

Chapter 2

Models of Development: Nature and Nurture in Adulthood

Lecture guidelines

This is a heavily theoretical chapter and can be tough going for students who are eager to move on to learning more concrete information about adult development and aging. Depending on the nature of the class and its size, the lecture can be oriented toward more or less theoretical aspects of the material by providing a conceptual orientation (more theoretical) or concrete examples (less theoretical). Because this material previews much of what is to come in later chapters, it is also possible to use this chapter as a way to plant the "seeds" for these later concepts and discussions.

Depending on the length of the class, it is advisable to break this chapter into two or more lectures, dividing it along the lines of biological vs. psychosocial theories. Biological theories can occupy an entire class period, particularly when combined with videos (see below). Some students may need extensive background in concepts of genetics. These will be important for later chapters, particularly Chapter 5, in which the genetic contributions to Alzheimer's and other diseases are discussed. The psychosocial theories provide an opportunity to present some substantive material that may be of greater inherent interest to students in psychology and other social sciences as it previews concepts that will not appear until much later in the course, such as personality development and family issues.

Videos and films

There are ample resources to use for illustrating this material. The PBS series called "NOVA Science Now": <http://www.pbs.org/wgbh/nova/sciencenow/> aired several segments about the genetics of aging including <http://www.pbs.org/wgbh/nova/body/can-we-slow-aging.html>

Ageism can be illustrated by showing scenes from humorous portrayals of aging characters in a stereotyped fashion, such as the Simpson's, a classic cartoon series with a wealth of material on aging. There is also an excellent example in the Seinfeld episode called "The Old Man," in which the characters each confront and older adult who is depicted in a funny but stereotypical fashion.

Examples of identity assimilation and identity accommodation can also be provided from film or television shows in which characters either resist changing (identity assimilation) or change excessively (identity accommodation) in response to an event that challenges their identities. A good example of identity assimilation is "Driving Miss Daisy" which, in the first scene of the movie, shows the struggle she experiences as she is faced with accommodating to her loss of the ability to drive.

Finally, students can provide their own examples if you ask them to submit images or online videos that illustrate ageism. The process of finding these materials can be especially instructive for students, and will also freshen up your own collection!

Discussion questions

Key concepts in the study of the lifespan

How does the notion of contextual influences on development relate to concepts such as gender, race/ethnicity, nationality, and socioeconomic status?

How do "nature" and "nurture" interact in development throughout life?

Models of individual-environment interactions

Which model do you feel is most appropriate for understanding development?

Why is it important to an interactionist model to emphasize the concept of reciprocity?

How has your life involved niche-picking?

Can you think of examples from your life when an action you took or decision you made had an outcome on a later event?

Sociocultural models of development

How does the life course perspective relate to the concepts of social clock and age-graded normative influences discussed in Chapter 1?

How does the ecological perspective link models of development that focus on external processes to those that focus on processes within the individual?

Why do you think disengagement theory was popular at one time?

Do you know anyone who exemplifies disengagement theory? Activity theory? Continuity theory?

What type of involvement in society would make you happiest when you get older? Why?

How do older minority individuals (especially women) manage to cope with discrimination?

What is your social clock?

Do you think that the social clock is helpful or harmful when people think about themselves and their lives?

Psychological models of development in adulthood

Do you feel that Erikson's theory provides a reasonable framework for understanding development throughout life? What are its weaknesses and what are its strengths?

Some critics of Erikson's theory feel that the theory is narrowly focused on heterosexual relationships in adulthood. Others argue that Erikson made an unreasonable distinction between development in men and women in that he suggested that intimacy precedes identity for women. What do you think of these criticisms?

Why is identity balance considered an optimal way of adapting to the aging process?

Provide some examples of age-related thresholds either in your own life or in the life of other people you have known. How did the people involved adapt to these thresholds?

Why are psychological models of development necessary? What do they add to biological theories?

Biological approaches to aging in adulthood

Can aging be programmed by our genes?

What would the world (or universe) be like if there was no aging?

Would you be interested (or have you already) had your genome tested with popular home DNA and kinship kits?

What if the process of replicative senescence could be stopped?

Which is your favorite biological theory? Why?

What products are being sold on the market based on these theories of aging? Are their claims legitimate or not, in your opinion, based on what you're learning in the course?

Multiple Choice Questions

AgeFeed

1. Stereotypes about aging

Correct choice: A

Based on AgeFeed, which of the following statements represents a stereotype about aging?

- A. Older adults are warm and kind.
- B. Aging does not necessarily make people wise.
- C. Older adults can learn new technologies.
- D. Some older people need to refresh their driving skills.

2. Stereotypes about aging

Correct choice: B

You've watched an online video depicting an older adult as having trouble figuring out the latest smartphone technology. As pointed out in AgeFeed, this portrayal represents a(n) _____ about aging.

- A. observation
- B. stereotype
- C. fact
- D. belief

Key concepts in the study of the lifespan

3. Developmental science

Correct choice: C

The understanding of social context as a factor influencing how people change over time is consistent with the field of:

- A. developmental history.
- B. cognitive psychology.
- C. developmental science.
- D. ecological psychology.

4. Contextual influence

Correct choice: C

Which of the following is a contextual influence on development?

- A. inherited traits
- B. change through maturation
- C. social class
- D. genetic abilities

Models of individual-environment interactions

5. Organismic model

Correct choice: B

Which model of development places the greatest emphasis on inherited traits?

- A. mechanistic
- B. organismic
- C. interactionist
- D. life-span

6. Interactionist model

Correct choice: B

The concept of niche-picking is most closely associated with which model of development?

- A. organismic
- B. interactionist
- C. mechanistic
- D. genetic

7. Reciprocal

Correct choice: A

The “life footprint” concept is most closely associated with which model of development?

- A. reciprocal
- B. mechanistic
- C. organismic
- D. contextual

8. Reciprocal

Correct choice: C

A friend mentions a great new show to start watching on a streaming video service. You begin watching this show, and as a result, decide to be a little bit nicer to your siblings. The friend’s advice to you represents what type of influence on your family relationships?

- A. multidimensional
- B. co-directional
- C. reciprocal
- D. organismic

9. Mechanistic

Correct choice: D

The idea that people change in response to such influences as education, family events, and interaction with peers is consistent with which model of development?

- A. organismic.
- B. maturation.
- C. inheritance.
- D. mechanistic.

Sociocultural models of development

10. Ecological perspective

Correct choice: A

The view that there are multiple levels of organization in the environment that can affect the development of the individual over time is known as the _____ perspective:

- A. ecological

- B. transcultural
- C. chronocultural
- D. multiphasic

11. Ecological perspective

Correct choice:

Bronfenbrenner's view that there are multiple levels of organization in the environment that can affect the development of the individual is known as the _____ perspective:

- A. international
- B. transcultural
- C. ecological
- D. transpersonal

12. Microsystem

Correct choice: C

Which of the following influences on development, in Bronfenbrenner's model, would be considered to fall into the microsystem?

- A. social services
- B. cultural ideologies
- C. organized religion
- D. mass media

13. Microsystem

Correct choice: A

In Bronfenbrenner's ecological model of development, the microsystem includes:

- A. friends, family, and others who the individual knows.
- B. culture, nationality, and the economic structure.
- C. government and other large-scale institutions.
- D. mass media, health care systems, and the community.

14. Macrosystem

Correct choice: A

Which of the following influences on development, according to Bronfenbrenner's ecological model, includes attitudes and ideologies of the culture?

- A. macrosystem
- B. exosystem
- C. microsystem
- D. chronosystem

15. Whitehall II

Correct choice: D

A demonstration of the effect of the environment on health in Whitehall II showed that longevity of London residents varied according to:

- A. proximity to emissions from coal power plants.
- B. levels of training of health care workers.
- C. distance traveled to schools and workplaces.
- D. location in higher-income vs. lower-income neighborhoods.

16. Whitehall II

Correct choice: B

Which region of London, as shown in Whitehall II, had the highest longevity of its residents?

- A. Barking and Dagenham
- B. Kensington and Chelsea
- C. Wembley and Windsor
- D. Oxford and Cambridge

17. Life course

Correct choice: A

Compared to the life span, the life course emphasizes which factors in development?

- A. cultural norms and expectations
- B. genetic influences
- C. impact of health and disease
- D. stages of cognitive development

18. Social clock

Correct choice: B

A student begins graduate school at the age of 42, much later than the traditional-aged graduate student. This student would be considered to have an “off-time” _____ clock. normative

- A. normative
- B. social
- C. stereotyped
- D. epigenetic

19. Continuity theory

Correct choice: B

The proposal that older adults are much more satisfied with their lives when they are able to maintain their former social roles and involvements is consistent with which role adjustment theory?

- A. disengagement
- B. continuity
- C. environmental
- D. ecological

20. Continuity theory

Correct choice: D

Which life course theory proposes that older adults have maximal levels of well-being when they maintain their previous degree of social involvement?

- A. disengagement
- B. activity
- C. ecological
- D. continuity

21. Activity theory

Correct choice: B

Activity theory proposes that older adults have the highest levels of well-being when their level of social involvement is:

- A. moderate.
- B. high.
- C. low.
- D. on-time.

22. Ageism

Correct choice: A

Which of the following is one of the “10 facts you probably didn’t know about aging?”

- A. Older adults don’t take jobs away from young adults.
- B. Health care costs are higher in people 70 years of age and older.
- C. 70 is the new 50.
- D. A large proportion of older adults require care.

23. Terror management

Correct choice: D

Which theoretical perspective on ageism gives the greatest emphasis to fear of death as a cause?

- A. disengagement
- B. inoculation
- C. modernization
- D. terror management

24. Modernization theory

The modernization theory of ageism is recently being criticized because it fails to take into account the _____ of older adults.

- A. health
- B. employment status
- C. family roles
- D. income

25. Multiple jeopardy

Correct choice: C

A study of female shoppers showing that retailers gave preferential treatment to well-dressed young women supports which theory related to ageism?

- A. age-as-leveler
- B. terror management
- C. multiple jeopardy
- D. modernization theory

Psychological models of development in adulthood

26. Initiative vs. guilt

Correct choice: A

A man in his 50s finds that he does his best work when he allows himself to daydream or even take a break and play a video game. According to Erikson, this individual is high in which psychosocial quality?

- A. initiative
- B. identity

- C. shame and doubt
- D. trust

27. Accommodation

Correct choice: A

Although you never liked classical music before, after going to a concert in the park, you realize that you actually like it. This example illustrates which process in Piaget's theory?

- A. accommodation
- B. adjustment
- C. assimilation
- D. affirmation

28. Identity assimilation

Correct choice: C

An older woman has a serious fall and is told by her health professional that she must wear special shoes. However, she refuses to change her footwear even though this still causes pain, because she prefers to wear styles that are more fashionable. This would be an example of which identity process?

- A. continuity
- B. reflection
- C. assimilation
- D. optimization

Optional- if showing Driving Miss Daisy

Correct choice: C

In the movie "Driving Miss Daisy," the main character seemed to go through which identity process when she realized that she could no longer drive?

- A. continuity
- B. reflection
- C. accommodation
- D. optimization

29. Selective optimization with compensation

Correct choice: B

Which theoretical model of adult development and aging proposes that people pick and choose the activities in which to invest their time and energies as they get older?

- A. life course continuity
- B. selective optimization with compensation
- C. organismic maximization
- D. multiple threshold

30. Selective optimization with compensation

Correct choice: D

The Selective Optimization with Compensation model of aging proposes that older adults maximize their functioning by:

- A. seeking support from friends.
- B. disengaging from social roles.
- C. genetically modifying their SNPs.

- D. focusing on areas in which they can excel.

Biological approaches to aging in adulthood

31. Gompertz function

Correct choice: C

The Gompertz function is most closely associated with which theory of aging?

- A. random error
- B. wear-and-tear
- C. programmed aging
- D. cross-linking

32. Genome-wide linkage study

Correct choice: B

In a genome-wide linkage study, genetic researchers use information from _____ to seek links between certain genes and diseases.

- A. complete genome scanning
- B. families who share genetic risk
- C. birth and death records
- D. blood types

33. Genetic theories- lifespan length

Correct choice: C

Genetic theories of aging are supported by the finding that the differing lifespans of different species, with one of the longest, at 184 years, being the:

- A. Indian elephant.
- B. Golden eagle.
- C. Galapagos turtle.
- D. Quahog clam.

34. Genetic theories- lifespan length

Correct choice: D

Studies of the genetic contributions to aging use data on the lifespan of species, with that of the house mouse averaging at:

- A. 6 years.
- B. 9 months.
- C. 15 days.
- D. 3 years.

35. Longevity heritability

Correct choice: C

Which percentage represents the amount of variation in longevity estimated to be inherited?

- A. 50
- B. 12
- C. 25
- D. 67

36. Replicative senescence

Correct choice: B

The fact that cells are only able to undergo a fixed number of divisions before they lose the ability to reproduce is known as:

- A. random error
- B. replicative senescence.
- C. cross-linking.
- D. wear and tear

37. Telomere theory

Correct choice: C

Research on the relationship between lifestyle factors and telomere length in healthy older adults suggests that _____ plays a role, although small, in preserving telomeres:

- A. occupation
- B. exercise
- C. education
- D. diet

38. Telomere theory

Correct choice: B

The telomere theory proposes that the cause of aging is due to:

- A. release of free radicals.
- B. destruction of the ends of chromosomes.
- C. lack of cellular replication.
- D. accumulation of toxins in the cell nucleus.

39. Cross-linking theory

Correct choice: A

The fact that collagen alters its structure, becoming rigidified and smaller, relates to which theory of aging?

- A. cross-linking
- B. front-loading
- C. free production
- D. overuse

40. AGE's

Correct choice: A

The substances that accumulate with age in collagen, causing it to cross-link, are known as:

- A. advanced glycation end-products.
- B. telomere-shortening molecules.
- C. antioxidant radicals.
- D. single nucleotide polymorphisms.

41. AGEs

Correct choice: B

Advanced glycation end-products are thought to affect the rate of aging by causing _____ to form in the body.

- A. free radicals
- B. cross links

- C. mitochondrial mutations
- D. antioxidants

42. FOXO gene

Correct choice: D

Researchers believe the FOXO gene may play a role in which heritable trait?

- A. cross-linking
- B. life expectancy
- C. antioxidation
- D. life span

43. FOXO gene

Correct choice: D

Which gene is the latest to be considered a possible influence on longevity?

- A. SNP
- B. AGE
- C. GWAS
- D. FOXO

44. Free radical theory

Correct choice: B

Unstable molecules that can form bonds with unpaired electrons and cause cellular damage are known as:

- A. mitochondrial mutations.
- B. free radicals.
- C. autoimmune substances.
- D. advanced glycation endproducts.

45. Free radical theory

Correct choice: D

Antioxidants are thought to be important to reversing or slowing down the aging process according to which biological theory?

- A. error catastrophe
- B. autoimmune
- C. cross-linking
- D. free radical

46. Resveratrol

Correct choice: C

Which natural compound, found in grapes (and therefore wine), is thought to have potential as an antioxidant?

- A. vitamin C
- B. folic acid
- C. resveratrol
- D. collagen

47. Error catastrophe

Correct choice: D

The theory proposing that aging results from mutations in the mitochondrial DNA is referred to as:

- A. telomere.
- B. cross-linking.
- C. autoimmune.
- D. error catastrophe.

48. Error catastrophe theory

Correct choice: A

The error catastrophe theory proposes that aging results from mutations in the:

- A. mitochondrial DNA.
- B. telomeres.
- C. collagen molecule.
- D. immune system.

49. Caloric restriction hypothesis

Correct choice: B

The caloric restriction hypothesis proposes that eating a diet low in total calories has what effect on the aging process?

- A. increasing stress hormones.
- B. reducing free radicals.
- C. speeding telomere shortening.
- D. accelerating cross-linking.

50. SNPs

Correct choice: C

Researchers use the identification of Single Nucleotide Polymorphisms, or SNP's, in order to study:

- A. the extent of cross-linking.
- B. length of telomeres.
- C. genetic variations related to life span.
- D. impact of stress on the body.

Short Answer Questions

1. How does a focus on social context change the way that psychology views lifespan development?
2. What are five examples of stereotypes about aging listed in AgeFeed?

Models of individual-environment interactions

1. What is niche-picking? Provide an example from your own experience that illustrates how this principle operates in development.

2. Define and contrast the terms: theory, hypothesis, model, and perspective.
3. What are the three major approaches to understanding development? How do they differ in their emphasis on the role of the individual in development?

Sociocultural models of development

1. What is the major assumption of the life course perspective?
2. What are the major levels of organization in the ecological perspective?

Psychological models of development in adulthood

1. Define the term "epigenetic" and explain how it relates to Erikson's psychosocial theory.
2. What are the four major psychosocial crises of adulthood according to Erikson? Define and provide an example of each.
3. What is an implication of the "matrix" as described within Erikson's theory regarding the relationship between age and specific psychosocial issues?
4. Define and provide an example of these terms:
 - a. Assimilation.
 - b. Accommodation.
 - c. Equilibration.

Biological approaches to aging in adulthood

1. Briefly describe the process of aging according to the telomere theory.
2. Define and contrast the random error theories of aging and provide an implication that each theory has for how individuals can slow the rate of their own aging.
3. Can random error theories be integrated with programmed aging theories? Why or why not?

Essay Questions

1. What type of evidence would be needed to refute the stereotypes about aging shown in AgeFeed?
2. Defend your position about "why" aging occurs, from an evolutionary perspective.
3. Describe and analyze a behavior of yours related to your own aging in terms of:
4. Identity processes.
5. Multiple threshold model.
6. Sociocultural perspectives.
7. What are two forms that "ageism" can take in terms of ways of thinking about older adults?
8. Provide your own analysis of why negative attitudes have existed toward older adults in Western society. How might these change in the future?
9. How do biological theories of aging relate to sociocultural views of development?