LECTURE READY 3

Strategies for Academic Listening, Note-taking, and Discussion

Answer Key
and
Transcripts

OXFORD

OXFORD
UNIVERSITY PRESS

198 Madison Avenue
New York, NY 10016 USA

Great Clarendon Street, Oxford OX2 6DP UK

Oxford University Press is a department of the University of Oxford.
It furthers the University's objective of excellence in research, scholarship,
and education by publishing worldwide in

Oxford New York

Auckland Cape Town Dar es Salaam Hong Kong Karachi
Kuala Lumpur Madrid Melbourne Mexico City Nairobi
New Delhi Shanghai Taipei Toronto

With offices in

Argentina Austria Brazil Chile Czech Republic France Greece
Guatemala Hungary Italy Japan Poland Portugal Singapore
South Korea Switzerland Thailand Turkey Ukraine Vietnam

OXFORD and OXFORD ENGLISH are registered trademarks of
Oxford University Press

Executive Publisher: Janet Aitchison
Senior Aquisitions Editor: Pietro Alongi
Editor: Dena Daniel
Associate Editor: Scott Allan Wallick
Art Director: Maj-Britt Hagsted
Production Manager: Shanta Persaud
Production Controller: Eve Wong

ISBN-13: 978-0-19-441723-5
ISBN-10: 0-19-441723-9

Printed in Hong Kong

10 9 8 7 6 5 4 3 2 1

Contents

Answer Key

CHAPTER 1

New Trends in Marketing Research

Build Background Knowledge

Exercise 1 (p. 2)

Answers vary

Exercise 3 (p. 4)

1. Companies use information about how people make buying decisions to create advertising and to design (and redesign) products and services.
2. "Open-ended" questions have many possible answers. Focus group discussion leaders ask these types of questions to get more information and hear ideas they might not think to ask about.
3. Sometimes participants in focus groups don't tell the truth to seem more likeable and avoid embarrassment. Also, unconscious emotional needs are the reason for some opinions.

Exercise 4 (p. 4)

1. f
2. g
3. h
4. e
5. c
6. d
7. i
8. a
9. b

Exercise 5 (p. 4)

Answers vary

Exercise 6 (p. 4)

Answers vary

Prepare to Listen and Take Notes

Exercise 1 (p. 5)

Answers vary

Exercise 2 (p. 5)

Answers vary

Exercise 3 (p. 5)

Answers vary

Exercise 4 (p. 6)

Hi, everyone. Good morning. Last week, if you remember, we discussed advertising research—the different types, such as motivation research and studies of ad effectiveness, and the rest. You should have it in your notes. Well, this week, we're going to talk about (product research). There are a few different types, and we won't go into them all, but I'll be covering two areas that are the most popular—new product research, to see if people are interested in a new product that's being planned, and competitive product studies, products that compete with the product your company sells. The second one will be really useful for your final class project.

Exercise 5 (p. 6)

Also see transcript on page 17 of this booklet.

1. Topic lecture language: In today's class we'll focus on . . .
   Topic: questions
   Plan lecture language: I'll be covering two areas . . .
   Plan: explain different question types; discuss what types of questions work best with each kind of research
2. Topic lecture language: What I want to discuss today is . . .
   Topic: the role of product image in advertising.
   Plan lecture language: First, we'll look at . . . , then we'll move on to . . .
   Plan: product images in ads; how product image connects to the target market
3. Topic lecture language: I'll give you an overview of . . .
   Topic: world brands
   Plan lecture language: We'll start out with . . . , then look at . . .

Plan: reasons for using; examples of successful companies

Exercise 6 (p. 7)
Answers vary

Exercise 7 (p. 7)
Answers vary
Possible answers are:
Marketing strategies & activities
Two parts
Product
Choose product, service, or idea
Determine target market
Pricing
Low enough to sell
High enough to make a profit

Listen and Take Notes

Exercise 1 (p. 8)
Answers vary

Exercise 2 (p. 8)
Answers vary
Also see transcript on page 17 of this booklet.

Exercise 3 (p. 9)
Answers vary

Exercise 4 (p. 9)
1. Neuromarketing is different because it studies the unconscious reactions to products and advertising.
2. Researchers can determine what type of reaction a person is having while looking at an advertisement or product by knowing what part of the brain is affected.
3. In the blind taste test, the results were equal. When the brand names were given, 75% preferred Coke over Pepsi.
4. They worry because neuromarketing could be used to unconsciously influence people.

Exercise 5 (p. 9)
Answers vary

Discuss the Issues

All answers vary

CHAPTER 2

Business Ethics

Build Background Knowledge

Exercise 1 (p. 12)
Answers vary

Exercise 3 (p. 14)
1. Enron grew quickly to become the world's largest energy trader. It became very profitable, employing 21,000 people and making sales of over $100 billion.
2. Enron collapsed because the company's executives made bad investments and borrowed millions of dollars to cover their losses. Enron executives started to sell their own stocks, then investors also sold their stocks, and the company went bankrupt.
3. The public awareness of the importance of business ethics increased and prompted a demand for greater responsibility in business leaders.

Exercise 4 (p. 14)
1. c
2. b
3. d
4. g
5. f
6. a
7. h
8. e

Exercise 5 (p. 14)
b

Exercise 6 (p. 14)
Answers vary

Exercise 7 (p. 14)
Answers vary

Prepare to Listen and Take Notes

Exercise 1 (p. 15)
Answers vary

Exercise 2 (p. 15)

One effect of the Enron scandal and other cases of corporate crime in the U.S. was the passing of the Sarbanes-Oxley Act. Let's start by looking at the aim of this law. Basically, the goal of Sarbanes-Oxley is to improve the accountability of corporate executives to shareholders and to improve confidence in American companies. Now, let's take a look at some of its requirements. One requirement is that companies establish independent audit committees—independent accountants who are required to report honestly about company finances. If you remember, accounting was a big problem in the Enron case. It also prohibits companies from making loans to their executives. On top of that, it protects whistleblowers—employees who report fraud within the company. Okay, so now that we know what Sarbanes-Oxley entails, I'd like to talk about the effect it's had on businesses. Many people agree that new regulations were necessary, but a lot of businesses have complained that Sarbanes-Oxley is just too expensive to implement.

Exercise 3 (p. 16)

1. F
2. T
3. F

Exercise 4 (p. 16)

Also see transcript on page 19 of this booklet.

1. New idea lecture language: First we're going to look at . . .
   New idea: the behavior of men and women in the workplace
2. Transition lecture language: Let's take a look at . . .
   New idea: some statistics
3. Transition lecture language: Next, let's look at . . .
   New idea: some statistics involving corporate crimes
4. Transition lecture language: Okay, so what does this all mean? Are women just as corrupt as men?
   New idea: Maybe not. Men actually commit more crimes than women in the workplace.
5. Transition lecture language: OK, so what does all of this mean? Are women just as corrupt as men?
   New idea: Maybe not. If we look at . . .

Exercise 5 (p. 17)

Answers vary

Exercise 6 (p. 17)

Answers vary

Possible answers are:

biz	business	emp'ee	employee
exec	executive	emp	employer
mgr	manager	ind	independent
corp	corporation	co	company

Exercise 7 (p. 17)

Answers vary

Listen and Take Notes

Exercise 1 (p. 18)

Answers vary

Exercise 2 (p. 18)

Answers vary

Also see transcript on page 19 of this booklet.

Exercise 3 (p. 19)

Answers vary

Exercise 4 (p. 19)

Answers vary

1. The goal of business ethics is to give employees a sense of how to behave responsibly.
2. There is the impact on employees and shareholders who lose their jobs and investments when companies go bankrupt. There is also the impact on the whole economy when people are not willing to invest their money.
3. Companies that are known for their integrity attract better employees. Employees who think their companies are ethical are more satisfied in their work, feel more valued, and are more productive at work.
4. Develop an ethics program, including a written code of ethics. Train employees in how to follow their code. Survey employees about how well the company is following the code. Teach ethics in business schools.

Exercise 5 (p. 19)

Answers vary

Exercise 6 (p. 19)

Answers vary

Discuss the Issues

All answers vary

CHAPTER 3

Trends in Children's Media Use

Build Background Knowledge

Exercise 1 (p. 24)

Answers vary

Exercise 3 (p. 26)

1. T
2. F
3. F

Exercise 4 (p. 26)

1. a
2. h
3. d
4. f
5. c
6. b
7. e
8. g

Exercise 5 (p. 26)

a

Exercise 6 (p. 26)

Answers vary

Exercise 7 (p. 26)

Answers vary

Prepare to Listen and Take Notes

Exercise 1 (p. 27)

Answers vary

Exercise 2 (p. 27)

Answers vary

Exercise 3 (p. 27)

Excerpt 1

There seems to be a connection between emotions and media use. Children who are unhappy use media more. Let me back this up with some findings. One study showed that the 18% of the young people who scored lowest on the happiness scale, . . . they were the students who reported themselves to be the least happy, . . . they spent more time using media than their happier peers.

Excerpt 2

Only 5% of young people said that their parents had rules about the type of video games they can play. Even though there has been a lot of public controversy in the media about video game content, . . . especially violence in video games, . . . this leads us to believe that this issue is not of great importance to parents.

Exercise 4 (p. 28)

1. T
2. F
3. T

Exercise 5 (p. 28)

Also see transcript on page 21 of this booklet.

1. Lecture language: What can we infer from this? . . .
   Generalization: We are less efficient when we multitask than when we focus on one activity at a time.
2. Lecture language: This demonstrates that . . .
   Generalization: When we multitask, we use our brains less efficiently.
3. Lecture language: I hope you can see . . .
   Generalization: You need strong multitasking skills to succeed in today's business world.
4. Lecture language: Let me back this up with a story . . .
   Support for generalization: Dave arrives at work early before people arrive, the telephone starts ringing, and emails start arriving.

Exercise 6 (p. 29)

Answers vary

Exercise 7 (p. 29)

Answers vary

Listen and Take Notes

Exercise 1 (p. 30)

Answers vary

Exercise 2 (p. 30)

Answers vary
Also see transcript on page 21 of this booklet.

Exercise 3 (p. 31)
Answers vary

Exercise 4 (p. 31)
1. Media technology is cheaper and more people can own it. Media technology is also more portable. And there are more ways of accessing media and more choices.
2. Because children have 8.5 hours of total exposure, but only spend 6.5 hours with media, which means they are using more than one type at a time.
3. She will watch more television and she will be less supervised.
4. Negative effects include lower test scores, attention spans, and reading less. Positive effects include better multitasking skills, confidence with media tools, and being more prepared for a media-rich world.

Exercise 5 (p. 31)
Answers vary

Exercise 6 (p. 31)
Answers vary

Discuss the Issues
All answers vary

CHAPTER 4

The Changing Music Industry

Build Background Knowledge
Exercise 1 (p. 34)
Answers vary

Exercise 3 (p. 36)
1. Copyright law was created for books, paintings, etc. It does not address the issues of new media.
2. They feel copyright laws should be strong. They believe anyone who has a copy of a song should pay for it and they support the use of security to restrict file sharing. This is because they feel they should be able to earn money from the products they create.
3. Strong security devices restrict the flow of information and limit technological development and innovation.

Exercise 4 (p. 36)
1. f
2. h
3. g
4. e
5. b
6. a
7. c
8. d

Exercise 5 (p. 36)
b

Exercise 6 (p. 36)
Answers vary

Exercise 7 (p. 36)
Answers vary

Prepare to Listen and Take Notes
Exercise 1 (p. 37)
Answers vary

Exercise 2 (p. 37)
Answers vary

Exercise 3 (p. 37)
There have been many legal battles between media and technology companies in recent years. In 1984, the U. S. Supreme Court decided that Sony was not legally responsible for the illegal uses of the video recorder they created. Which is to say, Sony, or any company, is not to blame when people use its inventions to break the law, . . . especially when there are many ways the invention can be used legally. They said it was true that many people use the video recorder to tape and distribute video illegally, but they also use it for activities that do not violate copyright law. So, in other words, people will use equipment for legal and illegal purposes, and the equipment maker has no control over that.

Exercise 4 (p. 38)
1. F
2. T
3. F

Exercise 5 (p. 38)

Also see transcript on page 23 of this booklet.

1. Lecture language: In other words, . . .
   Repeated point: They want LESS restriction.
2. Lecture language: What I mean is . . .
   Repeated point: Copyright was meant to motivate people to create new things.
3. Lecture language: That is, . . .
   Repeated point: Why should the creator have control for such a long time?
4. Lecture language: What I'm saying is . . .
   Repeated point: As soon as you create something, it's protected.
5. Lecture language: Let me say that another way
   Repeated point: Too much protection can freeze innovation.

Exercise 6 (p. 39)

Answers vary

Possible answers are:

What exactly is copyright?
How much has term of U.S. copyright increased?
Which types of companies are in a legal battle?
What reasons does each side give to support their position?

Listen and Take Notes

Exercise 1 (p. 40)

Answers vary

Exercise 2 (p. 40)

Answers vary

Also see transcript on page 23 of this booklet.

Exercise 3 (p. 41)

Answers vary

Exercise 4 (p. 41)

1. More people have access to tools to make high quality recordings on their computers, and these tools are relatively easy to use. Because of this, musicians no longer need recording contracts with music companies to record their music, so much more music is recorded and available.
2. In the recent past, most people listened to a limited number of radio stations that could be broadcast in an area. Now, because of satellite radio and the Internet, you can listen to radio shows from all over the world. It's getting more common to listen to music programs on digital files that can be downloaded, rather than programs broadcast at specific times over the airwaves.
3. Music companies want to restrict the Internet and technology more to reduce copyright infringement so that they can make money from the music they create and own. Technology companies feel you shouldn't force technology and the Internet to use devices that also restrict the legal sharing of music. It's impossible to completely stop file sharing. We should create a new model for paying musicians for their creations.

Exercise 5 (p. 41)

Answers vary

Exercise 6 (p. 41)

Answers vary

Discuss the Issues

All answers vary

CHAPTER 5

The Placebo Effect

Build Background Knowledge

Exercise 1 (p. 46)

Answers vary

Exercise 3 (p. 48)

1. By producing symptoms associated with the illness, the illness itself will eventually be cured.
2. The classic way to make homeopathic remedies is to take one grain of the desired herb or plant and dilute it with milk, sugar, water, or alcohol.
3. Because homeopathic remedies often contain undetectable amounts of active ingredients, most scientists say that it is impossible to create well-designed studies of their effectiveness. So they can't analyze homeopathy or explain how it works.

Exercise 4 (p. 48)

1. f
2. i
3. b
4. j
5. g
6. c
7. h
8. e
9. d
10. a

Exercise 5 (p. 48)

Answers vary

Exercise 6 (p. 48)

Answers vary

Prepare to Listen and Take Notes

Exercise 1 (p. 49)

Answers vary

Exercise 2 (p. 49)

Answers vary

Exercise 3 (p. 49)

Then, there was a doctor named Samuel Hahnemann who began to develop his own theory, which was based on three principles: the law of "similars," the minimum dose, and the single remedy. The law of similars came as a result of **(C)** Hahnemann's observations. He noticed that after taking a strong dose of the malaria treatment quinine, he developed symptoms similar to the symptoms of malaria. This led Hahnemann to believe **(E)** that if **(C)** a large amount of a substance causes symptoms in a healthy person, then **(E)** smaller amounts of the same substance can treat those same symptoms in an ill person.

Exercise 4 (p. 50)

1. F
2. T
3. F
4. T

Exercise 5 (p. 50)

Also see transcript on page 25 of this booklet.

1. Lecture language: One explanation . . .
   Cause: is that people are aging
2. Lecture language: This trend may be due to . . .
   Cause: the fact that people have become more individualistic.
3. Lecture language: Another reason . . .
   Cause: has been the increase of immigration of people from non-western cultures into the West.
4. Lecture language: because of this rising interest
   Effect: a huge increase in the number of people practicing alternative medicine.
   Effect: "integrative medicine"

Exercise 6 (p. 51)

Answers vary

Exercise 7 (p. 51)

Answers vary

Listen and Take Notes

Exercise 1 (p. 52)

Answers vary

Exercise 2 (p. 52)

Answers vary

Also see transcript on page 26 of this booklet.

Exercise 3 (p. 53)

Answers vary

Exercise 4 (p. 53)

1. The placebo effect is the often positive response that patients receive from a placebo; it's an improvement in a person's health due to taking a placebo, not any real treatment. In the past, doctors would sometimes give their patients placebo pills for health problems, but they wouldn't tell them that the pills weren't real. Now, placebos are regularly used in clinical trials of new drugs and other treatments.
2. In a blind test, volunteer patients who suffer from the same illness are split into two groups. One group will receive a new drug or treatment. The other group will receive a placebo. None of the volunteers will know who is receiving the drug and who is receiving the placebo. In a double blind test, even the researchers and their assistants don't know who is receiving the drug and who is receiving the placebo.

3. The three possible causes are: 1) An illness or injury may be taking its natural course and improve over time. 2) Patients may improve because they expect the treatment to help them. 3) Patients may improve because the process is therapeutic.
4. The depression study at UCLA took 51 patients suffering from depression and gave one group anti-depressants and gave another group placeboes. The researchers found that 52% of those on anti-depressants and 38% of those taking placeboes felt better. They were surprised because those who took the placebo and felt better had measured brain activity showing they had improved.

Exercise 5. (p. 53)
Answers vary

Exercise 6 (p. 53)
Answers vary

Discuss the Issues
All answers vary

CHAPTER 6

Intelligent Machines

Build Background Knowledge

Exercise 1 (p. 56)
Answers vary

Exercise 3 (p. 58)
1. It has been a challenge to create natural-sounding voices in machines because of the complex nature of language; To produce a natural-sounding voice, scientists need to simulate not only the individual sounds of a language, but also the volume, pitch, rhythm, and tones that help to express meaning.
2. Drivers were uncomfortable with a "female" voice giving directions, so BMW gave the cars "male" voices.
3. People will react to a computer voice using the same rules and expectations that they would apply to people.

Exercise 4 (p. 58)
1. h
2. d
3. g
4. e
5. f
6. b
7. c
8. a

Exercise 5 (p. 58)
b

Exercise 6 (p. 58)
Answers vary

Exercise 7 (p. 58)
Answers vary

Prepare to Listen and Take Notes

Exercise 1 (p. 59)
Answers vary

Exercise 2 (p. 59)
Answers vary
Possible answers are:

Excerpt 1

Scientists have developed machines that can not only speak, but also listen and recognize human speech. This has led to . . . **(E)**
. . . . the use of voices in cars to provide information and respond to requests.

Excerpt 2

But because cars can interact with drivers **(C)**, scientists must consider . . .
. . . the social rules and expectations of the culture.

Exercise 3 (p. 60)
Answers vary
Also see transcript on page 27 of this booklet.
1. Lecture language: As a result . . .
   Cause/(effect): *Answers vary*
   Actual effect: BMW chose a voice that they felt sounded friendly . . . but also very competent.
2. Lecture language: The reason for this was . . . .
   (Cause)/effect: *Answers vary*
   Actual cause: They didn't want the car to sound bossy

3. Lecture language: because of the noisy environment of a car
   Cause/(effect): *Answers vary*
   Actual effect: The computer often has difficulty understanding the driver
4. Lecture language: consequently . . .
   Cause/(effect): *Answers vary*
   Actual effect: they chose language that did not include any blame

Exercise 4 (p. 61)

Answers vary

Possible answers are:

2. People expect voice in car to match expectations of voice's personality ➜ BMW chose voice that was friendly but competent
3. One prob. w/using voices in a car is noisy environ. of car ➜ computer will have difficulty understanding driver.
4. Researchers found drivers weren't happy when voice in car accepted blame/ blamed driver for misunderstandings ➜ chose lang. that didn't include blame

Listen and Take Notes

Exercise 1 (p. 62)

Answers vary

Exercise 2 (p. 62)

Answers vary

Also see transcript on page 28 of this booklet.

Exercise 3 (p. 63)

Answers vary

Exercise 4 (p. 63)

1. One approach is to create machines that think or act rationally, but not necessarily like a human. Examples are machines that can come up with the ideal solutions to problems, or machines that can perform physical tasks, such as robotic vacuum cleaners or other robots. Another approach is to create machines that can actually think or act like humans. Examples are machines that can carry on conversations.
2. The Turing Test is a test used to judge whether a computer has human-like intelligence. In the test, a human judge engages in a 5- minute conversation with a computer through typed messages. If the program can fool the judge it passes the test. The Total Turing Test requires both a visual and a physical interface.
3. A machine would need natural language processing skills (the ability to communicate naturally in a language), knowledge representation (the ability to store what it knows or hears), the ability to reason like a human being, and the ability to learn and adapt to new situations based on what it experienced in the past.
4. AI is currently in use in robots, which do dangerous or difficult tasks. They are also in use in hospitals.

Exercise 5 (p. 63)

Answers vary

Exercise 6 (p. 63)

Answers vary

Discuss the Issues

All answers vary

CHAPTER 7

Sibling Relationships

Build Background Knowledge

Exercise 1 (p. 68)

Answers vary

Exercise 3 (p. 70)

1. They hope to learn how much we are influenced by our home environment and how much we are influenced by our genes. Studies at the University of Minnesota indicate that genes have about a 50% influence on our personalities, while our environment accounts for the other 50%.
2. Neither genes nor upbringing is a good predictor of the spouse we choose. Researchers found that the spouses of identical twins were not much more similar to each other than random pairs of people and two-thirds of the twins were "indifferent" to their twin's mate or "actively disliked" her.
3. Critics question some of the assumptions made by twin researchers, such as the assumption that identical twins and

fraternal twins have similar environments, or that identical twins raised apart are raised in very different environments.

Exercise 4 (p. 70)

1. d
2. h
3. a
4. j
5. i
6. g
7. b
8. f
9. c
10. e

Exercise 5 (p. 70)

Answers vary

Exercise 6 (p. 70)

Answers vary

Prepare to Listen and Take Notes

Exercise 1 (p. 71)

Answers vary

Exercise 2 (p. 71)

Answers vary

Exercise 3 (p. 71)

Twins occur in about 1 in 85 births. The two types of twins are fraternal, . . . or dizygotic, . . . and identical, . . . or monozygotic. The difference between the two types comes from a difference in how they begin life. While fraternal twins come from the fertilization of two separate eggs, identical twins come from a single fertilized egg that later splits in two.

There are many stories of twins separated at birth who turn out to be amazingly similar. For example, Barbara Herbert and Daphne Goodship were identical twins who were given up for adoption into different families at birth. When they met at the age of 40, they discovered that they both worked in local government, met their husbands at a town dance at the age of 16, and both had given birth to two boys and a girl. Like Barbara, Daphne dyed her hair auburn and drank her coffee cold.

Exercise 4 (p. 72)

1. b
2. c
3. a

Exercise 5 (p. 72)

Also see transcript on page 29 of this booklet.

1. Lecture language: Both . . .
   (Compared)/contrasted: Bill and Roger grew up together in Hope, Arkansas, and were said to be very close to each other and their mother and were musicians.
2. Lecture language: Roger, on the other hand . . . .
   Compared/(contrasted): Roger dropped out of college three times.
3. Lecture language: While Bill became a successful politician
   Compared/(contrasted): Roger began playing with rock bands and he started to get into trouble with the law.
4. Lecture language: unlike Bill . . .
   Compared/(contrasted): Roger never developed much of a career.

Exercise 6 (p. 73)

Answers vary

Exercise 7 (p. 73)

Answers vary

Listen and Take Notes

Exercise 1 (p. 74)

Answers vary

Exercise 2 (p. 74)

Answers vary
Also see transcript on page 30 of this booklet.

Exercise 3 (p. 75)

Answers vary

Exercise 4 (p. 75)

1. First-born and only children tend to be the most successful. Younger siblings, especially middle-born kids tend to be less successful.
2. Middle children are less likely to receive financial support for their education, and they are less likely to do well in school. Later in life, they earn less pay are more likely to find only part-time work.

3. First-borns typically weigh more at birth than their younger siblings, and heavier birth weight is a good predictor of educational success. Oldest and only children receive more time alone with their parents. Parents tend to have higher expectations of first-born and only children. First born children learn from teaching their younger siblings.
4. Gender: Boys and girls are treated differently. Genes: Some children will be smarter or inherit traits that will contribute to later success in life. Family size: disparities are more likely to exist between children in large families. Unexpected difficulties such as divorce economic hardship or events such as a death in the family.

Exercise 5. (p. 75)
Answers vary

Exercise 6 (p. 75)
Answers vary

Discuss the Issues
All answers vary

CHAPTER 8

Multiple Intelligences

Build Background Knowledge
Exercise 1 (p. 78)
Answers vary

Exercise 3 (p. 80)
1. Intelligence tests follow a bell curve: most students score in the middle range and a few score at the upper and lower ends of the scale. When these results are plotted on a graph, the shape resembles a bell.
2. IQ tests are designed to measure general knowledge, reasoning ability, mathematical skill, memory, vocabulary, and spatial perception.
3. Children develop at different rates depending on their biology, family, school, and environment. IQ tests can reflect acquired knowledge, not just aptitude. A child's performance can be affected by attention problems, illness, or emotional stress.

Exercise 4 (p. 80)
1. h
2. d
3. b
4. f
5. i
6. a
7. e
8. g
9. c

Exercise 5 (p. 80)
Answers vary

Exercise 6 (p. 80)
Answers vary

Prepare to Listen and Take Notes
Exercise 1 (p. 80)
Answers vary

Exercise 2 (p. 81)
Answers vary

Exercise 3 (p. 81)
a. 3
b. 4
c. 2
d. 1

Exercise 4 (p. 82)
1. T
2. F
3. F
4. T

Exercise 5 (p. 82)
Also see transcript on page 32 of this booklet.
1. Non-verbal signal: lean forward
   Important idea: a single quality
2. Non-verbal signal: holding up two fingers and counting with fingers (can be counted as one, two, or three signals)
   Important idea: Two categories: Fluid intelligence and crystallized intelligence
3. Non-verbal signal: Showing slides
   Important information: All information in slides (one or two signals)
4. Non-verbal signal: Hand moving down and up

Important information: Fluid intelligence decreases over time and crystallized intelligence increases over time.

5. Non-verbal signal: contrasts using hands
   Important idea: older people may not be able to solve problems as quickly, but they have more general knowledge

Exercise 6 (p. 83)
Answers vary

Exercise 7 (p. 83)
Answers vary

Listen and Take Notes

Exercise 1 (p. 84)
Answers vary

Exercise 2 (p. 84)
Answers vary
Also see transcript on page 32 of this booklet.

Exercise 3 (p. 85)
Answers vary

Exercise 4 (p. 85)

1. Linguistic intelligence is the ability to learn languages and the ability to use language effectively. Logical mathematical intelligence is the ability to detect patterns, think logically and analyze and solve mathematical problems. Spatial intelligence involves the ability to recognize and use patterns in space. Musical intelligence includes the ability to recognize and compose musical pitches, tones, and rhythms. Bodily kinesthetic intelligence refers to the ability of a person to move and coordinate their body or parts of their body. Interpersonal intelligence is a social intelligence and reflects a person's ability to understand other people. Intrapersonal intelligence reflects the ability to understand one's own feelings and motivations and control one's own actions.
2. Critics have argued that Gardner is just using the word "intelligence" to describe "talents" or "interests." In addition, this theory doesn't provide a reliable way to test intelligence and there is no clear way of comparing the intelligence of one person and another.
3. This theory has encouraged teachers to value all types of students and recognize that students learn in different ways. As a result, there has been a movement in education for teachers to present their material in ways that include all the seven intelligences.

Exercise 5 (p. 85)
Answers vary

Exercise 6 (p. 85)
Answers vary

Discuss the Issues

All answers vary

CHAPTER 9

The Art of Graffiti

Build Background Knowledge

Exercise 1 (p. 90)
Answers vary

Exercise 3 (p. 92)

1. Marco: Because it's mostly done without permission and it damages someone else's property. It's a political statement, but not art. It can make an area look ugly, especially when it gets old. It costs cities a lot of money to remove it.
   Shannon: Graffiti that is just the writing of someone's name or profanity is not art.
2. Jesse: Having permission to create is not a requirement for art. Graffiti art can be a response to commercial messages in a community. The graffiti art can be a way of community members engaging with each other.
   Shannon: Graffiti can have a positive effect on the appearance of the community.
   Lee: Better than the ads we have to see every day. Graffiti art is a way to take control of public space.

Exercise 4 (p. 92)

1. c
2. g
3. d
4. b
5. h
6. a
7. f
8. e

Exercise 5 (p. 92)

a

Exercise 6 (p. 92)

Answers vary

Exercise 7 (p. 92)

Answers vary

Prepare to Listen and Take Notes

Exercise 1 (p. 93)

Answers vary

Exercise 2 (p. 93)

Excerpt 1

In the subways of New York in the early 1970s, writers . . . what I mean by (writers) is graffiti artists . . . started doing something new. They started to tag their work. (Tag) is the term for a writer's signature. Before then, no one focused on who was making the graffiti.
A New York writer named Taki 183 . . . Taki 183 was his (pseudonym), meaning the nickname he chose to sign his work, . . . was the first to get fame and media attention for tagging trains. He traveled all over New York and tagged everywhere.

Excerpt 2

Pop Art was a big influence on artist Keith Haring. (Pop Art) is the term we use for the style of art created by artists like Andy Warhol, artists who used themes and techniques taken from mass culture. What do I mean when I say (mass culture)? I mean things like advertising, popular movies, fashion magazines, and comic books, . . . things like that. Pop Art used popular culture as a guide instead of the elite culture of the "high art" world. In this way, it was able to engage a much larger public.

Exercise 3 (p. 94)

1. F
2. F
3. F

Exercise 4 (p. 94)

Also see transcript on page 34 of this booklet.

1. Word: genre
   Lecture language: what I mean when I say . . . is . . .
   Definition: Type
2. Word: "get up"
   Lecture language: what do I mean by . . . ? By . . . I mean . . .
   Definition: to leave a tag on as many subway cars as possible
3. Word: "making a burner"
   Lecture language: This was called . . .
   Definition: to make something that was new in style
4. Word: contradictory
   Lecture language: meaning
   Definition: they kind of worked against each other.
5. Word: "buffing"
   Lecture language: is the slang term for . . .
   Definition: removing graffiti from trains

Exercise 5 (p. 95)

Answers vary

Listen and Take Notes

Exercise 1 (p. 96)

Answers vary

Exercise 2 (p. 96)

Answers vary
Also see transcript on page 35 of this booklet.

Exercise 3 (p. 97)

Answers vary

Exercise 4 (p. 97)

1. Many New Yorkers feel it's mostly vandalism, it's ugly, it makes a place appear abandoned, and it attracts crime.
2. Semiotics means a theory of signs. Symbols act like words. Haring used symbols like barking dogs and crawling babies to communicate in a kind of visual language.

3. Simple, bold lines, and using the same symbols over and over (semiotics), colorful
4. They felt he was "selling out" and that he was too focused on commercializing his artwork and making money.

Exercise 5 (p. 97)
Answers vary

Exercise 6 (p. 97)
Answers vary

Discuss the Issues
All answers vary

CHAPTER 10

Design Basics

Build Background Knowledge
Exercise 1 (p. 100)
Answers vary

Exercise 3 (p. 102)
1. Shapes of furniture and other design elements, such as staircases and windows.
2. Horizontal lines: feel stable and secure, can make a small room look longer or wider than it is, make smooth transitions between rooms
   Vertical lines: feel stable, make a room taller than it really is, strong psychological impact—as in important buildings, create a formal feeling
   Diagonal lines: give the impression of movement, stimulating
3. Horizontal: can be boring
   Vertical: can feel restricting
   Diagonal: can make you feel uncomfortable and nervous

Exercise 4 (p. 102)
1. i
2. c
3. d
4. e
5. f
6. g
7. a
8. h
9. b

Exercise 5 (p. 102)
a

Exercise 6 (p. 102)
Answers vary

Exercise 7 (p. 102)
Answers vary

Prepare to Listen and Take Notes
Exercise 1 (p. 103)
Answers vary

Exercise 2 (p. 103)
Answers vary

Exercise 3 (p. 103)
When designing a room, you want to be sure that it is not overstimulating or understimulating. In the book *Color and Light in Man-Made Environments*, Mahnke says that **(P)** you need to have some sameness in color, shapes, line, etc., but you also need some variety. According to **(P)** Mahnke, overstimulation can cause physical stress—for example, increased breathing rate, heart rate, and muscle tension. But understimulation can also be a problem. He states that **(P)** people in understimulating environments often feel restless, have trouble concentrating, and feel irritated. However, as color researcher Faber Birren says, and I quote **(Q)**, "people expect all of their senses to be moderately stimulated at all times." He believes that **(P)** this is because this constant moderate stimulation is what is present in nature.

Exercise 4 (p. 104)
1. c
2. a
3. b

Exercise 5 (p. 104)
Also see transcript on page 36 of this booklet.
1. Lecture language: . . . says, and I quote
   Paraphrase/(quotation)
   Main idea: Color can make a room seem warmer or colder.
2. Lecture language: According to . . .
   (Paraphrase)/quotation

Main idea: People perceive room temperature differently depending on the color of the room.

3. Lecture language: . . . says that
   (Paraphrase)/quotation
   Main idea: White is a bad choice and can cause eye fatigue
4. Lecture language: says, quote . . .
   Paraphrase/(quotation)
   Main idea: White is thought to be a "safe" color because it doesn't get a strong positive or negative reaction.

Exercise 6 (p. 105)

Answers vary
Possible answers are:
Outlining: Indenting of notes
Split-page format: Two columns: Review/study questions or summaries and Notes from class
Using key words: Color placement, effect, etc.
Abbreviations: txtbk, diff., nat., atmos., etc.
Symbols: →, +, =, etc.
Cause and effect: Green – indoors → good concentration

Listen and Take Notes

Exercise 1 (p. 106)

Answers vary

Exercise 2 (p. 106)

Answers vary
Also see transcript on page 37 of this booklet.

Exercise 3 (p. 107)

Answers vary

Exercise 4 (p. 107)

1. A physical response to color is when the human body responds in a universal way (not a personal or cultural way) to color. Color can stimulate activity, change a person's heart rate or temperature. Learned responses are based on associations we make with colors based on our culture and/or personal experiences. This information can be used in businesses to affect buying behavior or service satisfaction.
2. Value is the lightness or darkness of a color. They can change the appearance of a room. Dark values seem closer. Light and dark values together (high-contrast) create a dramatic effect. Colors close in value create a calm environment.
3. Warm colors are stimulating and dynamic. They make a room feel physically warmer and make people feel happier. Cool colors can be calming and relaxing—but also depressing. They make a room feel physically cooler.
4. Most colors are not pure colors. They are a combination of a dominant color and a small amount of another color—the undertone. Different colors with the same, or similar, undertones usually harmonize the best.

Exercise 5 (p. 107)

Answers vary

Exercise 6 (p. 107)

Answers vary

Discuss the Issues

All answers vary

Transcripts

CHAPTER 1

New Trends in Marketing Research

Practice Lecture

Introduction #1

OK, let's get started. **In today's class, we'll focus on** questions—the questions you write to find out about the attitudes and opinions of your target market. Before you conduct any kind of primary research—telephone interview, written questionnaire, focus group—you need to prepare questions, and certain types of questions are best for certain situations. **I'll be covering two areas in** today's lecture: question types—I'll be explaining different types of questions—and then I'll discuss what types of questions work best with each type of research. This will help as you're preparing questions for your final project.

Introduction #2

What I want to discuss today is the role of product image in advertising. We've talked about the basic idea that the things people buy add to, and reflect, their self-image. To illustrate this concept, well, **first, we'll look at** the product image created by a few ads. We'll watch some ads that are currently running on television. I think you'll find it quite interesting. And **then we'll move on to** how that product image connects to the target market.

Introduction #3

All right, we've been discussing cultural differences in buying behaviors. This morning, **I'll give you an overview** of the "world brand" concept. Now, I know you read in your textbook that consumers in different cultures and geographic regions have different needs, and that your product will be more successful if you adapt it and its advertising to fit each target market. But some companies find that certain products and the ads for those products do well even though they're made and marketed in almost the same way all over the world. These products are called "world brands." **We'll start out with** the reasons marketing experts give for using this approach, uh, the benefits of using this approach, **and then look at** a few companies that have been very successful at creating world brands.

Lecture

Good morning. We have a lot to cover. OK, so let's get started. Today, we are going to con**tinue talking about marketing research, and we're going to be focusing on a trend called neuromarketing.**

Now, first, I'm going to talk a little bit about why it developed. **Then I'll explain** how neuromarketing works, and we'll look at a couple of examples of how it's been used so far to illustrate it. **And then finally, I'll cover** some future possibilities and concerns some people might have about how this new type of research works. OK? Let's get started.

OK, first, why it developed. Now, advertisers have understood for a long time that buying decisions are not always rational, that emotional factors,… irrational reasons,… can be much stronger than the logical reasons, like price, quality, performance, taste. You get the picture? Now, the main motivations for many purchases are unconscious. They're under the surface, so people don't realize them. So, this means that focus groups and surveys can be useful, but their effectiveness is limited. And that's because most people are not fully conscious of how they differentiate between products. So, in other words, people don't always know the reasons they choose to buy one product over another.

So here's how neuromarketing… neuromarketing comes in. Researchers wanted to find other ways, other methods, besides surveys and focus groups, to do marketing research. So, they wanted to find

a more scientific method to understand the target market. In fact, they'd like to understand the target market better than it understands itself.

Now, that's why neuromarketing developed. So, now let's move on to how neuromarketing works.

Neuromarketing researchers use machines designed for medical purposes, specifically, magnetic resonance imaging, otherwise known as MRI. OK? And this medical technology can take pictures of brain activity. But marketers are using it to find out how people are thinking. Um-huh. How they process information about products, brands, and of course, advertising.

So here's how it works. While a test subject is connected to the MRI machine, researchers might show him a picture, maybe of a person like Arnold Schwarzenegger, or an activity like rock climbing, or they might show him a new TV commercial they've created. At the same time, the researchers are looking at a picture of the person's brain, at the activity going on inside the brain as the person looks at the image. They look at which parts of the brain are being used and the patterns of activity between areas of the brain. OK? You see, where in the brain something is processed suggests to the marketers how people are processing it, OK, or thinking about it. And this is because the brain uses different areas to do different things, and researchers now know a lot about where different functions of the brain are located.

So, do you understand? Different areas of activity in the brain can suggest to researchers if a person is responding positively or negatively to something and how strongly. Interesting, huh?

Now, let me give you a couple of examples that illustrate how it works. A 2004 study at Baylor College of Medicine tested people's responses to the taste of two different colas. All right, they had Coca Cola… and Pepsi. And they found that during the blind tastings, where volunteers didn't know which brand they were thin,… they were drinking, the results were split. Roughly 50% chose Coke and 50% chose Pepsi as the better tasting.

They also found that people were using the part of the brain connected to the feeling of reward. OK, this meant their brains were focusing on the taste and how much they liked it. However, when the brand names were given—when people knew which cola they were tasting—the results changed. Now, three quarters… three quarters of the people chose Coke over Pepsi. So only a quarter, or twenty-five percent, chose Pepsi.

They also found people were using a different part of their brain than before. They were using a part that's more closely connected to personality and self-image. Now this suggests that the image of the brand (what people associate with the brand) was responsible for the Coke preference. So participants in the study preferred Coke's image, not necessarily its taste. And this is important because this image preference translates into sales. Coke is the market leader in colas.

Now let me give you another quick example to show what else brain-imaging technology can show researchers. Yes, here it is. Ulm University in Germany, in a study funded by Daimler-Chrysler, used this technology, this MRI technology, to see how men reacted to pictures of cars. And guess what? They found that men use the back of the brain, a part of the brain used to recognize faces. Now, we don't know for sure exactly how this connects to buying behavior, but one possibility is that men process the design of a car like it was a human face, so this may cause them to prefer a car that has a "face" that is appealing. Make sense to you? Makes sense to me.

Now these are interesting studies, but, you know, the brain is a very complicated organ. And we may be able to see a reaction in the brain, but we still don't know exactly what people are thinking or how a particular brain reaction relates, or connects, to buying behavior.

So, that said, what about future possibilities? Hm? Well, we may not be there yet, but in the future, researchers hope to be able to accurately and precisely read pictures of brain activity to understand human—consumer—feelings and attitudes, and predict behavior—consumer behavior. Neuromarketing could be a very effective marketing research tool for the future. OK? It could help companies understand the target market's preference and needs. So that's the potential benefit. It can help companies predict consumers' needs and desires.

Now, of course, trying to find out more about the target market, well, that's nothing new. But neuromarketing could one day be a much more powerful, more effective, method than using focus groups and survey research. And that's what the concerns focus on.

Some people are concerned about the possible abuse of this tool. It could be used to do more than meet consumers' needs. Now it may be okay to use brain scans to… to… to design television ads for a cola, but what about a political ad, say, for a presidential candidate? Can we trust that the information learned from this marketing research will not be used to unconsciously influence our behavior in ways we don't even notice or really understand? Good question. Something to think about.

OK. Now that we've had an introduction to the ideas and issues connected to neuromarketing, I'd like to break you into small groups to discuss the study questions for this chapter of your textbooks. OK?

CHAPTER 2

Business Ethics

Practice Lecture

All right. Today, I'd like to continue our discussion of ethics in the workplace. **First, we're going to look at the behavior of men and women in the workplace.** One common belief is that women are more ethical than men. Some say that women are more honest and caring by nature, and so they are less likely to commit corporate crimes than men.

But is this really so? Let's take a look at some statistics. A Canadian study showed that corporations with three or more women on the board of directors were much more likely to have ethics guidelines than companies led only by men. And these companies were also more likely to verify their company's financial statements. So, it seems that companies that are led by both men and women set higher ethical standards.

Next, let's look at some statistics involving corporate crimes. A study done in the U.S. showed that in 2002 women actually committed slightly more crimes that involved stealing from their companies than men did: 5,917 for women compared to 5, 898 for men. Between 1993 and 2002, the number of these cases involving women increased by 80.5 percent. That's quite a bit. So, it seems that as more women have entered the workplace, more women have also started to commit corporate crimes.

Okay, so what does all of this mean? Are women just as corrupt as men? Maybe not. If we look at all corporate fraud and crimes, men actually commit more crimes than women—they commit 75% of all crimes in the workplace. And men steal larger amounts of money. Men steal a median amount of $185,000, compared with $48,000 for women. So women tend to steal smaller amounts, but they tend to steal over longer periods of time.

OK, uh, now, let's move on to some specific cases of corporate corruption involving women. One famous example is Martha Stewart, but there are many other examples of female executives responsible for corporate crimes…

Lecture

Good morning, everyone. Today, we'll begin our discussion of business ethics. I'll start by discussing the goals of business ethics and corporate responsibility. **Then**, we'll look into the reasons why people are concerned about business ethics, and the impact of corruption. In other words, what can happen when companies don't behave ethically. **After that, then** we'll see how corporations can benefit from creating more ethical work environments. And **finally,** as you can see, some ways that they can go about doing that.

So, **first, I'd like to discuss** what business ethics means, what it aims to do. In general, the goal of business ethics is to give a company's employees a sense of how to do business responsibly. Let me say that again. Business ethics aims to give the employees of a company a sense of how… how to do business responsibly, for all parties involved.

Now, to do this, a company needs to consider its responsibility to all of its stakeholders. That's "stakeholders," by the way. Don't confuse this term with "shareholders." Stakeholders are the people and organizations that have a stake, or interest, in the actions of a company. Stakeholders

include its suppliers, employees, its shareholders, the clients, and the outside community. A lot of people are stakeholders in a company. So, as you can imagine, determining responsible, or ethical, behavior in a business is no simple task. A company needs to consider the interests of all these different stakeholders—who often have very competing, very different interests—while at the same time, attempting to make money, to make a profit. Is everyone with me? OK? **Let's move on**.

So, developing a sense of corporate responsibility and ethics is not such a simple thing to do. So why are we… why are people so concerned with business ethics? Well, I'm sure you've all seen the news reports of corporate fraud lately, of white-collar crime. I mean, gosh, it looks like business leaders today just don't have a conscience at all, huh? At least not when it gets down… when it gets in the way of making a profit. Like Enron, for example.

Well, the fact is that corruption—meaning, a lack of ethics in the workplace—has a big impact on business and the economy. That's why business ethics are important. That's the bottom line.

So, **next, I'd like to look at** the impact of corporate corruption, how it affects everything it touches. **First**, there is the obvious impact on the stakeholders—especially the employees and shareholders who lose their jobs, salaries, investments, when their companies experience scandals, or worse, go bankrupt. And entire communities can be affected when, for example, companies violate health and safety regulations. But the effects of corporate corruption can also go well beyond the company's immediate stakeholders.

Let me illustrate this. A survey done in 2002 found that 70% of U.S. investors felt that concerns about corporate corruption were hurting U.S. investments a lot. In other words, people are not willing to invest their money in a company if they have any fear that the company and the company's executives are cheating. And this lack of investment hurts not only the company, but the whole economy. Think you got the picture? When potential… when potential investors question the ethics of a company, they don't invest in that company, or they don't invest at all, which hurts the whole economy. So scandal can actually hurt the economy. Got it? Good.

In addition to these investment issues, reports of corporate corruption have led many employees to doubt the honesty of all corporate executives. One study found that 91%,… that's right, 91% of employees believe that most corporate leaders only care about doing what is best for themselves—not their employees and not the company. This is especially important because it is those at the top, the corporate executives, who set examples for workers and create a "corporate culture," a corporate environment—an atmosphere within the company—that either encourages or discourages ethical behavior. You may doubt this, but it's true. Experts in corporate ethics have found that there is a strong connection between how employees view the ethics of their leaders and their own ethical behavior.

Let's look at the evidence that supports this. Researchers found that 43% of employees surveyed believed their supervisors don't set good examples of integrity. And that same percentage, 43%, felt pressure to violate their company's ethics rules themselves. So, does everyone understand these connections? Corruption at the executive level can have negative effects throughout a company.

Okay, so it's clear that corruption can hurt companies, but is the opposite also true? Does encouraging ethical work environments really help a business be profitable, be successful? Well, the evidence shows that… that promoting ethics in business is not only important for avoiding scandals, but also for creating better work environments and more profitable businesses.

So there's the answer! More profitable businesses. And studies show that companies that are known for their honesty attract better employees. And employees who think their companies are ethical are more satisfied in their work, and feel more valued as workers, and are more productive at work. All good things. Many studies also indicate that encouraging corporate responsibility can often help a company perform better financially. Got it? These are really important connections to understand.

OK. **Now we've discussed the benefits of promoting business ethics. Let's look at how that's done**—some things that a company can do to create a more ethical environment. So, one thing a company can do is to develop an ethics program. This should include a written code of ethics that is communicated to all employees. In other words, a set of written rules, or guidelines, for its employees to follow. Also, smart companies train their employees in how to follow this code of ethics and regularly... regularly survey their employees to evaluate how well the company is following the code. This creates more accountability—it makes all executives, and all employees accountable, or answerable for, their behavior. These types of programs do seem to work. A recent survey found that employees were more likely to report unethical behavior when their company had an ethics program in place.

OK. **Finally,** we can't forget about the importance of teaching business ethics in our business schools, so that future business leaders will have a solid understanding of how to behave responsibly before entering the corporate environment. So, I hope that you can all see how developing strong business ethics can benefit you as an employee and perhaps a future executive.

Next time, we'll begin to look more closely at how to make ethical decisions at work, by looking at some case studies and actual ethics problems. That's it for today. Be sure to read the assignment and be prepared to discuss it next week. Bye-bye.

CHAPTER 3

Trends in Children's Media Use

Practice Lecture

Today, I'm going to present the results of some recent research on the topic of multitasking. At the University of Michigan they recently conducted a study with math problems that shows how true this expression is. They found that if students had to switch back and forth between different types of math problems, it took them longer to do them. If they could focus on one type at a time, they could do the problems more quickly. **So, what can we infer from this?** Well, that we're less efficient when we multitask than when we focus on one activity at a time.

Another study, at Carnegie Mellon University, monitored the brains of people who were being asked to perform two tasks at the same time. They thought maybe activity in the different parts of the brain, connected to the different tasks, would not affect each other, or that both parts would have to work harder. However, what they found was that both areas worked less efficiently. Less brain power was being used for two tasks than would have been used for one task. **This demonstrates,** once again, that when we multitask, we use our brains less efficiently.

Today's young people are being brought up in a multitasking world. A study of successful companies found that their employees send and receive a total of 178 messages a day, and get interrupted, on average, 3 times per hour. **I hope you can see** that, in this kind of environment, strong multitasking abilities are vital to success.

So, it's true. Today's workplace doesn't allow much time for concentrating on one task or project. **Let me back this up with a story**. My friend Dave tries to get to work by 6 a.m. so that he can get in two hours of concentrated work before his coworkers arrive and the telephone starts ringing and the emails start arriving. He says this is the only way he has time to focus on important projects each day.

Lecture

Hi, good morning. Good to see you're all here so bright and early. I think you'll enjoy today's lecture because it's on a topic most of you know about and are part of. It's new trends in children's media use. And why is this an important topic to discuss, you may be asking yourself? Well, let's start by thinking about your day so far. What media have you used? Hm? How many different types of media have you used since waking up and coming to this class? Did you check your e-mail? Did you turn on the television as you were getting dressed or eating breakfast? As you were traveling here, did you have some kind of music playing in your car? Hm? Or did you use your iPod on the bus? Did you read a newspaper? How

many different types of media have you used already today?

OK, so now let's think. How is your experience different from, say, 50 years ago? What are some of the key changes? Well, in the middle of the 20th century, people in the U.S. had only TV, radio, records, movies, and print media. Today, early in the 21st century, we have many more options. Let's see. There's both a larger variety of technology available. That is, the number of different devices and types we use is greater. We have VCRs, DVRs, CDs, DVDs, computers. And we also have online activities now—e-mail, gaming, music streaming, just to name a few.

And it is also constantly changing. And the rate of the change is getting faster. OK, and technology is getting cheaper, too. It's less expensive now, so more people can own it. It's also getting more portable. OK? So you can carry it around and have access to it, use it, in more places. And lastly, with the Internet and cable/satellite technology, people now have more sources. OK? More places you can get entertainment and information from.

Overall, media use is just getting more convenient. Just look at that list. It's amazing, isn't it, how our lives are becoming increasingly full of media. That means that today's children are growing up in an increasingly media-rich environment.

So, today we are going to look at some new trends in media use, and talk about some of the more surprising results of this. Let's start by looking at the overall amount of media exposure and use today.

Now, a 2004 study by the Kaiser Family Foundation found that, on average, a child—kids between the ages of 8 and 18—spend nearly 6.5 hours a day outside of school doing media related activities, using media. Think about that. That's more than most adults spend in a full time job! But what's more interesting is that children have exposure to 8.5 hours of media per day.

OK, I can see the wheels turning. You're thinking, "Wait, how can they have 8.5 hours of exposure if they only spend 6.5 hours a day with media?" Well, **what we can conclude from these numbers is** that children are using several types of media concurrently. They're using different types of media at the same time. This is one of the new trends in media use—multitasking.

So, for example, while they are listening to music, they may also be playing a video game or reading, or they may be surfing the Internet and watching television at the same time. So, **we can infer that** today's youth are becoming more skilled at paying attention to more than one thing at a time, OK? At doing more than one task at a time.

Or is the opposite true? Maybe all this media is just making it harder for them to focus on one thing. They get bored more easily if there isn't a lot of stimulation from different sources. The truth is, we're not sure. We're not sure exactly what the positive and negative impacts will be at this point. What's interesting is that, even though children are using many more types of media, they are spending about the same amount of time with media as children did five years ago. This means that children can't really fit any more media time into their average day. They've hit a media-time ceiling. But, they can use media more intensively, by increasing their multitasking.

Now, as it turns out, that's exactly what they're doing. For example, one recent study suggests that 26% of media time is spent using two or more types of media concurrently, on multitasking.

Another interesting trend is the number of children who have access to media in their bedrooms. **OK, so let me back this up with some findings**. The number of children in the U.S. who have a VCR or DVD player in their room in 1999 was only 36%, in 2004, 54%. OK? Now, that was a dramatic increase. And, as you can imagine, children who have TVs in their bedrooms spend more time watching TV. They watch about three and a half hours a day. But children who don't have TVs in their bedrooms watch about 2 hours a day. That's a big difference. OK? That's 1.5 hours more in a typical day, 10.5 hours more per week. Now, that's significant. And TVs are not alone. Other media is also used more when it is located in the child's bedroom.

So, **what can we conclude about the increased intensity of media use by children?** Well, not everyone agrees. Some research suggests lower

test scores and shorter attention spans, which make some people think that increased media use only has a harmful effect on kids. And some people worry that today's kids are too dependent on visual media, that they don't have the patience to read long texts, which could hurt them in school and colleges.

But other people don't have such negative opinions. They believe that so much exposure to all kinds of media is just preparing them for real life. Life today is filled with media and images. They'll eventually have to live and work in that world, so their media use is just preparing them for that. These children are really good at shifting their attention from one thing to another, at focusing their attention on what interests them. Some experts say this skill of monitoring and coordinating more than one task at a time, but ignoring what isn't important, may actually be useful, a benefit. After all, managers and CEOs often supervise many people, many different projects at a time. So this could be a useful ability. Combine their multitasking skills with confidence with different media tools and these kids may actually have essential skills for the workplace of tomorrow.

So, let's wrap up now. And I'll want to leave you with a thought. We need to continue to study the changes in children's media use, but we shouldn't immediately infer that the changes are negative, that they're bad for kids. We have to consider how new technology, and exposure to it, and different ways of using media may actually help our kids in the long run.

OK. That's it for today. Bye.

CHAPTER 4

The Changing Music Industry

Practice Lecture

Hi, everyone. Today's focus is going to be on a hot topic connected to copyright law. Today I'm going to talk about a group who are working to weaken current copyright law. **In other words,** they want less restriction on the ownership of creative work and ideas. They think—and this group of activists includes lawyers and professors at important universities like Stanford—well, this group believes that copyright laws are currently too strong and these strong copyright laws make the United States less free and less creative.

Let me give you some background. Copyright was created to encourage innovation—**what I mean is,** copyright was meant to motivate people to create new things. It gave people a way to make money from innovation. People who invented something new could earn money by having others pay them a little bit of money to use or own the creation.

In 1790, copyright protection was 14 years. By 1909, it had increased to 56 years. Copyright protection, and this is for an individual person, it now lasts at least 70 years after the death of the creator. Why such a large increase? **That is,** why should the creator of something, or the creator's estate after he dies, why should they have control of the work for such a long period of time?

And starting in 1976, in the United States you no longer need to officially register something to have the copyright on it. **What I'm saying is,** as soon as you create something, say, write a song or take a photograph, it's protected. So now all new ideas and inventions are protected by copyright automatically and far into the future.

The group of activists I was talking about, they believe our current copyright system is making the U.S. unfriendly to innovation**. Let me say that another way:** they argue that too much protection freezes innovation.

OK, now let's get into some of their reasons and arguments for this position….

Lecture

Good morning. Let's go ahead and get started. So, today we are going to talk about how technology is changing the music industry. We are going to talk about how the ways in which music is recorded, promoted, and distributed have really changed. Then, I'd like to talk about some of the legal issues—copyright issues—that come with some of these, uh, changes. And these raise questions about how to deal with those issues, whether you can really protect against copyright infringement, and how much effort you should

put into protecting copyright. OK, so that's what we'll cover today.

Um, first, um, I'd like to point out that the overall major change has been in the democratization of all the aspects of the music industry. **What I mean is,** any member of the general public with a relatively new computer, common software, and high-speed access to the Internet has the tools needed to create, distribute, and promote music. So, let's start by taking a look at the making of music.

Many of the computers nowadays come with the tools of a professional recording studio, and the musicians themselves can learn how to use these user-friendly programs and make their own high-quality, really innovative sound recordings. A musician no longer needs a recording contract—money from a recording company—to make high-quality recordings. In fact, you don't even need to be a musician to make music. And, as you can imagine, this results in quite a few more recording artists out there now.

Now, you're probably thinking uh, that, uh, with so much music out there, does it make it harder to promote your work, so people know about it? Well, not really, because music promotion has been democratized, too. On the Internet, anyone can be a critic. People post reviews on lots of different music si… sites, such as Amazon.com, Rhapsody.com. And there are also thousands of… of weblogs, um, blogs, where people give their opinions on music and where musicians can talk about their music. Many people even create their own audio blogs—radio shows you can download for free.

So really, now anyone can be a DJ. These tools for promotion used to belong only to the big music industry companies. But now, they've gone from being in the hands of a few to being in the hands of the many.

So we've talked about how making music and promoting music has been democratized. Now let's look at distribution. You probably know that, um, this is the area that has raised a lot of controversy in the past few years—how people get and share music. We all know that digital downloads of MP3 files are now, well, really becoming one of the most popular ways to get new music for personal use. There are many sites where you can buy single songs or whole albums. Hah! Do they still call them that? Maybe I should say "collections." I don't know.

Anyhow, uh, most people who are downloading music do it by file sharing. File-sharing, a peer-to-peer network, sometimes called a P2P network. This is a type of Internet network that lets its users connect and access files on each other's computers. **In other words,** uh, well, sharing music with your friends and families is something that has been going on a long time, but now you can share your music with people all over the world. You don't need to know them.

And this is why it's caused so much controversy. There are legal gray areas about all this file-sharing, but most of it is illegal. It violates copyright. Copyright—the U.S. laws and international agreements on ownership and rights to distribute, in this case, intellectual property in the digital environment. So the bottom line here is, the same tools that make music easier to record, promote, and distribute, also make it easier to steal.

But who is breaking the law? Who should be punished or restricted? Should the makers of file-sharing software or file-sharing Web sites be punished? After all, peer-to-peer networks can be used in legal ways. So, that means restricting the use of these networks could make legal distribution of information and music much more difficult. But, really, let's be realistic. Even no… even though there are legal ways to use these networks, it's important to note that currently 90% of music downloaded at these types of sites violates copyright. **In other words**, P2P networks are popular and make money because people are using them to trade music illegally.

Now, take a look at these statistics. You don't need to write these down. They won't be on the test. Uh, OK. In 2005, in the U.S., 60 million people used file-sharing networks; 2.5 billion music files were traded every month; and though many types of files were traded—that's images, video, software—75% of the files were music. These facts raise a lot of questions about copyright and music. How can we stop, or at least reduce, copyright infringement?

This is where the companies that make the technology and the companies and… and people that make the music disagree. Let's… let me explain. OK. The music companies and many musicians believe that we need to restrict file-sharing on the Internet more. They feel companies that make it easy to share files illegally and make money from it should not be allowed to operate. And they want file-sharing technology companies to install security devices that make it harder to copy and share music—now, this is important—not only to protect their companies, but also the artists who write and perform the music. Who will pay the artists for the music if the companies aren't selling? Don't they deserve to be paid for their work? They don't want people to be able to share files without paying for it.

But, on the other hand, the file sharing sites and technology companies that develop this technology, they say it's wrong to restrict all uses of the technology just to protect copyright. Do you see their argument? They want this free flow of information, this sharing of ideas and information on the Internet, which they say, well, is what's led to some of the most recent technological advances in the world. Restricting Internet sharing, they argue, will not just limit file sharing but limit innovation as well.

Then there's this whole other group of people who feel that there is really nothing you can do to seriously reduce copyright infringement. People will continue to do it because they can. And we need to look to new models for how to pay artists and the companies that support them, that restricting file-sharing just won't work.

So, these are the issues that we'll be discussing in our study groups later. OK? First, how has the way you listen to and buy music changed in recent years? What do you think about music file sharing? And what can we do, if anything, to reduce copyright infringement when it comes to file sharing?

OK? So, that's it for today. I'll see you later for the study groups.

CHAPTER 5

The Placebo Effect

Practice Lecture

Good afternoon, everybody. Well, today we'll be discussing alternative medicine. This general term refers to all kinds of medical practices and products that are NOT usually used in conventional medicine, and by "conventional medicine," I mean the standard practices of trained doctors, M.D.s, practices that have been tested and accepted by the medical community. So, some examples of alternative medicine would be homeopathy, traditional Chinese medicines, acupuncture, chiropractic medicine, and products like herbal remedies. So that's "alternative medicine."

Now, alternative medicine is becoming very popular in Western countries. In the U.S., use of alternative medicine rose from 33.8% in 1990 to 42% in 1997. And an Australian study showed that, between 1993 and 2000, Australians spent 62% more on alternative medicines and treatments. And these numbers are still rising.

So, now we have to ask ourselves, "Why is there so much interest in alternative medicine?" **One explanation is that** people are aging. People are living longer these days, and alternative medicines may be more helpful in dealing with long-term health problems. For example, some people have had good results using acupuncture to help relieve pain.

This trend also may be due to the fact that people have become more individualistic. They're better educated and have access to much more information—especially on the Internet. And they want to make their own decisions regarding their healthcare, so they want to explore the possibilities of alternative medicine.

Another reason for this rising use of alternative medicine is the immigration of people from non-western cultures. People from places like Southeast Asia and China bring their traditional forms of medicine with them, which in the U.S. fall into the category of "alternative."

So, **because of this rising interest in alternative medicine,** there is now a huge increase in the

number of people practicing alternative medicine. And **it has also led to** a trend called "integrative medicine," that is, clinics and hospitals offering alternative medicines and treatments along with conventional medical treatments.

Lecture

OK, everyone, let's get started. Today, we're going to discuss the placebo effect. First, I'll explain what the placebo effect is and how placebos have been used. Then, I'll discuss some possible causes for this effect. Finally, we'll look at some studies of the placebo effect and some questions that they've raised about the use of placebos in testing and treatment of illnesses.

So, what is a placebo? Well, basically, a placebo is a fake medical treatment, fake, not real. When most people think of placebos, they think of sugar pills—pills that don't contain any actual active ingredients, just sugar, or some harmless substance. Does everyone get that? OK. But a placebo doesn't have to be a pill. It can also be a medical therapy or even surgery. The main thing is that a placebo is always a sham treatment. What I mean is, a treatment that does not actively treat a patient's illness. Let me write that for you. Sham treatment, OK? No actual medical benefit to it. Understand? OK.

Now, the placebo effect is the often positive response that patients receive from a placebo. In other words, it's **an improvement in a person's health that is due to taking a placebo, not due to any real treatment.** Let me repeat that because it's a very important point. It's not medicine that is helping someone, but their belief that they are taking medicine that is helping them.

And this is a real phenomenon. Doctors have known about the placebo effect for a long time. They even use it to their advantage. In the 1930s and 1940s it was common for doctors to give patients placebos for aches and pains and other minor complaints, you know, just to give them something. Of course, they didn't tell their patients that the pills weren't real medicine. But the surprising part is that patients would often claim to feel better, even though they hadn't taken any active drug. Just the act of taking the pill often seemed to have a positive effect.

Doctors don't do that anymore, of course, but let's talk now about how placebos are currently being used. Now, have you heard the term, "clinical trial"? You know, the way researchers test new drugs? Yes? OK? Good. So, placebos are still very much in use in clinical trials of new drugs and other treatments. I'll explain.

In a blind clinical trial, volunteer patients, who all suffer from the same illness, are split into two groups. One group of volunteers receives the new drug or treatment that is being used. The other group receives a placebo, like a sugar pill or a dummy injection. Now, the researchers know which is getting… which group is getting the placebo and which one the real drug, but none of the people in either group knows. The purpose, of course, is to compare the experiences of the volunteers to see whether the group getting the real drug is actually getting the desired reaction.

Now, in a double-blind trial, even the researchers and their assistants don't know who is getting the real drug and who is getting the placebo. This is to make sure that they have no bias when analyzing the results. To make sure that their expectations don't influence the results of the trial.

In either case, the placebo shouldn't have any effect at all. But, it turns out that the placebo effect is also very common in clinical trials. In fact, in a number of studies, 30-40% of the volunteers given placebos have shown some improvement. And in a few trials, placebos have shown up to 70% effectiveness.

So why does a placebo work at all? **What might be causing this phenomenon?** Well, no one knows for sure, but there are a few explanations. Some believe that at least part of the placebo effect **is due to** an illness or an injury taking its natural course. We often will feel better if we do nothing to treat an illness or injury. It might just be that,… excuse me,… that the placebo was given during a natural improvement in the health problem.

Now, but this couldn't explain all of the improvement that takes place with placebos. There must be some, or another reason for the placebo effect, another explanation. **One theory is** that the

placebo effect is purely psychological. It's all in the patient's mind. If patients expect to improve, they improve. They expect that the treatment will help them, and, hey, look at that, it does.

Now, this idea is supported by studies that have shown that **when doctors tell their patients they expect the treatment to work, the placebo effect increases** and some patients improve. But, on the other hand, **if a doctor said that the treatment might not be effective, the placebo is much less likely to work again**. So, again, that expectation of improvement leads to actual improvement.

Another reason that some patients improve on placebos may just be that the process of going through treatment is therapeutic. You know, that seeing a doctor who seems professional, and caring, and attentive, you know, just being treated, may make a patient feel encouraged and hopeful, which makes them feel better. OK, but even though the cause of the placebo effect may be psychological, there is empirical evidence that **placebos can result in** actual physiological changes, or signs of improvements in patients.

One study to document this was a study done at UCLA that involved 51 patients who were suffering from depression. One group was given a placebo. The other group was given an actual anti-depressant drug. Well, researchers weren't surprised to find that 52% of the patients taking the anti-depressant drug began to feel better, and 38% of the patients taking the placebo also began to feel better. Now, that's a pretty normal response. But what was surprising was that the researchers were able to detect an actual increase in the brain activity of the patients who improved on the placebo, which meant that their depression had actually improved.

These results have been repeated in studies treating a variety of illnesses, including heart disease, and even the common cold. So, **this points to** a chemical change in the brain associated with the placebo effect—associated with the belief that you're getting real medical treatment.

So why is this significant? Why does it matter? How can we use this knowledge to actually help people? Well, some researchers suggest that, since placebos do no harm and may actually help patients, doctors should be able to prescribe them. They should be able to give them a try and see whether a patient responds to them. But most doctors don't want… don't want to do this. They feel that prescribing placebos is dishonest. But this is a real debate in the medical community.

I'm curious to see what you think of this, so let's go ahead and break into discussion groups now. I'll hand out some questions to get you started.

CHAPTER 6

Intelligent Machines

Practice Lecture

Excerpt 1

Psychologists studying artificial voices have discovered that people react, not only to the gender, but also the personality of an artificial voice. That is, when the artificial voice sounds, or doesn't sound, like their expectation of a thing, they react badly. **As a result…**

As a result, **BMW chose a voice that they felt sounded friendly, but also very competent and knowledgeable.**

Excerpt 2

The designers of the voice for the BMW avoided having the car voice use the word "I," as in "I think you should slow down." **The reason for this** was…

The reason for this was that **they didn't want the car to sound bossy,** like it was in charge. No, instead, they wanted the car voice to take a secondary role, the role of a co-pilot or assistant to the driver. This was to make the driver feel safer and more confident, and also make him feel completely in charge of the driving experience.

Excerpt 3

One problem with using voices in a car is that, **because of the noisy environment of a car,…**

…because of the noisy environment of a car, the **computer often has difficulty understanding the driver.**

Excerpt 4

So, the designers conducted a study. They wanted to determine how the best way to have the car ask for repetition from the driver, so to ask the driver to repeat what he had just said. They found that people didn't like it when the artificial voice blamed itself, by saying something like "This computer did not understand. Please repeat." It sounded too stupid and not competent. On the other hand, if the artificial voice blamed the person by saying something like "You must speak more clearly," then the artificial voice sounded smart, but the person didn't like interacting with it. So, **consequently**,…

…consequently, **they chose language that didn't include any blame**. This meant using phrases such as "That was not understood; please repeat."

Lecture

Hello, everybody. Good morning. Are we ready to get started? OK. Today, I'd like to talk about artificial intelligence, or AI. First, I'd like to begin by defining AI and looking at some of the different approaches to AI. Then, we'll discuss some of the challenges faced by scientists working in this field. We'll finish up by looking at some of the accomplishments of AI and what scientists hope to achieve in the future.

OK, so first, what exactly is artificial intelligence? Well, it's a relatively new science. Researchers only began to work on intelligent machines back in the 1940s and 50s. John McCarthy, a computer scientist at Stanford University, defines AI this way: as the "science and engineering of making intelligent machines, especially intelligent computer programs." So let's use this definition and go a bit further with it.

"Intelligent machines"—before we can make an intelligent machine, we first need to decide what we mean by intelligent, right? And then how we go about programming that into a machine. Well, so far, there have been two main approaches to doing this.

One approach aims to create machines that can think or act rationally, though not necessarily just like a human. For example, some scientists have worked on creating machines that do things, you know, like perform physical tasks—like, for example, a robotic vacuum cleaner—but they do them in a non-human way.

Now, the second approach aims to… to come up with machines that can actually think or act like humans. They actually simulate human thinking or do things that require human-like intelligence, such as carrying on conversations, you know, just like a real person would. OK? Everyone with me so far?

OK. So, let's say we want to build a human-like machine. How can we know if we're successful? In other words, how do we figure out if a machine actually can think or act like a person? Well, in 1950, a scientist named Alan Turing, developed a test to answer this question. The Turing Test is still used today to measure whether a machine has human-like intelligence.

OK. There, in this diagram you see a human judge, who sits in a room with a computer. The judge types messages and carries on two conversations: one with the computer, and one with another person. Now, both reply, and the judge tries to decide which is the person and which is the machine, based on their answers, their conversation. So, if the computer can fool the human judge, if the judge thinks the computer is human, it passes the test.

Now Turing guessed that by the year 2000 a computer would be able to pass the test, but he was wrong. To this day, no computer has been able to pass the Turing Test.

OK. So why haven't scientists been able to develop a machine that is human-like enough to pass the Turing Test? The main reason is that human beings are very complex, very complicated. And human thinking requires a lot of different skills that you just can't program into a computer. OK? Let's look at some of these.

First of all, a machine with human-like intelligence would need to have what we call "natural language processing skills," that is, the ability to communicate naturally in a language. But, to do this well, a machine needs to have the human ability to use context to understand the

meaning of words and sentences. Now, so far, no machine can do that.

So, next, it would need to possess "knowledge representation"—in other words, the ability to store what it knows or hears, just like our brain stores information.

OK, third, it would need to be able to reason like a human being. To use the stored information to think and come up with the answers, like a person would, which is, you know, surprisingly difficult. Now this is because, even though computers are great at solving many problems very quickly and accurately, it's very hard to design one that has the same kind of common sense that humans possess—just the ability to figure out the best thing to do in a situation based on experience and intuition, and, um, on feeling. Now, we have it. Computers don't.

Finally, to pass the Turing Test, a computer would have to be able to learn, so that it could adapt to new situations based on lessons learned in the past.

Now, these skills I just showed you are only the ones needed to pass the basic Turing Test, where there is no physical interaction between the computer and the judge. An even more challenging test is the Total Turing Test. Now, this requires both a visual and physical interface, so it's not just typed messages back and forth. Now, the Total Turing Test is done with a video monitor, so the judge can test the computer's ability to perceive visual input, you know, to see something and respond to it. Now there's also a hatch, or a… a little door, where the judge can pass objects to test the computer's physical abilities. So, to pass this test,… to pass this test, a computer would have to possess vision. And it would have to be robotic, so that it could handle objects and move around, which is much more difficult.

So, we all know, no machine can accomplish all of these things. Well, not yet anyway. So researchers have focused much of their attention on developing machines that are good at just performing specific tasks but aren't necessarily human-like. Now, there are several areas in which AI has been successful in doing this. Robots, for example. You know, robots can do lots of physical tasks that are dangerous or difficult for humans to perform, you know, such as cleaning up nuclear waste. The military uses smart machines, types of robots, really, to help on battlefields and in unmanned aircraft.

What's really exciting is that robots are now being used in hospitals. Like in places where there isn't a human doctor, like, um, in an area that's difficult to reach—you know, far away from the city, you know.

Now, I have a picture here I found that I thought you'd like to see. Yes, here's an example of a "robodoc." See him talking to the patient? Now, some robots even perform surgical procedures now.

What are some other applications of AI today? Well, in addition to robotics, AI can play games, like programs that can play chess. People are using more and more AI for "natural language processing" needs, like when your computer or cell phone is programmed to understand and respond to your voice, to specific commands. Every day scientists are coming up with machines that look, sound, think, and behave more and more like people. As a result, some scientists are confident that it won't be long before we have human-like machines. But the other big question that brings up is, whether or not we even should develop intelligent machines.

But, you know, we don't have time for that today. I'll end here for now. More about that next week, so see you then.

CHAPTER 7

Sibling Relationships

Practice Lecture

OK, next, I'd like to look at some examples of siblings. Let's start with the case of former U.S. President Bill Clinton and his younger half-brother, Roger.

OK, so President Clinton was actually born William Jefferson Blythe in 1946. His real father died in a traffic accident three months before he was born, so he never knew him. When he was four, his mother married a man named Roger Clinton and he adopted Bill and changed the name to Clinton.

So, in 1956, Bill's brother, Roger Clinton, Jr., was born. Six years later, when Bill was 16, his mother divorced Roger Clinton and raised the boys by herself.

So that's their history. Now, as they grew up, the boys had similar childhoods: **Both Bill and Roger** grew up in Hope, Arkansas, they were very close to each other and to their mother, and were both musicians. But the similarities seem to end there.

Take education, for example. Bill was an excellent student. He even got a law degree from Yale University. **Roger, on the other hand,** dropped out of college three times.

Bill entered politics and was well-respected in the community. In 1978, he was elected governor of Arkansas. **While Bill became a successful politician, Roger** began playing in rock bands. He started getting into trouble with the law, too. And in 1984, he was arrested.

As you all know, Bill continued his successful political career, eventually becoming president, even elected twice. **Unlike Bill, Roger** never developed much of a career. He's held many jobs, but has spent most of his adult life struggling to develop a career as a rock singer.

So what could have caused two siblings to become so different? Well, there are many possible explanations. Next time we'll look at some of the factors that can contribute to sibling disparities such as this.

Lecture

Good morning, everyone. It's good to see you. OK, let's begin. Today, we're going to talk about siblings, and how siblings can differ from one another. But before I get started, I have a question for you. How many of you are the first-born—the oldest child in your family? OK. How many of you are the youngest? The middle? I see. OK. How many of you are the only child in your family? OK, well, I see. Well, no matter what your birth order, I think you will find today's lecture very interesting. Today, we're going to look at how sibling relationships—including birth order—can influence later success in life. The results, they might surprise you.

First, let's look at what the research says about birth order. We'll start with first-borns. It turns out that first-born children are often very successful. So, the first-born children are often very successful. Let's look at some of the statistics. Fifty percent of all U.S. presidents were first-born children; 45% of all the female world leaders between 1960 and 1999 were also first-born; and 21 of the first 23 astronauts were first-born. Impressive, isn't it? It gets better.

Other research indicates that, in general, **when compared to their younger siblings, the oldest children in the family are** more educated, are smarter, and they earn more money. They have larger incomes. So, the first-born are more… have more education, they're smarter, and more income.

A recent study looked at a group of people born between 1912 and 1975. The researchers found that regardless of family size, oldest children tend to be more successful. **Similarly,** only-children also tend to be very successful. **In contrast,** younger siblings in a family tend to get less education. For example, fourth-born children are likely to get about one year less education than their eldest sibling. So, the youngest gets lea… less education.

And it turns out that middle-born kids—I mean, those born between other siblings—they may have the biggest disadvantage, especially in large families. Studies of families, uh, in the U.S. have found that, **compared to first- or last-born children, middle children are** least likely to receive financial support for their education and they are least likely to do as well in school. So, the middle child gets the least education.

In fact, with the birth of a third child—so when the parents have a third child—the middle child's chances of failing in school increase seven times. As a result, middle siblings tend to suffer financially later in life. They earn less pay and are more likely to work part-time jobs. So, the middle child makes less pay.

These are some dramatic differences, aren't they? So, what accounts for these disparities between siblings? Let's look at some possible reasons.

First of all, first-borns typically weigh more at birth than their younger siblings. So, the first-borns are

heavier at birth. A higher birth weight is a good predictor for educational success. So, uh, higher birth weight means that the mother was eating well during pregnancy. You… you understand what I mean. Another possible reason for the first-born advantage is that the oldest and only children spend more time alone with their parents, time when their parents don't have to care for other children. So, the first-born and only-child spend more time with their parents.

So, what does this mean in practical terms? First-born and only children, they get more attention, more mental stimulation, and more constructive feedback from their parents. They spend more time in an "adult" environment. So, this can help them to not only succeed in school, but also to develop the confidence and the problem-solving skills that will help them to be higher achievers as adults. Parents tend to have higher expectations of their first-born and only children. And they expect those kids to achieve more. So, parents have higher expectations of their first-born and only children. These expectations might help them to be more mature, um, and to have a greater sense of responsibility.

All right. So, **in contrast to this,** middle children grow up in an environment where they are surrounded by other children. They have to compete with other children for their parents' attention and for the family's economic resources all the time, from the very first day. There is simply less adult attention and money to go around for middle children. So, the middle child gets less attention and resources.

Youngest siblings, on the other hand, especially if they are much younger, often receive more attention and resources than the middles because the older siblings are growing up and they are more independent. They need less of their parents' attention, so the youngest child gets more. So, the youngest child receives more attention and the resources later.

Now, before you all start cheering or crying, I want to present some other ideas on the topic. Just hang on. Many experts are skeptical about giving birth order so much credit for the differences between siblings. When it comes to money, for instance, the truth is there are large economic disparities between siblings in the U.S. In fact, only 25% of the income inequality in the U.S. comes from the economic differences between families. The remaining inequalities—75%—are due to economic differences between siblings, members of the same family. In other words, it is common for siblings—children raised in the same family—to grow up to be quite different and economically unequal.

Birth order may explain some of this disparity, but there are many other factors that can lead to the differences within families and have an effect on development and success. Let's look at some of these.

One factor that can have a big effect is gender. A number of studies have looked at this. The difference between how parents treat boys and how they treat girls is significant. Parents tend to allow their sons more independence. They assign them fewer household chores, and they don't criticize them as much as their daughters. Fathers, for example, usually spend more time with their sons and are more involved in their activities and schoolwork than they are with their daughters. This can certainly lead to a differing expectation and levels of success for boys and girls. Don't you think?

OK, of course, another big factor is genes—biology. All of us are different individuals. Some children will just be smarter or they will inherit traits that will help them to be successful later in life.

Family size is another one. Family size. Some experts say that family size is even more important than birth order, that disparities are more likely to exist between children in large families. This is especially true in poorer families, where resources, such as money, space, parental time and attention, are limited. Some children are more likely to go without and are more likely to suffer negative consequences.

OK, finally, another contributing factor to disparities between siblings is hardship—hardships, or difficulties that they have no control over. Families can experience lots of unexpected hardships: um, divorce, uh, some sort of change in family economics, uh, like a father losing his job, or random events, uh, in the… like a death in

the family or a fire that destroys the home. These events can affect different siblings in different ways, and they can have a huge effect on the future success of a child.

OK. Well, that is a lot of information, so I'll stop for today. I hope those of you who are younger siblings don't feel too discouraged about all of this. And remember, these are only trends, and certainly don't account for the uniqueness of individuals or the unique standards within every family.

Next week we will continue our discussion by looking more closely at factors outside the family that can affect a child's success in life. OK. I'll see you then.

CHAPTER 8

Multiple Intelligences

Practice Lecture

All right. Let's get started. We've been talking about some different perspectives on defining and measuring intelligence in adults, and I'd like to continue with that today.

OK. As I mentioned last week, psychologists have generally defined and thought about intelligence as a single quality or level of ability, and that it's possible to measure this ability, like with IQ tests, and compare the levels of general intelligence in people. However, a lot of psychologists who study intelligence actually find it more useful to look at intelligence as divided into distinct capabilities that work together. There are quite a few theories on how to categorize these different capabilities, but let's just look at one example here.

Some researchers believe that intelligence is divided into two categories: fluid intelligence and crystallized intelligence.

First, let's take a look at fluid intelligence. Fluid intelligence refers to the flexible thinking that's needed to solve problems and understand the connections between concepts. It involves the ability to reason and analyze new ideas and information. And people with good fluid intelligence are quick and creative with words, numbers, and solving puzzles.

On the other hand, crystallized intelligence is the general knowledge, the facts and information that we learn and remember. This would be things like math formulas, and dates in history, that sort of thing.

OK. So, overall intelligence consists of two different types of knowledge and abilities. But here's something interesting. Studies of fluid and crystallized intelligence show that fluid intelligence actually decreases over time. So that means that, as people get older, as adults age, their fluid intelligence is reduced. People become slower in their thinking and problem-solving. The good news is that crystallized intelligence actually increases over time.

So, to wrap up. As people age and mature, they may not be able to figure out problems as quickly as they once did, but have a lot more general knowledge of facts and information than young people.

OK, that's it for now.

Lecture

Hi, everybody. Today, we're going to discuss intelligence and how our definition of intelligence—the way we look at intelligence—can impact the way students are taught and evaluated in the classroom.

So, we talked last time about IQ, or the Intelligence Quotient, as a measure of intelligence. I want to continue today by talking about one person who disputes the validity of IQ tests: Howard Gardner.

Gardner is a developmental psychologist at Harvard University, and he has some interesting ideas. Gardner thinks that intelligence is not simply one entity, one quality that can be measured by a single aptitude test. No, he argues that people have several types of intelligence, or multiple intelligences.

And this is our topic today. So, we'll first take a brief look at each of these different types of intelligence, then we'll talk about some of the criticisms of this theory, and finally, look at the impact of this theory on the field of education.

So how did Gardner come up with this? Well, he used biological and cultural research to develop a list of seven different types of intelligence. We'll discuss each one in a moment, but here is the list: linguistic intelligence, logical-mathematical, spatial intelligence, musical intelligence, bodily-kinesthetic intelligence, interpersonal intelligence, intrapersonal intelligence. OK. Now, as I said before, we'll take a brief look at each one.

This first one, linguistic intelligence, is the ability to learn languages and the ability to use language effectively to express oneself and to remember things. In Gardner's view, writers, poets, lawyers, people like that, possess a high degree of linguistic intelligence.

OK. This next one, logical-mathematical intelligence, is the ability to detect patterns, think logically, analyze and solve mathematical problems. People with this type of intelligence excel in math and science.

OK. So you've seen two of the seven. Any questions? No? OK. So now, these first two types of intelligence are the ones that have been traditionally valued in schools and strength in these areas usually correlates to high scores on IQ tests and other standardized tests. Most tests measure only these two things. But Gardner argues that other human capabilities should also be included in a definition of intelligence. And he adds five more capabilities to the list. So let's take a look at these other intelligences.

The next one, spatial intelligence, involves the ability to recognize and use patterns in space—either in small spaces, such as the visual skill of artists and architects, or large spaces, such as the skill needed by airline pilots. Got it?

OK. Next we have musical intelligence. Now, this includes the ability to recognize and compose musical pitches, tones, and rhythms. We all know someone who is just naturally musical, right? Maybe someone who can play the piano even though they can't read the music or never took lessons, you know what I mean. Well, that's a form of intelligence, too, according to Gardner.

Now, the next one is called bodily-kinesthetic intelligence. This isn't a common word, but "kinesthesia" has to do with the movements of the body. So bodily-kinesthetic intelligence refers to the ability of a person to move and coordinate the body or parts of the body. Athletes, dancers, even surgeons—who need to have very skilled hands—all have highly developed intelligence in this area. OK?

The last two, well, these intelligence… intelligences are what Gardner refers to as the "personal" intelligences. There's the interpersonal intelligence, which is social intelligence, and intrapersonal intelligence, which is internal, about yourself.

So, interpersonal, that's *inter*, meaning between, among—interpersonal. This reflects a person's ability to understand other people, their feelings and motivations, and to work effectively with others. Educators, salespeople, counselors, people who work with other people as individuals, these are examples of people who need this type of intelligence.

On the other hand, intrapersonal—*intra*, or inward, internal—it's related to self-understanding. It reflects the ability to understand one's own feelings and motivations and control one's own emotions.

OK. So there are the seven intelligences: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal. They are seven different things, but Gardner points out that they rarely operate independently. We all use different intelligences simultaneously—at the same time—to perform tasks or solve problems. For example, think about a dancer. A dancer uses musical intelligence to understand the rhythm and variations of the music, bodily-kinesthetic intelligence to perform the dance moves, to make the pattern of the dance, and interpersonal intelligence to interpret the emotions of a dance and relate to the audience. You see? One task, but many different intelligences in use.

OK, moving on. So, there's been a lot of criticism of this theory among psychologists who study intelligence. All right. So, number one. Critics have argued that Gardner is simply using "intelligence" to describe talents or interests. So, these critics say, if you took Gardner's idea to the

extreme, almost any talent could be added to the list of intelligences.

On top of that, critics point out that this theory doesn't provide a reliable way to test intelligence, or measure it. Unlike the IQ test, which gives you a number, a score. So there's another criticism.

Now, remember that, according to Gardner, all human beings are intelligent, just in different ways. But critics say that looking at intelligence in such a broad way makes the study of intelligence meaningless. In other words, with no clear way of measuring intelligence, we also have no way of comparing the intelligence of one person and another. So, the critics say, with no way to measure or compare the intelligence of difference… of different people, what's the point of talking about intelligence at all? Fair point.

But despite these criticisms, this theory has had a big impact on education, and many educators have found its ideas useful. I'll wrap up by giving you three ways that Gardner's ideas have affected teaching.

OK. The theory of multiple intelligences has encouraged schools and teachers to value all types of students and to recognize that students learn in different ways.

As a result, teachers are starting to present their material in different ways, in ways that include all the seven intelligences. So, a teacher could include pictures or graphs and maybe students could build something or make a model with their hands.

Also, children need to be assessed in a different way, not just with paper and pencil tests. Students should be allowed to explain what they've learned in their own ways, mayb… maybe through oral reports or art projects.

Well, that's all we have time for today. Next time, we'll look at some more types of intelligence proposed by Gardner. Oh, and don't forget that your papers are due next Thursday. See you then.

CHAPTER 9

The Art of Graffiti

Practice Lecture

Today, I'm going to talk about a genre of graffiti. **What I mean when I say genre is the type of something.** So, the graffiti I'm going to talk about is known as "New York style." This style of graffiti is connected to the subway graffiti trend that started in the 1970s in New York City, but it spread to other cities in the United States, and even other countries.

OK, so these graffiti writers in New York in the 70s usually painted on subway cars while they were parked at night. They didn't have permission to paint the cars, so they needed to work quickly. They usually had two different motivations, or goals, for their work. The first goal was to get up as much as possible. **What do I mean by "get up"? Well, to leave a tag on as many subway cars as possible.**

The other goal was **to make something new, stylistically new, something that had never been seen before. This was called "making a burner"** and it was very important. Both goals were important.

So, you can see that these two goals were kind of **contradictory, meaning that they kind of worked against each other.** The work couldn't be too detailed or careful because that would take too much time. But if it was too basic or the same as other writers, you wouldn't get any respect from the other writers. So the quality of the work was judged according to this… this balance of speed and style.

So, a lot of the graffiti on subway trains was just tags, more about "getting up" than style. And many people who lived in the city of New York were upset about the graffiti, because most of it was not beautiful, and it felt out of control. So, in the 1980s, New York City started an aggressive buffing campaign. **"Buffing" is the slang term for removing graffiti from the trains.**

Now I'd like to talk about some of the stylistic elements of the New York style of graffiti writing….

Lecture

Morning. Welcome. You'll be glad you came to class today because we have a very interesting, and kind of fun, topic. We're going to talk about graffiti art. So, first, we'll talk about some ideas and issues connected with, eh,… graffiti, then look at graffiti artist Keith Haring, his unusual path into the art world, and a con… controversy that surrounded his work.

First, let's talk about what graffiti is. **What do I mean by *graffiti*?** The word *graffiti* comes from the Greek, which means "to write." Now, today, when we use the word graffiti, it suggests the work was done illicitly. **By *illicit*, I mean** it was done illegally, without permission from the owner of the space.

Why do people make graffiti? What's the purpose? Well, usually when someone draws or writes in a public space—a space where people can see it—they're either trying to draw attention to themselves—graffiti can be as simple as someone writing their name—but it can also be an expression of an idea in words or drawing. So, graffiti is a way to communicate ideas and thoughts, and even philosophies, to the public through pictures or words, or a combination of the two. The messages are meant to communicate directly with the public.

Now, not all graffiti is art. In fact, some people feel that no graffiti is art, that graffiti is just vandalism. They believe people who make graffiti should be arrested and forced to pay for removing it. Some cities, like New York City, for instance, spend millions of dollars each year removing graffiti that appears in public spaces because they think it makes a place look… look… well, look like it's not being taken care of. They think graffiti is an eyesore and makes a city look ugly.

So, there is a lot of controversy around graffiti. It's only recently, in fact, that graffiti has gained any respect from the art world—the world of museums, formal art exhibits, galleries. Let me give you some background on this.

Starting in the 1970s in New York and some other east coast cities in the U.S., a street art movement began. A lot of graffiti began to appear in public spaces, especially on subway trains and in subway stations. Now, Keith Haring, a young art student, was a big fan of a lot of the graffiti he was seeing around the city. He thought some of the work was the most beautiful he had ever seen. He knew that most of the people creating it were young and not trained as artists. They hadn't formally studied art in school, but he could see that they had a lot of artistic skill. And he especially loved how they used line—fluid lines that connected all parts of the artwork together.

So, after leaving art school in the early 1980s, Haring started to create his own graffiti in the subway stations of New York City. He was influenced both by his love of the graffiti he was seeing around the city and he was also influenced by Pop Art—the Pop Art movement of the 1960s. Like those artists, people like Andy Warhol, he wanted to break down the boundaries of the art world, to make art that was seen and understood by more than just artists and art critics and art professors. He wanted his art to directly engage the public.

So, Haring started by doing chalk drawings on empty spaces on the walls of subway stations. They were simple line drawings with themes and ideas most people could understand, like birth, death, war, love. He tried to communicate these ideas by using semiotics. Here, I'll write it. Now, semiotics, **this is the term for** a theory of signs. In semiotics, images act like words. And an artist can use specific images to create a kind of visual language. Haring created images with simple bold lines. Let me show you. Things like barking dogs—you can see some here—and crawling babies and flying spaceships, pyramids, TVs. All these images and symbols you see here.

He used these same symbols over and over, but when they were combined with different symbols in new contexts, they had new meanings. So in these two drawings, the pyramids are basically the same image, but its relationship with the other images creates a new message.

Though his work seems basic and simple, it, uh,... it really is… it's more sophisticated than it appears. It shows a strong understanding of visual communication. His drawings are very effective at communicating universal ideas to people of many different backgrounds.

OK. So Haring was making those chalk drawings, like these, all around New York and all around the subway stations. Some days he made as many as 30 drawings. New Yorkers would see his work regularly around the city, and they started to talk about it. *Who is… who is this making these drawings? What do they want?* And the public attention drew the media. And soon the art world also noticed him. Interest in his subway graffiti art led to his first gallery art show, which was in 1982. Here's a photo from that show.

Wow, look at that. You can see it looks a lot like the graffiti he made in the subway. He was really the one who first brought graffiti style into the high-art world.

So, he soon had international attention and he used his powerful style to make strong social messages. He dealt with issues like drug abuse, and he supported charities with his work. He also got involved in group art projects, especially with children, and community art projects.

But not only did he do work for social causes, for public and community causes. He also started to create art for advertising and to take some of his images and put them on t-shirts and hats and posters, you know, things like that. Then in 1986, he opened a store, the Pop Shop, to sell these things. And this is when he really became controversial. A lot of people didn't like him making money off his art. They said he was selling out. Now, **by *selling out*, I mean** they thought he was too commercial, too focused on earning money. And to some people that meant that his work wasn't even art anymore. They thought he was just designing products to sell. They felt that the desire to earn money was probably affecting his artistic integrity, his honesty as an artist.

But Haring disagreed. He thought that this was just another way of directly engaging the public, of reaching people with his work. He saw it as very similar to creating chalk drawings in the subway. It was just another way of broadening the boundaries of the art world, making the art world larger, of including more people in the experience.

OK. So, that's enough for today. I want you to think about this idea—about whether art can be commercial and still have integrity. And we'll talk about it in discussion groups in the next class. OK, bye for now.

CHAPTER 10

Design Basics

Practice Lecture

Excerpt 1

In the textbook we have been reading, **the author says, and I quote, "color has the power to suggest warmth or coolness."** Now, there have been many studies on the effects of room color on people's perception of temperature. The color of a room, research has shown this, really can make a room seem warmer or colder. So rooms painted warm colors, like red and orange, feel warmer than rooms painted cool colors, like blue or green.

In… in one study, people in a blue-green room said they felt cold when the actual temperature was 59 degrees—that's Fahrenheit, so about 15 degrees Celsius. But people in another room, a room painted reddish-orange, uh, they said that they felt cold only when the room reached 53 degrees Fahrenheit, or about 11 degrees Celsius. **According to a Norwegian study done in 1976, the temperature difference was a little smaller, but they still found that people generally felt warmer in a room painted warm colors**. So it's important to consider this connection between color and perceived temperature, especially in areas with very hot or very cold weather.

Excerpt 2

OK. So, many people think white is a great color for home or office interiors—white walls, white furniture. Research shows, however, that white is actually far from an ideal choice for most interiors. Let me explain. **Frank Mahnke, in *Color and Light in Man-made Environments*, says that white is a bad choice, because the contrast between white and highly colored objects can cause eye fatigue,** meaning it can make your eyes tired, and that's a kind of physical stress. So, if that's true, then why do people use it so much? Good question. Why

is white so popular? Well, **Mahnke says, quote, "white is considered a 'safe' color, evoking neither a positive nor a negative reaction." So, in other words, people who don't feel confident choosing colors may end up choosing white to stay 'safe', to avoid being criticized.** They would rather have no reaction than a bad reaction. Ironically, this fear may lead them to make one of the worst possible color choices.

Lecture

Hi. We're a bit behind schedule, so let's just dive right in today. Today, we're going to continue our discussion of the elements of design. We've talked about the use of space and light and now, today, we're going to be focusing on the use of color.

Color is a key part of the success of any project, and it's the most personal and emotional of all the elements. Every person has colors they like and don't like. But research has shown that there are patterns in the way people respond to color. Some of these responses are more physical, so that means more universal, and others are more learned.

The research I'm talking about comes from many types of studies. Take, for example, physiological studies—studies that look at how color affects body temperature, heart rate, brain activity, and emotional states. The Kuller reading that I assigned you talks about this. **In one of the articles I assigned, "The Use of Space—Some Physiological and Philosophical Aspects", Kuller states that** the color of an environment can have a big effect on heart rate and emotional feeling, and he presents research to back up those ideas. For example, very bright colors—colors with a lot of intensity—especially red and yellow, tend to excite people more, while white or gray walls seem to cause the opposite reaction. They create a feeling of boredom or depression. **According to Kuller,** this is because they aren't stimulating colors for the eye and brain.

OK, now, Kuller was talking about general human responses—physiological responses that most humans have. Physiological equals universal. There are also learned responses—responses to a color that you were taught by your culture. For example, colors you associate with holidays or your favorite sports team. Pink is for girls, blue is for boys, that kind of thing. People from the same culture often respond to colors in the same way.

Now, researchers have studied these physiological and learned responses to color in many ways. They've studied things like, how colors impact businesses—like stores and restaurants—in terms of customer buying behavior and service satisfaction. And it turns out that this is very interesting. So, today, we're going to look at the impact of color—some of the generalizations that we can make based on these studies—so that you can make good choices someday when you're planning different types of interior spaces.

OK. One thing to consider is the lightness or darkness, the *value*, of a color. Let me give you an example. Let's look at the color wheel for a minute here. OK. You've all seen one of these, I hope. OK, well, you can see all the colors in varying degrees of lightness and darkness. Light red is pink. You see it there? Right at the top. OK, now follow that row down toward the center, and you'll see that dark red is the color we call burgundy. Pink and burgundy are part of the same color family, but are different values of red.

You'll also notice another thing here. See how the dark colors, like burgundy, seem closer to the eye than lighter colors, like pink? You can use this effect to change the appearance of space in a room or a hallway, for example. When used together, light and dark values—also called *high-contrast*—can create a really dramatic effect. Colors close in value make the environment calmer. I'll show you some examples of this later.

Let's move away from color value now and move on to look at the impact of color families—in other words, groups of colors that are near each other on the color wheel. Warm colors, like the red, orange, and yellow you see there in the top right areas, those are stimulating and dynamic. So, they are good for rooms where there will be a lot of activity, or you want to encourage activity, like a child's playroom, for example.

Warm colors also make a room feel physically warmer. **In a letter to his brother, Vincent van Gogh said that** yellow is wonderful because

it stands for the sun. This may be a universal association. We associate this color with the sun, so it makes us feel warmer. These warm colors also tend to make people feel happier. To most people they feel cozy and comfortable.

Cool colors, like blues, greens and violets, there on the bottom left, those tend to be calming. They're associated with relaxation and activities that require deep thought. Be careful though, because they can also feel depressing and heavy. Cool colors also seem to lower the physical temperature of a room. So you need to use these colors carefully.

OK, now let's talk about color *harmony*—the way colors feel together. Now, color harmony can be difficult because most colors are not pure, they're not… not exact. Most people won't paint a room pure blue. They may mix blue with black to make navy blue, or they may mix… mix it with purple to get royal blue. So, most colors are actually a combination of colors.

Now, in these mixtures, the dominant color is the main color we identify. The small amounts of other colors, or black or white or gray, that are mixed with the pure color, those are called the undertones. Identifying the nature of the undertones of a color is the first step to creating color harmony because, generally speaking, different colors with similar undertones tend to harmonize the best.

So, let me explain. Usually we evaluate the undertones of colors by value (lightness or darkness), or intensity (purity or dullness), or by their warmth or coolness. If these undertones are similar in the different colors of a room, the room is more aesthetically pleasing, more comfortable. If different colors in a space have different undertones, they don't harmonize. They make a person feel uncomfortable. So, undertones are very important.

But you can decide how harmonious you want a space to be. Let's look at, um, a couple of examples of harmony in action.

OK, well, the aesthetics of traditional Japanese interior design, like this room, say that all colors must be subtly harmonious, as we see here: similar colors and similar color values. And that works well in this setting. But in another setting, like a lounge, for instance, bold combinations might be more appropriate. You see? You see, here, there are big differences in color value and strong colors.

Both of these designs are aesthetically pleasing and effective, depending on the purpose of the space and the aesthetics of the people who will use the space. **Josef Albers, an artist and teacher who studied and wrote a lot about color, he once said, and I quote,** "…in visual perception, a colour is almost never seen as it really is—as it physically is." What Albers means is that color is seen differently depending on the surroundings, what other colors are close by, what light there is. Color is whatever we make of it.

Okay, I'll leave you with this thought because we're out of time. So, we'll pick it up next time. All right? Thanks very much. Have a great day.

OXFORD
UNIVERSITY PRESS

www.oup.com

ISBN 0-19-441723-9
9 780194 417235