stephen P. Robbins suggested an alternative position toward conflict called the interactionist view. The interactionist view states that conflict is not only unavoidable, but necessary for an organization to function properly. Like Taylor, Robbins did acknowledge that conflict could be harmful to an organization. Yet Robbins also felt that some conflicts actually result in the search for new ideas and solutions. Therefore, a certain level of conflict was desirable for a company to expand. Robbins believed the best way for managers to handle conflict was to manage it in such a way as to reduce its harmful features and increase its beneficial features. This would raise production to its highest possible level. As you can see, Robbins's interactionist view differs greatly from Taylor's traditional approach.

03 Office Hours

M: Professor Johnson, can I talk to you for a minute?
W: Of course, Sam. What can I do for you?
M: Well, I just finished reading your newest book, about how to write about the natural world, and I thought it was great.
W: I'm glad you liked it.

M: You know, before I picked up your book, I never thought of nature writing as a specific genre.
W: Not many people do. But really, learning how to describe the natural world is important to all forms of writing. In my book, I stressed that nature writing almost exclusively depends on using your five senses of sight, hearing, smell, touch, and taste. The whole purpose of nature writing, after all, is to paint a picture of the world around you. If you think about it, Creative Writing professors teach their students the same things concerning imagery.
M: That may be true, but most of my friends in Creative Writing say that one of their big problems is that they don't use enough description in their works.
W: That's not surprising. Many writing students have trouble because it's hard to put the description of the world around you into words.
M: I always had trouble with using imagery in my writing until I read your book. After doing some of the exercises you suggested, I feel like my writing has improved some.
W: That's wonderful. I think that if writing students practiced writing about the natural world around them, they'd find it much easier to put images into writing.
M: That's one of the reasons I thought I'd talk to you. Since I know this is the time when you professors have to start planning what classes you want to teach next term, I wanted you to consider forming a class on nature writing. We could use the book you wrote as the class textbook.
W: I'm flattered that you think my book would be good enough to form a class around.
M: And it would be great to get writing students to appreciate the natural world. I mean, we're usually zooming through our lives so quickly that we don't have time to actually stop and look at the world around us.
W: You have a point there, but do you really think there would be an interest?
M: Absolutely. I think it would be popular even with students who aren't studying writing. No other class at the university teaches about nature writing. It would be a hit.
W: I'm glad you think so. Unfortunately, the department here doesn't. I suggested teaching a class on nature writing over two semesters ago, but the department head didn't believe it would be popular with students.
M: Are you kidding? I know tons of people who would want to sign up for it.
W: I'll tell you what. If you think you could get thirty people to send letters to the department head expressing support for a nature writing course, it might convince him to approve one.
M: OK. I'll make an announcement about the course in my Creative Writing class and try to get students to write those letters.

04 Service Encounter

W: Hi, may I help you?
M: Hi, I'm here to ask about meal plans.
W: Sure. What are you looking for?
M: Well, I'm thinking that I should probably change my meal plan.
W: OK, what meal plan are you on right now?
M: The twenty-meals-a-week one. But I'd definitely like to get something smaller, since I'm always missing my meals, and I end up wasting lots of money.
W: Well, we have the fourteen-meals-a-week, the ten-meals-a-week, and the seven-meals-a-week plans available.
M: How much are those compared to the $3,000 that I'm paying for the twenty-meal plan?
W: Let me look this up . . . OK, so it's $2,700 per year for the fourteen, $2,500 for the ten, and $2,400 for the seven. I'm sure you can see that the twenty-meal-plan is the best deal.
M: Well, considering that I really only average about ten meals a week with my hectic schedule, I'm going to get that one.
W: OK, so you'd like to downgrade to ten meals a week? I can arrange that for you. Let me put it into the system. Done.
M: That was quick.
W: Yep. Anything else I can do for you today?
M: Well, yeah. Actually, I'm still concerned about the meals that have been wasted and I'm sure will still be wasted—even with the new meal plan—just because of the way my schedule varies and changes unexpectedly. I mean, what if one week, I only manage to make it to three meals, and the following week, I find that I actually want fourteen? I just wish that there was another system that was more flexible.

W: OK, I understand your dilemma. You know, you could actually go off of a meal plan entirely, and purchase something called "Meal Points," which you can use at the various establishments to buy snack foods, and even to buy individual meals at the dining facility.

M: Really? I can do that?

W: Sure. And also, when you purchase "Meal Points," you'll be buying a dollar for eighty cents.

M: Huh? What does that mean?

W: Let's say you'd like to buy one hundred dollars worth of meal points—remember, you can use them to buy practically any kind of food you'd like around campus—you'll get them for eighty dollars.

M: Hmm, so it's like getting a twenty percent discount. Not bad . . .

W: This way, you won't have to feel like you're wasting any of your meals.

M: That's a relief.

05 Astronomy

M: OK, many of you had questions about Earth's earliest atmosphere. So to, uh, answer those questions, let's start at the beginning. So, uh, during the first phase, um, the very first gases that existed in the Earth's atmosphere were hydrogen, helium, and hydrogen-rich gases from when the planet was formed from, uh, from the remains of a star. Now, these gases are really light, and the solar wind, or fast-moving streams of particles from the sun, were able to blow these gases out into space easily. So the first gases in Earth's atmosphere escaped, and the Earth had no atmosphere for a while. Then Earth underwent a lot of geologic activity. Inside the Earth's hot interior, heavy metals were sinking toward the center, while lighter materials like rock rose toward the surface.

Let me clarify. The events happening inside Earth's interior caused a lot of volcanic activity on the surface. We had volcanoes exploding constantly. Now all this volcanic activity released, um, a lot of gases into the air in a process called outgassing. OK, you all get that? *Outgassing*. That's the second step. Now, most of the gases released by these volcanoes were steam or water vapor, carbon dioxide, and nitrogen, so our early atmosphere was composed chiefly of these three gases. So does anybody know what Earth's early atmosphere was like?

W: Um, well, the Earth would have been extremely hot. And since there was no water or oxygen, there wouldn't be any life. And I think I remember hearing that the atmosphere was denser than it is today.

M: Absolutely. Hot, dense, devoid of life. As in no living things at all. Think of the carbon dioxide-rich atmospheres of Venus or Mars, and you'll get a good idea of what early Earth may have been like. Well, the next major thing that happened was water formation. So Debbie, how was water able to form?

W: Uh, well you said much of the Earth's atmosphere was water vapor. So I guess the Earth eventually cooled down enough for water to form.

M: Yes. Once the atmosphere cooled, the water vapor in the atmosphere began to condense and create precipitation. This is how our oceans were formed. Much of Earth's carbon dioxide was dissolved in Earth's oceans, leaving an atmosphere rich in nitrogen and with less carbon dioxide and water vapor. Water acted as a catalyst for life. Once water was created, the final major step was able to occur. About 3.5 billion years ago, life began to develop in the form of unicellular bacteria. This was followed by more complex organisms, most notably, photosynthetic blue-green algae. And this is where things really got interesting.

Photosynthesis, you'll remember, is how organisms like plants and algae are able to convert carbon dioxide into energy. As most of you probably know, one product of photosynthesis is oxygen. The algae absorbed much of the carbon-dioxide and released oxygen into our atmosphere. As plants continued to evolve, more and more oxygen was released into the atmosphere until our atmosphere transitioned from a carbon-dioxide dominant atmosphere to its current state as an oxygen-rich atmosphere.

06 Zoology

M: OK everyone, listen up. We're going to conclude this week's lecture series by talking about two apes that are *very* similar to one another. I'm talking about our close cousins, gorillas and chimpanzees. I'm sure most of you recognize that outside of their respective sizes, gorillas and chimpanzees are very similar physically, but what about socially? In fact, there are some notable differences in the social structure of these two primates that I would like to spend some time going over.

First, let's talk about similarities. You should note that gorillas and chimpanzees share almost the *exact* same DNA as humans. Gorillas and humans share approximately ninety-seven to ninety-eight percent of the same DNA, while chimpanzees and humans have approximately ninety-eight to ninety-nine percent in common. Evolutionally, this not only makes gorillas and chimps closely related to us, but to *each other* as well. So obviously, they're going to share lots of similar characteristics, right? For example, both gorillas and chimps walk on their knuckles and tend to form groups.

Each of these groups consists of a dominant male that acts as the group leader. But here we start to run into some differences in group structure that work to differentiate the two primates. You see, gorillas are much more solitary than chimpanzees. Yes, they do form groups, but these gorilla groups are much smaller than chimpanzee groups. A gorilla group usually consists of about a dozen individuals: a male gorilla, several adult females, and their young.

Sometimes the group may include a few younger males, but they rarely mate with any of the females. The females belong to the dominant male. Chimps, on the other hand, live in large groups of 50 or more individuals, sort of like a mini-society. And unlike gorillas, many chimps in the group may be male. This large group consists of several smaller subgroups—another characteristic that is not seen with gorillas. These chimpanzee subgroups often consist of a mother and siblings. Much of the younger chimps' behavior is learned from the different individuals in their subgroups and, like humans, chimps appear to have a special bond with their mothers and siblings.

Now, as in the case of many social animals, the dominant males in both gorilla and chimpanzee groups are usually the biggest in size and brute strength. This is not to say that the dominant male will stay in power forever. Both gorillas and chimps can be, and often are, overthrown by others. Dominant male gorillas can be overthrown by a stronger, tougher gorilla, who will then take over the group. The displaced gorilla will then usually spend the rest of his life alone by himself. Then what about chimps? Well, chimpanzees display similar dominance patterns, although displaced males are not always sent into isolation like displaced gorilla males.

There is one exception to this system of dominance that I feel is worth mentioning. Whereas gorillas rely on brute strength to gain the dominance of a group, it appears that chimps may also rely on intelligence to move up their group hierarchy.

In a study conducted by primatologist Jane Goodall in 1964, a chimp named "Mike" was able to gain control of a group because he was smart. This chimp was not the usual candidate for a leader. He was one of the lowest in the dominance hierarchy and very weak physically. He was often attacked by chimps much bigger than him. But one day, Mike stumbled across a kerosene can lying around Goodall's camp. None of the other chimps had paid any attention to them, except for Mike. Grabbing one of the kerosene cans, Mike began charging the other males of the group and banging the can with his fists. All the other chimps were terrified of the loud noise, and Mike became the leader of the group without even fighting. He proved that chimps can use their intelligence, and not just brute strength, to gain power.

So what do these differences in social structure tell us about these animals? Perhaps it demonstrates the slightly closer genetic relationship that chimps have with humans. Large communities, subgroups, gaining power through intelligence—are all unique characteristics that humans and chimpanzees share. Whatever the case, these slight differences in the social structure of gorillas and chimpanzees are fascinating topics for further study.

07 Office Hours

W: Hello, Professor Williams. Can I talk to you for a sec?
M: Of course, Ann. What can I do for you?
W: Well, you see, I've been having a lot of trouble with the tests for the class. I barely passed this last test. But I've been trying to study for them.
M: This class can be really hard, but the study guides should help. Did you use the study guide I provided to review the key concepts of this chapter?
W: Yes, and I think that's part of the problem. The study guides don't seem to reflect what's on the test.
M: What do you mean?
W: I mean that I've been using the study guide. In fact, I practically memorized the information on the study guide, but then when I get to the test, I usually find a whole bunch of questions that were not on the study guide.
M: I'm still not sure that I understand. Would you happen to have a copy of the last test that we could go over?
W: Actually, I have a copy of the last test *and* a copy of the study guide. Let me just find them. Here they are.
M: OK. Now, let's look at a question that you missed. Hmm . . . It looks like you missed question number ten about off-price retailers. The question asked, "What is an off-price retailer?" The correct answer was C, "a retailer that sells goods at prices twenty-five percent or more below traditional department store prices." You chose answer A, which states the definition of a discount store.
W: Actually, I just guessed on that one. I had no idea what the answer was. It wasn't in the study guide.
M: OK, let's look at your study guide. The word "retailing" is listed right here, but I see that you didn't write much down.
W: Yeah, I just wrote down the definition. Wasn't that what I was supposed to do?
M: Yes, but you also should have written down the types of retailing, like, for instance, off-price retailers. I see that you've defined each term in the study guide, but you didn't go any deeper. You should also have written down the types of retailing and anything else that we discussed in class or that was in your reading.
W: But it doesn't specify that in the study guide. It only has the word "retailing."
M: Well Ann, the exams test deeper knowledge than what's listed on the study guide. The study guides list the key topics, but it's up to you to explore these topics deeper. And there's one other major reason why I didn't list the different types of retailing on the study guide.
W: And what's that?
M: Conciseness. There are about fourteen different types of retailing that exist, and there's no way I can list all of them on a single page.
W: Then how do I know what to look for?
M: We went through all the types of retailing in the lecture. Weren't you here then?
W: Yes, I was. And I took notes on it, too.
M: Did you look over your notes for the test?
W: I glanced through them, but I relied mostly on what was on the study guide.
M: That's probably the problem. You depend more on your study guide than your notes. Ann, the study guide is just *a guide*. It's a rough outline of what will be on the test. It is not an in-depth list of everything you'll need to know to do well on the exam.
W: So how do I study for the test if I can't depend on the study guide?
M: You can still use the study guide. It lists the key terms and concepts you'll need to know. However, it's your job to explore and study these topics deeper.
W: How? I obviously can't study all the information in the reading; that's hundreds of items to memorize. How do I know what part of the reading is going to be on the test?
M: Do this by depending on your notes. Rather than just defining the terms in the study guide, take the concept listed and use that as a starting point. Then go through your notes and write down everything that we talked about in class concerning that concept.
W: Well, OK. But that's still an awful lot of stuff to study. We go over so much information in class.
M: It will get easier once you read through your notes a few times.

08 Service Encounter

W: Excuse me, sir. Can I talk to you for a moment?
M: Absolutely. How can I help you?
W: Well, this is kind of embarrassing, but, uh, I'm having some problems with your weightlifting machine. I, uh, I think I might have broken it.
M: Which one? We have two machines.
W: The one over there in the corner.
M: What happened? How did you break it?
W: I'm not really sure. I was lifting weights, and everything was going fine. It was working properly, but then . . . I don't really know what happened. It just stopped working right.
M: Can you be more specific?
W: There might be something wrong with the steel cable that connects the, you know, the bar thing with the weights. You know how you pull the bar down, and the cable lifts the weights up? One minute it was going fine. I pulled the bar down, and the weights seemed to lift up fine. But the next time . . . well, I did yank the bar down really hard, but that shouldn't have caused it to break, right?
M: I don't think so. Still, you need to be careful with the equipment.
W: I was. I didn't yank it down that hard, but the second time, the bar just came down easily. It wasn't pulling any weight. And I had that thing set at twenty pounds. I tried pulling it down again and again, but nothing. No, uh, resistance at all. The cable just doesn't seem to be connected to the weights anymore.
M: Sounds like the cable may have snapped.
W: Well, is there a place you can go to get it repaired?
M: Maybe. It depends on how damaged it is. I'd better go have a look.
W: Yeah, but before you do that, can I ask you how much this is going to cost?
M: Well, as I said before, it depends on how damaged it is. We'll probably have to have a repairman come and assess the cost. I'm guessing, what with the cost of the wire and the repairman's time, it'll cost at least $100.
W: $100? Just for a simple repair? What if you can't repair it?
M: I guess we'll have to look into getting a new machine.
W: And how much will that cost?
M: Well, it's a pretty valuable weight lifting machine. Better than the other one we have. But as a school, we'll probably get some kind of discount. I would say somewhere in the $1,200 range.
W: $1,200? If the entire machine is broken, I'm going to have to come up with $1,200 to replace it?
M: What? Of course not. Accidents happen, we expect that. That's why the school has insurance for the equipment. You won't have to pay the entire cost for a new one.
W: Oh, that's a relief!
M: However, you will have to pay a slight fee for repairs and damage.
W: How much?
M: $50.
W: That's still a lot, but it's much better than $1,200. Do you have a form I have to fill out or something?
M: Yes. Let me just get you one. Here it is. Now, this is what we use whenever a student happens to damage or lose part of our exercise equipment. You need to write your name, address, and student ID number on the form. Then you fill out right here on this line which piece of equipment has been damaged and how. Now, you said the steel cord on the weight lifting machine snapped?
W: Uh, I think so. I didn't actually see the snapped cord, but it has to be that. I mean, why else won't it pull up the weights?
M: Hmm. Well, we'd better go over and check. Let's see here. Uh, the cord looks fine.
W: You're right. I didn't actually stop to look at it before I came over to talk to you. Something else must have broken.
M: Uh, I think I found your problem, and the good news is, it's easily fixable.
W: It is? What was the problem?
M: Here—the pin that holds the weights together fell out. That's why you weren't pulling up any weight. The pin just needs to be re-inserted.
W: This is so embarrassing. I can't believe I didn't stop to check if the pin was still in. I'm sorry that I wasted your time!
M: Not a problem. It's better than having a broken machine.
W: Thanks for all your help.

09 Psychology

M: To continue our discussion on emotion, today we're going to go over the facial hypothesis—sorry, I mean the *facial feedback hypothesis*. The facial feedback hypothesis suggests that our emotions are activated by our facial expressions. In other words, the type of face we make triggers what we feel. Everyone got that? According to the facial feedback hypothesis, our facial expressions *create* the emotions that we experience. Let me go a little deeper to show you what I mean.

We all know that we make certain facial expressions when we experience an emotion. In a previous discussion, we talked about how these expressions are, for the most part, universal. For instance, when two people from opposite parts of the world experience a distressing situation, their eyes open wider, their eyebrows shoot up into their forehead area and their lips may open partially. So, yeah, people everywhere exhibit similar facial expressions during similar emotional situations, but what do our facial expressions have to do with emotion? Well, our first inclination would be to assume that we make an appropriate face in *response to* an emotion. For example, we smile because we feel happy and we frown because we feel sad, but the facial feedback hypothesis states that the facial expressions we make actually activate or *cause* the emotions we experience. We feel happy *because* we smile, not the other way around.

The facial feedback hypothesis works like this. Say we're put in a situation that calls for a certain emotion. Perhaps we are in a situation that calls for an emotion of sadness. First, our brain registers the sad situation and sends out a signal. Now, according to the facial feedback hypothesis, this signal activates the part of our brain that controls facial movement. So all this happens in the brain, and only after we exhibit the appropriate facial movement do we feel the emotion.

Let me take a little detour here to go over what I mean by *facial movement*. OK, so uh, we have 80 facial muscles that control our face, 36 of which control facial expressions. These muscles react to form different expressions. So the next thing to happen in a sad situation is that our facial muscles respond to the brain's signal by drawing the inner corners of our eyelids closer together and pulling our lips downward in a frown. But at this point, we still don't experience the *emotion* of sadness. Our faces react, but our emotions do not at this point. Finally, feedback from our faces reaches the appropriate program in the brain that controls our emotions. This feedback then activates that program and triggers the emotional response. Only now do we actually experience the emotion of sadness.

If this theory is correct, then the facial expressions that we make are essential to how we experience emotion. So theoretically, a person who lacked control of his facial muscles wouldn't experience any emotion, right? But how do we test the accuracy of this theory? OK, right now, I want everyone to smile. Now I want everyone to frown. Good. Our smiling should have caused us to experience the emotion of happiness, and our frowning should have *caused* us to feel sad. Did this happen? Did anyone of you feel suddenly happy or sad based on the expression you made? Probably not. So at first, the facial feedback hypothesis appears to be wrong. However, after numerous studies, researchers did find something interesting. They did not find that making a facial expression *causes* emotion, but they did find that feedback from our faces can either increase or suppress an emotion that a person is already experiencing. In other words, the facial expression *exaggerates* what you're already feeling.

Say you're experiencing a joyful moment and you smile. The smile alone did not cause you to become happy; however, it can *increase* the intensity of your happiness to make you even more joyful. Or say you're in a difficult situation where you have to look happy. In this case, a smile probably won't turn your misery into happiness, but it may serve to alleviate your misery somewhat. The feedback from your face really can help, even if it's not in the way originally predicted!

So in conclusion, the facial feedback hypothesis is both correct and incorrect. While evidence has revealed that facial feedback does not *cause* emotion to occur, it has also proven that facial feedback does have at least a slight influence over the intensity of our emotions.

10 Geography

W: Today, we're going to start our unit on overpopulation by asking whether Thomas Malthus's theory on overpopulation was accurate or whether it was downright wrong.

But first, who is Thomas Malthus and what is overpopulation? Thomas Malthus was a famous political economist of the 18th century. He believed that at the rate our world's population was growing, we would soon use up all our resources and reach a point where the Earth would no longer be able to sustain us. This situation is called overpopulation.

Now, when a country experiences overpopulation, it often faces a series of economic difficulties. For instance, India, which is predicted to surpass China's population in the next fifty years, has so many people that the country is facing poverty and is running out of land to put people. Thomas Malthus predicted these types of problems over two hundred years ago and came up with his famous theory about overpopulation.

Now in his theory, Malthus said that the world's population was progressing at a geometric rate. This is when you have a series of numbers where each number is being *multiplied* by a particular amount to get the next number in the sequence.

For example, think of the sequence 2, 4, 8, 16, 32—each successive number in the sequence is multiplied by 2. That's kind of how our population works. On the other hand, Thomas Malthus thought that while our population was progressing *geometrically*, our food supply was progressing at only an *arithmetic* rate, when the same number is *added* to each successive number. Think of 1, 2, 3 or 2, 4, 6, 8—the same amount is being added to each number. So if our population is growing geometrically, and our food supply is growing at an arithmetic progression, what's going to happen?

M: There's not going to be enough food for everyone.

W: Right. Hence, we have overpopulation, a situation in which there is not enough resources to go around. Now Malthus believed that the only way to stop overpopulation was through misery and death. He wrote in his essay that once the population exceeds the power of the Earth to support it, then "premature death must in some shape or other visit the human race." This death would most likely come through war, severe famine, or the spread of plague-like diseases.

M: But didn't he think that there could be other, less gruesome ways to deal with overpopulation? What about, uh, doing what China did by limiting the amount of children each couple could have?

W: He did propose the use of such techniques, mostly for the poor and the working classes. But overall Malthus thought that the horrible outcomes of poverty and widespread death resulting from overpopulation were inevitable. Mankind would suffer until enough people died that the world could once again sustain the human population.

Now in reality, Malthus's beliefs were correct on certain levels. For instance, overpopulated countries do have lots of impoverished citizens, shortages of food, and other economic difficulties. However, many of Malthus's apocalyptic predictions did not come to pass. Can any of you think of an example?

M: Well, Malthus predicted that we'd have widespread famine and starvation across the world. That didn't happen. Even though there are famines in some parts of the world, Malthus's prediction was that we would see massive famines across the entire world. We don't see that happening.

W: Correct. In particular, Malthus believed that widespread famine would occur in Europe, which did not happen. Malthus also believed that social reform and higher wage increases wouldn't benefit society in the long run, because he felt that more prosperous families would have the means and the desire to have more children, thus increasing the population even more.

Now, looking at current worldwide trends, this appears to be false, because our most economically wealthy countries like the United States, Japan, and the European continent are actually experiencing *decreasing* population rates. Yes, did you have a question?

M: Yes, I just wanted to point out that Malthus also didn't really take technology into account, right?

W: Yes, Malthus did not adequately consider what advances in technology could do for mankind. Advancements in technology and science have prevented Malthus's predicted catastrophes

from taking place. In fact, experts from the UN Food and Agriculture Organization believe that with our current technology and production processes, our Earth can produce enough food to be able to sustain our current population of six billion people.

Mini Test 1

01 Sociology

M: I want to talk about a fairly new field of study called, uh, don't laugh, but it's called *garbology*. As you all can probably guess, garbology is the study of garbage, and more specifically, it is the study of landfills and the trash that overflows from them. Are we pretty clear so far? There are a couple of reasons why someone might take an interest in garbology.

For one thing, it's a way to learn about the past. Think of it this way—the study of trash kind of imitates an archaeological study. Trash items reveal valuable knowledge about the passage of time. And considering that some ancient cultures left no writing, tombs or any other artifacts, all we're left with to study is something everyone is sure to leave behind—their trash. Anyway, something else garbologists hope to learn by studying the waste that a particular population produces is their patterns of food consumption and trash disposal. Garbology can also unmask certain environmental concerns.

Just to give you a bit of background, the word "garbology" was originally coined by A.J. Weberman, a uh, a writer actually, to describe his studies as he sorted through a famous pop singer's personal trash. He wanted to uh, well, he wanted to learn more about the singer, so he could write a book on him. So anyway, I think I might have mentioned before that the study of garbage did not begin until recently. In fact, it wasn't even a legitimate academic area of study anywhere until 1971. The University of Arizona was the first to offer garbology as a course of study, which focuses on educating students about the patterns seen through the contents of trash, and even traces history through the contents. So what have garbologists learned so far?

A little garbology knowledge can go a long way, especially in deciphering the mysteries that are left by older cultures. For example, by studying food remains, garbologists can tell what kinds of food a population used to eat and what their nutrition was like. Or pieces of tools that were broken or failed could be used to learn about the types a technology a culture had developed. Finally, studying the pollen from plants found discarded in the area, garbologists can learn about the flora in the region. Do you all have any questions about how garbology is used to study the past? Good, let's keep moving on then.

In addition to learning from exploring ancient remains, garbologists also investigate trash to learn about the present. Garbology has revealed unique patterns in human behavior. For example, by studying the number of food packaging and disposable convenience items found in trash, they have been able to determine that humans are no longer relying on handmade products and cooking as they used to.

Additionally, garbology also gives some insight into the food consumption patterns between the upper, middle and lower classes. In a study, garbage was collected from different neighborhoods in search of soup cans. While the cans were relatively non-existent in the garbage of the rich, the trash from the middle-class neighborhoods were full with these cans.

What do you think that means? To begin with, the assumption is that the rich can afford to hire help with preparing meals and can also afford to eat out. Thus, there is barely any prepackaged convenience food in their trash as they have no need for it. Meanwhile, the middle-class generally looks for convenience in its food purchases. This kind of information is priceless to corporations who need to determine who their targets should be in their marketing plans.

Let's discuss one last aspect of garbology: It has helped divulge some previously unknown facts about biodegradation. See, before, it was believed that trash decomposed at rates far quicker than it really does. The reality is, many things do not even decompose at all! Plastic, for example, seems to last forever, which poses several obvious environmental problems.

Even worse than plastic is paper. Here's something that'll boggle your brains: newspapers alone make up nearly fifteen percent of the trash in landfills. What's more is that newspapers *from the 1950s* can still be found in fairly good condition. On one hand, the lack of biodegradation serves garbologists because the preserved items are easier to study. However, because of the serious predicament that the Earth is in, biodegradation, or rather, the lack of biodegradation, is an issue that needs to be addressed.

02 Psychology

W: Let's see. OK, let's continue where we left off concerning how humans form their understanding of experiences. To prepare for the discussion, I had you read about Rom Harré's idea of personal theories. Who can give the class a brief overview of the reading?

M: Well, Harré was a social construction theorist who thought that personal theories are central to the human experience. But, uh, can you explain a little more about what you mean when you say personal theories?

W: I think it helps if you consider it like this: the ways that people perceive themselves form the foundation for how they perceive the environment outside of themselves. Is that clear? So their interpretations of the world are constantly being influenced by the systems that they've created, systems that help people organize life events according to how they view themselves. These systems are called personal theories. So, there were a couple of factors that Harré thought were part of how people learn to understand themselves and the world around them. Based on the reading, can you mention any of those?

M: Um, well, I remember that one of the factors is the notion of person. That's the visible aspect of the individual. So I guess the notion of person is how people want others to view them, or uh, yeah, how you want other people to perceive you.

W: Good. And what was the other factor in the development of personal theories?

M: Isn't there also the notion of self?

W: Could you expand a little more on that?

M: Uh, I'll try . . . but to be honest, I'm not really sure I completely get this. But anyway, from what I understand, the notion of self is the privately held belief system that individuals have about themselves.

W: You're totally right. So, just to clarify, the sense of person is public whereas the sense of self is private. Are we all clear on everything so far? Great, then let's move on. You'll probably remember from your reading that Harré made a clear distinction between the social and personal aspect of the person to show how the two form a whole. Now, my question for you all is, what did Harré have to say about the role of the community in the formation of a sense of self?

M: Usually, in communities, an individual is conceived as fitting into a particular category or role, such as worker, parent, authority figure, and so it goes that the person's social being is seen as embodying this role.

W: Well put. However, within the context of this role, individuals create their own sense of self in order to have a private being. So let's say your role right now in your community is that you're a student. Within that role, you define yourself as a diligent student. In this way, you are creating your own private sense of self. Or, as a member of the community you have a public self, which is embodied in a role. However, there are personal aspects of that role, which people create as part of the role, but it's a more private sense of self. OK, now, according to Harré, are people born with a sense of self?

M: No, in fact he made a big deal out of explaining that the self and the person are not innate; but rather, they are constructed through social experiences.

W: That's it—right. And that's a key point that we'll talk about next.

03 Office Encounter

W: Professor Williams?
M: Ah, Gillian, come in. What can I help you with today?
W: Well, it's about the paper . . . uh, well, I've run into some problems. See, my aunt hasn't been well recently, and I've been spending a lot of time with her.
M: I'm sorry to hear that.
W: And, well, as for the paper, I've tried to give it my best effort, and while I've been able to form most of it, I'm afraid that I won't be submitting my best work due to my current circumstances. What should I do?
M: Really, all I can say is try your best.
W: It's just that I feel at this point, my best won't be enough. Especially because I really would like to excel in your class. I was hoping that, well, that I could have until Monday to finish my paper. I really feel that having the weekend to recuperate would allow me to produce a paper that I could actually be satisfied with.
M: I see that you've had to shift your priorities in order to tend to your aunt, but the truth is, I'm unable to give you an extension this time.
W: I don't understand. Why not?
M: Three weeks ago, you asked for an extension, and I gave you one. Unfortunately, you didn't honor the new due date. In fact, you then asked for an extension on your extension. It's always been my policy to give only one extension per student per semester. I feel that it's only fair for the other students, particularly to those who never ask for one.
W: I understand that, but given my situation, couldn't you make an exception?
M: The thing is, I already have . . . It sounds rigid, but sometimes one has to stick steadfastly to certain rules. Just for the sake of fairness.
W: OK, it's just that I would really like to do well in this class.
M: You can still do very well. You have until tomorrow to complete your paper and to reflect what you have learned in class. And if for whatever reason, you are dissatisfied with your performance on this paper, then you have other opportunities throughout the semester to redeem your grades.
W: So what would you recommend that I do?
M: Let's see, what would I recommend? Well, first and foremost, work hard on your paper, to the best of your ability. Also, you still have the final exam and the group project, both of which account for twenty percent of your grade. That's a huge chunk. In addition, you can continue to show up to class and participate, and prove to me that you do indeed want to learn.
W: OK, I understand. Thanks very much for your advice and your time.
M: Anytime. Best of luck to you on your paper. I'm sure you'll do fine.

Chapter 3 Function Questions

01 Psychology

W: Today I want to talk about the development of moral reasoning, and, uh, a theory by Lawrence Kohlberg. Kohlberg theorized that there is a specific pattern of development—that is, stages that people go through—when they are forming their moral reasoning. We'll split them into three stages—uh, levels, really, of development.
So, um, the first level is called a pre-conventional level. Kohlberg defined this level as, uh, as a stage when people are concerned only about the impact of an event on themselves. There is really not much concern for how one's decisions or events affect anyone else. Kohlberg noticed that a lot of kids' moral development was at this level. For example, if throwing a rock at someone is fun for the child, well then, that's enough to cause the action. To put it another way, if it feels good, do it! The pain caused to the person being hit by the rock is not considered. Now, the child may also be aware that doing certain things will bring about some sort of punishment. And the child might avoid any action that will get him or her in trouble. But make no mistake—there are no moral decisions being made here. Instead, the child just wants to avoid punishment. He or she doesn't avoid the bad behavior because he or she realizes it is morally . . . uh, morally wrong.
OK, moving on . . . as you may have already guessed, the next stage is the conventional stage—conventional level. Most teenagers find themselves at this level, but it can also be seen in adults as well—I mean adults who don't attain

a higher level. People at this stage start to take into account how their actions affect other people. Typically, their moral thought processes are greatly affected by society. In other words . . . hmm, how can I put this? In other words, they'll conform to the societal norms of what is thought to be right and wrong. Because society views certain things as moral or immoral, individuals begin to view them that way, also. So, what differentiates them from those in the first level is they actually have an idea of right and wrong, independent of any qualms about punishment. But they haven't quite made *their own* decisions about right and wrong yet.

So, next is the post-conventional phase. In this level, people will begin to develop their own sense of right and wrong. So, basically, they no longer really consider what society thinks is right and wrong, and they definitely aren't thinking about just punishment. They just want to do something because *they believe* it's the right thing to do. They've internalized society's ideals and made them their own, often changing societal rules in the process. Does that make sense? Now, with this phase, people begin to see how right and wrong can change in different situations. Or maybe they see different reasons for doing the right thing. Basically, right and wrong become subjective. Maybe an action is right in one situation, but not in another. I think we can all think of a situation where that would apply.

02 Philosophy

W: OK, today I want to look at two different philosophical ideas. Both have been very influential since their development, but they each have their own viewpoints on the world and on reality. In fact, though they are each based upon the metaphysical—that has to do with things that are not strictly physical, but also things like, um, truth, or causality—uh, they differ on a number of points. These ideas are objectivism and solipsism. It'll be really easy to compare them since they're so different. Let's do that now.

We'll begin with their ideas about reality. Now, objectivism is an idea that was formed by a woman named Ayn Rand. It basically theorizes that, apart from the world we know, there is another reality that is completely separate from what we perceive with our minds. So this reality is considered to be, um, independent from what we think or what our minds tell us. It's there, no matter what. But, now, solipsism is completely different. It argues that perhaps, not only is the reality we perceive with our minds the only one . . . but it is also *created by our minds*, so to speak. What I mean is, as far as solipsism is concerned, the mind is the only thing that really exists. So the two ideas are really kind of at odds with each other. They're very much opposite.

OK. They also differ in how they understand the things that make up this thing called reality. Now, in comparison with objectivism, solipsism advocates that the existence of anything outside the mind really can't be proven. What's a good example I can use? Let me think . . . All right. See that apple on the table over there? How do you know that it exists? Your mind is telling you that it exists, but what if your brain is manufacturing it? Then what? You wouldn't actually know whether your mind was creating the world around you. You would have no way of knowing if it was real or not. So that's solipsism's idea of reality.

Now let's take objectivism's view on that apple. Unlike solipsism, objectivism argues that the apple on the desk is really there. Even if you were to walk out of the room, that apple would still be there. Right? Because with objectivism, your perception of it has nothing to do with the apple's actual *existence*. Instead, the world is the way it is regardless of whether your mind perceives it. Got that? Objectivism argues that reality exists apart from your mind. Solipsism contends that, um, that your mind is the only reality.

Let's look at another way that the two philosophies vary. Objectivism suggests that a reality separate from our own minds is substantiated by our sensory perceptions—smell, touch, sight, and even things such as intuition. Solipsism, on the other hand, would argue that things outside of the mind aren't really there. All of those sensory perceptions are just the product of the mind. Remember, that's the main theme with solipsism: everything that we perceive—whether sensory or not—is simply created by the mind. Objectivism believes it actually exists, independent of . . . oh,

how can I put this . . . of how our minds function or perceive it. Really, all objectivism and solipsism have in common are their metaphysical roots; they both deal with an *idea*—the idea of reality. Their interpretations of that reality, though, are completely different.

03 Office Hours

M: Hello, Marjorie. Did you come to see how you did on the test? I don't have them graded quite yet. Although I'm sure you did quite well.
W: Thanks, Professor Maxwell, but I actually didn't come to find out about my grade. I have a little problem, and I came by to ask if you could give me some suggestions.
M: Well, sure. What's the matter?
W: I want to teach after I graduate, and I'm a little concerned because I haven't had any hands-on experience. I also want to learn to plan interesting lessons so that the students can enjoy getting their education. So I was wondering if you have any suggestions on how to get some experience.
M: Oh, I don't think you need to worry too much. You're an excellent student, and you've shown a lot of promise in all of my classes you've taken. I'm sure you'll be a wonderful teacher.
W: Still, I'd really like to have the opportunity to try teaching in a controlled setting before I graduate and get a job where I'm expected to run the class. I think it could be really helpful for me to have someone else give me tips and ideas on how to improve.
M: Well, I suppose that's understandable. I'll tell you what, we may be able to do something next semester. What would you think about doing an independent study course? You could assist me with one of the lower level classes, and get some experience.
W: That would be great. What kind of stuff would it involve? I mean, what would I do exactly?
M: You'll get to observe how I handle different situations, grade papers, make tests, and assist me in teaching. Then, toward the end of the semester, I'll permit you to teach several classes on your own. You can design the entire lesson and decide what kind of homework the students will have.
W: The only thing I would be worried about with that kind of independent study course is that I wouldn't have enough time for it. I have a pretty full schedule next semester as it is. I'm taking a full course load, and I have to work part-time, too. Plus, I'm involved with a couple of volunteer organizations that take up some of my free time.
M: It does sound like you're busy. But at least consider it. I really think that an independent study course would allow you to try out your teaching skills and learn a lot. I took a course that was very similar when I was an undergraduate, and it proved invaluable. I really depended upon what I'd learned when I got my first teaching job.
W: Well, I'll definitely think about it. I'd really like to . . . I just don't know if I have enough time, but maybe I can figure out a way to rearrange my schedule or something. Thanks, Professor Maxwell.
M: You're welcome, Marjorie. I hope you get to do that course. Let me know if you want to set it up.

04 Service Encounter

M: Hello, Nurse Garnett. How are you today?
W: Hi, Brady, I'm doing well. What can I help you with?
M: Well, um . . . I heard an announcement on the student radio station that the university alumni association offers health insurance.
W: Yes, that's right. It's really very good insurance.
M: I was wondering how I could get it after I graduate in May.
W: Since it's offered by the alumni association, the health insurance is available to any former university student, as long as the student has received his or her diploma. The only thing required is a complete physical. They just want to know what kind of health you're in before they insure you.
M: Well, I have diabetes, but other than that, I'm completely healthy.
W: Then you should have no problem getting approved for coverage once you graduate.
M: What kind of policies do they offer?
W: There are actually a lot of different options. Coverage starts out with a $1,000 deductible—that's the part you pay before the insurance kicks in—and a $45 co-pay. The co-pay just determines how much you will have to pay for basic services like a doctor's visit. The insurance will pay for the rest.

M: So basically, if it's anything minor, the insurance doesn't help at all. How much does that policy cost per month?

W: It would probably be about $150 a month for someone your age.

M: That's pretty expensive, considering it only covers major medical problems. It wouldn't even pay for my diabetes medicine, or my regular checkups.

W: True, but it is all-inclusive. The insurance the alumni association offers includes just about every kind of doctor. It will take care of specialists, eye doctors, even dentists. Most insurance companies are limited to regular doctors, maybe vision coverage, but it's very rare for an insurance policy to include coverage for dentists and specialists.

M: Well, I hope I never get sick enough to need a specialist, and I really think that extra coverage would just be a waste of money for me. I just need insurance to help cover the normal stuff—a check-up, medicine, that kind of stuff. I don't want to pay for coverage I hope to never use. I would rather just pay for those things if I have to, instead of all the time.

W: Well, no one thinks they're going to need health insurance for the bigger stuff, but the reality is, a lot of people do need extensive insurance coverage.

M: I know, but I can't afford to pay for it. I guess I'll just have to do without health insurance.

W: You shouldn't give up just yet. Go ahead and take this brochure. It explains all the benefits I mentioned in a little more detail. Think about it for a while. Really, it *is* a good insurance policy.

M: OK, I'll take it and look it over. Thanks for the information.

W: No problem. I hope it helps.

05 Business

M: I'm glad to see you all recovered from the test in our last class enough to show up today. Um, as you know, in advertising there are a number of diff . . . different mediums to consider when devising an advertising plan. And they can be pretty effective or not very effective at all. To give you an idea of the positive and negative points a certain method might have, I decided to focus on advertising in magazines. All right. Let's start with some of the more appealing aspects of magazine advertising.

First off, there are a ton of specialized magazines out there, which means you can reach your target audience very easily. They attract certain people to read them, and the readers often spend a lot of time interacting with the magazine. That means that if you can get the right kinds of advertisements in the right magazine, the readers will probably be interested in what you're selling. Does anyone know what I mean? Yes? Kayla?

W: You know, the subject material is obviously interesting to them if they subscribe to the magazine. Um . . . like a flower seed company advertising in a gardening magazine, for example.

M: Right. Another thing to factor in is that magazines are generally established businesses with a long-term customer base. These people subscribe to the magazine every year, and there is, uh, high customer loyalty. There is kind of a, um, a trust built up between the magazine and the customer. So, for example, if you are able to advertise your kitchen gadget in a cooking magazine, it's almost like the magazine is recommending the product to its customers. Another advantage to advertising in magazines is that you can be very creative with your advertisements.

W: What do you mean? I mean, how do magazines allow you to be any more creative with your advertisements . . . than any other way of advertising?

M: Well, you could do full-page ads, ad spreads—like across several pages—or angled ads. For example, on that creativity thing, have you ever seen an ad that is sideways from the way the rest of the magazine reads? Or that includes a perfume sample? These are the kinds of things customers like. Let's move on to the . . . the um, the disadvantages. Because magazines are so specialized, a lot of times, you may not be able to reach the customer base that you would like to for large-scale advertisements. If that's the case, and you have to move up to a more widespread magazine, your advertising cost will skyrocket.

W: Plus, most magazines only come out monthly or even less than that.

M: That's a good point. Since they do come out sporadically, you may not be able to have that constant advertising presence that you would get with another medium.

I just have one more disadvantage you should consider with magazine ads. Lots of companies pay money to have magazine advertisements, and often, all the ads are located around the same areas of the magazine. This means you are competing with other companies for visibility.

06 History

M: The railroad was one of the most important developments in the entire 19th century. Before the railroads were completed, it was very difficult to make the long journey across the continental United States. Its completion signaled the beginning of a new era for the young country. It was a time of many different changes, and it even altered the way of life in the West.

The Union Pacific and Central Pacific Railroads were given, um, they were given permission to build the first transcontinental railroad. The plan was for them to meet up in the middle, which they did at Promontory Point, Utah. Lawmakers approved the plan because of the changes it would effect. Um . . . one was faster travel. Another was quicker and more efficient mail service. They also hoped that the railroad would encourage settlement of the huge chunk of land that had been bought in the Louisiana Purchase.

One of the most important effects of the railroads was that towns began to spring up all along the rail lines. Farming, mining, and tourist communities were thriving. The new railways allowed people to get—have access to—things that made life a lot easier. Things like, uh, like food and supplies. People didn't have to go back east anymore to get the supplies they needed. The new availability of commercial goods encouraged people to move farther west. Got it? They wanted to try to build new lives for themselves there. Needless to say, the economy was thriving, in large part because of the good ol' railroad. It also gave people more security in some ways. In the case of an emergency, help wasn't nearly as far away. However, along with these came a number of results that lawmakers and the railroad companies themselves never could have predicted. What I mean is, long-term effects included a lot of things that people don't exactly smile on these days. Things like the death and eventual near-extinction of bison—bison being the really big, hairy animals, uh, some call buffalo, that used to be so common in the US—they became nearly extinct in most areas across the plains of the United States. As all the towns were built, oh, and people began to cultivate the land for farming . . . well, bison became a nuisance. The large herds trampled the crops. Nobody wants their wheat crops stomped into the ground. So they put up fences. Gradually, the bison began to die off. People also killed them to keep them out of their crops, or to eat for food, which decreased their numbers. Um . . . let's see. Oh, yes. The railroads also meant a change in lifestyle for the Native Americans. Their land was overtaken by new communities, and their primary food source—the bison—was being killed off. This eventually caused a number of tragic deaths through wars between the new settlers and Native Americans, as well as through wars between different groups of Native Americans vying for land.

OK. Then, another effect of the railroad was that livestock were introduced to the American West. Ranchers brought the cattle in on the trains. Now, this had all kinds of implications, to people, land, and the ecological stability of the region, as well. So listen up. First, not all people liked the livestock. The farmers didn't want them roaming free because they would ruin their crops—just like the bison, but the ranchers wanted their cattle to be able to wander and graze on the prairie grasses. Eventually the disputes between the farmers and cattlemen culminated into . . . I mean, they turned into several big fights. These were called range wars. The livestock also grazed on the food the bison ate, contributing to their decline. Plus, as if that wasn't enough, they ate so much of the prairie grass that they stripped the ground of the roots keeping it in place. With the introduction of cattle, massive amounts of the topsoil became vulnerable to erosion. It just washed away. This—in part, along with a long drought—eventually caused the famous "dust bowl" in the Great Plains of the 1930s.

So, the West couldn't stay the same—it progressed and changed. Uh, but not all the changes were good ones. A lot of people suffered, and *a lot of* conflicts resulted from the building of the railroad. The entire character of the West was forever altered. You might want to think about that. It was a really important time in the history of the United States.

07 Office Hours

W: Professor Bentley? Can I come in and ask you about the research paper for your political science class?
M: Of course, Meredith. Are you having problems with the paper?
W: Kind of. It's just so long . . . I feel overwhelmed. I don't really know where to start on it. I've been working on the research for a while, but I don't know what to include and what to leave out.
M: Well, to start with, what is your paper going to be about?
W: I decided to cover the political structure of France. There's plenty of information, but it's almost too much. I mean, you mentioned that you wanted a section on the country's history, but France has so many years of history! I just don't know how to narrow it down.
M: Well, since the overall paper is not supposed to exceed forty pages, including footnotes and all, you could devote around ten pages to the history. Try going through the research and sketching a timeline for the development of France.
W: I'm not sure how that will help . . . it would take forever to make an accurate historical timeline.
M: Well, that's true, if you put in everything that ever happened. Instead, eliminate all the . . . the extra stuff, you know, that didn't really have much to do with how the country formed. Just put in the big events, like the French revolution, or any other major power shifts. Even the more minor wars don't need to be covered. The history of the country is just supposed to give, um, kind of a background for the political structures.
W: OK, I can do that. Oh, yeah, what kind of sources are best? I have a lot of different kinds, but I've heard that you prefer certain ones.
M: Yes, I do. I don't want any random websites or magazine articles. All of your information should be from academic sources. Like academic journals, quarterlies, and research publications. Also, you can use educational websites, such as those posted by other universities. Otherwise, I really don't want any online resources. Books are always fine, of course. Our library has a good selection, but then I'm sure you've probably already found them.
W: Yeah. But how should I organize the information? I know that the requirements for the paper include the history, the country's future political outlook, and how the different parts of the government interact, but I don't see how that will transition very well.
M: Well, that's really for you to determine, but I think I would start with the history, then describe the type of government in the country, how it functions, and finish with the outlook. It seems to kind of go in an order that is logical. You want to make sure that you don't start describing something that your reader hasn't been properly introduced to establish a . . . a basis for what follows. Your reader has to have some concept of what you're talking about.
W: That sounds good. I just don't know how I'm going to get a forty-page paper done in the next four weeks.
M: Meredith, I told the class about this research paper at the beginning of the semester. I even gave you an example so that you would know how extensive it would be. You should have a good portion of it—at least twenty pages—written already. It's worth fifty percent of your grade, after all.
W: I know, and I did start researching it right away. But then I got overwhelmed, and spent too much time going through all that information before I came to talk to you.
M: I'm sure that if you try hard you can get it done in time. I would suggest you get busy, though. Set a goal for a certain number of pages to complete each day. That should help keep you on the right track. Just make sure that you leave yourself enough time to read over it and make any corrections it needs.
W: I will. Um . . . thanks for your help, Professor Bentley. I have to go. I have a literature class in ten minutes, but I appreciate your advice.
M: Oh, you're welcome. I'll see you in class, Meredith.

08 Service Encounter

M: Hi, I need to sell my books back. I have a huge stack of them.
W: OK, let's see what we can do. Um . . . I can take all of them back except this one.
M: Oh, you mean my biology book?
W: No, your *Fundamentals of Psychology* textbook.
M: You can't take that one back? But it's still in really good condition. I made sure to take care of it so that it would still be worth a lot.

W: It is in very good condition, but I'm afraid that the university just won't take it back. I'm sorry. Sometimes books just aren't bought back.

M: But why wouldn't the university want it back? It was brand new when I bought it, and it was the most recent edition. It even still has the CD-ROM that I didn't even use. It was really a pretty good book.

W: I know, but that doesn't mean we can take it back.

M: Well, why wouldn't the bookstore want it?

W: The textbook companies issue new editions at different times, and they probably just released a new one. Even if your book was the most recent edition when you bought it, that doesn't mean it's still current. A lot of publishing companies offer new editions very frequently.

M: This book cost me $115, and I only used it for one semester. Isn't there anything else I can do with it? Can you give me any suggestions?

W: I understand why you're upset, but maybe there is another option that you can check into.

M: Really? What's that?

W: The university bookstore has a textbook trading website that allows students from all branches of the university to get into contact with one another and exchange books. You just post the textbook information, what class it was used for, and how much you believe it's worth. You should also include a list of textbooks you'd be willing to trade it for, and the classes they are for. Then you can browse and look for someone who has a book you want and who also needs the book you have. It works very well.

M: It sounds like a good idea, but what if I don't want to actually trade it, I just want to get cash for it?

W: If you get on the website, you'll start out at the homepage. You have to input your student ID number so that the university knows you're using their website. Then you are required to post your textbook profile—that's the textbook information I was talking about. But then you choose whether you'd prefer a trade or a straight buy. If you click the straight buy, the website organizes the offers you receive for your textbook over a certain period of time. The only catch is, at the end of the time period, you have to take the highest offer, no matter how unreasonable you may think it is.

M: Well, I guess that would be OK. I would still be getting more than I would get for it otherwise. I just can't believe I actually have to do that or trade it. I never would have thought that the bookstore wouldn't take it back.

W: That's just the way things go sometimes. Here, let me write that website down for you. And remember to put the little number on the back of the book on the textbook profile. It's near the barcode. A lot of textbooks have similar titles, and if you forget the number, it can be hard for students to determine if it's the right book other students are looking for.

M: Thanks, I'll remember that. Do you have any other tips?

W: Well . . . sometimes a picture of the book's cover can help, too. Students can do a search for the subject, then browse through pictures. If someone sees the book's picture, they know it's the right one, and they'll usually bid on it right away.

M: Great. Thanks for all your help. I'm definitely going to try out that trading website.

W: Sure. If you have any problems, you can come by and ask me. See you later.

09 Environmental Science

W: OK. We've been discussing some of the consequences of the use of nuclear materials on our planet—some of the accidents that have been caused, the impact on wildlife, things like that. To finish up our chapter on nuclear problems, we're going to cover how nuclear waste is disposed of. This is a huge problem. With all the nuclear power plants, the nuclear applications used by militaries around the world, and even the industrial use of nuclear material, there is an excessive amount of nuclear waste to dispose of. The problem is, the options are limited. I mean, you can't just pile nuclear waste into your local landfill. It takes thousands of years before the radioactive isotopes start to decay and they aren't dangerous anymore. So what do you do with all that unstable waste?

Well, one of the most common ways of getting rid of, um, nuclear waste is to process it to make it more stable. This can be done using a process called vitrification. Basically, all it is,

is adding sugar and lithium and then spinning it really fast in a hot cylinder. It can also be condensed into a smaller volume by using ion exchange, or mixing it with special chemicals. Then it's sealed in a steel drum. I'm not talking about the kind of drum musicians use! I mean a huge steel barrel that is welded shut and then washed thoroughly. Of course, after that, you still have to put the drums somewhere, because there is still a chance that the radioactive material will corrode the steel and seep out.

Also, another problem with the radioactive waste is actually storing it. There are a lot of, uh . . . a lot of ideas on this. And, you know, there um, there isn't any answer that makes everyone happy. But one thing to do with nuclear waste is to simply store it in huge storage bunkers. Scientists can kind of watch it then, monitor it to make sure it doesn't leak. Plus, the really dangerous parts start to decay after a few decades. So if they do decide to do something else with them, it's not as much of a risk of contaminating things that are exposed to it. OK. So, that's one way of disposing of nuclear waste.

Another common way of disposing of it is to put it in a secluded area of the environment—you know, like underwater or buried underground. Oh, yes . . . this neutralizes its immediate danger to humans, but the danger to the environment is still massive. I mean, who knows what it could do to the vegetation and the animals in the area? Underwater, it could put marine creatures at risk. A lot of people are concerned that—long-term, anyway—this could cause even more damage than most of the other options. They don't want to put the environment at risk just to store nuclear material.

Transmutation is an option that is being explored as well. It, uh, it involves . . . it's kind of like changing the chemical makeup of the radioactive material into a type of nuclear waste that is less radioactive. It uses nuclear reactors to process the material and make it less dangerous.

Transmutation also allows it to be used in some kinds of industrial processes, so that it is "recycled" in a way. Now, the . . . there's one more possibility I want to discuss with you. That's disposing of radioactive waste in space. Some people don't want nuclear material just floating in space. But a lot of people like this idea because it wouldn't have any direct effects on the environment—the ground would be safe, the animals would be safe, the food would be safe. However, there are several, um, several disadvantages. For one, it would take *a lot* of trips to space to get rid of all our used nuclear material. This makes it financially unfeasible. Another reason disposing of nuclear waste in space is unappealing is that there is the possibility of a severe nuclear accident if one of the rockets carrying the material crashed.

10 Art History

M: All right, everybody. We've taken a look at a lot of sculptures lately, but consider how they were made for a moment, instead of just their beauty. Today we're going to talk about the different methods that can be used in sculpture. Specifically, we're going to discuss—uh, modeling, carving, assembling, and casting. We're going to talk about how to distinguish between them.

Anyway, I want to talk to you about the different types of additive and subtractive methods, and then consider a few famous pieces of sculpture. Oh, um, additive just means that you add things one by one, and subtractive means that you start with a big chunk of something and remove pieces. We'll go ahead and talk about the additive ones first. First off, modeling. Modeling involves the use of clay and, well, the basic idea of modeling is to continue adding a material until you have a finished product. So, in the case of clay, the process always starts with something to work the clay around. It's usually some kind of core . . . or some kind of a framework to give the sculpture its structural strength. Then, the clay is formed into a representation of, say, a person or something. People have used modeling for thousands of years. Anybody have any ideas of some kind of famous sculpture that was modeled?

W: What about those terra cotta soldier statues found in the ground in China? Were they modeled?

M: They sure were. Generally, you can tell if a sculpture was modeled—and therefore, additive—by how it was made. For example, if the sculpture has a core and it was made of clay, it was modeled. Terra cotta is clay that has been baked in a special oven, so it was modeled. Is everyone ready to move on to the next one?

OK, the next additive method is called casting. It's actually very similar to the modeling method in one important way: casting first requires a model. OK, so casting involves a mold, which is basically just the outer shell of what the sculpture will look like. Then, some sort of material is poured into the mold and allowed to solidify. These materials can include a lot of different things: metals, sand, concrete . . . It's a very versatile sculpture method. Once the material has hardened, the mold is removed and the sculpture is complete. OK, so does anyone want to offer an example?

W: There's a statue in Venice, Italy of a man on a horse. I learned about it in another class, but I forget what it's called. I'm pretty sure it was made with a cast, though.

M: You're right. It's called the *Equestrian Monument of Colleoni*. The sculpture was made with bronze. The melted bronze was poured into a cast, it hardened, and the sculpture was complete. OK, let's go ahead and move on. We'll talk now about assembling. It's an additive process that is characterized of mat—by materials being used together to form something.

W: Wait, I thought that was modeling.

M: Oh, I guess I should clarify. Now, while modeling involved a core and one material, assembling just . . . let me think of the best way to say this . . . it really just puts different materials together. This is actually done quite often with metals. The metals are actually fastened together or sometimes just placed on or near each other. Does anyone want to try to give an example of assembling?

W: This might be a long shot, but I've seen a lot of art from a guy—David Smith was his name, I think. And he would just take a bunch of stuff—stuff from a junkyard, garbage basically—and he'd put it together and make a sculpture out of it.

M: Yes, actually, David Smith is a great example. He actually has an interesting story: after learning about welding in an automobile factory, he decided to apply that knowledge to art. So he began putting old metal parts together to make art. Now, he's one of the most famous sculptors of the 20th century.

OK, let me move on to the last one. You all know what carving is, right? Basically, you start with a big piece of material—wood is very common—and you use some sort of tool to take pieces away. This, of course, is a subtractive method. And, well, I'll offer an example this time. Do you know Michelangelo's famous statue *David*? That was made using a big piece of solid marble, and Michelangelo just chipped away at the block. That's right! There are a number of important sculptures in history that were made using carving, and *David* is one of them.

Chapter 4 Stance Questions

01 Economics

M: We've been talking about inflation and its effects, usually bad but sometimes good, on the economy. Now, remember, inflation is a situation when the value, the uh, the purchasing power of money goes down. A dollar today doesn't buy as much as it did, say, yesterday, or last year, or whenever. It causes prices to go up. But today, let's talk about *stagflation*. Stagflation is the combination of inflation and a stagnant economy in which production actually falls.

So, basically, uh, today I want to illustrate stagflation by using a specific event . . . and, uh, I'll show you how that event caused the different negative effects that led to stagflation: high prices and a stagnant economy. It takes distinctive conditions to, uh, to create stagflation in the economy, like during the 1973 oil crisis. The United States, and most of the rest of the world, for that matter, relies upon something called OPEC for its oil. OPEC, or the Organization of Petroleum-Exporting Countries, is basically a partnership that collectively produces most of the oil in the world and so can strongly influence the price of oil. The oil crisis began as OPEC announced it would no longer export oil to the US.This action had a number of consequences . . . all of which led to the period of stagflation.

The price of raw oil in the US went up . . . lots . . . like,130 percent, since these producers no longer sold their oil there. This means that the US gasoline manufacturers had to raise the price of gas. I mean, they still had to make a profit, right? So to compensate for the, uh, the increased oil prices, they lowered gas production. You see, I could show you what I mean with a bunch of graphs and mathematical formulas,

but really, I'm afraid that would just complicate the issue. Of course graphs and formulas are important, but right now, in this class, I just want to describe why companies lower production and what results from that action.

Here we go: OK, there's a really good reason, well, for *the oil companies*, anyway! Yeah, so there's a really good reason that companies lowered their production. And in this case, I mean that the American gasoline manufacturers lowered their production of gasoline. You see, when you lower production, the price goes up. Makes sense? No? OK, well, think about it this way: if there is less of any given product, people will pay more for it. Yeah, if something's scarce, then they'll typically pay more for that product than they would if there were a lot of it. So the US oil companies raised the price of gas, which in turn caused an increase in gas prices.

But here's the problem for the gasoline producers—they're not making any more profit, because as you'll remember, the price of the raw material, oil, went up. So hey, prices went up for the consumer. And if I can put in my two-cents' worth, uh, my opinion is that there aren't too many things worse for an economy than this. So you end up with a stagnant economy along with inflation . . . what do we call it? Stagflation!

02 Business

W: Today, I'd like to talk about a sales model known as "direct selling." So let's start right off with a definition, shall we? Direct selling is just like it sounds: direct. As in, um, directly to the customer, a sale made directly to the consumer. You all know that products are typically sold in stores or um, well, over the *Internet* these days. In direct sales, the customer doesn't necessarily have to even enter a *store* at all. Direct sales is a way of selling a product directly to the customer without using a shop or an agent. For example, a knife manufacturer may sell its knives directly to the consumer . . . without using a store, for instance.

There are a number of different methods a company can use to sell directly to the public. And um, let's go over those now. The first one here, I'm sure you're all quite aware of: a lot of direct sales are made through telephone calls to consumers. They're those annoying phone calls you always get during dinner. You know, the kind that gives you a long explanation of why their product is so good, and how low the price is. Usually, they start out with some kind of a question. The question that is phrased in such a way that most people will keep listening, thus, uh, thus giving the seller a chance to make the sale. That's one method of direct selling.

Another important way to sell directly is through the use of seminars. Have you ever gotten a letter in the mail saying that you'll get *a free gift* if you come to some presentation about something? You're curious, so you go, right? Who wouldn't want a free gift? Then you go to the presentation and find out that they just wanted to get you there to *sell you something*? Ugh! That's the seminar approach. Quite often, these are seen in the form of money-making seminars. The seminar might be on oh, let's see . . . how to make money in real estate, how to make money in the stock market, and so on. You get a free gift for showing up, but of course at the end of the seminar, a sales pitch is made. Usually, they want to sell you books or tapes that offer more in-depth information on what was presented in the seminar.

And last but certainly not least, we have demonstrations. Salespeople love to use demonstrations. A demonstration, sometimes called *a product demonstration*, is when a salesperson actually shows you how to use the product. It's a great way to attract buyers, and well, frankly, I think they're kind of fun. You see these all the time at fairs and exhibitions. I often take a seat and enjoy them myself at such events. They're not typically very formal, and during them, the salesperson can not only describe the product's benefits, but can also show the potential customer how to use the products.

03 Office Hours

M: Hello, Allison. I'm glad to see you're feeling better. That must have been a pretty bad strain of the flu you got for you to miss three of my classes in a row.

W: It was terrible, but I *am* feeling much better now, thanks.

M: What can I help you with?

W: Well, I'm actually concerned about my sculpture. Since I was out sick for so many classes, I'm not as far along as the rest of the class. I talked to Jainie, and she's nearly done with her sculpture. So is Tom. And Tom told me that you moved the due date up a week and a half. I'm just not sure I can get my entire sculpture project done in time.

M: You should be able to catch up from those missed classes during studio times. That's actually why we have the studio open after classes and during the evenings. I know it can be hard to finish an entire project if you miss classes, but if you just spend some extra time in the studio, it shouldn't be too much of an ordeal.

W: Ideally, that's true, but every time I go to the studio, it's completely full. There isn't a single table open, and all the tools are being used, too. Last time I went, I even tried to squeeze in at this one table. It was so crowded that somebody accidentally hit my elbow. It damaged my work so badly that I had to completely redo part of my sculpture.

M: Now, Allison, I know that the studio can get a little crowded at times, but this is a class that requires work outside the classroom. It's a studio course, and you're getting credit for it. That means that you need to find times to go to the studio when it isn't occupied.

W: I know, Professor Brighton, I just don't know when that is. Do you have any suggestions?

M: Well, you could try going early in the morning. I know the thought isn't pleasant, but the studio is open from seven until nine, when the first class starts. I know for a fact the studio isn't busy then.

W: I'm really not a morning person . . . any other ideas?

M: You know, since you were sick, you might have to make some sacrifices in order to get it done. I mean, I . . . well, you still have to keep up even if it's not easy, right? But, OK, OK, anyway, let me think . . . Maybe you could ask another student to go to the studio at a different time so that you could go later. You said that Jainie was almost through. Maybe she'd even be willing to forego one of her visits to the studio.

W: That's a great idea! Maybe if she isn't willing to do that, Tom would be. Then I could get my work done, and still not have to get up so early. Thanks for the suggestions, Professor Brighton. I'm sure I'll be able to get one of them to help me out.

M: Not a problem at all. I'm glad I could help. Just make sure you get that project done by the twentieth—that's the new due date. I'll see you later, Allison.

04 Service Encounter

W: Hi, can I help you with something?

M: Yes. Uh, my mom called and told me she sent a package to me using express mail, and I should have gotten it today. But it wasn't at my dorm, and it was supposed to be delivered there. So I thought maybe the mail center got it by mistake. It's kind of important, too—it's my birth certificate. I really hope it isn't lost.

W: Yeah, I uh . . . I see what you mean. You don't want to lose that. Well, we usually get packages fairly early in the morning. I checked the storeroom earlier, and there wasn't a package back there. Plus, all the packages we receive are entered into the computer system, and there aren't any packages mentioned in today's records. Hmm. It's your birth certificate, you say?

M: Yeah. My mom put it in one of the big document envelopes with the bubble wrap inside them. I think she may have sent it registered mail.

W: Wait, I'm confused. I thought you said she sent it express. The kind of mail service she used could affect when it's delivered. Maybe she sent it the wrong way, and it will be here tomorrow.

M: I don't think so. She did send it by express mail, but I think she also registered it so that if it was lost, there would be a record of it.

W: I'm really not sure what to tell you. Did you check with the dorm staff? Maybe they have it. Maybe you should verify that none of the other dorms have received it in error. Maybe it was delivered to the wrong one or something.

M: That could take a while. How many dorms are there in all, again?

W: Uh, let's see. There's Davis Dorm, there's Winters Hall, um . . . Fairbanks, Underwood, Parsons . . . you're right, there are quite a few. I think there are close to seven. But I really think that might be your best option. I really don't know of anything else for you to do.

M: I guess I'd better get started, then. It's going to be a long day. I sure wish they would have just delivered it to my dorm.

W: Well, there's no need for you to walk around the whole campus from dorm to dorm. I have a list of the dorm phone numbers. Try calling them, first. Then, if one of them has it, you can just go to that one, instead of walking all over. I'll bet one of them got it. Do you know what day your mom sent it?

M: I think she mailed it on Tuesday, but it may have been Wednesday, I guess.

W: Either way, if she mailed it express, you should have gotten it by now. I'd definitely check the dorms. Here is that directory of phone numbers. In fact, I'll bet you'll find it there. This has happened in the past and the missing package always shows up at a different dorm. So I wouldn't worry, but now you know what to check, OK?

M: OK, well, thanks.

W: Good luck. I'll keep my eyes open here, too, just in case it shows up. Actually, let me write your name and number down so that I can contact you if I find out anything.

M: Sure. It's Brian Masters, and my dorm phone number is 555-4281. Thanks for your help.

05 Environmental Science

W: OK, so everybody talks about all the pollution that goes into the air, but doesn't nature have ways to take it out? Actually—and this might surprise some of you—the answer is yes. There are actually four different ways that nature takes particles of various . . . uh, various kinds of pollution out of the air. So everyone, get out your notebooks and write this down, because it will be in a pop quiz sometime in the near future.

The first way that nature takes bits and pieces of stuff out of the air is through good old-fashioned rain. Bet you didn't know that, did you? It's called rain out. Does anyone have a guess as to how rain helps lessen pollution?

M: Is it because the moisture of . . . um, well, it kind of traps the pollution as it comes down?

W: You're on the right track, but that's not it exactly. You see, rain drops start to actually form *around* the pollution. Think about it this way. In order for condensation to occur, there has to be something for the moisture to condense on. Well, the pollution in the air is what the rain condenses around. Then, when it rains, the pollutants fall down to the ground and get absorbed into the soil. By the way, if you put "rain" on your quiz, you'll get it wrong. Rain out. Got it?

Let's move on to . . . oh, yes, sedimentation. OK. Say a volcano erupts. It spews huge plumes of ash and soot into the air. It lingers there a few days . . . and then what?

M: It falls to the ground.

W: Exactly! But why? Anyone know? No? OK, well, it's because of gravity. Basically, many pollution particles are actually heavier than air. So, if this is the case, they'll just fall back down to the Earth. It doesn't get much easier than that, so without further discussion, let's move from sedimentation to the next, um, the next way that nature sort of cleans itself.

Next up is something with a long name: photodissociation. It's not quite as complicated as it sounds, though, so don't worry. What it is . . . it's, um, well, it's where radiation from the sun breaks down all the chemicals in the air. It breaks them into other things. I feel like I'm not explaining this well. Basically, the sun's radiation can break down chemical bonds. So, if there is an O_3 particle, which is ozone, sunlight can break it down into O_2: oxygen. So, as you can see, the sun depletes the amount of ozone in the air.

Finally, we have oxidation. It's where oxygen *combines* with other elements to form something else altogether.

M: You mean like with acid rain? I heard something about oxidation having something to do with acid rain.

W: Acid rain is definitely an example of oxidation. The oxygen combines with the sulfuric dioxide in the air, and well, through a lengthy process that I'm not going to get into in this class, well it forms acid rain. And like rain out, the pollution gets placed back into the soil. And by the way, this last method is a big problem, because when the acid comes down, it kills trees. So the air may be cleaner, but there's pollution on the ground.

06 Business

M: All right. Productivity is always an important concern in business. It can either make your business succeed or fail. If your employees aren't productive, there's little chance that your business will succeed. The converse is also true. If your workers are productive, there's little chance it will fail . . . at least, way less of a chance. There are still lots of other factors that can make a business fail . . . but anyway, what we're going to be talking about today has to do with productivity. It's called the Hawthorne Effect. Basically, the Hawthorne Effect states that a simple increase in the attention that a worker gets will increase his or her productivity. Sounds pretty unlikely, I know, but that's what the theory says. But, as you can imagine, there's a lot of debate about whether it exists. See, in the 1920s, a factory started doing these experiments on how different changes affected their employees' productivity. Uh, this factory was called Hawthorne Works, which is where the Hawthorne Effect got its name. Anyway, this factory brought in lots of researchers to conduct their experiments. So, today I'll just talk about the experiments they did—uh, the ones that support the Hawthorne Effect and those that don't, and I'll let you all make your own decisions.

In the first tests, they altered the lighting in the factory, then measured the amount of productivity. Now, I don't know about you, but I would think that if the workers had more light, rather than less light, they would be more productive. But actually, the initial findings suggested that the lighting really didn't matter. See, the researchers found that, regardless of the lighting, the productivity in the factory went up. This is puzzling. I mean, why would the productivity go up seemingly for no reason? Either there should be no effect at all, or there should be some correlation between light level and productivity. So the scientists at Hawthorne Works got this idea. They thought that maybe it was just because extra attention was being devoted to the workers. So, because they were getting more attention, the workers performed better.

A later test seemed to support the Hawthorne Effect. The researchers recorded that this time, when the subjects were moved to another room, they were consistently more productive, regardless of anything else that was done. They felt that this was due to the extra attention the employees received, but I don't really believe it. Subsequent review of the experiments revealed other facts. What do I mean? Well, the room the workers were moved to had better lighting, more air flow, and, on top of that, it was quieter. So there are actually quite a few reasons that could have caused the increased productivity—not just the extra attention. There are a few other things that help to disprove the Hawthorne Effect.

In one experiment, the researchers began with the subjects in the same room, and measured how productive they were. Then, they took them to a different work area and measured it again. Everything stayed pretty much the same. However, the researchers then gave the subjects breaks. This caused a notable increase in their productivity. When they returned to their original work areas without breaks, their productivity fell. Therefore, the researchers concluded that the attention really had nothing to do with it. The breaks caused the increase in productivity.

Another experiment done at Hawthorne Works also seems to undermine the Hawthorne Effect. It also reinforces what the scientists learned with the last experiment I mentioned. Just like . . . just like um, in the . . . the last one, the workers were moved to a different work area, but the workers didn't speed up. In fact, individual workers accommodated to the average speed of all the workers combined . . . there were no great workers, no terrible workers, *only average workers*. What I mean is, and this is really fascinating, even if a worker was particularly fast, he or she would slow down so that he or she wouldn't make the whole group look bad. Interesting, huh? But this really seems to contradict the idea of the Hawthorne Effect. I mean, if it was just the attention causing increased productivity, the workers in each of these experiments should have done better. But they didn't. So basically, the whole idea of the "Hawthorne Effect" has been called into question, and with good reason.

So, while the Hawthorne Effect may be one of the most well-known ideas about productivity, extra attention toward your employees may not *really* cause them to do better. Instead, your best bet is better working conditions and salary.

07 Office Hours

M: Professor Stevenson?
W: Yes? What can I help you with, Dan?
M: Well, I noticed in the campus newspaper yesterday that you had placed an advertisement for a research assistant position. I was hoping that you could describe what's expected a little for me. I might be interested in it.
W: Well, it's a two-semester commitment; I don't want to hire someone and then have to find someone else halfway through the research. So, I guess, first of all, can you commit to two semesters as a research assistant? It takes quite a bit of time.
M: I'm not taking a full course load next semester, and I had planned on taking it easy the following semester, too. So I don't think the amount of time should be a big deal. Two semesters is fine. I mean, one or two or even three is OK by me. Whatever.
W: OK. I need someone who can help me with both field and laboratory research. Basically, you need to know laboratory rules and have a good knowledge of chemical interactions. What kind of chemistry classes have you had?
M: I'm actually majoring in chemistry, and I'm a junior this year, so I've completed quite a few. I can bring you my transcript—what I have so far—if you want.
W: That wouldn't hurt. I usually don't require transcripts, but hey, since you're offering . . . I really need to know what level of chemistry you are at right now. Um, also, a lot of the job is just observation. You'll accompany me during field studies, and you should really be able to pay close attention to the smallest details. I can't have my research assistant missing something, or it could compromise the whole experiment. Are you detail-oriented?
M: Very. I'm also really organized, so keeping track of massive amounts of information is pretty easy for me. I also don't usually misplace things.
W: Wonderful! But the most important thing is, do you have any relevant experience? You know, like with a research firm, or something like that?
M: I've never had the privilege of working with a research firm, but I worked for a forensic laboratory analyzing various samples during my sophomore year. I know how to use all kinds of microscopes, DNA analysis software, and . . . well, all sorts of stuff like that.
W: It sounds like you might be a good candidate. You certainly have the right experience. What we're going to do is test water samples in the area for dangerous chemicals. Then we'll take blood samples of people who live in the area and look for those same harmful chemicals in their blood samples. I'm looking for any correlation between the presence of hazardous substances in the body and high levels of the same substances in the communities' water supplies. It's going to be fairly involved, and I want to make these tests and measurements in our subjects and in the water several times a month. Which means we'll be very busy.
M: It sounds like it would be very interesting work. What does the application process involve?
W: Well, first, of course, you . . . you, uh, have to fill out a paper application. I also require three different professional references and a chemistry examination. Then, I conduct an extensive interview. There's also a one-week probationary period, during which I can decide if you're the right candidate for the job. After that time, you'll be permanent for the entire length of the research project.
M: Does this job provide any credit hours, by chance?
W: It doesn't count for any credit hours, since it is a paid position, but it can be used in substitution for an upper-level chemistry course if you are awarded the assistantship. Also, this is the sort of thing that most graduate schools look for on an application for graduate studies. It really looks impressive to have worked on a professional research study. Plus, if you do get the position, and I decide to publish the research—I generally do, by the way—your name will be on it as well, which can also be added to your résumé when you're looking for a job after you graduate.
M: It sounds like it is a great opportunity to learn more and to build up my credentials. When is the application deadline?
W: It has to be submitted by five p.m. on September 17th. If any part of it is left blank, it won't be accepted, so make sure you fill it out completely.

08 Service Encounter

W: Hi, I was wondering if you could help me with something.

M: Well, I guess that depends on the problem. What's your question?

W: I want to get signed up for work study again next semester. Can you check my financial aid status and see if I'll still be eligible?

M: Sure . . . uh, you'll still be able to qualify, but unfortunately, my information says that the deadline for applying was on the—let me see—twenty-ninth. Unfortunately, a deadline's a deadline. There's nothing we can do about that.

W: Wait a sec. What is today? I thought it was the twenty-seventh.

M: It is, but the deadline was actually last month, not this month. I'm sorry, but that means you won't be getting any work study. Once the deadline has passed, there's really no way to submit a work study application and get all of the required processing, signatures, and approval done. It's really a very strict deadline.

W: Oh. Well, I work in the admissions office and I really enjoy it. Isn't there some way to still get work study?

M: No, there's not. I wish I could help, but there's really not anything I can do. And I have more bad news. I used to work in the admissions office when I was still a student here, and they don't allow non-work study students to work there.

W: Maybe they could make an exception? You know, since I still qualify for work study, but I didn't apply in time. I already know the job, and I like it a lot. Plus, it's my last semester. I would rather not have to learn a brand new job for just one semester.

M: Hmm . . . let me think for a minute. Um, you might be able to file a petition for exception with the director of admissions. You have to fill out the petition, and then write a brief essay about why you should be granted the exception. They look at your work record, your grades, and your character, and then make a decision based on the composite—you know, how good of an employee and student you are.

W: OK. I should be considered a pretty good employee, and I have a 4.0 grade average. Then what?

M: Well, if you check out, they may decide to let you go ahead and keep working there. But you should know, it's pretty rare for them to grant a petition of exception to the work study rule. Generally, they prefer to keep those positions open for students who are actually receiving work study aid. There are a lot of good positions that are for students that don't quality for work study. In fact, if you check around you might be able to find one you like better. Uh . . . there may even be a different kind of position open in the admissions office. A lot of times, the different departments will have several different positions, and only a few of them are work study. At least that way, you wouldn't have to change offices or work environment. You'd still be working with the same people.

W: I guess that might work. I'd still like to keep my other job, though. Do you think you could get me one of those petition forms? I'm going to fill it out, and if my petition for exception is refused, then I'll think about finding another job. Hopefully that won't happen, it'll be accepted, and I'll have my old job back.

M: That would be nice. Here's that form. Now, make sure you include your entire work history at the university. So if you've ever had a work study job in another department, put it down under work experience. And you'll also want to make sure to fill out the part about your current course load and your major and minor. The department directors like to know that stuff so that they can determine whether the job you're doing is applicable to your major.

W: OK. Is there anything else?

M: Not that I'm aware of. You might include a couple of references. After you submit the form, you'll probably have to wait about a week while they check into everything. Then they'll contact you and interview you about your petition. You should have some idea about whether they have approved it or not by the end of the week after next.

W: Thanks for all your help.

09 Anthropology

M: Major changes in how people gathered food occurred during a period of time known as the Pleistocene Epoch, which was, oh, it was from about 1.6 million years ago to roughly 10,000 ago. And as with anything in anthropology, well, there was a good reason for this change. You see, during this time, the population exploded. More people meant that the old methods of gathering food were no longer sufficient. Yeah, so, it was during this time that people came up with the idea of *broad-spectrum collecting*. Suddenly, people started eating things they hadn't before . . . oh, things like shellfish, clams and oysters, for instance. And really, they ate anything they could find! Well, that was edible, anyway.

Let me explain broad-spectrum collecting now. You see, during much of the Pleistocene Epoch, people could more easily gather enough food to feed their families. They picked berries or gathered different fruits, and dug up nutritious roots and vegetables to eat. They also hunted for large game, um, animals, a lot. But for some reason, toward the end of the Pleistocene Epoch, people began to look for more varied sources of food. This is what is known as broad-spectrum collecting. This . . . this, is uh, basically just a fancy name for eating a broader spectrum—oh, sorry—for eating a greater variety of foods than they used to. They sought out a more diverse selection of food types.

Now, there are a lot of different ideas about why people started looking for different sources of food. The population increase isn't in question; it is really an acknowledged fact that there was a larger number of people in the Pleistocene era. But it's actually kind of controversial about why broad-spectrum collecting began to develop, and how this population explosion impacted the hunting and gathering of food. Some people, for example, they, um, think that the population increase caused people to hunt too many of the larger animals. So many, in fact, that the animals weren't able to reproduce fast enough to maintain their numbers. This is what is known as the overkill hypothesis, and it's really, well, if you ask me, it's the most reasonable. Basically, all kinds of animals seemed to become extinct—or at least, there were a lot fewer of them—during this time.

But hey, regardless what I think, this idea is disputed by a lot of people, who think that these extinctions were simply the result of climate changes. They say that in order for such large numbers of varied species to become extinct, the climate would have to be the reason for the change in gathering habits. But—listen up—these extinctions followed the movement of human beings around the world. So I mean as people moved into the until-then uninhabited parts of the world, oh, like North America and Australia, well, the extinctions followed. This really seems to indicate that hunting had a large part in these die-offs. So yeah, these extinctions, well, they happened *worldwide*—wherever there were humans. Now, unless the climate changes were uniform around the globe, it is far less likely that they were responsible for broad-spectrum gathering. Human population, on the other hand, was consistent in its trends: it was going up.

Broad-spectrum collecting also accounts for the fact that much of the food people began to eat was work-intensive to gather or hunt. If other sources of food were more readily available, it is much less likely that people would invest the time necessary to track down these other sources of food and prepare them for eating. A good example is shellfish. A lot of kinds of shellfish have an outer shell, which makes preparation far more time consuming.

With all the demands already placed on humans' time, it seems . . . what's the word? Unlikely, I guess. It seems unlikely they would take extra time to find this food and prepare it unless their other options were limited due to overkill. OK . . . I know there are a few more things I wanted to cover. Oh, yes. There's one more reason the overkill theory seems plausible to me, and that is that people were simply not eating so well . . . they weren't getting the nutrition they needed. Now, you might think that if they were eating from a wider variety of food sources, they should have had better diets. But the fact is, if these people were used to eating easily accessible food, and that food started dying off, they would be forced to begin finding alternate food sources. It's not that they were eating different foods that they liked better; they were eating whatever they could find, regardless of whether it was good for them or not.

10 Biology

W: Before we begin, I want to remind you all that your papers on animal intelligence are due next week, and that each group will be responsible for a ten-minute presentation on their particular topic. With that in mind, you may want to pay extra close attention to today's lecture, which should be pretty interesting. It's about medicine, and in particular, I'm going to talk about animals that, well, animals that take and use medicine.

M: What do you mean? They know that certain things can help them recover from illnesses?

W: I thought my little introduction might surprise or, well, even confuse some of you. And to answer your question, Tom, no, not exactly, but you have the right idea. You see, animals seem to know that certain plants can help them with sickness.

M: I really don't see how an animal could be aware of the medicinal properties of a plant. I mean, it's more likely that they just eat this stuff because they ate it before, and maybe it happened to help with a common problem. Or maybe the animals eat the plant because it's part of their diet anyway. And they happen to gain some other benefit just because they eat it.

W: Well, you could think of it that way if you wanted to, I suppose, but if you did, you'd be wrong! Actually, animals really do seem to know that certain plants help them medically.

M: Really? Hmm. Like what, for example?

W: Like the fact that certain kinds of monkeys, when they find aspilia plants—they actually purposely go out each day and locate these plants—they rub the leaves in their mouths. They are very bitter, and the monkeys don't even seem to really like the taste. It's really as if they know the plants are beneficial for them.

M: How are they beneficial? I mean, are they just nutritious, or . . . ?

W: No, they aren't just nutritious. These plants are really good at killing parasites that inhabit the intestines of wild animals. The acidity kills them. There are other animals that do these kinds of things, too. Usually, the "medicines" they take are to treat some sort of fungus or parasitic problem. Let's see . . . oh, yes . . . bears. Bears chew certain leaves too, in order to get rid of internal parasites, but they also use the medicinal properties of plants to treat external problems, as well. Um, like chewing the Osha root and then spitting some of the juices into their fur. By doing this, they can get rid of parasites that live on them. It's kind of like a bear bath.

M: I didn't know that animals were that smart. I always just kind of figured that they only did things because that was what was instinctual.

W: And that may be some of it. But these kinds of things happen far too often to simply dismiss them as mere coincidence. Here's another example. This one is really cool. Do you all know what cyanide is?

M: It's a poison, right? A really deadly one. You're not going to tell me that some animals eat cyanide.

W: Oh, but I am! They do. It's really quite an amazing phenomenon. In fact, I've saved the best for last. You're not going to believe this one, OK? Anyway, a lemur—that small, monkey-looking animal with a really long tail—some lemurs eat a certain kind of bamboo that has cyanide in it. In fact, every day they eat about twelve times the lethal dose for animals of similar size. Now, they just do this for food. So, how do they counteract the poison then?

Well, the lemurs somehow found out that, by eating the soil, yep, dirt, they can keep the poison from killing them. The ions in the soil neutralize the poison, allowing the lemurs to eat all the bamboo they want. Pretty amazing, isn't it? So, in conclusion, I think there is some pretty strong evidence here that animals are smart enough to learn how to protect themselves, even if that means using medicine. I suppose you could argue against me, but I'm pretty sure you'd be wrong.

Mini Test 2

01 Biology

M: Today we're starting out the week with a look into the discovery of evolution. There's a couple of different factors that come into play here, but I think it's easier to think more about the important figures in the discovery of evolution. So there're two people in particular who I think were instrumental in figuring out how evolution works. The first is Charles Darwin, who is known mainly for his work in developing evolutionary

theory, which I'll go into more detail about later in the lecture. The second figure I'd like to talk about is Gregor Mendel, the father of modern genetics.

Before I go on, I think I should give you some context so you'll understand what people thought about evolution before Darwin. You may never have guessed it, but mining contributed to the discovery of many fossils as workers dug away at the Earth. In Europe, the remains of gigantic saber-toothed tigers and elephants were discovered. And at the beginning of the 19th century, popular naturalists had begun to explore the notion of evolution, but they didn't really know how to explain how it happened.

That's when Darwin comes in. I'm sure there isn't a single person in the room who hasn't heard of Darwin. Initially a student of medicine, he tired of his studies and went on to study theology. He left that, too, and came across the opportunity to sail across the world in the 1830s. Well, as it turns out, the captain hadn't really gotten his maps correct, so there were a lot of deviations from their original itinerary. In an interesting sort of way, as scholars, we owe a debt of gratitude to that captain. Yeah, we should be grateful to him! Because you see, the side trips didn't discourage Darwin. Quite the opposite: They gave him the chance to travel for about five years, to everywhere from the South American coasts, to the Galapagos Islands to Australia, and across the Indian and Atlantic oceans. See, all this traveling gave him the chance to encounter an endless array of animals, including several ancient species that only remained as fossils. The observant Darwin noticed that animals changed as their environments changed. In 1838, he created a theory about the evolutions he observed in some species. In Darwin's opinion, these species clearly changed, or evolved, over time. He then wrote about the appearance of new species as a result of natural selection in his famous book *On the Origin of Species*. Does everybody know what that is, by the way? I don't really want to spend a lot of time on it, but the theory of natural selection goes as follows: let's say an animal's environment suddenly changes—like it gets colder and stays colder. As a result, many species die off quickly, but some possess attributes like, denser fur, say, that allow them to survive, whereas others do not. You see, these traits are passed on to the next generation. This is survival of the fittest, and this is how species evolve.

Anyway, Darwin's ideas were truly groundbreaking, but honestly, he didn't really have any way of proving his theories. People paid attention to his work, but seeing that he couldn't support most of it, he was dismissed. I mean, uh, well, most scientists did not take his theory seriously. And that's where Mendel comes in . . . see, all the evidence Darwin needed was provided by Gregor Mendel, but unfortunately, the paths of these two amazing minds never crossed, delaying the advancement of the theory of evolution for many years to come.

How did Mendel's work support Darwin's theory? Well, think back to what Mendel did: he was a Czech mathematician and botanist who spent seven years breeding pea plants. By controlling their pollination and recording the results, he noticed some patterns. Eventually, he was able to even predict the patterns of the hybridization of the plants. And after observing many generations of these patterns, Mendel gained an understanding of the laws of heredity. Through his mathematical calculations, he turned it into a science of genetics. Like Darwin, the implications of Mendel's work were not fully realized until the early 20th century. Still, when it was recognized, it meant that there was finally an explanation of how the traits from an evolved species were passed down over generations. The knowledge of heredity and genetics from Mendel's work was necessary to support Darwin's theory of evolution, thus completing the picture for not only the discovery of evolution, but also its widespread acceptance.

02 Communications

W: Let's continue our discussion on the sociopsychological tradition in communication theory. Just to help the flow of the discussion, maybe we should recap some of the information we've already learned about it. So, what are the basic aims of sociopsychological tradition?

M: Um, well, I guess its goal is to figure out how a person as a communicator will act in a number of situations. So what theorists are looking for are predictors, or signs, of how people will act

in a situation when they need to communicate with others.

W: Thanks for your input. Is everybody pretty clear on what the sociopsychological tradition is then? It's all about how people act in a communicative situation . . . you know, when they have to communicate.

Good, then we can jump right into one of the two prevalent theories in sociopsychological theory: trait theory. The best way to approach this theory is to first understand what I'm talking about when we refer to *traits* in this class. Can anyone define what a trait is in communication theory?

M: A trait is a characteristic that a person will display pretty regularly—these are the parts of our personalities that are apparent to others.

W: Exactly! Traits help psychologists understand behaviors, and for communication theorists, it helps us interpret and study communication styles. The interesting thing is that traits can often be used as predictors of how people will act in any given situation. What are some examples of traits studied in communication theory?

M: Communication anxiety! And how about conversational narcissism?

W: Those are great examples. Really, there are hundreds of them, but I want to focus on one that has been studied extensively: argumentativeness. When I say argumentativeness, most of you probably think that's a negative trait, don't you?

M: Sure. I guess I just can't conceive of it *not* being negative. I mean, an argumentative person is probably hard to get along with and very hostile.

W: I'm glad you brought that up. Later in the lecture I'll address those issues, but for now, let's just say that argumentativeness is actually a *positive* trait as far as communication goes. Argumentativeness is characterized by a willingness to engage in conversations about controversial topics. Another characteristic of the argumentative trait is that the person is able to argue and support his or her points and refute the points of others. This trait is a good predictor of a person who is open to learning, willing to listen to other points of view and build his or her own communication skills. What else could we guess about a person with the argumentative trait?

M: That they are assertive?

W: Yes, exactly. Here, I have to make the distinction between a person who is argumentative and an assertive person. Although assertiveness is part of the argumentative trait, please understand that an assertive person is not necessarily argumentative. Do you know what I mean?

M: You mean because a person might be assertive and choose not to argue their points.

W: Yes, that's right. And here's something regarding this trait . . . this argumentative trait that I'd like to add. And it's uh, well, it's a little counterintuitive. We talked a little bit about how someone might equate argumentativeness with aggression, but in communication theory there is actually a recognized difference between argumentativeness and verbal aggression. What do you all think the difference is?

M: Argumentativeness is a trait associated with effective communication while verbal aggression is what happens when someone cannot pull off being argumentative.

W: Uh huh, right. Let me give you an example. In a study, married couples were observed to see how their communication styles influenced the quality of their marriages. Couples who were argumentative, that is, those that were able to argue effectively and reach compromises, were found to be less violent than couples who were not argumentative. And, in fact, they found that the violent couples were on the whole much more verbally aggressive. Can anybody guess why this was so?

M: Right . . . right, makes sense. Um, it's because verbally aggressive couples can't verbally work out their differences. So, basically, the idea is that argumentativeness should balance out the tendency to be verbally aggressive, which can lead to violence.

03 Office Encounter

W: Hi, I'm here to sign up for courses for next semester.

M: OK, I can help you with that. Do you have your add course form already filled out?

W: Um . . . add course form? I don't think I got one of those. All I got in my campus mailbox was a course book with all the course offerings for next semester. I've looked through it, and I think I've got all my courses picked out already.

M: OK, well that's a good start. In order for us to get into the system, though, we need you to fill out an add course form. It should have been on the last page of that course book you looked through.

W: Oh, I guess I didn't see it. I'm sorry. You don't happen to have any around here, do you? My dorm is on the other side of campus, and it would be such a pain to have to walk all the way back there.

M: No worries, we have plenty of them here. Here you go. All you have to do is put your student identification number and class at the top and then put the course number, the professor's name, and the course title in the boxes below that. Let me know if you need any help, OK?

W: Oh wow, this is a little more complicated than I thought it would be. It says here I need the professor's permission in order to sign up for the course. So, do I take this form to the professor before next semester, or what?

M: No, that's really just a formality for higher level classes. The truth is that at this point in the process, you're just pre-registering for next fall. That way, professors can get an idea of what their class sizes will be and the university can match up the bigger classes with big lecture halls. That's not to say this isn't important, though. For a lot of seminars, you need to be pre-registered or the professor won't let you take the course.

W: So, I don't have to worry about getting the professor's permission at the beginning of the semester, then?

M: Nope . . . At that point, the professor will be able to make sure that you have all the prerequisites, if the class has any, and it can all get settled then.

W: OK, I guess that makes sense. What should I do if I change my mind, though?

M: Well, remember, you have a two-week shopping period at the beginning of next semester to visit different classes and decide which ones you'll actually take.

W: Wait, and I won't have to pay an extra fee?

M: Nope. That way, students can find out about the professor's teaching style and if the class is really something they want to take.

W: That's such a great policy. Thanks a lot. I think I'm done here.

M: No problem. And if you have any more questions about the policies, check out the website. It has all the information there and you can even download and print out the forms you need.

Chapter 5 Organization Questions

01 Business

W: Today we're going to move on to something called the product life cycle. Just like people, well, products go through stages of life. I mean, you're born, you start out kind of slowly, then you mature, make your impact on the world, and then, well, sad, but we all die. Likewise, every product goes through a life cycle too. Soap, toys, clothes, computers, . . . everything. As I was saying, just like human beings, a product has to be born. And that's what happens in *the development and introduction phase*. Two major things happen in this stage. First, the product is created—and of course, in doing so, in creating the product, the company pours a lot of money into making a *prototype*. Once that's done and the product is ready, advertising starts, and customers are introduced to the product concept first, closely followed by the actual product. So yeah, the product hits the market in this phase.

Now, you need to understand that sales for new products—except in really, really rare cases—usually start out slowly. So the company needs aggressive marketing to get customers to take notice of the new product. Typically, the company is losing money on the product at this phase.

So our product grows up a little, and now it's a teenager, so to speak. The second phase is the *growth stage*, and yeah, it's kind of like being a teenager. Not quite mature, but getting bigger and better all the time. What do I mean? Well, remember, in the first phase, money is typically not made on the product, but now, now the thing starts making money. The product starts to stand on its own two feet. This stage can bring intensified demand for the product, and it begins to gain a reputation. The general public is more interested in the product, because they've heard about it some. But if you think

everyone is just fine in this stage and there are no problems, let me tell you something. Competition *increases* in this stage as other companies start to copy the product, making their own versions of it. Hey, life's tough!

Moving on, when people hit their twenties, they begin to mature. The third stage is called, you got it, *the mature stage*. Now people recognize the product immediately, and it has an established customer base with a good, long-standing reputation. This lasts for a while—it varies by product—and the company can make lots of money—typically more than in any other phases. People know the product and continue to buy it. Now, as a side note, it's important to realize that some products never reach this stage. Hey, some people never grow up, right? Well, some products are released, never become popular, and are immediately taken off the market.

Now comes the sad part: just like we humans, there's a time to uh, call it quits. Everything dies, including our once-strong product. The final stage in a product's life is called *the decline stage*. Eventually, the popularity of a product has to end. And when the product becomes outdated, or customers lose interest, it goes into the decline stage. The product is not worth producing anymore, so the company phases the product out.

02 History

M: OK, let's talk about an important force that helped shape American society in the 1920s and 1930s. Any guesses about what it might be? No? Well, anyone ever heard of the Charleston? How about the jitterbug? They're different kinds of dances that were popular during that era. You see, the dance halls of that time drew crowds from all over and began to shape society in a lot of different ways.

Let me first give you an idea of what these dance halls were. Dance halls first cropped up in the major metropolitan areas after World War I. A lot of the dance craze was fueled by a desire to forget the war, you know, to forget about the hard times. Big cities like Chicago, New York, Boston, and Detroit opened up huge venues where people could congregate and dance. These dance halls hosted popular bands, which helped encourage people to come.

Actually, in New York, about ten percent of the people joined in the dance craze once a week. All together, about six million people attended a dance hall in 1924. Now, I don't know if that sounds like many to you guys, but let me put this in perspective for you. That was just in one city. Six million people, in dance halls, in one city, in one year. That's a lot.

So, what did dance halls do for culture? First, dance halls gave society a different view of entertainment. Now, I know we don't normally think of dance crazes as shaping society, but if you think about it for a minute, it's really true. Just like rock and roll affected American culture, the dance halls that started opening up in the 1920s really influenced young people's ideas of entertainment, relationships, and different beliefs. What do I mean by that? Um . . . during the early twenties in the United States, a lot of people thought dancing was evil or inappropriate. They thought that it encouraged the young people to be irresponsible and reckless, but the teenagers and people in their twenties were really drawn to this form of entertainment because it was fun! So they developed different beliefs about dancing and entertainment in general. This, of course, it . . . uh, it changed American culture. It gave people a place to go and socialize.

Now, dance halls also had an effect on . . . hmm, what's the best way to put this? Dance halls gave people a different idea of what proper behavior was. Now, today we would think dance halls were not at all morally offensive. It was just people dancing. But it was actually rather progressive for the time. In a way, it allowed people to get away from their very proper, um, some would say boring lives. They got to go out and dance, to be with strangers. And I think eventually it led to the idea that such behavior was just fine, even if it was shocking for some at the time.

03 Psychology

M: How is everyone today? Feeling good? How about happy? Angry? Most of you are just looking at me with a blank expression, wondering why I'm asking. Well, that's what we're talking about today: emotions. You see, psychologists have been fascinated with emotions for a long time because they are so complex and intricate. And one theory called the Two-Factor Theory of Emotion tried to do just that—explain how emotions are created. Anyone ever heard of it—the Two-Factor Theory of Emotion?

W: I've read about it . . . yeah, let's see. It's a theory suggesting that emotions depend upon things, um, two factors, and those are physiological arousal followed by cognitive interpretation of that arousal.

M: Um, yeah, that's basically it, exactly. To rephrase, um, this two factor theory of emotion states that we need two things to feel any emotion at all. OK, the first of these things is some sort of physical arousal . . . you know, a stimulus. That's the first thing, and then second comes the cognitive interpretation part mentioned. Second, we need to interpret, in our minds of course, we need to interpret what this physical stimulus means.

OK, so one of the things that defines the Two-Factor Theory of Emotion is that it has a reliance on your physical state. Let me explain: you can think of different physical states, right? Like, maybe your muscles are tired, maybe your hands are shaking. So you see, psychologists recorded that people sometimes perceive that they feel a certain way just because of their physical arousal. In other words, if I'm shaky and my heart is racing, I think I'm nervous. I don't take into account that I could simply be feeling the effects of all the sugar in that chocolate cake I had a while ago. OK? Does everyone understand?

W: I'm just not sure I see the connection between physical state and emotion. I mean, where does the mind come into it all?

M: Good question. You see, because you think you feel that way—like nervous, for example, even though you really just ate chocolate, you actually begin to feel nervous. The emotions become real—I mean, yeah, now you're really nervous—even if it is a false interpretation that initiates them. They called it cognitive interpretation—basically, how somebody perceives a certain event or set of circumstances. OK, that's the theory, but now I'd like to introduce a little surprise. Yeah, the uh, the theory is not accurate. And well, as it turned out, it seems that the theory overstated the importance of arousal to cause emotions. People later learned that you do not have to have some physical arousal to feel an emotion. I mean, think for a minute about, oh, a great day in your life. Go ahead guys, actually think about it. OK? Well, I'll bet one or two of you feels happy right now, huh? Certainly nothing aroused you physically, you just created an image in your heads. So in the end, this theory was pretty much considered not to be accurate.

04 Literature

W: Think about some of the classic literary works. Now, think about the plot and the story structure. How many of them are actually very unique stories? Not many of them. This was the point of an important literary movement called structuralism. Structuralism wasn't just predominant in literature, either. It was actually a cultural movement that affected nearly all the arts and sciences—psychology, anthropology, mathematics, history, and of course, literature.

So what is structuralism, exactly? In literature, it's the idea that the most important part of any literary work is, um, is *its underlying structure*, not the characters—even if dynamic, not the plot itself—even if it's interesting, and not the writing style—even if it's beautiful and clear. Structuralism is looking for . . . well, for *uniqueness*. So basically, if the structure of the work resembles previous works, even in the slightest way, it isn't considered noteworthy. Let's look at an example. Can anyone think of a truly unique literary work?

M: How about *Romeo and Juliet*? Think of all those interesting and complicated plot twists. That's got to be unique.

W: Actually, *Romeo and Juliet* uses a classic theme: boy meets girl, falls in love, but there is a huge problem: their families can't stand each other. Thus, the tragic ending. This structure is seen over and over again throughout history. For that reason, the structuralists would criticize it. A structuralist would say that it uses a "formula." Understand?

M: OK, I guess I can see that.

W: All right, then . . . but what if the story were switched around, changed . . . would it be "unique" then? For example, if the story were about two families that liked each other, and then arranged for their kids to get married, but the kids didn't like each other . . . and all this leads to a tragic end? Would that satisfy our highly critical structuralists?

M: Hmm . . . it's uh, it's completely different, so it must be unique.

W: Sorry, no. It would not satisfy the structuralists. It still has the same basic elements: love, animosity, and of course, the tragic ending. The formula is still the same. And, uh, by the way, structuralists have a name for this . . . they call it an "inverse structure."

M: Then what are structuralists looking for, exactly?

W: Like I said, something completely new and different, without any comparisons. In structuralism, the whole goal is to reduce the story down to it's . . . to it's, um, it's basic components—the most basic structure. Then, if the structure is new and different, it becomes noteworthy. Otherwise, it's just another piece of literature. The thing all structuralism has in common—I mean, whether it is in history, or psychology, or anthropology, or literature—is that it looks for the meaning of things in the distinctiveness of its structure. In literature, specifically, though, structuralism doesn't see any value in the work unless it is unique.

05 Astronomy

M: Today we're going to get started a little differently. Do this: imagine you're an astronomer. You've seen Saturn in a telescope—and you all have, right? You all know what Saturn looks like? Rings . . . yes? OK. So, you've seen the rings, but neither you, nor any other astronomer in the world, can come up with even the slightest clue of what they're made of. How . . . how frustrating would that be? Well, luckily for us, a Scottish physicist named James Clerk Maxwell finally solved the mystery in 1857. So, my fellow astronomical sleuths, what do you think the rings are made of?

W: Can I guess? I'd have to say that they're made of solid rock. I mean, how else would we be able to see them?

M: Well, that's a very common guess, and that's what many thought in the past, but that's actually incorrect. So, should I go ahead and crack the mystery for you all? OK. So, this Maxwell that I mentioned a minute ago, he decided that the rings had to be made of tiny particles that orbit around the planet.

W: Tiny particles? Tiny particles of what?

M: Would you like to guess?

W: Oh, wow, I don't know. Um, well, would they be little pieces of rock?

M: Nope, but that's a good guess. OK, I want you all to get this, so I'm going to help you out. Think about this: you all know that the rings are really bright, right? And they appear brighter at different points in the planet's rotation. OK, so, knowing that, what can you surmise? No one? Here's another hint. They reflect over eighty percent of the sunlight that hits them. Now, what material is this starting to sound like to you?

W: What—no, um, ice?

M: That's it! Great job, you just did in a few minutes what it took astronomers over two hundred years to do! Of course, you had help. Anyway, you're exactly right about the ice. The particles are pieces of ice that range from, well, tiny, to as big as a large snowball that you might make during a snowball fight. So, honestly, "particles" is almost misleading because it makes you think of something really small, but that's what they call them. Anyway, so where did these particles come from?

W: Actually, before we move on to that, could you explain how they actually formed rings?

M: Good question. It is yet another mystery; the rings are really only about, at the most, twenty or thirty meters thick. That's very thin. So how do they stay in such a thin pattern? Well, astronomers believe it is because the particles tend to run into each other as they orbit. After a while, they had collided so many times that they all just sort of fell into the same orbit. No one particle could stray from its own orbit because it would just be knocked back by an adjacent particle. Does that make sense? Let's move on to how they formed.

06 Environmental Science

W: Let's go back in time a few years to the 1940s. The world is at war . . . yeah, World War II is being fought. Let's say you're the leader of a country that has men fighting in hot, tropical areas. But here's the problem—not only are your men fighting the enemy, they're also fighting mosquitoes. Yep, lots of your men are dying from malaria, a disease caused by the bite of a mosquito.

So you look around and find this stuff . . . DDT, which was actually made many years earlier. But you're smart, so you figure out that this substance, DDT, also does a great job of killing mosquitoes, it's a pesticide. You spray the stuff in tropical areas, right where your troops are . . . and yeah, the mosquitoes die. This is good, but little do you know that the pesticide DDT also has some very significant drawbacks. DDT's problems came to light pretty quickly. Though scientists knew DDT killed mosquitoes, they hadn't realized that the mosquitoes would be able to quickly adapt to the toxin through natural selection. Over time, mosquitoes quite simply became resistant to the pesticide, and the parent mosquitoes passed on this resistance to their offspring. You could spray the stuff on 'em, and why, they'd drink it up and laugh at you! So the number of cases of malaria rose again . . . um, really, really fast. And mosquitoes reproduce fast, so *the entire population* could acquire resistance very quickly. Pretty soon, almost all the mosquitoes were resistant to DDT.

Another downside is DDT's effects on the environment: plants and animals. In terms of animals, we'll talk about birds. Many birds were exposed to the pesticide in the process of spraying for mosquitoes, and it severely weakened their ability to reproduce. Furthermore, many of the birds ate the mosquitoes with high DDT levels in their bodies. The DDT caused the eggshells of the birds' offspring to be thinner than normal, which failed to protect the baby bird until it could survive outside the egg. This was a huge problem . . . you know the bald eagle of North America? Well, it just about became extinct because of this. There's something else to consider. Scientists initially figured that DDT couldn't pose any real threat to the environment because it's not water soluble, but they didn't think about the fact that it can be carried in fats and oils. So it is still possible for it to be transported to other areas. So, yes, it did end up harming the environment.

There's a *third* negative effect of DDT that we need to discuss before moving on, and well, actually, I just mentioned it in passing. Yeah, you see this pesticide causes something called *biomagnification*. Basically, what this means is that the poisons build up in the animals, and the higher up on the food chain an organism is, the higher the levels of DDT it takes in. Over time, the level of DDT builds up, OK. Hmm . . . let me explain: if an insect has some DDT in its body, and then a bird eats a lot of such insects, by the time it gets to the top of the food chain, there's a whole bunch of DDT inside the animals. It accumulates is what I'm saying. This meant that the entire food chain was affected by the negative ramifications of this pesticide—all the way up to humans.

Now, despite all the many drawbacks of DDT, it did have a few strong points. Like I said, it helped reduce the incidence of malaria. Granted, in tropical areas, the number of cases rose again, but they still weren't as high as they were initially. And in countries that aren't tropical, it *drastically* reduced the number of cases. So, yes, DDT is absolutely an effective pesticide.

There's really no doubting that. It also had a positive result in that it limited the cases of yellow fever, which is another disease transmitted by mosquitoes. If it weren't for DDT, these diseases might still be causing major problems in countries around the world. Now, the cases are much more contained than they were, although they are still a big problem in some parts of the world.

OK. Uh, in most of the developed nations, DDT isn't used anymore, but a lot of countries are still using it for various purposes. So the controversy over DDT is still a major issue. However, if you look at the negative points and the positive points, my opinion is that the negative points easily outweigh the positive ones.

07 Sociology

M: We're going to talk about something that is pretty complex, but it's also an important part of sociology. So, the topic today will be game theory. And if you're wondering, yes, it is a theory all about games, but don't let that fool you into thinking that it isn't a very important and complex sociological theory. Anyway, let me go ahead and define the theory first. Game theory is basically just a series of observations about the way people play games: typical games that we play, like chess or sports. Game theory looks at all the possible scenarios for how a game could be played, and then identifies the best course of action. That is, the um, the best course of action if each player employs a certain strategy. So, in essence, game theory is a study of the strategies that people use in games, but it applies to real life too—um, to many situations, not just games. Games, then, are just a good way to see how people use strategies. Understand?

W: No, I don't get it. Wouldn't it just be a big list of good strategies? Where does the theory part come in?

M: Well, players in games use different strategies, right? I mean, a strategy has to change. Let me give you an example. If you were playing tag, and two people went off to the left, while only one person went to the right, the best course of action would be to go left. You know, because you have a higher chance of tagging someone. But if two people went right instead of left, the best course of action would change. The best thing you could do in that case would be to adjust your strategy and go right. So your best strategy changes according to the strategies of other players. So, you can't say "the best strategy in tag is to go left" because that wouldn't always be true.

W: OK, I understand. So game theory is really about tailoring your strategy to the strategies of other players. But what happens if you can't beat them, only match their strategy?

M: Yeah, there's another theory for that—a part of game theory. The Nash equilibrium, deals with—well, um, it's kind of like a different theory, but it's important to understanding game theory. Basically, when every player chooses their best strategy, there is an equilibrium, where no one has a superior advantage. This equilibrium idea had been around for a while. It was first mentioned in the early 1700s. But the equilibrium wasn't very applicable to game theory in general, until John Nash figured out how it applied more universally. Here's an example of how this applies. One of the most famous examples is called the prisoner's dilemma. Basically, the game simulates a set of interactions in a prison. Let's say two prisoners are planning to escape. The example says that they have two different choices. They can stay loyal to each other and keep the plan a secret, or they betray the other and reveal the plan, in exchange for a lighter sentence. So, there are advantages and disadvantages of each choice, so you can't really say that one is better than the other. The equilibrium is achieved if both decide to betray the other. Neither choice has adverse consequences, and neither prisoner is really affected by the betrayal. On the other hand, if only one of the prisoners betrays the other and is caught . . . neg . . . negative consequences ensue. The first prisoner—the one that committed the betrayal—has the upper hand.

W: What if neither of the prisoners betrays the other? Like, if they both stay loyal? Isn't that equilibrium, too?

M: Actually, the theory says that what you're describing isn't equilibrium, because as long as both stay loyal, there is the *fear* of betrayal—the situation is completely unstable. They're probably both wondering if each prisoner is going to betray the other . . . so really, there's the possibility that they'll change their strategies at any time. Both prisoners opting to betray is completely stable, and stability is key to the Nash equilibrium. Now, not all of these little games have a Nash equilibrium, only some of them. The Nash equilibrium is really useful in analyzing the way that people react to things. For example, in sociology, we use it to help predict how people will respond to different actions on the parts of the people around them. You see, these games are not just about the game; they're all . . . they really are about people and understanding them.

08 Education

W: Where does the responsibility for the student's learning fall—on the student or the teacher? This question has been debated in education, well, probably about as long as "education" has been around.

I remember sitting in a class one day wondering why I wasn't learning anything. Then I looked down at my notebook. It was covered in doodles, you know, those little drawings that students make in their notebooks when they're bored. So why wasn't I learning? Simple. I hadn't been paying attention! I closed my notebook and made sure I didn't get distracted. And I started *actively listening* to the teacher, and even questioning her. By the end of the class, I had learned quite a bit. I will never ever forget that day, because it finally hit me that I had a part to play in my education. With that said, let's get into it . . . now, one of education's longstanding ideas is the "banking" concept. Basically, this reinforces the idea that children need to be taught lots of facts in order to "deposit" knowledge into them. The teacher, of course, is responsible for this.

M: But if I don't pay attention, like you were saying earlier, then it's not the teacher's fault I'm not learning, it's mine. It doesn't make sense for the teacher to be held completely accountable for the education of the students. I mean, it would kind of bother me to not have a part to play in my own education . . .

W: I know what you mean, and that's exactly why this idea—this "banking" concept—is not accepted by everyone. So that was the old theory. Now for the new, and this is, actually this is my main point today. I will start with a man named Paulo Freire. Paulo Freire was a Brazilian teacher who made a, um, a name for himself by examining and contesting this concept. He published a book called *Pedagogy of the Oppressed*. Pedagogy means teaching methods, by the way. In his book, he tried to combat the idea that students are just inactive subjects for the teachers to shape however they wished. Instead, he wanted teachers to relinquish this idea in favor of another: that students should learn interactively. He also wanted to emphasize that the teachers should facilitate learning but not completely take it over.

M: I thought I had heard of someone else—other than this Freire guy, I mean—talking about students participating in their education . . . I can't remember his name.

W: You're right there are others. But Freire is the man who really put all of this, the uh, the notion of active participation on the part of students in their own learning, he put all this into a comprehensive volume dedicated to the subject. He also . . . he made it apply to modern education, instead of past methods of education. And he added another aspect to the idea, too. He felt that the typical teacher-student relationship hampered learning. I'm talking about the whole authority thing, you know, "I'm the teacher. I'm in charge. Obey me!" He wasn't into that. Nope, he wanted the authority structure abolished and replaced by a different one where the teacher is also a student, and the *student* is *also a teacher*.

M: I don't think that would work very well. I mean, how could the class even progress?

W: Well, he thought that if both the teacher and the student had dual roles, the educational experience would be more enriching for both parties. Uh . . . really, he wanted the whole relationship to be about learning from *each other*. I have to tell you, I actually learn a lot from you guys. I don't use a method completely compatible with Freire's ideas, but I do use parts of them. For example, I let you guys present your semester projects to each other, and discuss them and ask questions. Why do you think I do this?

M: Um, to see if we know what we're talking about.

W: Well, partially, I admit, but mostly because a lot of times, you guys are your own best teachers. I mean, you learn well from each other, and you also learn the most when you're preparing to teach your peers. I learn things from you guys when I listen to your projects that I never would have known if I had done all the research, because you think differently than I do. So it is beneficial for all of us. Remember that when you present those projects next week.

09 Biology

M: Today I want to talk to you about the importance of genetic diversity in animals. If a population of animals is said to be "genetically diverse," that just means there is a great variation in the genes of that species. Typically, very large populations of animals show genetic diversity, while smaller populations do not show such great diversity.

Genetic diversity allows animals to adapt to changes in an environment, to build up resistances to diseases . . . we'll discuss that more in a second. It actually affects a lot of different systems in animals . . . especially the reproductive process. One of the most prevalent concerns scientists have regarding endangered species is their lack of genetic diversity. Many animal species are now either threatened or endangered, which, of course, leaves a much smaller number of animals to reproduce and continue the species. At first, a reduced population isn't too much of a problem, uh, well, in terms of genetic diversity at least. But . . . but, uh, eventually, all the animals start to have the same genetic lineage. So they are lacking the introduction of new genetic material. Basically, the old material just gets recycled, over and over again.

So what, then, is the effect of reduced genetic diversity? There are many, actually. First, animals are more susceptible to disease when the gene pool is reduced—when there's little genetic diversity. Usually, when different strains of viruses or diseases hit, the species survives through its eclectic mix of genetic material. The diversity enables them to survive, because there are usually some families of animals that are more tolerant of the disease than others. These animals survive, and then reproduce, which passes this immunity on to the others in their species. If there isn't a wide variety of genetic diversity, and all the . . . they all have the same characteristics, they will also all have the same weaknesses. This puts the species in danger of complete extinction by a single, particularly potent disease that they don't have a resistance to. This susceptibility gets worse as the genetic diversity decreases, meaning that the problem gets worse with every generation. The originally unique genetic material gets . . . well, watered-down.

To move on to another negative effect: because of this lack of genetic diversity, and the subsequent watering-down of the original genetic information, the animals' offspring are born with more deformities. The genetic information gets corroded. Hmm, let me explain that. Without a source of new genetic material, the body has fewer options when it is forming. Instead, the genes recombine in defective ways, producing multiple genetic problems. A good example is the cocker spaniel. These animals have such a lack of genetic diversity that many of them experience a variety of health problems as a result. These health problems in animals with a lack of genetic diversity are not always very obvious. The defect can be as simple as a higher disposition toward heart problems, or arthritis. But, um, in any case, the animal's genetic integrity is weakened.

OK . . . let's see. I know I was going to make a third point. Oh, yes. All of these problems affect the overall population viability. If the entire species has such a lack of genetic diversity that they are in poor health, that puts the whole species at risk. All of the factors I've already mentioned . . . well, those factors make for a pretty poor outlook for the survival of the species. The susceptibility of the animals to disease makes them prone to widespread population wipeouts. Their compromised physical health means that many of them die before reaching old age, and the deformities cause a large number to die shortly after birth. Or while still really young. So the entire population is threatened by the lack of diversity. The whole situation is really pretty sad.

So, how about an example of how all of this information applies to a specific animal? One species that is battling these problems are cheetahs. These animals are rare in the wild, and have been bred in captivity for many years. But because the overall number of cheetahs is so small, they have a severe lack of genetic diversity. Scientists actually estimate that as many as eighty percent of all cheetahs have the same genetic material. That's a lot! Um . . . really, a lot. These animals face all of the physical problems associated with this, too. In fact, their problem is so bad that cheetahs have a difficult time successfully reproducing at all. Their reproductive organs have been weakened by the limited genetic information.

10 Art History

W: In the 14th century, the populations of Europe and Asia were profoundly affected by the Black Death, which was a disease that killed millions of people. But of course, here you all sit in an art history class, so I'm going to talk about its, the uh, the Black Death's effect on art. Whereas before this time, art had been more unrealistic, the art after the horror of the Black Death reflected a . . . a new attention to the reality of life, no doubt brought on by the amount of tragedy the people had witnessed. Um, yes, Robert?

M: You, uh, just an observation, but you would think the people at that time would want to escape the sad reality of the Black Death in their art and culture.

W: Well, with the Black Death, the entire population of Europe dropped by, like, a third. One out of every three people died from this sickness . . . hard to believe. And the ones that lived, well, these people, um, were either feeling guilty that they had survived, or maybe they just thought about what death meant more often. They became religious, and they were obsessed with the death they had seen. Actually, that's one of the hallmarks of art immediately following the Black Death. It has . . . a a morbid quality that just hadn't been seen before. Never before was an entire generation of artists so completely captured by death and tragedy.

M: What do you mean? What was so morbid about their work?

W: Well, to start out with, a lot of the colors were extremely somber. Black, greens, and occasionally dark blues were the overriding colors, and even normally bright colors like yellow, when they were used—which was rarely—were toned down and made more . . . oh, gloomy, I guess.

Second, most artists included representations of death or death scenes in their art. A really famous artist of the time, Francesco Traini, created a painting called *The Triumph of Death* where three coffins are being viewed by a group of people. Inside are bodies that are decaying as the people look on. In another corner, a "grim reaper" sort of character—a witch with a big blade used to kill her victims—is overtaking people in another group . . . people who are . . . who are just going about their daily lives. The painting is of course reminiscent of the Black Death, and it shows how *each member of society* was affected by it. It even appeals to the emotions, evoking a depth of sorrow because the Black Death so unexpectedly killed so many.

Now let's move on to Giotto, another Italian artist, who, who tried to make things appear as realistic as possible. So realism can be understood as the third effect of the Black Death on art. Giotto showed similar themes as other artists of the day—death and dying, of course—but he added this idea of realism . . . in particular, he showed real emotion on people's faces, and in their gestures. This wasn't really done too much before Giotto. Anyway, because of this, he is considered to be one of the artistic fathers of the early Renaissance painters.

OK, uh, onwards to the final effect of the Black Death on the art of the day. An entire new school of art appeared, and it was called "The Art of Dying," well, when translated into English, anyway. These works, I should add, had a real purpose. The paintings and often the woodcuts . . . you know, when you carve a design into a wooden block and then creating an image by pressing the inked block onto a piece of paper. Well, anyway, the purpose of these was to show um, hmm . . . how can I put this? Well, really, the purpose was to show people how to die well.

M: How to die well? That sounds, uh, kind of strange. I mean how does one die well, anyway? I don't quite understand what you mean.

W: Well, to understand any type of art, you need to put it into its historical context, and in this case, remember that Christianity was the dominant religion in Europe. So when I say these works from The Art of Dying school offered advice on how to die well, I simply mean that they reflected the church's outlook on death, and in particular, life after death—and how to get to heaven.

Chapter 6 Content Questions

01 Business

W: OK, everyone, when you think of a traditional large company, what comes to mind? A big office, perhaps? Lots of workers. What about managers? Well, some companies have lots of managers . . . lots *and lots* of managers. And when a company has many levels of management, that company is said to be a "tall" organization. And can anyone guess what the opposite of a tall management structure is?

M: I'd guess a *short* management structure?

W: Good guess, but no, it's a flat structure, but more on that later, OK? Back to the issue at hand, which is tall management structures. So . . . you might have the company president—that's one level. And then you might have a vice-president. That's another level. And then you might have, oh, I don't know, general managers. And below them managers. And below them assistant managers. And then management trainees. And then, who knows . . . you might have sub-assistant-manager trainees in training! OK, I'm making a joke here, but yeah, some companies have *huge* management structures, called um, we call them management hierarchies.

There's a good reason for hierarchies, of course. And that is that when a company grows, when it gets really huge, well, you need to control the organization so you need managers telling people what to do. But here's the problem: problems arise, um, *significant* problems arise when you have vast management hierarchies, the first of which is poor communication, in particular the problem of what's known as *distortion of commands*. What do you suppose that is? John?

M: Um . . . same thing that happens here in class, I'd guess. I mean, you give us information in every class. But um, as you probably figured out, we don't always remember that information correctly on a test, right? I mean, we get things wrong, even though you told us the answers here in class.

W: Good illustration, and yes, I certainly have figured that one out, John! So yeah, basically, what John's getting at is that people can interpret things differently than they're supposed to. Meaning can be lost through incorrect interpretation of a manager's words.

So that's one problem. And there's another . . . it um, if you have a tall management structure, it can take a long, long time for decisions and orders to pass through the levels. So let's say the company president gives an order to do something . . . something that will affect everyone in the company. Well, in a company with a tall structure, that order can take a long time to reach the actual workers. This makes companies slow to respond to change in the market.

Finally, managers are expensive, very expensive. Managers have assistants, secretaries, bonuses, big salaries . . . you name it . . . they're expensive. Um, you've all heard about companies that downsize, right? Layoff workers. Well, did you know that typically, they try not to downsize the people actually making the products? Statistically, they downsize middle managers in companies that just have too many levels of management. And if you ask me, that's not altogether a bad thing. I mean, if a company is going to be effective in the global market, it can't have so many managerial levels.

02 Environmental Science

M: So, we've been discussing the diversity of plant and animal species found around the world, and, um, we've also talked about how humans have benefited, and, uh, continue to benefit, from many of these species. The problem we face is how to make sure the diversity of plants and animals is *preserved*. After all, species are dying off, they are going extinct and disappearing every year. And as they disappear, we lose some of the diversity of species on our planet. We lose *important* biological resources.

What I'd like to talk about now is how we as humans can *manage* these precious biological resources. The two methods we are going to talk about today both aim to preserve species so they don't become extinct, and each method aims to protect both plant and animal species. They just go about doing it in a different way, as you'll see from the examples.

Now, traditionally we've managed biological resources through institutions like zoos, botanical

gardens, and aquariums, all of which are examples of what we call off-site management. Off-site management is when we take animals and plants out of nature and let them live in a special place where scientists and caretakers can watch over them and protect them. The other choice you have to preserve plants and animals is called on-site management. That's when you leave plants and animals in their natural environments, their habitats. This is important: the two choices for biological resource management are on-site management and off-site management, clear so far? Good.

Since it has been the most common throughout human history, let's start off by talking about off-site management of plants and animals. Usually, off-site management involves separating plants and animals that would otherwise be found together in nature. So, if you wanted to protect zebras, they would go to a zoo, whereas if you wanted to protect a species of grass that shares the same natural environment with zebras, the grass would be planted in a botanical garden. There is no attempt to preserve the natural environment in off-site management. The aim is to preserve the individual species. Because of this focus on individual species, zoos and botanical gardens can be places that protect species from extinction and even allow them to be put into new natural environments later.

Now, on-site management, that's a whole different game. When you want to preserve biological resources in one place, you have a much harder job. First of all, where do you draw the lines? Well, that's where national parks come in. National parks are being created, as I speak, around the world to preserve biological resources in their natural environments, so those resources are not threatened by human destruction. Unlike zoos and botanical gardens, however, natural parks face difficulties in terms of their size. How big do you make it to protect everything in them? One problem is when animals leave the park and get killed by hunters. This doesn't happen in zoos. On the other hand, by making a park, you protect a larger number of species all at once. You protect them as they live together, you protect the entire natural environment, and that means even preserving biological resources we haven't yet discovered.

03 Office Hours

W: Hi there Professor Martin . . . do you have a minute?

M: Sure, Jane, how's everything going?

W: Good. I read that article you suggested on waterway restoration. It was really interesting. I think that the work those environmental scientists are doing to clean up polluted streams and rivers is very impressive, and needed. I just had no idea they had the technology to remove so many chemical contaminants.

M: Oh, glad you enjoyed it. The river project that article talked about uses cutting-edge technology. It's all still very new, but, um, I think a lot of people will be adopting that technology in the coming years to clean up other waterways.

W: You know how, um, the other day in class, you were talking about how students should try and get some hands-on experience if they want to go into the environmental science field?

M: Yes. I always encourage my students to do that. I can't overemphasize the value of practical experience for any future career, be it in environmental science or some other field.

W: Well, I think you convinced me to give it a try. The thing is, how do I, um, *actually get* hands-on experience? It's not like environmental companies and organizations are willing to hire college sophomores.

M: Jane, one very easy way to get experience, and also to meet some very interesting and dedicated people who care about the issues and are doing something about it, is to join a local environmental group and volunteer to help with one of its projects. A lot of the local groups are always looking for volunteers. There is more work to do than there are people to do it. So it would allow you an excellent opportunity to get good practical experience. There are a lot of groups, large and small, in our area that you could volunteer with. If waterway restoration is something that interests you, I could introduce you to a group that I know well. They are a nice bunch and would certainly appreciate the help.

W: It does interest me, and I really want to do something about cleaning up the river. Um, uh, but you see, I'm taking classes full-time and have a part-time job too. I'm really busy, and I'm not sure I have time for volunteering. That's why I was thinking of a paid job.

M: Let me suggest another option, then. You could do an independent study project. You would work with a sponsor and design a project. And you could do the project while you volunteer with a local environmental organization. For example, you could help the organization test water samples and write an analysis about it.
W: That sounds great. Does that mean an independent study project would take the place of a regular class?
M: As long as you find a sponsor and get approval from the department, then yes. In that case you could get credit for your project just as if you were taking a regular class.
W: Neat.

04 Service Encounter

M: Hi, I was wondering if you could help me. I'm having a lot of trouble balancing my classes and my job this semester. It's really tiring me out. And we still have ten weeks to go. My friends all suggested I talk to you to get some advice.
W: OK, well, let's talk about your schedule and see if we can find a way to help you. To start, can you tell me a little more about your schedule this semester and why it is giving you trouble?
M: Sure. The thing is, I have to work. My scholarship ran out last term, and now I have to work to pay for tuition, rent, food, all that. You know I barely make enough money to survive. And, you know, I work a lot, at least twenty hours per week. Sometimes more. Twenty hours is the minimum. Sometimes I have to work a lot more. Just depends on how busy the restaurant is. It's really hard, but I've got to do it.
W: So how about your classes?
M: Well, I'm taking six classes this term. I've scheduled them so that I can go to classes all day and then work every evening if I have to.
W: Six classes is a pretty heavy schedule for any student. And with work on top of that, it must be hard to find any time to study, or to get any sleep for that matter.
M: Tell me about it.
W: Do you need to take six classes?
M: Um, yeah, I have to take six classes if I'm going to graduate on time. I figured if I take six classes this term, and next term I can graduate on time. I really want to do it.
W: And how are your grades this term?
M: That's what worries me. I'm not doing so well. Before, I was a pretty above average student. I went into the term with a 3.5 GPA, but now my grades are slipping.
W: You know what, it sounds to me that you might want to drop a few classes and accept that you won't graduate on time. If you are facing this much pressure this early in the term, you are risking your GPA, your job, and your health. Why don't you just take the three classes that are most important to you, and focus on doing well in them? You also said that you are in a tight financial situation. It would seem that keeping your job is a top priority. Without it, how can you continue to go to school?
M: Exactly, I can't.
W: So I suggest you drop at least three classes. Sometimes it is important to recognize that you can't have everything that you want. You have to choose the best option for you.
M: What you are saying makes a lot of sense; I just needed to hear it from someone else. Thanks for your help.
W: Certainly, and if you need to talk about anything else, you can always drop in.

05 Philosophy

W: OK, so today we're discussing "positive skepticism." I'd like to spend some time talking about what it is, and more importantly, the influence of Michel de Montaigne on its development. First, imagine yourself living in a country that is being torn apart by bloody wars fought between opposing religious groups. You belong to one of these religious groups, but you see no point to the wars. All they bring is destruction. You have been educated to see that life can be and indeed was once better for all humans. What do you do?
M: I'd have to leave my country and go live somewhere else.
W: OK. Anything else?
M: I guess you could try to get the two sides to stop fighting. But that would be really tough.
W: Good. So you can see a little of what kind of decision Michel de Montaigne was facing when his home country was being devastated by religious wars between Protestants and Catholics

during the 16th century. Montaigne was a Catholic, but he had no desire to take sides. So he left his job as a lawyer in the city and withdrew to live quietly in the country.

You see, Montaigne was educated to value human dignity and believed education could help people improve morally. The world he saw around him was the opposite, so he decided to investigate why this was so. His investigations and writings inspired an intellectual trend known as "positive skepticism," a new approach for criticizing the harmful effects of tradition and authority.

M: Wait. How could he investigate the social problems of his time if he fled to the countryside? It's not like they had TV and Internet back then.

W: And even if they did, Montaigne would not have trusted them. You see, he felt that all he really could know was himself, and so he began his investigation by rigorously questioning himself and everything he thought he knew and answered the questions honestly. This prepared him to ask serious critical questions about society. His method influenced "positive skepticism" in three ways.

One was that he found that extreme positions in politics and religion were dangerous but appealing to many people. Why? Because they were easier than doing the hard work of thinking carefully. It is much harder to understand the complexities of the world and to live with them. So Montaigne criticized these extreme positions.

That brings us to his second contribution, and that was to promote moderation and tolerance. If more people shared Montaigne's view and refused to give in to the extremes, then 16th century Europe may have been a much more prosperous and less bloody place.

Finally, he rejected absolute positions, especially in terms of religious truths and morality, even though he was a religious man. This was an extremely important contribution since the wars of his time were fueled by religion and hatred of other religious groups. The most extreme believers could not talk to one another to solve their differences because each side was convinced that it was absolutely 100 percent correct and the other side was 100 percent wrong. These methods of critical thinking are still with us today and have inspired many writers to be skeptical of tradition and authority in their own times.

06 Sociology

M: When we talk about the largest form of social organization, we are talking about the concept of society. Society refers to a semi-closed system made up of individuals. However, it is a collective that is larger than any of the individuals.

Humans have developed a remarkable array of different forms of social organization; yet sociologists have identified a few key types of societies, types that share defining general features common to certain specific societies. I'd like to talk about three types today, just to give you a look at the considerable diversity of human societies. And one way to differentiate types of societies is to look at three dimensions —there may be some new words for you, so pay attention.

The first thing we look at in categorizing a society is its level of mobility. In other words, do its members live in one place, or do they move around? Then we ask about how members meet their need for food. We call this their subsistence pattern. So we ask what their subsistence pattern is. And a third thing we also ask is who does what job? This is what we call the division of labor. We ask what the division of labor for the society is. So we compare mobility, subsistence patterns, and the division of labor.

Let's start off at the beginning, with the very first human societies. The earliest humans developed a form of social organization that centered on movement. The key word here is movement. And what I mean by that is that the earliest human societies were highly mobile, moving from place to place in search of food, water, and shelter. Food was obtained exclusively through two means: hunting and gathering. This is why we call this type of society a hunter/gatherer society. If you are trying to get food by hunting animals and gathering plants, well, you have to keep moving. Animals won't stay around if you are trying to kill them.

Similarly, if you are picking all the berries, roots, and edible leaves in an area, you will eventually run out. So that's what I mean by movement being so important. Now the other thing is division of labor. In hunting and gathering societies, people don't really have specific jobs. So we say there is little division of labor. Sure, it's the

men that do most of the hunting and the women that do most of the gathering, but when it comes to cooking, building shelters, caring for children, healing, making tools, all those other jobs are done by anybody and sometimes everybody. There are no specialized jobs in a hunting and gathering society. Clear so far?

OK, then onto the next type—horticultural societies. Well, at some point, people got tired of moving around all the time and not always finding food, so someone discovered that he could collect the seeds for plants and plant them. People found a way to get greater control over their food supply by planting some food crops like wheat, corn, beans, etc. People still move around in a horticultural society, but not as much, and sometimes very little at all. They begin to settle down and spend more of their time raising animals and plants, but they are still going out hunting and gathering too, just not as much. There are other differences, too. Unlike the egalitarian hunter/gatherer societies, horticultural societies have some division of labor. Some people are political or religious leaders, who don't do as much of the work producing food as other people do. In some horticultural societies, there are a limited number of individuals who are healers or have other specialized jobs.

Now, for our third type of society, we see a huge change. In this type, the agrarian society, people have settled down more or less permanently. That's not always the case with horticulturalists, who often move from time to time or even seasonally in some cases, but in an agrarian society, people are settled down, or sedentary. They produce all of their own food by growing it in permanent fields or by raising animals. Sure, some people might hunt, but the important thing is that agriculture is the dominant subsistence pattern. It is also in agrarian societies that we see significant divisions of labor, the rise of specialists who only do one job. For example, kings, warriors, doctors, priests, even teachers. Most people are farmers though in an agrarian society.

07 Office Hours

W: Hi Professor Jordan, can I talk to you? My name is Sandra Lewis. I'm interested in taking your Developmental Pysch. class next term.

M: Yes, hi Sandra, come on in. Take a seat.

W: Thanks. So I, uh, just met with my advisor and she tentatively signed me up for your class, but she said I would need to talk with you to get your approval and to ask you to sign a form. That's because I haven't taken Intro to Psych, and, um, it said in the course catalog that that class was a prerequisite for your course.

M: Yes, that is correct. It is departmental policy not to allow students to take middle and upper level courses without having first completed the necessary prerequisites. We do this because the courses above the introductory level courses presuppose that students have a certain amount of background knowledge. For instance, in Developmental Psychology, we start off assuming that you know all the theories and material covered in the Introduction to Psychology course, the 101 course. Without that background knowledge, it's hard to follow the course. So I'm afraid you'll have to take the 101 course first, and then you are more than welcome to be in my class next time I offer it, which I think, hmm, will be this summer.

W: Oh no, that won't work. I'm not going to be here this summer, and I really want to take your class. See, I have an internship this summer at a camp and will be working with disabled children. So I really want to take your class to help me be prepared for that experience. One of the supervisors at the camp, Jessica Franklin, graduated from here about two years ago, and she highly recommended that I take your class before starting my internship. She thought it would be very beneficial to have a foundation in the theory of developmental psychology to help guide my work.

M: Ah, I remember Jessica. Glad to hear she is working at the camp. I know that was something that she had hoped to do after graduating. Good for her. Tell her I said hello next time you talk with her.

W: Sure. Be glad to.

M: But about your situation, I can understand where you are coming from, and it sounds like you could really benefit from the class. And it's

great to hear that you are planning an internship this summer as well and want to apply the theories from the course toward your work, but without the background knowledge that you will need, I'm afraid the course will be too difficult for you.

W: Well, I know that I didn't take the 101 class here, but I have taken two years of psychology in high school, so I'm pretty familiar with the basic theories and concepts. I didn't take the AP test, but I still know a lot.

M: Hmm. How about this? What I can do is let you take the class on a trial basis. I'll sign your form and you can be in the class. But, I want you to check in with me on a weekly basis and let me know how you think things are going. Then we can decide if the course is right for you or not. I'd also suggest that you audit the 101 class while you are in my class. That means you'll be in 101, but you won't be responsible for all the work, and you won't get credit for it. But that way, at least, you'll be getting some exposure to how we teach introductory psychology at this college, and it might help you review what you learned in high school.

W: Professor Jordan, I really appreciate you doing this. I'm confident that it will work out. And of course, I'll keep you posted on how things are going.

M: OK then, where's that form you were telling me about?

W: Oh, right here. Thanks.

M: Just make sure you turn that in soon. They are pretty strict about deadlines around here.

W: Yeah, that's what I hear. My advisor keeps warning me about that. I'll drop it off right now. See you next term.

M: I'll see you then.

08 Service Encounter

M: Uh, hi, do you know where I can find the editor?

W: Yes, but she's not available right now. Can I help you with something?

M: Yeah, I'm a first-year journalism major, and I've been taking this class, Intro to Journalism, with Professor Woodward. He's a really cool guy, and the class is super interesting. Um, so I was talking to him after class the other day, and I told him that I want to become a journalist—my goal is to write for *The New York Times* someday. Anyway, we were talking, and he said that I need to get some experience, build up a portfolio, you know. So he suggested that I try to write freelance for the school paper. I thought that sounded like a great idea. Because, you know, I used to write for my school paper in high school. So that's why I'm here. You guys are the school newspaper, and I want to see if I can get a job with you!

W: Wait a minute. Wait a minute. Slow down. Let me explain something. We do work with freelance writers, but we can't pay non-staffers.

M: Yeah, but if I write for the paper, I'm staff, right? That's how it was in my high school, except we didn't really get paid, but this is college.

W: No, not exactly. That's not how it works here. The way it works is like this. Right now, the paper only has a budget for five paid positions. That's our entire staff, five people, and that includes the editors, writers and a photographer. We're all part-time but we manage, somehow, to get it all done. Anyone else who works for us, writing, taking pictures, drawing cartoons, does so freelance. And for the purposes of our budget, they are considered nonstaffers. We can't pay them. I'm sorry. That's just how it is.

M: Oh, bummer. So much for that plan. I'm not sure what I'm going to do now.

W: Wait! Don't get me wrong, we *need* freelance writers, *big time*! I don't want to give you the wrong impression. I'm sure the editor would love to talk to you about working with us. She'd just need to see some writing samples that show what you are capable of. Then, if she thinks you can handle it, she can get you started writing one or two articles a week.

M: Yeah, but I need a job. I need to earn some money. My parents are helping me out with tuition and housing, but I have to use my own money for books and clothes, CDs, going out you know, stuff like that.

W: I completely understand that, but why don't you give it a try, writing freelance for us? You can get some experience and build up your portfolio in the process. And most importantly, if you stick around for a while writing with us, there is bound to be a staff position that will open up. If you become staff, we can pay you. That's actually how I got hired. Sorry I didn't introduce myself. I'm Gina. I write most of the sports articles.

M: Cool, I've read your stuff. I'm Alex.

W: I started out writing freelance. First covering student government, and then I got into reporting on the budget, ugh, that was not my thing. Yeah, it was tough at first, but I learned a lot. And then when one of the senior writers graduated, I got hired. And it just happened that he was the sports writer, and I love writing about sports. This is my last year. I love it. The job's part time, but it's a great place to work. Sure I can't get you to reconsider?

M: Did you say you needed help with sports?

W: We'd love some help.

M: Right on.

W: Let's get you set up with an appointment to talk with Martha. How does Friday morning look for you?

M: Anytime before eleven. I have class then.

W: Here, I'll leave her a note that you'll stop by at ten. Oh, and don't forget to bring some writing samples.

M: Will do.

09 History

M: As the Industrial Era swept across America in the later half of the 19th century, it created an enormous amount of wealth for a new generation of men, men who often had started from humble backgrounds only to acquire fabulous riches in their lifetime. Yet at the same time, millions of Americans were suffering in horrible conditions of poverty in the rapidly growing industrial cities.

Some intellectuals of that time were championing the rise of these ultra-wealthy leaders of industry. They would say that a man gets what he deserves in life. For instance, if he works hard and becomes rich, then that is what he deserves. His wealth is the product of his hard work. Conversely, if a man is lazy and lives in poverty, then that too is his own fault. Such thinkers believed that America was a land of endless riches. They also said that if a man became very wealthy, the government had no right to take his money in the form of taxes, because he earned it and knows best how to spend it. But, you might say, don't governments need money to help the poor and those in need by providing public education, hospitals, sewers, and other things that everyone can use?

One of the wealthiest men of the time, Andrew Carnegie, responded to such a question by promoting what he called the "Gospel of Wealth." It stated the main ideas I have just laid out for you: that men get what they deserve, that governments should let them get rich, and that they should be able to do what they want with their wealth, but he added something that others were not saying. Carnegie believed that a man with wealth was responsible to help others improve themselves, and to demonstrate his commitment to help other men improve their conditions, he gave generously, creating a system of 2,800 public libraries. He died before he could spend all of his money, but carefully left it entrusted to an organization that continues to manage his money today and give to people in need. Carnegie believed that such great men of wealth could indeed eradicate poverty from America without government interference.

Well, has the "Gospel of Wealth" lived up to the promises that Andrew Carnegie envisioned? Let's look at two criticisms before we decide. First, there is the problem of the ideas underlying the "Gospel of Wealth." Carnegie did not reject the idea that some men could become incredibly wealthy and that this might be a problem. He was more concerned with what they did with their money. The problem is that not everyone can become rich—not in 19th-century America or anywhere. People have different personalities and abilities. Some people are born with poor health and injuries, so that they must be cared for their entire life. Because the "Gospel of Wealth" continued to support the idea that people get what they deserve, it did not help face the real causes of problems facing American society at the end of the 19th century. Its narrow commitment to individualism obscured the realities many people faced.

Second, while Andrew Carnegie accomplished great things through his philanthropy, and set about to give away all his wealth, few others followed his path. For his "Gospel of Wealth" to truly have helped alleviate the suffering of so many during his time, it would have needed far more philanthropists to practice what Carnegie preached. That did not happen. It was a mistaken idea to think that if wealthy industrialists were

allowed to pay less money to the government in the form of taxes, then they would give it away more effectively. It didn't happen. There was and still are excellent philanthropists, wealthy people that give their money to others in need, but the problem is there aren't enough of them So governments tax people and, if they are at their best, should use that money to make sure that everyone benefits.

There are a lot of things governments provide that aren't always recognized, but that improve the condition of all people, rich and poor alike. Without government programs, we would never have seen industrial cities cleaned up and made into healthier, safer places to live than they once were. Some would argue that these changes were more beneficial to most poor people than Carnegie's libraries, since these changes directly raised living standards.

10 Astronomy

W: We've been talking about the lunar landscape and lunar soil, and today I want to pose an interesting question to you, one that scientists are grappling with as we speak. Is there water on the moon? Or, theoretically, *could* there be water on the moon? It would seem that yes, water could be on the moon. We just haven't found it yet. Especially since we've talked about how the moon likely shared a similar origin with Earth.

M: But how can there be water on the moon if there is no atmosphere and little gravity? Wouldn't any water that may have been on the moon have evaporated a long time ago?

W: Yes, Earth and the moon share similar origins, but scientists think that if there is water on the moon, it likely came from comets or meteors that contained ice and crashed into the moon. This is also a theory of how Earth got its water, but what you said is correct. Any water on the moon's surface would evaporate quickly. That's why scientists think any water on the moon would have to be in the form of ice, specifically underground ice deposits. These could be in the form of crystals or perhaps larger bodies of ice.

M: You mean like an underground ice lake or something?

W: Exactly. That's exactly what we are talking about, possible frozen underground lakes. Now, if ice were on the moon, where would you start looking?

M: The poles. They are coldest. That's where they are looking for water on Mars too, and it's where ice is found on Earth.

W: Right. You'd look for ice in the polar regions. Well, when investigating any theory, as you all know, scientists make the best guesses they can possibly make, and then seek evidence to support or disprove their theory. Let's take a look at the evidence in support of there being ice on the moon.

Now, scientists have been thinking about this problem since the 1960s, but it wasn't until 1996 when they got their first solid evidence. A spacecraft called *Clementine* was sent to investigate the lunar South Pole and sent back the first evidence of potential water. Its radar suggested that it had found deposits of water ice a few meters under the moon's surface. Then in March of 1998, a second spacecraft, *Lunar Prospector*, confirmed what *Clementine* had found. Even more, it confirmed that there are large deposits of water ice at *both* the moon's north and south poles.

M: How did they know the ice was there if it was underground? That's what you said, right?

W: Good question. They know because they found indirect evidence in the form of hydrogen.

M: What do you mean by that?

W: What I mean is that instruments on the spacecraft detected hydrogen. Hydrogen, as you know, combines with oxygen to form water, the chemical formula being H_2O, for two hydrogen atoms joining an oxygen atom with water being the result. The instruments on *Lunar Prospector* could not detect H_2O, but it could say if there was or wasn't any hydrogen present, and what the instruments showed was lots of hydrogen, enough for perhaps trillions of tons of water ice. But the scientists, being scientists, were not satisfied with indirect evidence. So guess what they did next?

M: They got samples of ice to bring back?

W: That would be ideal, but at present it's too expensive and difficult. They had a simpler solution. When *Lunar Prospector* was ending its lifetime, the scientists crashed it into one of the craters where

ice was expected to be located. They had hoped that the crash would cause water vapor to be released. If that happened, they could see the water vapor with powerful telescopes, and it would give direct evidence for the presence of water ice. However, they knew the chances were very slim, less than ten percent.

M: So, did they find the water vapor?

W: Unfortunately, no. They did not detect water vapor from the impact, but that does not mean that there is no water on the moon since there are many uncertainties. For the time being, we'll just have to stay tuned and see what the scientists cook up next.

Chapter 7 Inference Questions

01 Philosophy

M: Yesterday we left off talking some about Ayn Rand's Objectivism. You'll remember that Rand's philosophy is ultimately about the quest for happiness, but what we're going to focus on today is the Objectivist view of reality. That would be considered the metaphysical aspect, meaning that it deals with issues of the nature of reality aside from customary scientific explorations.

Are you all clear with that? Just keep in mind that "metaphysics" literally means "after the physics," so I guess you can see it as the philosophy of things *beyond the physical world*. Anyway, the Objectivist view of reality is based on three axioms set out by Rand. The three axioms are the Primacy of Existence, the Law of Identity, and the Axiom of Consciousness.

So, on with the Primacy of Existence. The basic idea is that there is a reality that exists with or without people being conscious of it. Another way to put it is that aside from people knowing and sensing things in the world—which is what we're calling consciousness—there is a greater reality. The Primacy of Existence is in direct opposition to philosophies of Relativism that claim that instead of there being an objective reality, that people create their own, unique realities. So, for example, a Relativist would say that a car crash occurs because a person believes it does, whereas the Objectivists maintains the self-evident truth that a car crash occurs regardless of whether or not we want it to. This is actually how the axiom is defended—see, the existence of a greater reality is why people have something to be conscious of in the first place.

OK, I'm assuming there are no questions so I'll move on to the second axiom: the Law of Identity. So keeping the Primacy of Existence in mind, now consider that everything that exists in this objective reality has an identity. What does she mean by identity? Identity refers to the different attributes, or characteristics, that set something apart from other things. Quite simply, a chair is a chair, and not a desk. That simple example shows that something can only have one identity, but that's not to say that something has to only have one characteristic. Half of the chair might be made of wood, the other from metal. Those two characteristics are part of the identity. But these characteristics occur in specific amounts, and the characteristics are definite. This is why this axiom is important—it basically proves that reality has definite identities that can be learned.

The idea that something can be learned makes up a part of the Axiom of Consciousness. See, once we acknowledge the identity of things, that something exists, people are conscious and able to learn. All knowledge is based on the fact that we are conscious, or aware, of the objective reality and the different identities that reside there. So anyway, Rand also says that since one can't be conscious without there being something to be conscious of, it follows that the mind does not *create* reality, but instead, through consciousness, discovers it.

02 Linguistics

W: In linguistics, we often focus on really particular details of language. Today I want to move away from that and discuss the relationship between culture and language and how each affects the other. I want to start with the theory of linguistic relativity, which is more popularly known as the Sapir-Whorf hypothesis, after the two linguists who formulated it. Has anybody ever heard of the Sapir-Whorf hypothesis? No? I only ask because it's pretty popular. In fact, it's been applied to many other fields as well.

OK, so the premise of the theory is that the way a language is structured influences how its speakers think and behave. Do you all get what I mean? If you think about it, it's pretty amazing. I mean, they're essentially saying that the language you speak determines how you think and how you act. It's not just that. On a much greater level, it also suggests that the world for any given culture is perceived through completely different eyes, or tongues, more appropriately. Do you understand how we get to that conclusion? It's because of the way that their language allows a culture to express and understand their unique realities. Sapir and Whorf were a professor-student team. They formulated this theory over the course of many years working with a variety of different groups. It resulted from performing experiments in comparative language studies. That's when linguists study two different languages next to each other to find their similarities and their differences. After all was said and done, they reviewed their results and came up with the theory of linguistic relativity.

Anyway, before you all completely dismiss this, let me say, there's a lot of evidence that supports this theory. One of the more cited cases was the work that Whorf did with the Hopi. After studying and analyzing the Hopi language, Whorf observed that, both linguistically and culturally, the Hopi had very different conceptions of time than English speakers. He noticed that the Hopi didn't have different tenses as we do in English to express when things happen.

For example, in English, we would say "ran" to express that the action happened in the past, but the Hopi have no equivalent to the past tense. In order to express the same thing, they would use a word that literally translates to "running from memory."

Like I said, Whorf noticed this difference and thought it was . . . uh . . . different. The more he learned about the Hopi culture, however, he realized that this was no sheer coincidence. It turns out that the Hopi have a different way of thinking about time. For us, it's natural to view time as a line. Something happens, and it is done. Something will happen in the future, and what that means for us is that it's farther up in the line. But the Hopi saw time as a process, so instead of a line, it was more cyclical.

03 Office Hours

M: Good afternoon, Professor Stevens. Are you free right now?

W: What time is it? Hmm, I think I can spare a moment. What's up, Aaron?

M: I wanted to talk to you about my last paper. I'm pretty unhappy with my grade. Plus, I'm not sure what you meant by some of the comments. Do you think we could go over it?

W: Certainly. Do you have the paper with you?

M: Yup, here it is. See, in the introduction, you wrote, "logic." I couldn't figure out what you were referring to.

W: When I write that on a paper, it means that the two sentences that are circled have no logical link to each other. You wrote: "The critical issue that Cineweb faces is how to make sure the company can succeed in light of the success of established Internet video rental services." Next you write: "In addition, Cineweb's name should be advertised more, in an effort to make it stand out from its competitors." The problem is that the second sentence didn't seem to relate to the first. Instead, you'd want to add a sentence that would introduce the second sentence as one of the ways that Cineweb could deal with the issue, perhaps. Otherwise, it doesn't really make any sense.

M: Yeah, I see what you mean. OK, what about this: in the third paragraph, you circled the word "institution" and all it has next to it is a question mark. What does that mean?

W: Sorry, that is pretty vague. Let me explain—you're calling Cineweb an institution, but that's not accurate. I sort of get the sense that you were trying to use it synonymously with "business," but you can't do that.

M: Right, I guess I was just worried about using "business" too much. But I do get it—an institution is not the same thing as a business.

W: Uh huh. Anything else?

M: Just one more. At the bottom of the page, you said that I didn't provide sufficient evidence to back up my proposals, but I thought I did that by talking about precedents with other companies.

W: You did do that, but what I *really* wanted you all to do was relate the precedents to how it could apply to Cineweb. Do you understand?

M: Right . . . so not just include companies that have tried a certain tactic before, but how it could benefit or harm Cineweb in particular.

W: Exactly. You know, Aaron, taking a second look at this, it seems that you didn't quite understand the assignment.
M: It's true. But thanks for explaining some of these comments to me . . . I just wish I could do something about my grade. I *know* I could do better if given a second chance. Especially now that I have a clearer idea of what you're looking for.
W: Why don't you do a rewrite?
M: Really?
W: Yup. What I'll do is just average your first grade and the grade from the rewrite together. Does that sound fair?
M: More than fair. Thank you so much! I really appreciate it.

04 Service Encounter

W: Hi, maybe you can help me. My name is Bianca and I'm the president of the juggling club.
M: How interesting! I didn't even know there was a juggling club. So anyway, how can I help you?
W: We've actually only been around for a year. We wanted to host a juggling competition, and I thought that a room in the student union building would be perfect. I just need to find out how to go about that.
M: Well, Bianca, the way it works is that a representative from the group comes in and submits a reservation form. It's quite easy from there, really. We'll make sure that the requested room is going to be available on the date. Everything else is up to the group.
W: What do you mean, exactly? Like providing food or something?
M: Yes, like catering and advertising and um, like decorations.
W: Yeah, I gotcha. OK, so you said we needed to submit a reservation form? Where exactly do I get that?
M: The reservation form? Didn't it come in your organization packet at the beginning of the year? The Student Activities Office sends them out at the beginning of the fall semester.
W: None of this is ringing a bell. Where would I have received this?
M: You wouldn't receive it personally. It goes to the organization's mailbox in the student union building.
W: I don't think we have a mailbox. I mean, I've kind of just organized everything myself from the very beginning.
M: Uh oh, it sounds like you're not registered with the university. Unfortunately, in order to use campus facilities, you have to have a recognized organization.
W: Wow. I don't even really know what that means. So how do I go about getting our group officially recognized?
M: Well, when your group becomes recognized, you not only get access to campus facilities, but you also get some funding, depending on the size of your group.
W: I can't believe I didn't know about this. Does the process have to get started at the beginning of the semester, or are we still eligible?
M: You'll still be eligible. First, the group has to come up with a constitution and submit it to the Student Activities Office.
W: What's the constitution have to be like?
M: You have to include the name of your group and your membership list. Also, you'll have to describe the basic organization of the group, so like, how you choose your leaders . . . stuff like that.
W: OK, that sounds easy enough. Then what?
M: Then the review board will either approve or reject the application. If you get accepted, you'll receive the organization packet with the reservation forms and all sorts of other important information.
W: All right, that sounds good. Oh, you wouldn't happen to know how long it takes for the constitutions to be reviewed, do you?
M: The review board meets every other Thursday. They notify all applicants as soon as a decision has been made.
W: Great. Thanks for your help.
M: No problem. Good luck with that!

05 Geology

M: Continuing our conversation about volcanoes, today I want to talk about types of volcanoes. Geologists generally group them into four types: cinder cones, composite volcanoes, shield volcanoes, and lava domes. Just to forewarn you: all of these have alternate names, but to

avoid confusion, for this class, we'll be using the above terminology. So, what was the first type I mentioned?

W: I think you said cinder cones.

M: That's right! Thank you. OK, so anyway, cinder cones are thus named because they are composed of hardened pieces of lava called cinders. The cinder cone is formed when there is a violent eruption from a central vent: vent being the opening. The lava solidifies when it contacts the air and it falls around the vent. Over time, a circular cone builds up around the vent.

W: What are some other characteristics of cinder cones?

M: Well, for one thing, they're usually very steep and they have a bowl, called a crater, at the very top. Another thing about cinder cones is that they don't really get to be very high. In fact, I would guess most don't really get higher than a thousand feet.

The next type of volcano is the composite volcano. These are very steep and symmetrical. They have a central vent at top, and the eruptions through this vent are how the cone is initially built up. But as the volcano gets larger, lava usually flows through little networks of cracks on the side of the cone. When the lava hardens in the cracks, the entire structure is strengthened.

W: I'm sorry, but can you give us some examples of composite volcanoes?

M: Of course. Composite volcanoes are much larger than cinder cones. In fact, a couple of the world's biggest mountains, such as Mount Fuji and Mount Rainier are composite volcanoes. Does that help?

All right, the next type of volcano we'll be talking about is shield volcanoes. This type of volcano gets its name from its appearance. See, they're really broad and kind of dome-shaped. I guess some geologists thought that from the side, they resemble a warrior's shield. Anyway, the reason shield volcanoes are shaped that way is because they are made when fluid lava eruptions spread over large distances and cool. Like composite volcanoes, lava often flows out of the flanks of the volcano, which also explains how it gets its gentle slopes.

W: Isn't Hawaii completely made up of shield volcanoes?

M: That's right. Hawaii is just a chain of shield volcanoes that rise up thousands of feet from the ocean floor. In fact, Mauna Loa, which also has the distinction of being the world's most active volcano, has been found to project over 28,000 feet above the ocean floor. Crazy, huh? Shield volcanoes are massive—they can be up to three or four miles wide.

There's one more type that I'll talk about. It's called a lava dome. In a lava dome, the volcano doesn't really erupt; lava just barely comes out, if at all. Most of it piles up right around the vent. So, instead of growing from the buildup of lava on the outside, it grows from the inside. It's actually pretty common to see these on the side of a composite volcano.

06 Art History

W: Good afternoon, class. I bet there isn't one person in here who *doesn't* think of the name Andy Warhol when the pop art movement is mentioned. It's gotten to the point that the movement is inextricably tied to this one figure, and with good reason. Andy Warhol had an incredible influence on shaping the American pop art movement and was largely responsible for legitimizing pop art. We'll go into further detail a little later in class, but I think I'd like to start with a definition of what pop art is exactly.

I think people have conflicting ideas about what pop art is, mostly because it was a movement that was going on in a lot of different places all at once. There was the Spanish movement, the British movement, even the Japanese pop art movement. But the earliest emergence of the movement sort of happened simultaneously in Britain and the United States in the early 1950s.

Anyway, at its simplest, pop art employs well-known images and themes as a kind of celebration of popular culture and a rejection of elitism. It's often looked down upon as being lowbrow, I guess, but a lot of pop art is actually pretty academic. There were many different figures that influenced pop art, but really, the one that always comes to mind is Andy Warhol. I said earlier that Warhol heavily influenced the

American pop art movement. He did this in a couple of ways. Before I start, I want to emphasize that Warhol was a trained artist, and was actually a working artist during the 1950s before he became a prominent figure in the movement. I say this because I think most people assume that he was a hack, so to speak . . . uh, someone who merely capitalized on a passing trend. I guess you can still argue that if you like, but he also had some very interesting ideas about art.

See, the man was completely enamored with pop culture. Taking cues from the movement, Warhol added a different aspect to his art. One way that he shaped the movement came from his ideas about the role of mass-produced items in the art world. He likened himself to a machine and wanted to elevate items that were mass produced to art. For example, some of his most famous paintings are those of Campbell's soup cans. Really, most of his subjects were really recognizable. And for him, the important part was making art that had mass appeal. In other words, he wanted his art to attract and speak to the majority of people, not just art critics.

I also want to mention Warhol's tendency to collaborate with other artists. His frequent collaborations helped changed people's previous attitudes about art. What I'm referring to is how, usually, artists tended to be really protective about their work. It was generally seen as a more personal thing. But the other side of Warhol's ideas about elevating mass-produced items to objects of art was that he also wanted to mass produce art. Do you all get the distinction? OK, so anyway, by collaborating with others, he created an assembly line of art, which, needless to say, was very uncommon at the time. But after that, collaborations weren't looked down upon so much and it was very much a part of that movement.

Warhol pushed pop art into the consciousness of the public not only through depicting popular subjects, but by bringing pop art to the gallery. In a 1964 exhibit called *The American Supermarket*, Warhol and other like-minded artists presented different pieces that represented a supermarket. They featured paintings of soup cans, vegetables, meat—all the things that you see when you go to the supermarket.

The importance of the exhibit was twofold. For one thing, it was really the first big exhibit featuring pop artists. This is significant because it kind of added legitimacy to those artists and the works they created. Also, the subject matter made people think to themselves, "What is art?" Do you all see what I mean? Because it wasn't what people were used to, I think that simply seeing these pieces in a gallery forced people to evaluate their personal ideas about what makes art *art*.

07 Office Hours

W: Good afternoon, Professor Moreno. I was hoping I could talk to you for a couple of minutes.

M: Sure, Marcy. What's on your mind?

W: I just saw my midterm evaluations on the website, and, I have to say, I'm a little disappointed about my participation grade.

M: Let me pull up your file. OK, I got you down with a B minus. That's not a bad grade.

W: I understand that. What I don't understand is why it's not an A. I mean, I haven't missed even one class all semester. I'm here every single time, and I'm always prepared. And after talking to some of the other students in the class, we all agree that I'm one of the most vocal students in class.

M: Well, Marcy, although I certainly appreciate your good attendance, that's really not all there is to it.

W: Wait, but it's not as if I just show up and stay quiet for an hour and a half. In fact, I make a point of making at least three comments per class. That's more than what some people could say for their own participation. Some people never say anything at all.

M: That's true, but to be fair, most of the other students do participate pretty regularly.

W: I know. I guess my point is that I just don't really get how I could have earned a B minus so far. I've been working for an A plus, and I didn't expect the participation grade to be dragging down my average. I try really hard in class.

M: I can see that you do, and I appreciate that. Let me explain something to you, though—I don't give anything away in my class. That means you have to work for everything.

W: But I do.

M: You may think you do, but from this conversation alone it becomes apparent that your attitude about participation is not at all what I'm looking for.
W: Sorry, I'm not really following. What are you looking for exactly?
M: Have you ever heard the expression "quality over quantity"?
W: Yeah.
M: What I'm getting at is that I don't only expect for my students to speak up in class. I also want to make sure that people are adding *quality* contributions to the discussion.
W: Oh. I'm sorry, but would you mind explaining what you mean by quality participation? I obviously have different ideas about what that is.
M: Marcy, I don't mean that your comments aren't interesting. But ultimately, some comments are more relevant to the discussion than others. It's those kinds of comments that the others can learn from, which is what we want, obviously.
W: So I just need to try to keep my comments more on-topic then?
M: Well yes, I think it would help if you could limit your in-class commentary to things that are immediately relevant to the discussion. Otherwise it's just distracting to the others.
W: OK, I can do that. How else could I improve the quality of my participation?
M: I would advise that you pay more attention to your interactions with your peers and try to be more attentive to what others are saying.
W: Like how? I don't get it.
M: OK, you mentioned earlier that you try to make at least three contributions every class.
W: Uh huh. I thought it was a good way to make myself participate.
M: I can see that, but don't you think that maybe by doing that, you tend to focus more on meeting your quota rather than really listening and responding to what others have to say.
W: Oh wow, yeah, I can see that. I never meant for it to be that way . . . I guess I was just really focused on nailing this one part of the class, but I see what you mean now, I really do.
M: It just happens that way sometimes. But now you know how you can improve, and that means you can bring your B minus up to an A plus by the end of the semester if you keep the things we talked about in mind.

08 Service Encounter

M: Hi, how are you?
W: Good, thanks. Can I help you with something?
M: Yeah, I'm actually here to use one of the practice rooms.
W: OK, so you want to make a reservation? I'll just need your student identification card. While you get that, answer me this: what instrument do you play?
M: Oh, no, no, no. I already made my reservation. I'm supposed to be in practice room B4.
W: You did? I wasn't expecting anyone until three-thirty this afternoon.
M: Oh, really? I have a practice room reserved at two. So I guess I'm a little early, but I definitely made the reservation for two p.m.
W: Let me look for it . . . what's your name?
M: Mike. Mike Brady.
W: I'm sorry, Mike. I don't see it here. You're sure it's for today?
M: I'm positive. I made it specifically for today because I knew I'd finally have some time to relax today.
W: OK, it must be here somewhere then. Oh, I know! Maybe it was filed as Brady Mike. There are so many people coming through here, we rarely have a day that a reservation isn't misfiled. But I guess that's not the case today. I'm sorry, Mike. I don't see you anywhere in the system.
M: Oh, geez. Is there any way you could let me in to the room anyway?
W: The whole point of the reservation system is to make sure that, in busy periods, everyone has access to the rooms. But also, we need to have a way to keep track of who's using the rooms. You know, just in case there is damage or anything like that.
M: Right, I understand that. We need to keep these rooms open and in good condition for everyone. But, I guess what I'm thinking is that if anything is damaged, you'll know it was me.
W: I wish it worked that way. But even that way, you wouldn't be the one assuming the responsibility for the room. Unless you're on the system, I'm completely responsible for the rooms. You know how it is. I would if I could, but—
M: —you can't. OK, what options do we have?
W: Mike, when did you make the reservation?
M: It was about a month ago. I remember because I found out about my cosmology midterm on

the same afternoon. In fact, that's why I made the reservation . . . I figured that since I would be done studying by today, and I'd probably be half crazy after all of that studying, I could finally get down here for a couple of hours and practice away.

W: I hear you.

M: Why did you want to know about when the reservation was made?

W: Well, I thought that if it was recent enough, we could pull up the paper file. But, we only keep those for a week. I know, it seems so senseless, but don't worry, we'll figure something out. What we need specifically is the reservation number. You don't happen to remember what that was, do you?

M: No way. I don't even know what that is.

W: I wouldn't expect you to. It's a seven-digit number that's generated by the system when you make the reservation. If we had that, we could pull it up on the computer. But . . .

M: There's really nothing else we can do? It seems like we should be able to redo the reservation somehow. I mean, I can even tell you which room it was supposed to be in—room B on the second floor.

W: Actually, do you remember receiving a confirmation sheet when you made it? It's a half-sheet paper that has a reservation number and the particulars about when you're supposed to come in.

M: Oh yeah . . . the reservation number was on the bottom of that, wasn't it?

W: That's it. Do you have it? It would make everything so much easier.

M: Yep, in fact, I think I have it in my backpack. Just give me a second.

W: No problem.

M: I can't find it anywhere. It must be in my room. I don't live far from here.

09 Business

M: Hi, everyone. I'm sure you all know what mass production is, and even if you don't, it's most definitely a part of your daily life. How, you ask? Well, just to set the record straight, mass production is when large amounts of identical products are made on assembly lines. So the machine spits out the standard parts and then people put them all together while the parts move down a moving conveyer belt.

Most people think that mass production was invented by Henry Ford, who used it to make the famous Ford Model T car, but the truth is that Ford really just popularized it. We're still not sure exactly who invented mass production, but semblances of the production method were seen as early as the American Civil War, when it was used to manufacture firearms.

The idea of the assembly line was first patented in 1901 by Ransom Olds of another automobile company, Olds Motor Vehicle Company. Yet, it wasn't through any relation to Olds that the Ford Motor Company began to use the assembly line. Instead, according to popular accounts anyway, officials from Ford got the idea from a Chicago slaughterhouse.

The official, Mike Campion, observed the employees at the slaughterhouse butcher portions of animals as they moved down a conveyor belt. Impressed at how fast the employees were able to work by performing a single function over and over again, Campion returned to the company and suggested they apply the "disassembly line" method to their production. After some initial doubts, the method was finally employed, revolutionizing manufacturing thereafter. Interestingly, as a way to honor the inspiration for the assembly line, the owner of the slaughterhouse, Pa Klann, was allowed to drive the very first automobile built on assembly line.

So now that you guys have a more accurate history of mass production, I want to discuss some of the advantages and disadvantages of the system. The most obvious advantage is that mass production is really fast. According to the archives at the Henry Ford Museum, after the system was started, they were able to make cars in three minutes. If that doesn't convince you of the efficiency of mass production, let me add that before it took one hour and 35 minutes to make one car. There are a couple of reasons why it's so much faster. Since the parts are all made by machine to a specific, standard size, people don't waste time refitting parts. Plus, the simplification of the employee's tasks made it a lot faster for them to perform their duties, although it made work less interesting.

Another advantage of the system is that human error is significantly reduced, if not completely eliminated. I sort of alluded to the reason for this before, but I'll elaborate. Remember that, before, all the parts were made by hand. But one of the hallmarks of mass productions is having a machine that makes the parts for you. That way, the machine just pumps out many of the same exact part and all the human really needs to watch for is that the machine is functioning correctly. Are we all still on the same page? Good.

All right, those were some of the advantages, but don't be fooled. There are some disadvantages as well. The first example relates back to my point about how mass production eliminates human error. See, the other side of that is that production design becomes kind of inflexible because you have all these machines making the same parts over and over. What I mean is that if at any point, you wanted to change the design, you couldn't just give an employee new specifications. You'd have to get completely new equipment to make the part for you.

That leads me to another disadvantage. We talked about how efficient the system is, meaning that, in the end, the cost per object is less because it takes less labor, but getting the appropriate machinery to make all the parts is extremely expensive. Now imagine you're a business owner. Unless you know for a fact that this machine and system are going to provide a design that you need to ultimately be successful, it would take a lot to convince you that it was even worth making the initial investment in the machinery.

10 Psychology

W: This week, we talked about all sorts of topics relating to sleep and dreams. Studying dreams is notoriously difficult, given their highly personal nature. Still, psychologists have come up with different ways of studying dreams that has revealed some information about what dreams are and why we dream. Aside from the more popular interpretations of dreams, who can tell us one of the ways that dreams can be used?

M: Well, Loewi talked about how it can help with creativity. Isn't that how he came up with that experiment that won him the Nobel Prize?

W: Yep, that's right. For those of you who aren't familiar with this case . . . Dr. Otto Loewi was a pharmacologist who was famously quoted as saying that he would have never performed his award-winning experiments if it had occurred to him while he was awake. In that way, he supported the idea that dreams can be helpful in coming up with creative solutions because you're less inhibited. But anyway, what is another way that dreams are studied or used in psychology?

M: Well, this refers more specifically to lucid dreams, but I guess they can be used to promote a sense of emotional well-being or growth.

W: I'm so glad someone brought this up. I can't believe we haven't talked about lucid dreams. Anyway, a lucid dream is a type of dream during which a person feels as though they are awake. By that I mean you're simply dreaming while being aware that you're dreaming. You can think of it as being conscious while dreaming. Does that make sense?

M: Yeah, but how come we don't hear more about them?

W: There are a couple of reasons, actually. I mean, like I said before, it's hard to study any kind of dream.

M: Lucid dreams are pretty rare, aren't they?

W: Uh huh. In fact, I just read an article that said that only about twenty percent of the population have lucid dreams on a regular basis.

M: So what is the purpose of lucid dreaming, then?

W: I guess one example I can give you that's a little more specific is nightmare resolution. A famous case study involved a woman who had just gotten into a car accident, wait, no, she had just gotten divorced.

M: So she was having nightmares or something?

W: Right, night after night, she would have this terrifying dream that she was being swallowed up in a giant wave. But with the help of a psychologist, she was able to have a lucid dream, meaning that she could control it. She learned to change the dream so that instead of getting swallowed up, she would swim and live.

M: I didn't realize there was a way to induce a lucid dream. Is there a standard way of doing that?

W: Yes, actually. I mean, there are different methods, but I can share one that was popularized by the lucid dream guy, Stephen La Berge. OK, so first you're supposed to try to memorize a dream you've just woken up from for a couple of minutes. Then you have to do something that you could only really do while you're fully awake, like reading.

M: What do you have to do that for?

W: Well, the memorization part is kind of like a rehearsal for when you go back to sleep. Anyway, next, you get back into bed and, while you're trying to get back to sleep, say to yourself that you want to remember what you're dreaming the next time you begin to dream.

M: Is there any more rehearsal after that?

W: I'm not sure what you mean, exactly. After you say that to yourself, you should try to imagine yourself actually lying in bed and having the dream that you were rehearsing before.

M: And all that helps you have lucid dreams?

W: Yes, it's been found to help.

Mini Test 3

01 Biology

W: Our next topic is mimicry in animals. See, in nature, animals have different ways of defending themselves from predators. Some animals change their behavior to become less appealing to those that are hunting them, such as oh, such as when an opossum plays dead. But others have an evolutionary defense mechanism through which they are able to change their appearance in order to discourage predators. This is called mimicry. OK? Mimicry.

But don't confuse mimicry with camouflage. Camouflage is when an animal takes on the appearance, uh, looks like its surroundings, but mimicry refers specifically to the instances when an animal models its appearance after *another organism*. Are we all clear with that? Great, why don't we discuss some more specific types of mimicry then?

Well, then, I guess we can start with Batesian mimicry. Batesian mimicry is when an animal mimics the appearance of another in order to protect itself from predators. The real distinguishing factor between Batesian mimicry and other types of mimicry is that in Batesian mimicry, the animal that changes its appearance has no characteristic of its own that would discourage predators otherwise. Let me explain further . . . see, it isn't as though animals just randomly pick another animal to mimic. They model themselves after animals that either taste really icky, uh bad, or are poisonous. By looking like a poisonous species, predators are going to pass over them when they are out hunting. Are we all still on the same page? Why don't I give you all an example just to clarify?

OK, so let's consider the Brazilian butterfly Pierdiae. There's no real reason why a bird wouldn't want to eat one of these guys except for one thing—it looks exactly like a butterfly form the Heliconiidae family. The Heliconiidae are not a species that birds are interested in eating because—well, they taste funky, you know, unusual and not at all tasty. Just by having similar coloration as the Helicondiidae, the Pierdiae are able to escape getting eaten. So basically, the tasty Pierdiae looks like the not-so-tasty Heliconiidae and thus avoids predation. Pretty cool, huh? Anyway, the case of the Pierdiae butterfly was the first time that this type of mimicry was observed, by a man named Henry Bates, hence the name. But don't be fooled, Batesian mimicry occurs in all types of bugs, cockroaches, all different kinds. Scientists haven't completely figured out how animals evolve to have the same coloring and features as other animals, but genetic research has revealed that the patterns of color inheritance is probably influenced by geography. That means that bugs from different areas have different genes to determine which species they mimic. If there aren't any questions, I think we should talk some about Müllerian mimicry.

OK . . . after the discovery of Batesian mimicry, scientists started studying mimicry in all sorts of animals. What scientists noticed, though, were animals that had a defense mechanism of their own, yet they *still* mimicked other species. This was called the Batesian paradox, because it made no sense at all for an organism that was already unappetizing to predators to mimic another animal. Then a German zoologist named Fritz Müller proposed that the reason an organism would do this is so that predators

would learn their lesson about not eating them from *another* inedible species that looks like them. Does that make sense? Here, let me put it this way . . . See, birds and other predators aren't *born* knowing which bugs are good to eat and which ones are going to make them sick or whatever. So when a bug with its own defense mechanism mimics another type of bug, it benefits because then the predator learns *not* to eat them by first trying a different but similar-looking species. And once the predator learns, it's going to avoid bugs that resemble it. Think of it as kind of like a warning pattern that's shared between many bugs. In fact, the group of bugs that share the pattern, which is called a mimicry ring, by the way, usually go through some signal standardization. All that means is that all the animals in the mimicry ring evolve in order to have the same warning signal.

02 History

M: This week, we studied the beginnings of agricultural societies in two different parts of the world: the Nile River Valley and Mesoamerica. Now, the reason I wanted to go over that was to provide you all with a foundation for understanding agriculture as we know it today, but when I was reading your reaction papers, it seemed that most of you have confused a lot of the information we went over. For today, let's get everything cleared up by talking about some of the ways that these two cultures differed in their early approaches to agriculture. Can anyone start?

W: OK, given the geographic differences between the two, there were some obvious differences in the way that they grew crops.

M: What do you mean exactly? Can you give the class an example, maybe?

W: Well, I mean, I guess both cultures had to deal with pretty rough terrain. I mean, the Egyptians were out in the middle of the desert, but they had the Nile River as a source of water. So they came up with a system of using the Nile to their advantage by controlling the water. Didn't one of the Egyptian kings actually build a dam or something for irrigation purposes?

M: That would be King Menes. And you might remember that later, floodwater from the Nile was channeled twelve miles into Lake Moeris so it could be used later. So how did the Mesoamericans handle irrigation?

W: Well, they were also growing on inhospitable terrain, and unlike the Egyptians, they didn't really have a huge river like the Nile to fulfill their water needs. But didn't they build reservoirs or something?

M: I think you might be getting confused here. The Mesoamericans are known more for their extensive canals that would run into areas that didn't get much rain. They also carved terraces out of hills in order to keep the irrigation water from washing all the fertile soil away. What other technique did the Mesoamericans use to improve land and water use?

W: They also built islands in the middle of lakes so they could take advantage of the water source.

M: That's right. OK, let's move on. Now, in terms of food production, how did these two cultures differ?

W: Well, for one, the crops were completely different. In Egypt, they grew millet, barley, and wheat, but that stuff didn't even exist in Mesoamerica. Down there, they grew corn, avocadoes, and, of course, cacao.

M: I'm glad you brought that up . . . in case you all forgot, cacao is the plant that we use to make chocolate now. In fact, a lot of the crops from Mesoamerica are really popular food items now and couldn't be found in Europe before exploration, such as the tomato.

W: Sorry, I hope this isn't too off-topic, but I was just wondering if it took a long time for the Mesoamericans to cultivate those food items. I guess it just seems like they're all such an important part of the culture that it must have been around for a long time.

M: You're actually not that off-topic because that's another way that these two agricultural societies were different. To answer your question, it took a relatively long time for the Mesoamericans to begin to cultivate food. The Egyptians started cultivating their staple crops as early as 5000 BCE. Meanwhile, according to archeological evidence, the Mesoamericans didn't really get started until 3500 BCE. Additionally, food cultivation in Mesoamerica was closely tied to the domestication of corn. In Egypt, they started cultivating food as soon as domesticated animals from the Middle East were introduced.

W: Wow, that's like, a 1,500 year difference. Why did it take so long?

M: It's probably a combination of many different factors, but most archeologists agree that the infertile and dry lands throughout Mesoamerica probably had something to do with it.

W: That makes sense. Because if you think about it, that meant that the Mesoamericans had to come up with the infrastructure and technology just to be able to use the land. I guess it would take a couple of hundred years to figure out how to do that.

03 Office Hours

W: Hi, Professor Mathis.

M: Sheila! Thanks for coming in. I don't expect this to take long, so don't worry.

W: Um, OK. I'm sorry, but do you mind if I ask why you asked me to come?

M: Have a seat. Look, the reason I wanted to talk to you is because I'm a bit concerned about your performance in our discussion section. I didn't want to put you on the spot in front of the class, and that's why I asked to speak to you privately.

W: Oh.

M: Sheila, you've been a great student so far. You're always prepared when you come to class, and your essays are a delight to read. But in discussions, you never say anything.

W: It's just that, I don't know, it's just so nerve-racking for me. Honestly, I would really like to, but whenever I want to contribute something, it just sounds so dumb in my head. Or someone else says it first.

M: I thought it might be something like that. The problem is this: participation is mandatory, and it accounts for twenty percent of your final grade. Maybe there's something we can do to make you feel more comfortable.

W: Like what?

M: Well, first off, have some confidence in your intelligence. You really don't have to worry that the things you say sound dumb. I assure you, they're not, and I think you'd find that the other students would appreciate your unique perspective.

W: I guess so. It's not just that, though. There's just something about speaking in front of people that makes me really nervous. I feel as though I get so caught up trying to calm myself down that I really can't even come up with anything to say.

M: The solution to that is easy. Here's what you do—when you come into class just sit down and listen. Don't think about what you should say or when you should say it. Just listen. If you do that, you'll find that you'll form natural reactions to them, and that's what you'll express when it's your turn to talk. Does that make sense?

W: It does, actually. And, to be honest, I've never really tried that.

M: Good. I would really hate for your final grade to be dragged down by your participation, especially since I know that you must have many interesting things to contribute. Also, I guess the whole situation just made me question my abilities as a facilitator.

W: No, it's not that at all . . . well, can I maybe give you a suggestion?

M: Of course!

W: Well, I think it's been much easier for me to participate when you've handed out a list of questions as a guide, instead of just letting everybody rattle off about a random topic.

M: Hmm, you know, I can see where you're coming from with that. I'll think about doing that more often. Well anyway, I hope I've been able to help you.

W: You have. And I promise that I'll make more of an effort to participate from now on.

Practice Test

01 Biology

M: I want to talk about the hunting behavior of sharks, which, due to some new study methods, we've been able to learn a lot more about recently. You know, with all the new data that's been collected, marine biologists are starting to see that what we *thought* we knew about hunting behavior in sharks was completely wrong. See, for a long time, scientists thought that sharks were solitary hunters, like the leopard. But as it turns out, sharks might actually be group hunters, like wolves. Let's look at some of the evidence.

OK, so let me begin by explaining the methodology a little bit, if only to take some time to appreciate what these marine biologists did in the name of science. So basically, a group of scientists took a little boat to Cocos Island, an area in the Pacific Ocean that's about 300 miles off the coast of Costa Rica. Let me just point out, this is, uh, this is one of the most untouched and pristine marine environments left on Earth. It also happens to be the stomping grounds for many different kinds of sharks, making it a *perfect* place for scientists to learn about sharks. Anyway, since the scientists were trying to learn about the hunting patterns of the sharks, they had to make the sharks hunt. So they put out bait to bring the sharks to them. It might sound insane, and they certainly did put themselves in extraordinary danger, but by doing this, they were able to witness firsthand how sharks strike. So what exactly did they observe? One thing they noticed was that after they had initially released the bait, a single shark would first make its way toward the boat and begin feeding. In a matter of mere moments, though, the boat would be *completely* surrounded by sharks. What does this tell scientists? Well, that the other sharks appeared after the first one struck led them to believe that sharks probably have some way of communicating with other sharks to alert them that food has been found. And in fact, marine biologists know that sharks have extremely sensitive hearing, but they haven't completely figured out how it is that they send messages to each other.

Moving on now—OK, while this was happening, scientists also noticed that the group was comprised of sharks of diverse age groups and genders. So, there were male sharks, female sharks, baby sharks, adult sharks, and everything in between. Marine biologists guessed that shark hunting groups are usually made up of sharks that are related to each other. Furthermore, they observed that sometimes, the older sharks would hold back some, letting the younger sharks have first dibs on the prey. This sort of suggests that the older sharks were allowing the younger ones to gain some experience and learn how to hunt. Is that interesting or what?

Any questions? Good. As all these sharks were coming up to the boat, the scientists placed tracking devices on many of them. This, of course, let them observe their hunting patterns away from the boat, which gives them a more, I don't know, authentic view into the hunting behavior of sharks. And when they went back and looked at what the sharks were doing out there in open water, they were amazed. Time and time again, they witnessed the sharks displaying the same behavior as they did around the boat. First one shark would strike, then the prey would be surrounded by an entire pack of sharks.

Interestingly, their hunting patterns seemed to involve a series of attacks that drove their prey into positions in which they couldn't defend themselves. In one instance, they found *dozens* of whale carcasses washed up on shore. Going over their tracking data, they found that the area had recently been visited by the same pack of sharks that they had encountered earlier. They concluded that they had taken advantage of the whales' unfamiliarity with the region and struck in a series of surprise attacks. The whales were easily intimidated and were cornered into an area, where the sharks had their feeding frenzy.

02 History

W: Like most of the cities in Italy, Venice has a rich history. In modern times, it's mostly known for the canals that link the entire city together as roads do in most other places. But in the past, Venice was a powerful republic. As with Rome, it was . . . well, it definitely was not built in one day; in fact, the rise of the Venetian Republic was an ongoing process that took about five centuries. We can analyze the success of the Venetian Republic in terms of developments of many arenas. However, by examining the growth of trade over the course of Venetian history, the link between political power and trade become pretty apparent.

So let's do that . . . Let's begin in the 10th century, when the threat of Norman invasion was looming and challenged Venetian trade routes. See, Norman invasion would have obviously meant

the loss of territory, but the Venetians were equally concerned with maintaining their connections to the south. Think for a moment about where Venice is geographically: it's located in the swampy land in northern Italy, where it hugs the coast of the Adriatic Sea. This position gave them easy access to some places, but in order to maintain their partnerships with the republics closer to the Mediterranean coast, it was imperative for them to knock out the Norman threat. And that's exactly what they did.

In defeating the Normans, Venice also gained a friend in the Byzantine emperor, Alexius, who very much appreciated their help in helping defend Byzantine. Alexius I granted Venice exclusive trading rights throughout the Byzantine Empire. Do you all understand the implications of that? It essentially allowed the Venetians to build a monopoly. But the friendliness pretty much disappeared as Venice became increasingly antagonistic toward Byzantine ports.

I don't want to make it seem like it was all Venice here, though. To be fair, I think it's safe to say that the Byzantine emperor also recognized how prosperous Venice was becoming. And the more money Venice made, the greater the threat they posed to the Byzantine Empire. Anyway, the rising tension with the Byzantine Empire led to a series of aggressive strikes that brought the Venetian-Byzantine trade alliance to an end.

The bitterness between the Venetians and the Byzantines was an on-going conflict, but in 1204, it reappeared with a dangerous new facet. This time, the Byzantines had the help of the Genoese. And with the help of the Genoese, the Byzantines recovered their land in 1261. And while the Venetians were now shut out of Byzantine trade, Genoa now had access to the Black Sea markets. Can you understand how big of a blow this was to the Venetians? Remember, the Venetian Republic had built a monopoly by this time, and by being shut out, they lost a lot of money.

Additionally, now there wasn't just the problem of the Byzantines, but also of the Genoese. I think at this point, we see that the Venetians shifted their focus from fighting the Byzantines to fighting the Genoese. And this makes sense if you think about it, because for the Venetians, it was always about trade rights. And after the Genoese aligned themselves with the Byzantines and reaped all these benefits, they were also the main competition. Is everyone still following?

OK, let's move on to the 14th century, which is when, according to most historians, Venice reached the apex, er it's uh, height of its power. The 14th century was a difficult period throughout all of Italy—people were at war with each other just about everywhere. Venice got involved with some of that, but really, the focus of their antagonism was as it had been for years before, with Genoa. By this time, Genoa and Venice have been at each other's throats for what, like a hundred years. The fighting took a toll on both sides. It was making them both lose money, and I think that they both finally just got tired of fighting and called a truce in 1381. Venice got a better deal in the peace treaty because they pretty much got control of all the sea routes, plus they were able to focus on administering to all the territory that they had gained over the years.

03 Service Encounter

W: Hi, I'm Elaine. I made an appointment to speak with a Financial Aid Counselor.

M: Hi, Elaine. I'm Frank. Why don't you take a seat and we can talk?

W: Thanks so much. Well, the reason I'm here is because I'm having trouble paying for school. I don't necessarily have a problem with my financial aid package . . . as far as I can tell, it's pretty fair according to the information I was sent. It's mostly just that some new expenses cropped up, and I have no idea how I'm going to pay for them?

M: OK, well, you're right. At least in terms of what we've got on file about your situation. Do you mind if I ask what expenses you're having to deal with now?

W: It's just one thing actually, but it's huge. See, my laptop got stolen. I know I can use the library computers, but I'm sure you understand what an inconvenience that is, especially since the library closes at midnight. Although I would love for it to be the case, I'm rarely done by midnight. It doesn't work that way for computer science majors.

M: Of course. There's a reason why the university encourages all students to have a personal computer. The libraries are there for convenience, but with everything running off the campus server now, it's pretty unfeasible to ask students to perform without a computer of their own. The good part is that there's actually a program we have to help students buy a computer. The first thing I want to ask you is how you bought your old laptop.

W: Oh, that thing. My older sister gave it to me when *she* graduated from college. It was, like, seven years old.

M: Good, because the program only applies for the purchase of one computer.

W: Oh, OK, so I qualify, then. Can you tell me more?

M: Well, basically, it's a loan, but you don't have to start paying it back until you graduate. Also, the university has a partnership with Babbage Computers, so our students get a really good discount.

W: That's awesome! Really, that's exactly what I need. So, how do I sign up for this?

M: The first step is to order the computer. You go to the company's website, it's www.babbage.com. You pick out the computer you want and when it asks you to pay, you enter the school name. That's going to give you the discounted price. Since you need the loan to pay for it, you have to print out the page that has the price and submit it, along with a completed Computer Purchase Program form, here, at the Office of Financial Aid.

W: That sounds kind of complicated. You wouldn't happen to have a detailed instruction sheet or something? I just don't want to forget any steps. I need to get a replacement as soon as possible.

M: Of course, all the information is in this packet, along with the Computer Purchase Program form.

W: You've been such a great help. Thanks!

04 Philosophy

M: I don't think there's any way we can study ethics and not discuss Socrates and his very famous student Plato. You all are probably at least minimally familiar with their philosophies, whether you know it or not. The truth is that these, uh, these two ancient Greek philosophers posed *so many* important questions that are still discussed today, even outside of the philosophical realm. So anyway, what I want to do today is kind of put Socrates and Plato side by side and talk about which points they agreed upon and where their philosophies diverged. Do you all know what the Socratic Method is? Yeah, Mary, go ahead.

W: The Socratic Method is a form of inquiry, um, questioning that Socrates is famous for using. I mean, I guess he would ask his opponents a series of questions, and in the course of the conversation, expose the problems with their claims.

M: That's right. Now, the reason that I bring up the Socratic Method is to show how he put his views about ethics on the table for discussion and criticism. If you read the materials I passed out during the last session, you know that Socrates talks about virtue a lot. And when Socrates talks about virtue, what exactly is he referring to? It's goodness, it's moral excellence, it's . . . well, it's ethics. Anyway, according to Socrates, virtue was something that could be known, and if someone truly knew what virtue was, it would stand up to the Socratic Method. More importantly, by knowing virtue, one becomes virtuous. Do you all understand so far?

W: Um, I'm a little confused. I don't really understand what you mean when you talk about *knowing* virtue?

M: All right, think back to the emphasis that Socrates placed on educating oneself as the road to enlightenment. At the very beginning of the road is ignorance, and remember that he thought that ignorance of virtue in particular was why people did bad things. At the end of that road is goodness, and virtue is closely tied to that. But really, the thing to focus on here is the idea that by being aware of what virtue is, one is virtuous. This is really the part that applies to ethics, because ethics is essentially the study of what is right and wrong, and why people behave the way they do in relation to the ideas of right and wrong.

His take on it seems simplistic to modern readers, especially because his philosophy lacks the element of self-interest. The reason I mention that is because self-interest is a huge part of the way modern philosophy deals with ethics; that is, many modern philosophers acknowledge

that the reason people do bad things is not because they are mistaken or don't know what it is to be good. Rather, at least some part of their bad behavior is caused by the desire to benefit themselves somehow. But like I said, the notion of self-interest wasn't really treated in Ancient Greece. That's one of the things that Socrates and Plato had in common.

With that said, why don't we talk about Plato's take on ethics? Let's see, well, as a student of Socrates, Plato was obviously influenced a lot by him. In fact, most of his work was written as dialogues between Socrates and his opponents, so in that way, he kind of carried on the tradition of the Socratic Method. But I think you'll see that Plato's ideas about ethics were a little more fleshed out than those of Socrates. Plato thought that goodness was an objective form, meaning that it was a more general thing that remained the same even in different cultures or situations. Any questions?

W: How do Plato's ideas about there being some sort of universal form of goodness explain why someone should choose to be good, though?

M: Well, you have to go a little further than that. In really simple terms, Plato thought that if a person acted justly, their soul would be balanced and bring the person great happiness. So, to answer your question, the motivation to be good and just is to be happy.

05 History

W: When we study history, without knowing it, we're reading somebody's interpretation of what happened and why it happened. The way history is written is obviously a very important thing, especially as it relates to how people form their own conceptions of history. With that in mind, today I want to talk about the "frontier thesis," which, as we all know, was formulated by the American historian Frederick Turner. Let's see . . . who can give the class a brief summary of what the frontier thesis is?

M: I'll give it a try . . . it's, um, it's Turner's idea that the single most important factor in the shaping of American society was its unique frontier history. According to Turner, people in the United States gained many traits based on living on the frontier, and the society evolved as the frontier became more developed.

W: OK, you mentioned that Americans gained some particular traits as a result of the frontier life. What are some of those traits?

M: Oh, individualism and self-reliance mostly.

W: Uh-huh, that's right. What are some other traits?

M: Inventiveness, and also, um, materialism.

W: Good. OK, when Turner first published "The Significance of the Frontier on American History" in 1893, it caused a huge storm in the universities. What do you think the controversy was about?

M: Well, I think that it was because it sort of reversed what all the other historians were saying about American society and history.

W: Which was what?

M: That the institutions of the United States were primarily influenced by the English and the Germans.

W: Good. So Turner turned those ideas on their back. He also asserted that it was the Europeans that were affected by American settlement rather than vice versa. Given what we know about how history was being written at the time, why else would such a claim be controversial?

M: Wasn't Turner one of the first historians trained in the United States?

W: Yes, that's right. Before him, most historians went to Europe to study.

M: So, I guess there could have also been an element of discontent with the way Europeans were portrayed. I mean, to suggest that Europe was influenced by America at the time must have been jarring for other historians who might have conceived that the European influence was much stronger.

W: Well, it's true that most historians were trained in Europe, but it wasn't only in Europe that there were strong reactions. The impact of the paper wasn't based on the assumptions of which country was more powerful. It really had more to do with the complete originality of the things Turner said. And remember, Turner's "frontier thesis" did become the model that people used in learning about the development in the United States for at least fifty years after it was written. But Turner didn't necessarily stop with his frontier thesis; in fact, throughout his life he continued to form theories about American history. From your readings, what were some of the ways that Turner "changed his tune," so to speak, from his original theory?

M: Well, one that stuck out to me was how at first he totally glorified people moving out west because it supposedly spoke to the self-reliance and mobility of the American people, but later he wrote another paper where he pretty much flip-flopped on the issue and accused those people of ruining the environment and only caring about themselves.

W: That *was* a pretty interesting switch, wasn't it? And what solutions did Turner propose for those problems? . . . I mean, Americans becoming distanced from each other and the degradation of the environment.

M: For one thing, he thought that Americans needed to promote community life. He also proposed environmental conservation, such as taking care of the forests instead of cutting down the trees indiscriminately. Oh, and didn't he also stress the importance of the education system?

W: Yes, he did. Essentially, he thought that people didn't really need to explore geographic frontiers. Instead, he supposed that the developing country needed to promote the exploration of educational frontiers.

06 Office Hours

M: Uh, Professor Smith?

W: Yes, David? What can I help you with?

M: You handed back our papers last Friday with comments and feedback, and the truth is, I'm not sure I understand your comments completely. I mean, I received a D minus on my first draft, and well, I don't think that it's, um, fair.

W: Do you have the paper with you?

M: Sure. Here you go.

W: Great, thanks. Hmm, let's see. Ah, yes, I recall this one.

M: And?

W: Well, David, I believe you said some very intelligent things here. You did a great job at applying complicated psychological theories to everyday situations.

M: I really tried to include some meaningful connections.

W: Right, that part you did well.

M: So, on which part did I do poorly?

W: Let me explain something to you. Sure, it's important for the content of a paper, such as the ideas that you include, to be unique. But you must remember that it's the presentation that is a bit, well, awkward and strained. You seem to jump from point to point without really supporting your thesis. You have to be able to choose one solid idea, and really be able to back it up.

M: Well, isn't it better to have many ideas to give it more depth?

W: Not necessarily. In an academic paper you have to work within the constraints of the rules of academic writing. So therefore, you must pick one idea that you could solidly support with evidence you've learned in class, or other relevant information. This way, you can convince the reader that you know what you're talking about.

M: OK, I think I'm understanding a bit more. So what should I do with my paper specifically?

W: Hmm, let's see. Well, you don't have to do much actually. Just choose one of your ideas to be your main idea, and since the other ones are inter-related, you can use them to support the primary one. Then, well, let's see . . . I see that you switch back and forth between your ideas within your paragraphs, so my advice to you would be to stay put within your paragraphs. For example, in one of your paragraphs, you mention the importance of social acceptance of mental illness. However, within the same paragraph, you introduce social oppression. It just all seems like it's crammed in there.

M: OK, I understand.

W: I graded these first drafts roughly, because I wanted to motivate the students to do well, and I wanted them to come in, as you did, and ask me about my comments. You've done the right thing. Plus, the grades for the first draft of the paper really don't factor into the final grade. I just give them to guide you.

M: Well, that's a relief!

W: Well, just consider my advice when you're doing your revisions, and you should do just fine.

M: Thank you for your time.

W: Of course. OK, David, I'll see you in class tomorrow.