

6

HOW TO TALK ABOUT SCIENCE AND SCIENTISTS

(Sessions 11–13)

TEASER PREVIEW

What scientist:

is interested in the development of the human race?

is a student of the heavens?

explores the physical qualities of the earth?

studies all living matter?

is a student of plant life?

is a student of animal life?

is professionally involved in insects?

is a student of language?

is a student of the psychological effects of words?

studies the culture, structure, and customs of different societies?

SESSION 11

A true scientist lives up to the etymological meaning of his title “one who knows.” Anything scientific is based on facts—observable facts that can be recorded, tested, checked, and verified.

Science, then, deals with human knowledge—as far as it has gone. It has gone very far indeed since the last century or two, when we stopped basing our thinking on guesses, wishes, theories that had no foundation in reality, and concepts of how the world *ought* to be; and instead began to explore the world as it *was*, and not only the world but the whole universe. From Galileo, who looked through the first telescope atop a tower in Pisa, Italy, through Pasteur, who watched microbes through a microscope, to Einstein, who deciphered riddles of the universe by means of mathematics, we have at last begun to fill in a few areas of ignorance.

Who are some of the more important explorers of knowledge—and by what terms are they known?

IDEAS

1. whither mankind?

The field is all mankind—how we developed in mind and body from primitive cultures and early forms.

An anthropologist

2. what's above?

The field is the heavens and all that's in them—planets, galaxies,

stars, and other universes.

An astronomer

3. and what's below?

The field is the comparatively little and insignificant whirling ball on which we live—the earth. How did our planet come into being, what is it made of, how were its mountains, oceans, rivers, plains, and valleys formed, and what's down deep if you start digging?

A geologist

4. what is life?

The field is all living organisms—from the simplest one-celled amoeba to the amazingly complex and mystifying structure we call a human being. Plant or animal, flesh or vegetable, denizen of water, earth, or air—if it lives and grows, this scientist wants to know more about it.

A biologist

5. flora

Biology classifies life into two great divisions—plant and animal. This scientist's province is the former category—flowers, trees, shrubs, mosses, marine vegetation, blossoms, fruits, seeds, grasses, and all the rest that make up the plant kingdom.

A botanist

6. and fauna

Animals of every description, kind, and condition, from birds to

bees, fish to fowl, reptiles to humans, are the special area of exploration of this scientist.

A zoologist

7. and all the little bugs

There are over 650,000 different species of insects, and millions of individuals of every species—and this scientist is interested in every one of them.

An entomologist

8. tower of Babel

This linguistic scientist explores the subtle, intangible, elusive uses of that unique tool that distinguishes human beings from all other forms of life—to wit: language. This person is, in short, a student of linguistics, ancient and modern, primitive and cultured, Chinese, Hebrew, Icelandic, Slavic, Teutonic, and every other kind spoken now or in the past by human beings, not excluding that delightful hodgepodge known as “pidgin English,” in which a piano is described as “big box, you hit ’um in teeth, he cry,” and in which Hamlet’s famous quandary, “To be or not to be, that is the question...,” is translated into “Can do, no can do—how fashion?”

A philologist

9. what do you really mean?

This linguistic scientist explored the subtle, intangible, elusive relationship between language and thinking, between meaning and words; and is interested in determining the psychological causes and effects of what people say and write.

A semanticist

10. who are your friends and neighbors?

This scientist is a student of the ways in which people live together, their family and community structures and customs, their housing, their social relationships, their forms of government, and their layers of caste and class.

A sociologist

USING THE WORDS

Can you pronounce the words?

1. <i>anthropologist</i>	an'-thrə-POL'-ə-jist
2. <i>astronomer</i>	ə-STRON'-ə-mər
3. <i>geologist</i>	jee-OL'-ə-jist
4. <i>biologist</i>	bī-OL'-ə-jist
5. <i>botanist</i>	BOT'-ə-nist
6. <i>zoologist</i>	zō-OL'-ə-jist
7. <i>entomologist</i>	en'-tə-MOL'-ə-jist
8. <i>philologist</i>	fə-LOL'-ə-jist
9. <i>semanticist</i>	sə-MAN'-tə-sist
10. <i>sociologist</i>	sō-shee-OL'-ə-jist or sō'-see-OL'-ə-jist

Can you work with the words?

SCIENTIST

PROFESSIONAL FIELD

- | | |
|-------------------|--|
| 1. anthropologist | a. community and family life |
| 2. astronomer | b. meanings and psychological effects of words |
| 3. geologist | c. development of the human race |
| 4. biologist | d. celestial phenomena |
| 5. botanist | e. language |
| 6. zoologist | f. insect forms |
| 7. entomologist | g. the earth |
| 8. philologist | h. all forms of living matter |
| 9. semanticist | i. animal life |
| 10. sociologist | j. plant life |

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

Can you recall the words?

insects

1. E _____

language

2. P _____

social conditions

3. S _____

history of development of mankind

4. A _____

meanings of words

5. S _____

plants

6. B _____

the earth

7. G _____

the heavenly bodies

8. A _____

all living things

9. B _____

animals

10. Z _____

KEY: 1–entomologist, 2–philologist, 3–sociologist, 4–anthropologist,
5–semanticist, 6–botanist, 7–geologist, 8–astronomer, 9–
biologist, 10–zoologist

(End of Session 11)

SESSION 12

ORIGINS AND RELATED WORDS

1. people and the stars

Anthropologist is constructed from roots we are familiar with—*anthropos*, mankind, and *logos*, science, study.

The science is *anthropology* (an'-thrə-POL'-ə-jee). Can you write the adjective form of this word? _____. (Can you pronounce it?)

Astronomer is built on Greek *astron*, star, and *nomos*, arrangement, law, or order. The *astronomer* is interested in the arrangement of stars and other celestial bodies. The science is *astronomy* (ə-STRON'-ə-mee), the adjective is *astronomical* (as'-trə-NOM'-ə-kəl), a word often used in a non-heavenly sense, as in “the *astronomical* size of the national debt.” *Astronomy* deals in such enormous distances (the sun, for example, is 93,000,000 miles from the earth, and light from stars travels toward the earth at 186,000 miles per *second*) that the adjective *astronomical* is applied to any tremendously large figure.

Astron, star, combines with *logos* to form *astrology* (ə-STROL'-ə-jee), which assesses the influence of planets and stars on human events. The practitioner is an *astrologer* (ə-STROL'-ə-jər). Can you form the adjective? _____. (Can you pronounce it?)

By etymology, an *astronaut* (AS'-trə-not') is a sailor among the stars (Greek *nautes*, sailor). This person is termed with somewhat less exaggeration a *cosmonaut* (KOZ'-mə-not') by the Russians (Greek, *kosmos*, universe). *Nautical* (NOT'-ə-kəl), relating to sailors, sailing, ships, or navigation, derives also from *nautes*, and *nautes* in turn is from Greek *naus*, ship—a root used in *nausea* (etymologically, ship-sickness or seasickness!).

Aster (AS'-tər) is a star shaped flower. *Asterisk* (AS'-tə-risk), a star-shaped symbol (*), is generally used in writing or printing to direct the reader to look for a footnote. *Astrophysics* (as'-trə-FIZ'-iks) is that branch of physics dealing with heavenly bodies.

Disaster (də-ZAS'-tər) and *disastrous* (də-ZAS'-trəs) also come from *astron*, star. In ancient times it was believed that the stars ruled human destiny; any misfortune or calamity, therefore, happened to someone because the stars were in opposition. (*Dis-*, a prefix of many meanings, in this word signifies *against*.)

Nomos, arrangement, law, or order, is found in two other interesting English words.

For example, if you can make your own laws for yourself, if you needn't answer to anyone else for what you do, in short, if you are independent, then you enjoy *autonomy* (aw-TON'-ə-mee), a word that combines *nomos*, law, with *autos*, self. *Autonomy*, then, is self-law, self-government. The fifty states in our nation are fairly *autonomous* (aw-TON'-ə-məs), but not completely so. On the other hand, in most colleges each separate department is pretty much *autonomous*. And of course, one of the big reasons for the revolution of 1776 was that America wanted *autonomy*, rather than control by England.

You know the instrument that beginners at the piano use to guide their timing? A pendulum swings back and forth, making an audible click at each swing, and in that way governs or orders the measure (or timing) of the player. Hence it is called a *metronome* (MET'-rə-nōm'), a word that combines *nomos* with *metron*, measurement.

2. the earth and its life

Geologist derives from Greek *ge* (*geo-*), earth. The science is *geology* (jee-OL'-ə-jee). Can you write the adjective? _____ . (Can you pronounce it?)

Geometry (jee-OM'-ə-tree)—*ge* plus *metron*—by etymology “measurement of the earth,” is that branch of mathematics treating

of the measurement and properties of solid and plane figures, such as angles, triangles, squares, spheres, prisms, etc. (The etymology of the word shows that this ancient science was originally concerned with the measurement of land and spaces on the earth.)

The mathematician is a *geometrician* (jee'-ə-mə-TRISH'-ən), the adjective is *geometric* (jee'-ə-MET'-rik).

Geography (jee-OG'-rə-fee) is writing about (*graphein*, to write), or mapping, the earth. A practitioner of the science is a *geographer* (jee-OG'-rə-fər), the adjective is *geographic* (jee-ə-GRAF'-ik).

(The name *George* is also derived from *ge* (*geo-*), earth, plus *ergon*, work—the first George was an earth-worker or farmer.)

Biologist combines *bios*, life, with *logos*, science, study. The science is *biology* (bī-OL'-ə-jee). The adjective? _____.

Bios, life, is also found in *biography* (bī-OG'-rə-fee), writing about someone's *life*; *autobiography* (aw'-tə-bī-OG'-rə-fee), the story of one's *life* written by *oneself*; and *biopsy* (Bī'-op-see), a medical examination, or view (*opsis*, *optikos*, view, vision), generally through a microscope, of living tissue, frequently performed when cancer is suspected. A small part of the tissue is cut from the affected area and under the microscope its cells can be investigated for evidence of malignancy. A *biopsy* is contrasted with an *autopsy* (AW'-top-see), which is a medical examination of a corpse in order to discover the cause of death. The *autos* in *autopsy* means, as you know, *self*—in an *autopsy*, etymologically speaking, the surgeon or pathologist determines, by actual view or sight rather than by theorizing (i.e., “by viewing or seeing for oneself”), what brought the corpse to its present grievous state.

Botanist is from Greek *botane*, plant. The field is *botany* (BOT'-ə-nee); the adjective is *botanical* (bə-TAN'-ə-kəl).

Zoologist is from Greek *zoion*, animal. The science is *zoology*. The adjective? _____. The combination of the two o's tempts many people to pronounce the first three letters of these words in one syllable, thus: zoo. However, the two o's should be separated, as in *co-operate*, even though no hyphen is used in the spelling to

indicate such separation. Say zō-OL'-ə-jist, zō-OL'-ə-jee, zō'-ə-LOJ'-ə-kəl. *Zoo*, a park for animals, is a shortened form of *zoological gardens*, and is, of course, pronounced in one syllable.

The *zodiac* (ZŌ'-dee-ak) is a diagram, used in astrology, of the paths of the sun, moon, and planets; it contains, in part, Latin names for various animals—*scorpio*, scorpion; *leo*, lion; *cancer*, crab; *taurus*, bull; *aries*, ram; and *pisces*, fish. Hence its derivation from *zoion*, animal.

The adjective is *zodiacal* (zō-DĪ'-ə-kəl).

REVIEW OF ETYMOLOGY

PREFIX, ROOT	MEANING
1. <i>anthropos</i>	mankind
ENGLISH WORD _____	
2. <i>logos</i>	science, study
ENGLISH WORD _____	
3. <i>astron</i>	star
ENGLISH WORD _____	
4. <i>nautes</i>	sailor
ENGLISH WORD _____	
5. <i>naus</i>	ship
ENGLISH WORD _____	
6. <i>dis-</i>	against
ENGLISH WORD _____	
7. <i>nomos</i>	arrangement, law, order

ENGLISH WORD _____

8. *autos*

self

ENGLISH WORD _____

9. *metron*

measurement

ENGLISH WORD _____

10. *ge (geo-)*

earth

ENGLISH WORD _____

11. *graphein*

to write

ENGLISH WORD _____

12. *bios*

life

ENGLISH WORD _____

13. *opsis, optikos*

view, vision, sight

ENGLISH WORD _____

14. *botane*

plant

ENGLISH WORD _____

15. *zoion*

animal

ENGLISH WORD _____

USING THE WORDS

Can you pronounce the words? (I)

1. *anthropology*

an'-thrə-POL'-ə-jee

2. *anthropological*

an'-thrə-pə-LOJ'-ə-kəl

3. <i>astronomy</i>	ə-STRON'-ə-mee
4. <i>astronomical</i>	as'-trə-NOM'-ə-kəl
5. <i>astrology</i>	ə-STROL'-ə-jee
6. <i>astrological</i>	as'-trə-LOJ'-ə-kəl
7. <i>astronaut</i>	AS'-trə-not'
8. <i>cosmonaut</i>	KOZ'-mə-not'
9. <i>nautical</i>	NOT'-ə-kəl
10. <i>aster</i>	AS'-tər
11. <i>asterisk</i>	AS'-tə-risk
12. <i>disaster</i>	də-ZAS'-tər
13. <i>disastrous</i>	də-ZAS'-trəs

Can you pronounce the words? (II)

1. <i>geology</i>	jee-OL'-ə-jee
2. <i>geological</i>	jee'-ə-LOJ'-ə-kəl
3. <i>geometry</i>	jee-OM'-ə-tree
4. <i>geometrician</i>	jee'-ə-mə-TRISH'-ən
5. <i>geometric</i>	jee-ə-MET'-rik
6. <i>geography</i>	jee-OG'-rə-fee
7. <i>geographer</i>	jee-OG'-rə-fər
8. <i>geographical</i>	jee'-ə-GRAF'-ə-kəl
9. <i>biology</i>	bī-OL'-ə-jee
10. <i>biological</i>	bī'-ə-LOJ'-ə-kəl

11. <i>biography</i>	bī-OG'-rə-fee
12. <i>biographer</i>	bī-OG'-rə-fər
13. <i>biographical</i>	bī'-ə-GRAF'-ə-kəl

Can you pronounce the words? (III)

1. <i>autonomy</i>	aw-TON'-ə-mee
2. <i>autonomous</i>	aw-TON'-ə-məs
3. <i>metronome</i>	MET'-rə-nōm'
4. <i>autobiography</i>	aw'-tə-bī-OG'-rə-fee
5. <i>autobiographer</i>	aw'-tə-bī-OG'-rə-fər
6. <i>autobiographical</i>	aw-tə-bī'-ə-GRAF'-ə-kəl
7. <i>biopsy</i>	BĪ'-op-see
8. <i>autopsy</i>	AW'-top-see
9. <i>botany</i>	BOT'-ə-nee
10. <i>botanical</i>	bə-TAN'-ə-kəl
11. <i>zoology</i>	zō-OL'-ə-jee
12. <i>zoological</i>	zō-ə-LOJ'-ə-kəl
13. <i>zodiac</i>	ZŌ'-dee-ak
14. <i>zodiacal</i>	zō-DĪ'-ə-kəl

Can you work with the words? (I)

a. theory of the influence of

- | | |
|-----------------|--|
| 1. anthropology | planets and stars on human events |
| 2. astronomy | b. science of earth-mapping |
| 3. astrology | c. science of all living matter |
| 4. geology | d. science of human development |
| 5. biology | e. science of plants |
| 6. geometry | f. science of the composition of the earth |
| 7. botany | g. science of animal life |
| 8. zoology | h. science of the heavens |
| 9. geography | i. mathematical science of figures, shapes, etc. |

KEY: 1–d, 2–h, 3–a, 4–f, 5–c, 6–i, 7–e, 8–g, 9–b

Can you work with the words? (II)

- | | |
|------------------|---|
| 1. autopsy | a. “sailor among the stars” |
| 2. biopsy | b. star-shaped flower |
| 3. biography | c. story of one’s own life |
| 4. autobiography | d. dissection and examination of
a corpse to determine the cause
of death |
| 5. zodiac | e. great misfortune |
| 6. astronaut | f. “sailor of the universe” |
| 7. cosmonaut | g. story of someone’s life |
| 8. aster | h. diagram of paths of sun, moon,
and planets |
| 9. disaster | i. instrument to measure musical
time |
| 10. autonomy | j. self-rule |
| 11. metronome | k. examination of living tissue |

KEY: 1–d, 2–k, 3–g, 4–c, 5–h, 6–a, 7–f, 8–b, 9–e, 10–j, 11–i

Do you understand the words?

Are *anthropological* studies concerned with plant life?

YES NO

Are *astronomical* numbers extremely small?

YES NO

Is an *astrologer* interested in the time and date of your birth?

YES NO

Are *nautical* maneuvers carried on at sea?

YES NO

Does a *disastrous* earthquake take a huge toll of life and property?

YES NO

Do *geological* investigations sometimes determine where oil is to be found?

YES NO

Does a *geometrician* work with mathematics?

YES NO

Do *geographical* shifts in population sometimes affect the economy of an area?

YES NO

Does a *biographical* novel deal with the life of a real person?

YES NO

Is *botany* a biological science?

YES NO

Is the United States politically *autonomous*?

YES NO

Is a *biopsy* performed on a dead body?

YES NO

Is a *metronome* used in the study of mathematics?

YES NO

Is an *autopsy* performed to correct a surgical problem?

YES NO

Does an author write an *autobiography* about someone else's life?

YES NO

KEY: 1–no, 2–no, 3–yes, 4–yes, 5–yes, 6–yes, 7–yes, 8–yes, 9–yes,
10–yes, 11–yes, 12–no, 13–no, 14–no, 15–no

Can you recall the words? (I)

pertaining to the science of animals (*adj.*)

1. Z_____

pertaining to the science of plants (*adj.*)

2. B_____

dissection of a corpse to determine the cause of death

3. A_____

story of one's life, self-written

4. A_____

pertaining to the science of all living matter (*adj.*)

5. B_____

science of the measurement of figures

6. G_____

pertaining to the science of the earth's composition (*adj.*)

7. G_____

branch of physics dealing with the composition of celestial bodies

8. A_____

star-shaped flower

9. A_____

very high in number; pertaining to the science of the heavens (*adj.*)

10. A_____

science of heavenly bodies

11. A_____

science of the development of mankind

12. A_____

person who believes human events are influenced by the paths of

the sun, moon, and planets

13. A_____

KEY: 1–zoological, 2–botanical, 3–autopsy, 4–autobiography, 5–biological, 6–geometry, 7–geological, 8–astrophysics, 9–aster, 10–astronomical, 11–astronomy, 12–anthropology, 13–astrologer

Can you recall the words? (II)

microscopic examination of living tissue

1. B _____

self-government

2. A _____

time measurer for music

3. M _____

voyager among the stars

4. A _____

traveler through the universe

5. C _____

great misfortune

6. D _____

mapping of the earth (*noun*)

7. G _____

self-governing (*adj.*)

8. A _____

diagram used in astrology

9. Z _____

pertaining to such a diagram (*adj.*)

10. Z _____

pertaining to ships, sailing, etc.

11. N _____

star-shaped symbol

12. A _____

story of a person's life

13. B _____

KEY: 1-biopsy, 2-autonomy, 3-metronome, 4-astronaut, 5-cosmonaut, 6-disaster, 7-geography, 8-autonomous, 9-zodiac, 10-zodiacal, 11-nautical, 12-asterisk, 13-biography

(End of Session 12)

SESSION 13

ORIGINS AND RELATED WORDS

1. cutting in and out

Flies, bees, beetles, wasps, and other insects are segmented creatures—head, thorax, and abdomen. Where these parts join, there appears to the imaginative eye a “cutting in” of the body.

Hence the branch of zoology dealing with insects is aptly named *entomology*, from Greek *en-*, in, plus *tome*, a cutting. The adjective is *entomological* (en'-tə-mə-LOJ'-ə-kəl).

(The word *insect* makes the same point—it is built on Latin *in-* in, plus *sectus*, a form of the verb meaning *to cut*.)

The prefix *ec-*, from Greek *ek-*, means *out*. (The Latin prefix, you will recall, is *ex-*.) Combine *ec-* with *tome* to derive the words for surgical procedures in which parts are “cut out,” or removed: *tonsillectomy* (the tonsils), *appendectomy* (the appendix), *mastectomy* (the breast), *hysterectomy* (the uterus), *prostatectomy* (the prostate), etc.

Combine *ec-* with Greek *kentron*, center (the Latin root, as we have discovered, is *centrum*), to derive *eccentric* (ək-SEN'-trik)—*out of the center*, hence deviating from the normal in behavior, attitudes, etc., or unconventional, odd, strange. The noun is *eccentricity* (ek'-sən-TRIS'-ə-tee).

2. more cuts

The Greek prefix *a-* makes a root negative; the *atom* (AT'-əm) was so named at a time when it was considered the smallest possible

particle of an element, that is, one that could *not* be cut any further. (We have long since split the atom, of course, with results, as in most technological advances, both good and evil.) The adjective is *atomic* (ə-TOM'-ik).

The Greek prefix *ana-* has a number of meanings, one of which is *up*, as in *anatomy* (ə-NAT'-ə-mee), originally the *cutting up* of a plant or animal to determine its structure, later the bodily structure itself. The adjective is *anatomical* (an'-ə-TOM'-ə-kəl).

Originally any book that was part of a larger work of many volumes was called a *tome* (TŌM)—etymologically, a part *cut* from the whole. Today, a *tome* designates, often disparagingly, an exceptionally large book, or one that is heavy and dull in content.

The Greek prefix *dicha-*, in two, combines with *tome* to construct *dichotomy* (dī-KOT'-ə-mee), a splitting in two, a technical word used in astronomy, biology, botany, and the science of logic. It is also employed as a non-technical term, as when we refer to the *dichotomy* in the life of a man who is a government clerk all day and a night-school teacher after working hours, so that his life is, in a sense, split into two parts. The verb is *dichotomize* (dī-KOT'-ə-mīz'); the adjective is *dichotomous* (dī-KOT'-ə-məs). *Dichotomous* thinking is the sort that divides everything into two parts—good and bad; white and black; Democrats and Republicans; etc. An unknown wit has made this classic statement about *dichotomous* thinking: “There are two kinds of people: those who divide everything into two parts, and those who do not.”

Imagine a book, a complicated or massive report, or some other elaborate document—now figuratively cut on or through it so that you can get to its essence, the very heart of the idea contained in it. What you have is an *epitome* (ə-PIT'-ə-mee), a condensation of the whole. (From *epi-*, on, upon, plus *tome*.)

An *epitome* may refer to a summary, condensation, or abridgment of language, as in “Let me have an *epitome* of the book,” or “Give me the *epitome* of his speech.”

More commonly, *epitome* and the verb *epitomize* (ə-PIT'-ə-mīz') are

used in sentences like “She is the *epitome* of kindness,” or “That one act *epitomizes* her philosophy of life.” If you cut everything else away to get to the *essential* part, that part is a representative cross-section of the whole. So a woman who is the *epitome* of kindness stands for all people who are kind; and an act that *epitomizes* a philosophy of life represents, by itself, the complete philosophy.

3. love and words

Logos, we know, means *science* or *study*; it may also mean *word* or *speech*, as it does in *philology* (fə-LOL'-ə-jee), etymologically *the love of words* (from Greek *philein*, to love, plus *logos*), or what is more commonly called *linguistics* (ling-GWIS'-tiks), the science of language, a term derived from Latin *lingua*, tongue.

Can you write, and pronounce, the adjective form of *philology*?

_____.

4. more love

Philanthropy (fə-LAN'-thrə-pee) is by etymology the love of mankind—one who devotes oneself to *philanthropy* is a *philanthropist* (fə-LAN'-thrə-pist), as we learned in [Chapter 3](#); the adjective is *philanthropic* (fil-ən-THROP'-ik).

The verb *philander* (fə-LAN'-dər), to “play around” sexually, be promiscuous, or have extramarital relations, combines *philein* with *andros*, male. (*Philandering*, despite its derivation, is not of course exclusively the male province. The word is, in fact, derived from the proper name conventionally given to male lovers in plays and romances of the 1500s and 1600s.) One who engages in the interesting activities catalogued above is a *philanderer* (fə-LAN'-dər-ər).

By etymology, *philosophy* is the love of wisdom (Greek *sophos*, wise); *Philadelphia* is the City of Brotherly Love (Greek *adelphos*, brother); *philharmonic* is the love of music or harmony (Greek

harmonia, harmony); and a *philter*, a rarely used word, is a love potion. Today we call whatever arouses sexual desire an *aphrodisiac* (af'-rə-DIZ'-ee-ak'), from Aphrodite, the Greek goddess of love and beauty.

Aphrodisiac is an adjective as well as a noun, but a longer adjective form, *aphrodisiacal* (af'-rə-də-ZĪ'-ə-kəl), is also used.

A *bibliophile* (BIB'-lee-ə-fil') is one who loves books as collectibles, admiring their binding, typography, illustrations, rarity, etc.—in short, a book collector. The combining root is Greek *biblion*, book.

An *Anglophile* (ANG'-glə-fil') admires and is fond of the British people, customs, culture, etc. The combining root is Latin *Anglus*, English.

5. words and how they affect people

The *semanticist* is professionally involved in *semantics* (sə-MAN'-tik). The adjective is *semantic* (sə-MAN'-tik) or *semantical* (sə-MAN'-tə-kəl).

Semantics, like *orthopedics*, *pediatrics*, and *obstetrics*, is a singular noun despite the -s ending. Semantics *is*, not *are*, an exciting study. However, this rule applies only when we refer to the word as a science or area of study. In the following sentence, *semantics* is used as a plural: “The *semantics* of your thinking *are* all wrong.”

Two stimulating and highly readable books on the subject, well worth a visit to the library to pick up, are *Language in Thought and Action*, by S. I. Hayakawa, and *People in Quandaries*, by Dr. Wendell Johnson.

6. how people live

The profession of the *sociologist* is *sociology* (sō'-shee-OL'-ə-jee or sō-see-OL'-ə-jee). Can you write, and pronounce, the adjective?

_____.

Sociology is built on Latin *socius*, companion,¹ plus *logos*, science, study. *Socius* is the source of such common words as *associate*, *social*, *socialize*, *society*, *sociable*, and *antisocial*; as well as *asocial* (ay-SŌ'-shəl), which combines the negative prefix *a-* with *socius*.

The *antisocial* person actively dislikes people, and often behaves in ways that are detrimental or destructive to society or the social order (*anti-*, against).

On the other hand, someone who is *asocial* is withdrawn and self-centered, avoids contact with others, and feels completely indifferent to the interests or welfare of society. The *asocial* person doesn't want to "get involved."

REVIEW OF ETYMOLOGY

PREFIX, ROOT	MEANING
1. <i>en-</i>	in
ENGLISH WORD _____	
2. <i>tome</i>	a cutting
ENGLISH WORD _____	
3. <i>in-</i>	in
ENGLISH WORD _____	
4. <i>sectus</i>	cut
ENGLISH WORD _____	
5. <i>kentron</i> (<i>centrum</i>)	center
ENGLISH WORD _____	
6. <i>a-</i>	not, negative
ENGLISH WORD _____	

7. <i>ana-</i>	up
ENGLISH WORD _____	
8. <i>dicha-</i>	in two
ENGLISH WORD _____	
9. <i>epi-</i>	on, upon
ENGLISH WORD _____	
10. <i>logos</i>	word, speech
ENGLISH WORD _____	
11. <i>lingua</i>	tongue
ENGLISH WORD _____	
12. <i>philein</i>	to love
ENGLISH WORD _____	
13. <i>sophos</i>	wise
ENGLISH WORD _____	
14. <i>adelphos</i>	brother
ENGLISH WORD _____	
15. <i>biblion</i>	book
ENGLISH WORD _____	
16. <i>Anglus</i>	English
ENGLISH WORD _____	
17. <i>socius</i>	companion
ENGLISH WORD _____	
18. <i>anti-</i>	against

USING THE WORDS

Can you pronounce the words? (I)

1. <i>entomology</i>	en'-tə-MOL'-ə-jee
2. <i>entomological</i>	en'-tə-mə-LOJ'-ə-kəl
3. <i>eccentric</i>	ək-SEN'-trik
4. <i>eccentricity</i>	ək'-sən-TRIS'-ə-tee
5. <i>atom</i>	AT'-əm
6. <i>atomic</i>	ə-TOM'-ik
7. <i>anatomy</i>	ə-NAT'-ə-mee
8. <i>anatomical</i>	an'-ə-TOM'-ə-kəl
9. <i>tome</i>	TŌM
10. <i>dichotomy</i>	dī-KOT'-ə-mee
11. <i>dichotomous</i>	dī-KOT'-ə-məs
12. <i>dichotomize</i>	dī-KOT'-ə-mīz'

Can you pronounce the words? (II)

1. <i>epitome</i>	ə-PIT'-ə-mee
2. <i>epitomize</i>	ə-PIT'-ə-mīz'
3. <i>philology</i>	fə-LOL'-ə-jee

4. <i>philological</i>	fil'-ə-LOJ'-ə-kəl
5. <i>linguistics</i>	ling-GWIS'-tiks
6. <i>philanthropy</i>	fə-LAN'-thrə-pee
7. <i>philanthropist</i>	fə-LAN'-thrə-pist
8. <i>philanthropic</i>	fil'-ən-THROP'-ik
9. <i>philander</i>	fə-LAN'-dər
10. <i>philanderer</i>	fə-LAN'-dər-ər

Can you pronounce the words? (III)

1. <i>philter</i>	FIL'-tər
2. <i>aphrodisiac</i>	af'-rə-DIZ'-ee-ak'
3. <i>aphrodisiacal</i>	af'-rə-də-ZĪ'-ə-kəl
4. <i>bibliophile</i>	BIB'-lee-ə-fil'
5. <i>Anglophile</i>	ANG'-glə-fil'
6. <i>semantics</i>	sə-MAN'-tiks
7. <i>semantic</i>	sə-MAN'-tik
8. <i>semantical</i>	sə-MAN'-tə-kəl
9. <i>sociology</i>	sō'-shee-OL'-ə-jee or sō'-see-OL'-ə-jee
10. <i>sociological</i>	sō'-shee-ə-LOJ'-ə-kəl or sō'-see-ə-LOJ'-ə-kəl
11. <i>asocial</i>	ay-SŌ'-shəl

Can you work with the words? (I)

- | | |
|------------------|---|
| 1. entomology | a. physical structure |
| 2. eccentricity | b. summary; representation of the whole |
| 3. anatomy | c. science of the meanings and effects of words |
| 4. dichotomy | d. linguistics |
| 5. epitome | e. science dealing with insects |
| 6. philology | f. science of social structures and customs |
| 7. semantics | g. charitable works |
| 8. sociology | h. that which causes sexual arousal |
| 9. aphrodisiac | i. strangeness; oddness; unconventionality |
| 10. philanthropy | j. condition or state of being split into two parts |

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

Can you work with the words? (II)

1.
dichotomize a. dull, heavy book
2. epitomize b. love potion; aphrodisiac
3. philander c. pertaining to the study of language
4. philter d. one fond of British people, customs, etc.
5.
bibliophile e. pertaining to the science of group cultures,
 conventions, etc.
6.
Anglophile f. to split in two
7. asocial g. withdrawn from contact with people
8. tome h. book collector
9.
philological i. to summarize
10.
sociological j. to engage in extramarital sex

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

Do you understand the words?

Is a *philanderer* likely to be faithful to a spouse?

YES NO

Did Dr. Jekyll-Mr. Hyde lead a *dichotomous* existence?

YES NO

Is an egoist the *epitome* of selfishness?

YES NO

Is a *philanthropist* antisocial?

YES NO

Is an *aphrodisiac* intended to reduce sexual interest?

YES NO

Is a *bibliophile's* chief aim the enjoyment of literature?

YES NO

Does a *philologist* understand etymology?

YES NO

Is a *semanticist* interested in more than the dictionary meanings of words?

YES NO

Is an *asocial* person interested in improving social conditions?

YES NO

Is a light novel considered a *tome*?

YES NO

KEY: 1–no, 2–yes, 3–yes, 4–no, 5–no, 6–no, 7–yes, 8–yes, 9–no, 10–no

Can you recall the words?

pertaining to the study of social customs (*adj.*)

1. S _____

pertaining to the psychological effects of words (*adj.*)

2. S _____ or S _____

lover and collector of books

3. B _____

make love promiscuously

4. P _____

pertaining to the science of linguistics (*adj.*)

5. P _____

pertaining to the study of insects (*adj.*)

6. E _____

one who admires British customs

7. A _____

smallest particle, so-called

8. A _____

pertaining to the structure of a body (*adj.*)

9. A _____

a dull, heavy book

10. T _____

split in two (*adj.*)

11. D _____

to split in two

12. D _____

a condensation, summary, or representation of the whole

13. E_____

to stand for the whole; to summarize

14. E_____

pertaining to charitable activities (*adj.*)

15. P_____

out of the norm; odd

16. E_____

one who “plays around”

17. P_____

arousing sexual desire (*adj.*)

18. A_____ or A_____

science of the manner in which groups function

19. S_____

self-isolated from contact with people

20. A_____

KEY: 1–sociological, 2–semantic *or* semantical, 3–bibliophile, 4–philander, 5–philological, 6–entomological, 7–Anglophile, 8–atom, 9–anatomical, 10–tome, 11–dichotomous, 12–dichotomize, 13–epitome, 14–epitomize, 15–philanthropic, 16–eccentric, 17–philanderer, 18–aphrodisiac *or* aphrodisiacal, 19–sociology, 20–asocial

CHAPTER REVIEW

A. Do you recognize the words?

1. Student of the stars and other heavenly phenomena:
(a) geologist, (b) astronomer, (c) anthropologist
2. Student of plant life:
(a) botanist, (b) zoologist, (c) biologist
3. Student of insect life:
(a) sociologist, (b) entomologist, (c) etymologist
4. Student of the meaning and psychology of words:
(a) philologist, (b) semanticist, (c) etymologist
5. Analysis of living tissue:
(a) autopsy, (b) biopsy, (c) autonomy
6. That which arouses sexual desire:
(a) zodiac, (b) bibliophile, (c) aphrodisiac
7. Self-governing:
(a) autobiographical, (b) autonomous, (c) dichotomous
8. Part that represents the whole:
(a) epitome, (b) dichotomy, (c) metronome
9. One who physically travels in space:
(a) astronomer, (b) astrologer, (c) astronaut
10. One who has extramarital affairs:

(a) cosmonaut, (b) philanderer, (c) philanthropist

KEY: 1-b, 2-a, 3-b, 4-b, 5-b, 6-c, 7-b, 8-a, 9-c, 10-b

B. Can you recognize roots?

ROOT	MEANING
1. <i>anthropos</i>	_____
EXAMPLE anthropology	
2. <i>logos</i>	_____
EXAMPLE philology	
3. <i>astron</i>	_____
EXAMPLE astronomy	
4. <i>nautes</i>	_____
EXAMPLE astronaut	
5. <i>nomos</i>	_____
EXAMPLE metronome	
6. <i>autos</i>	_____
EXAMPLE autonomy	
7. <i>ge (geo-)</i>	_____
EXAMPLE geology	
8. <i>graphein</i>	_____
EXAMPLE biography	
9. <i>opsis, optikos</i>	_____

EXAMPLE autopsy

10. *zoion*

EXAMPLE zodiac

11. *tome*

EXAMPLE entomology

12. *sectus*

EXAMPLE insect

13. *lingua*

EXAMPLE linguistics

14. *philein*

EXAMPLE philanthropy

15. *sophos*

EXAMPLE philosophy

16. *biblion*

EXAMPLE bibliophile

17. *Anglus*

EXAMPLE Anglophile

18. *socius*

EXAMPLE sociology

19. *logos*

EXAMPLE biology

20. *bios*

EXAMPLE biopsy

KEY: 1–mankind, 2–word, speech, 3–star, 4–sailor, 5–law, order, arrangement, 6–self, 7–earth, 8–to write, 9–view, vision, sight, 10–animal, 11–a cutting, 12–cut, 13–tongue, 14–to love, 15–wise, 16–book, 17–English, 18–companion, 19–science, study, 20–life

TEASER QUESTIONS FOR THE AMATEUR ETYMOLOGIST

1. Recalling the root *sophos*, wise, and thinking of the English word *moron*, write the name given to a second-year student in high school or college: _____. Etymologically, what does this word mean? _____

2. Based on the root *sophos*, what word means *worldly-wise*? _____.

3. Thinking of *bibliophile*, define *bibliomaniac*: _____.

4. These three words, based on *lingua*, tongue, use prefixes we have discussed. Can you define each one?

(a) monolingual _____

(b) bilingual _____

(c) trilingual _____

Can you, now, guess at the meaning of *multilingual*? _____.

How about *linguist*? _____.

What do you suppose the Latin root *multus* means? _____.
(Think of *multitude*.)

5. With *Anglophile* as your model, can you figure out what country and its people, customs, etc. each of the following admires?

(a) Francophile _____

- (b) Russophile _____
- (c) Hispanophile _____
- (d) Germanophile _____
- (e) Nipponophile _____
- (f) Sinophile _____

6. Using roots you have learned, and with *bibliophile* as your model, can you construct a word for:

- (a) one who loves males: _____
- (b) one who loves women: _____
- (c) one who loves children: _____
- (d) one who loves animals: _____
- (e) one who loves plants: _____

(Answers in *Chapter 18*)

WHERE TO GET NEW IDEAS

People with superior vocabularies, I have submitted, are the people with ideas. The words they know are verbal symbols of the ideas they are familiar with—reduce one and you must reduce the other, for ideas cannot exist without verbalization. Freud once had an idea—and had to coin a whole new vocabulary to make his idea clear to the world. Those who are familiar with Freud's theories know all the words that explain them—the *unconscious*, the *ego*, the *id*, the *superego*, *rationalization*, *Oedipus complex*, and so on. Splitting the atom was once a new idea—anyone familiar with it knew something about *fission*, *isotope*, *radioactive*, *cyclotron*, etc.

Remember this: your vocabulary indicates the alertness and range of your mind. The words you know show the extent of your

understanding of what's going on in the world. The size of your vocabulary varies directly with the degree to which you are growing intellectually.

You have covered so far in this book several hundred words. Having learned these words, you have begun to think of an equal number of new ideas. A new word is not just another pattern of syllables with which to clutter up your mind—a new word is a new idea to help you think, to help you understand the thoughts of others, to help you express your own thoughts, to help you live a richer intellectual life.

Realizing these facts, you may become impatient. You will begin to doubt that a book like this can cover all the ideas that an alert and intellectually mature adult wishes to be acquainted with. Your doubt is well-founded.

One of the chief purposes of this book is to get you started, to give you enough of a push so that you will begin to gather momentum, to stimulate you enough so that you will want to start gathering your own ideas.

Where can you gather them? From good books on new topics.

How can you gather them? By reading on a wide range of new subjects.

Reference has repeatedly been made to psychology, psychiatry, and psychoanalysis in these pages. If your curiosity has been piqued by these references, here is a good place to start. In these fields there is a tremendous and exciting literature—and you can read as widely and as deeply as you wish.

What I would like to do is offer a few suggestions as to where you might profitably begin—how far you go will depend on your own interest.

I suggest, first, half a dozen older books (older, but still immensely valuable and completely valid) available at any large public library.

The Human Mind, by Karl A. Menninger

Mind and Body, by Flanders Dunbar

The Mind in Action, by Eric Berne

Understandable Psychiatry, by Leland E. Hinsie

A General Introduction to Psychoanalysis, by Sigmund Freud
Emotional Problems of Living, by O. Spurgeon English and Gerald H. J. Pearson

Next, I suggest books on some of the newer approaches in psychology. These are available in inexpensive paperback editions as well as at your local library.

I Ain't Well—But I Sure Am Better, by Jess Lair, Ph.D.
The Disowned Self, by Nathaniel Brandon
A Primer of Behavioral Psychology, by Adelaide Bry
I'm OK—You're OK, by Thomas A. Harris, M.D.
Freedom to Be and Man the Manipulator, by Everett L. Shostrom
Games People Play, by Eric Berne, M.D.
Love and Orgasm, Pleasure and The Language of the Body, by Alexander Lowen, M.D.
The Transparent Self, by Sydney M. Jourard
Don't Say Yes When You Want to Say No, by Herbert Fensterheim and Jean Baer
Gestalt Therapy Verbatim, by Frederick S. Perls
Born to Win, by Muriel James and Dorothy Jongeward
Joy and Here Comes Everybody, by William C. Schutz
The Fifty-Minute Hour, by Robert Lindner

(End of Session 13)

¹ *Companion* itself has an interesting etymology—Latin *com-*, with, plus *panis*, bread. If you are social, you enjoy breaking bread with companions. *Pantry* also comes from *panis*, though far more than bread is stored there.

——— *Brief Intermission Four* ———

HOW TO AVOID BEING A PURIST

Life, as you no doubt realize, is complicated enough these days. Yet puristic textbooks and English teachers with puristic ideas are striving to make it still more complicated. Their contribution to the complexity of modern living is the repeated claim that many of the natural, carefree, and popular expressions that most of us use every day are “bad English,” “incorrect grammar,” “vulgar,” or “illiterate.”

In truth, many of the former restrictions and “thou shalt nots” of academic grammar are now outmoded—most educated speakers quite simply ignore them.

Students in my grammar classes at Rio Hondo College are somewhat nonplused when they discover that correctness is not determined by textbook rules and cannot be enforced by schoolteacher edict. They invariably ask: “Aren’t you going to draw the line somewhere?”

It is neither necessary nor possible for any one person to “draw the line.” That is done—and quite effectively—by the people themselves, by the millions of educated people throughout the nation.

Of course certain expressions may be considered “incorrect” or “illiterate” or “bad grammar”—not because they violate puristic rules, but only because they are rarely if ever used by educated speakers.

Correctness, in short, is determined by current educated usage.

The following notes on current trends in modern usage are intended to help you come to a decision about certain controversial expressions. As you read each sentence, pay particular attention to the italicized word or words. Does the usage square with your own language patterns? Would you be willing to phrase your thoughts in just such terms? Decide whether the sentence is “right” or “wrong,” then compare your conclusions with the opinions given after the test.

TEST YOURSELF

Let’s not walk any *further* right now.

RIGHT WRONG

Some people admit that their *principle* goal in life is to become wealthy.

RIGHT WRONG

What a *nice* thing to say!

RIGHT WRONG

He’s *pretty* sick today.

RIGHT WRONG

I feel *awfully* sick.

RIGHT WRONG

Are you going to invite Doris and *I* to your party?

RIGHT WRONG

1. Let’s not walk any *further* right now.

RIGHT. In the nineteenth century, when professional grammarians attempted to Latinize English grammar, an artificial distinction was drawn between *farther* and *further*, to wit: *farther* refers to space, *further* means *to a greater extent* or *additional*. Today, as a result, many teachers who are still under the forbidding influence of nineteenth-century restrictions insist that it is incorrect to use one word for the other.

To check on current attitudes toward this distinction, I sent the test sentence above to a number of dictionary editors, authors, and professors of English, requesting their opinion of the acceptability of *further* in reference to actual distance. Sixty out of eighty-seven professors, over two thirds of those responding, accepted the usage without qualification. Of twelve dictionary editors, eleven accepted *further*, and in the case of the authors, thirteen out of twenty-three accepted the word as used. A professor of English at Cornell University remarked: “I know of no justification for any present-day distinction between *further* and *farther*”; and a consulting editor of the Funk and Wagnalls dictionary said, “There is nothing controversial here. As applied to spatial distance, *further* and *farther* have long been interchangeable.”

Perhaps the comment of a noted author and columnist is most to the point: “I like both *further* and *farther*, as I have never been able to tell which is which or why one is any farther or further than the other.”

2. Some people admit that their *principle* goal in life is to become wealthy.

WRONG. In speech, you can get *principal* and *principle* confused as often as you like, and no one will ever know the difference—both words are pronounced identically. In writing, however, your spelling will give you away.

There is a simple memory trick that will help you if you get into trouble with these two words. *Rule* and *principle* both end in *-le*—and a *principle* is a rule. On the other hand, *principal* contains an *a*, and so does *main*—and *principal* means main. Get these points straight and your confusion is over.

Heads of schools are called *principals*, because they are the *main* person in that institution of learning. The money you have in the bank is your *principal*, your *main* financial assets. And the stars of a play are *principals*—the *main* actors.

Thus, “Some people admit that their *principal* (main) goal in life is to become wealthy,” but “Such a *principle* (rule) is not guaranteed to lead to happiness.”

3. What a *nice* thing to say!

RIGHT. Purists object to the popular use of *nice* as a synonym for *pleasant*, *agreeable*, or *delightful*. They wish to restrict the word to its older and more erudite meaning of *exact* or *subtle*. You will be happy to hear that they aren't getting anywhere.

When I polled a group of well-known authors on the acceptability in everyday speech of the popular meaning of *nice*, their opinions were unanimous; not a single dissenting voice, out of the twenty-three authors who answered, was raised against the usage. One writer responded: "It has been right for about 150 years ..."

Editors of magazines and newspapers questioned on the same point were just a shade more conservative. Sixty out of sixty-nine accepted the usage. One editor commented: "I think we do not have to be nice about *nice* any longer. No one can eradicate it from popular speech as a synonym for *pleasant*, or *enjoyable*, or *kind*, or *courteous*. It is a workhorse of the vocabulary, and properly so."

The only valid objection to the word is that it is *overworked* by some people, but this shows a weakness in vocabulary rather than in grammar.

As in the famous story of the editor who said to her secretary: "There are two words I wish you would stop using so much. One is 'nice' and the other is 'lousy.' "

"Okay," said the secretary, who was eager to please. "What are they?"

4. He's *pretty* sick today.

RIGHT. One of the purist's pet targets of attack is the word *pretty* as used in the sentence under discussion. Yet all modern dictionaries accept such use of *pretty*, and a survey made by a professor at the University of Wisconsin showed that the usage is established English.

5. I feel *awfully* sick.

RIGHT. Dictionaries accept this usage in informal speech and the University of Wisconsin survey showed that it is established English.

The great popularity of *awfully* in educated speech is no doubt due to the strong and unique emphasis that the word gives to an adjective—substitute *very*, *quite*, *extremely*, or *severely* and you

considerably weaken the force.

On the other hand, it is somewhat less than cultivated to say “I feel *awful* sick,” and the wisdom of using *awfully* to intensify a *pleasant* concept (“What an *awfully* pretty child”; “That book is *awfully* interesting”) is perhaps still debatable, though getting less and less so as the years go on.

6. Are you going to invite Doris and *I* to your party?

WRONG. Some people are almost irresistibly drawn to the pronoun *I* in constructions like this one. However, not only does such use of *I* violate a valid and useful grammatical principle, but, more important, it is rarely heard in educated speech. The meaning of the sentence is equally clear no matter which form of the pronoun is employed, of course, but the use of *I*, the less popular choice, may stigmatize the speaker as uneducated.

Consider it this way: You would normally say, “Are you going to invite *me* to your party?” It would be wiser, therefore, to say, “Are you going to invite Doris and *me* to your party?”