

## FOCUS ON VOCABULARY AND LANGUAGE

### *Behavior Genetics: Predicting Individual Differences*

Page 135: To scientifically *tease apart* the influences of environment and heredity, behavior geneticists would need to design two types of experiments. Myers is using an analogy here: in an attempt to discover and separate out (*tease apart*) the differential effects of the environment and genes, behavior geneticists use two approaches—twin studies and adoption studies.

Page 137: . . . *blue-collar families* . . . This phrase refers to a social category based on the type of work people do. Traditionally, manual workers wore denim-blue work shirts (*blue-collar workers*) in contrast to office workers, managers, etc., who wore white shirts (*white-collar workers*). Myers discusses identical twins (both named Jim) who were adopted by similar working-class (*blue-collar*) families.

Page 138: Stories of *startling twin similarities* do not impress Bouchard's critics, who remind us that "*the plural of anecdote is not data.*" Bouchard's investigation into the similarities between separated twins suggests that genes influence many behaviors, such as career choices, TV-watching habits, and food likes and dislikes (*startling stories*). Critics point out that any two strangers of the same sex and age would probably have many coincidental things in common if they were to spend hours comparing their behaviors and life histories. Furthermore, stories by or about individuals (*single anecdotes*) do not constitute scientific data, even if there are many of them (*the plural of anecdote is not data*).

Page 139 (margin): "Mom may be *holding a full house* while Dad has a *straight flush*, yet when Junior gets a random half of each of their cards his *poker hand may be a loser*" (David Lykken, 2001). To make sense of this quote you need to be familiar with card games such as *poker*. In this game, a "full house" and a "straight flush" are sequences of cards (*hands*) that usually are winners. Even if Mom and Dad have "winner" sets of genes, similar to the winning cards in poker, the random genes they pass on to their offspring (*Junior*) will not necessarily be a "winning" set of genes too (*his poker-hand may be a loser*).

Page 141: *Go barefoot* for a summer and you will develop toughened, callused feet—a biological adaptation to friction. Meanwhile, your *shod neighbor will remain a tenderfoot*. Our enormously adaptive capacity is a common, but extremely valuable, characteristic of human beings (*the behavioral hallmark of our species*). If someone does not wear shoes (*goes barefoot*), his feet will become tough, a biological adaptation. But if a person wears shoes (*your shod neighbor*), his feet will be tender or soft (he will be a *tenderfoot*), also the product of a biological mechanism. It is the environment that causes the difference between the two people. (Note that the word *tenderfoot* traditionally referred to someone who was new to ranching in the western United States and is now used to describe any newcomer or novice.)

Page 141: . . . *blueprints* . . . A *blueprint* is an architectural term for a copy of an original diagram or plan used as a working drawing for creating a building or structure. Myers notes that genes and environment interact. **Genes**, rather than acting as master plans (*blueprints*) that always lead to the same result, instead react and respond to their environments. Thus, people with identical genes (identical twins) but with different experiences (different environments) end up with similar but not identical minds.

Page 141: Thus, asking whether your personality is more a product of your genes or your environment is like asking whether *the area of a field is more the result of its length or its width*. The area of a space, such as a soccer field or a football field, is determined by multiplying its length by its width. Obviously, you cannot find the area of the field without both length and width. Likewise, we do not become who we are without both *nature* and *nurture*. As Myers notes, genes and experience are both important and neither operates apart from the other; rather, they interact.

Page 143 . . . *sleuth* . . . A *sleuth* is a detective. Like detectives trying to catch a criminal or solve a crime, researchers throughout the world are currently trying to locate (*sleuth*) the genes responsible for many disorders.

Page 143: Progress is a *double-edged sword*, raising both *hopeful possibilities* and *difficult problems*. Myers is using the metaphor of a sword with two cutting edges (a *double-edged sword*) to illustrate the fact that progress has two aspects to it—one positive (*hopeful possibilities*) and one negative (new ethical issues and *difficult problems*).

### ***Evolutionary Psychology: Understanding Human Nature***

Page 144: . . . *cash-strapped* . . . This means to be in desperate need of money (*strapped for cash*). Russian researchers selectively bred only the tamest and friendliest foxes from each of 30 generations over a 40-year period. The present breed of foxes are affectionate, docile, and eager to please; to raise funds for the financially destitute (*cash-strapped*) institute, they are being marketed as house pets.

Page 144: But the *tight genetic leash* . . . is *looser* on humans. Just as a dog is restrained or held in check by a strap or cord (*leash*), genes generally determine the fairly rigid or fixed patterns of behaviors in many animals. In humans, however, genes are less influential; thus, the usually strong genetic constraints (*tight genetic leash*) operate in a less determined way (are *looser*).

Page 146: *Casual, impulsive sex* is most frequent among males with traditional masculine attitudes (Pleck et al, 1993). There are large gender differences in sexual values and attitudes, which are reflected in the differences in male-female behaviors. Males (especially those with stereotyped views of females) tend to lack restraint (they are *impulsive*) and to be nonchalant (*casual*) about having sex with someone they have just met and hardly know (they have *casual, impulsive sex*).

Page 147: Men also have a lower threshold for perceiving *warm* responses as a *sexual come-on*. Males will typically misinterpret a female's affable, affectionate, or friendly behavior (her *warmth*) as an invitation to have sex (*a sexual come-on*). Numerous studies have shown that men are more likely than women to attribute friendliness to sexual interest.

Page 147: In our *ancestral history*, women most often sent their genes into the future by *pairing wisely*, men by *pairing widely*. Evolutionary psychologists note that our normal desires (*natural yearnings*) help perpetuate our genes. In our evolutionary past (*ancestral history*), females accomplished this best by being selective in their choice of mate (*pairing wisely*); men were better served by more promiscuous behavior (*pairing widely*). However, as Myers points out, environmental factors, such as cultural expectations, can alter or shape how sexual behavior is expressed by both males and females (*culture can bend the genders*).

Page 148: Women, in turn, prefer *stick-around dads over likely cads*. Women tend to prefer males who are more likely to be supportive of their children (*their joint offspring*). They also prefer males who are more willing to make a lasting contribution to their protection (*stick-around dads*) to males who indicate little or no willingness to make such a co-parenting commitment (*likely cads*).

Page 148: As *mobile gene machines*, we are designed to prefer whatever worked for our ancestors in their environments. Evolutionary psychologists believe that behavioral tendencies that increase the probability of getting one's genes into the future have been selected over the course of evolution. Humans who actively seek out mates and successfully procreate (*mobile gene machines*) are passing on inherited tendencies to behave in certain ways (*our natural yearnings*) because these behaviors were adaptive for our ancestors.

## *Parents and Peers*

*Page 150:* Similar to *pathways* through a forest, *popular paths* are broadened and *less-traveled paths* gradually disappear. This analogy suggests that brain development goes on throughout life. Neural connections (*pathways*) that are frequently used (*popular paths*) are widened and more clearly defined, while those connections that are seldom used (*less-traveled paths*) become weakened and may eventually disappear.

*Page 150:* During early childhood—while excess connections are *still on call* . . . To be *on call* means to be ready and available for use. Thus, during the early childhood years while there are many neural connections ready for use (*still on call*), an enriched and stimulating environment is extremely important for intellectual, perceptual, and social development. As Myers puts it, “Use it or lose it.”

*Page 151:* In procreation, a woman and a man *shuffle their gene decks and deal a life-forming hand* to their child-to-be . . . The idea here is that, just as cards are randomly interspersed (*shuffled*) and then passed out (*dealt*) to the players, a man and a woman intermingle their genes (*shuffle their gene decks*) and conceive offspring (*deal a life-forming hand to their child-to-be*). The child is then exposed to numerous environmental factors beyond parental control that limit how much the parents influence and shape the child’s development (*children are not easily sculpted by parental nurture*).

*Page 151:* Society reinforces such parent-blaming: Believing that parents shape their offspring *as a potter molds clay*, people readily praise parents for their *children’s virtues* and blame them for their *children’s vices*. Myers suggests that, because some factors that affect development are under the parent’s control and others are not, it is not appropriate to be judgmental. We should be slower to praise parents for their children’s achievements (*children’s virtues*) and slower yet to be critical when the children do not perform up to our expectations (*children’s vices*). Children are not simply formed by their parents’ child-rearing abilities (*as a potter molds clay*) but rather are influenced by many factors beyond their control.

*Page 152:* *If the vapors of a toxic climate are seeping into a child’s life*, that climate—not just the child—needs *reforming*. Myers is suggesting that when problem behaviors arise it is important to look at the whole context that is influencing the child, rather than focusing on the child alone. If the environment (e.g., the neighborhood and schools) is unhealthy and dangerous (*a toxic climate*) and is slowly leaking (*seeping*) into a child’s life, then it is important to change (*reform*) these environmental influences instead of simply trying to change the child.

## *Cultural Influences*

*Page 153:* We come equipped with a huge *cerebral hard drive ready to receive many gigabytes of cultural software*. Myers is comparing our capacity to learn and adapt through cultural transmission to that of a computer’s operating system (a *cerebral hard drive*). Like a human, the hard drive is capable of receiving very large amounts of information through programming (*gigabytes of cultural software*).

*Page 154:* Yet, norms *grease the social machinery* . . . Every society has its own rules and regulations about accepted and appropriate modes of conduct (*social norms*) and these standards differ from culture to culture. These proscriptions may sometimes seem unjust or senseless but, because they are known and practiced by most people, they serve the function of helping a society run smoothly (they *grease the social machinery*).

*Page 154:* When cultures collide, their differing norms often *befuddle*. When people from different cultures meet, the interaction can be confusing (*befuddling*). **Personal space** (the distance we like to have between us and others) varies; someone who prefers more space may

end up constantly retreating (*backpedaling*) from someone who needs to be close in order to have a comfortable conversation.

*Page 154:* . . . *standoffish* . . . This means to be distant or unfriendly in social interactions. North Americans have a need for a bigger personal space than do people from some other cultures. So, when that space is infringed upon (*invaded*), the natural reaction is to back away, which may give the impression of being aloof and unfriendly (*standoffish*).

### **Gender Development**

*Page 160:* How much does biology *bend the genders*? Myers is asking what creates or influences male and female differences (*bends the genders*). How much of this difference (the *gender gap*) is due to genetic inheritance (*biology*) and how much is a function of environmental influences (*culture and socialization*)? In answering these questions the next section looks at gender differences in aggression, social power, and social connectedness.

*Page 160:* These gender differences in *connectedness surface early* in children's play, and they continue with age. Males and females differ in their feelings of belonging (*connectedness*), a disparity that is noticeable from a young age (it *surfaces early*) and continues as an individual gets older. When playing, boys tend to engage in competitive group activity without much close, confidential, or affectionate dialogue. Girls typically are more intimate with each other and play in smaller groups, frequently with one friend. Girls are also less competitive and more supportive and empathic.

*Page 162:* The **Y chromosome** includes a single gene that *throws a master switch* triggering the testes to develop and produce the principal male hormone, **testosterone**. We all get an **X chromosome** from our mothers and either an X (you'll be a girl) or a Y (you'll be a boy) from our fathers. Thus, the Y chromosome is crucial for making males and a single gene is responsible for initiating the process (it *throws the master switch*) that activates (*triggers*) the production of testosterone by the testes.

*Page 163:* . . . "tomboyish" . . . A *tomboy* is a girl who likes to play "boy" sports and games. When a female embryo is exposed to too much **testosterone** (the male sex hormone), the developing child will act more aggressively and behave in ways more typical of boys (she will act in a *tomboyish* way).

*Page 164:* In the United States 30 years ago, it was standard for men to *initiate dates*, drive the car, and *pick up the check*, and for women to decorate the home, buy and care for the children's clothes, and select the *wedding gifts*. **Gender roles** are a culture's expectations for male and female behaviors. These behaviors can change over time and across cultures, and can vary from generation to generation. Traditionally (*as was common practice 30 years ago*), males asked females to go out (*initiated dates*) and paid for the meal and entertainment (*picked up the check*). In contrast, women looked after the domestic concerns, which included purchasing and looking after the children's clothes and choosing presents for those who were getting married (*wedding gifts*).

*Page 165:* By the late 1960s and early 1970s, with the *flick of an apron*, the number of U.S. college women hoping to be *full-time homemakers plunged*. Over time, gender roles have changed. Within a relatively brief period of time (*with the flick of an apron*), the number of women engaged in the traditional female role (the *full-time homemaker*) declined rapidly (*plunged*) and the number of women in the work force increased substantially (*roughly doubled*), especially in traditional male fields such as medicine, law, and psychology.

### *Reflections on Nature and Nurture*

*Page 168: . . . won the day . . .* Galileo's theory that the Earth revolved around the Sun, and not the other way around (*vice versa*), was eventually accepted (*it won the day*). His explanation was a coherent account (*it hung together*) of the way the solar system actually works.

*Page 168: It boggles the mind*—the entire universe *popping out of a point* some 14 billion years ago . . . When something is startling, unexpected, or hard to comprehend, we say that "it *boggles the mind*." The idea that the entire universe arose from a singularity (*popped out of a point*) approximately 14 billion years ago is one such "mind-boggling" idea that leaves even scientists full of reverence and wonder (they are *awestruck*).