

that would involve her with a different group of girls. Team sports are one option, if she is so inclined. Dance or drama may be a good choice. Or horseback riding, or swimming. Of course, girls in these other activities can be just as prone to cliques and rivalries as the girls at her school. But girls need connection with other girls. By showing your daughter that you understand her situation and that you're taking the problem seriously and doing your best to help—instead of trying to talk her out of it—you're already helping her feel better.

In extreme cases you may need to talk with your daughter about other options. Ask her how she would feel about transferring to another school. If you're in the public school system, the guidance counselor can often facilitate this transfer. That's another reason why you'll want to be in touch with the guidance counselor throughout the process. Sometimes a transfer can be accomplished seamlessly over a semester break.

Watch for signs of clinical depression. If your daughter is crying uncontrollably, if she's lost interest in doing the things she used to enjoy, or if (God forbid) she starts talking about suicide, then you should seek professional help. The experience of being shunned by other girls *can* precipitate full-blown clinical depression, with the associated risk of suicide. Don't hesitate to schedule a consultation with a qualified psychologist or psychiatrist if you have any doubt.

5 SCHOOL

Girls don't receive their fair share of education. Teachers of good intention respond to boys and teach them more actively, but . . . while the teachers are spending time with boys, the girls are being ignored and shortchanged.

—Myra and David Sadker, 1994¹

A review of the facts shows boys, not girls, on the weak side of an educational gender gap. Boys, on average, are a year and a half behind girls in reading and writing; they are less committed to school and less likely to go to college.

—Christina Hoff Sommers, 2000²

Both girls and boys are being shortchanged.

—Jackie Woods, president, American Association of University Women, 2002³

Melanie

Melanie was an academic superstar all through high school. In eleventh grade she took Advanced Placement (AP) English, AP Spanish, AP American history, and AP biology as well as trigonometry. Not only did she get straight A's that year, she also really seemed to enjoy each class. She was especially interested

in the environmental science unit of her biology class. Her biology teacher, Ms. Griffith, recognized Melanie's talent and encouraged her. With Ms. Griffith's help, Melanie devised a science project to test and correlate levels of pollutants in samples of water taken from the Potomac River at different points, from Harpers Ferry in West Virginia all the way down to Georgetown and Anacostia in Washington, D.C. Her project won second place at an environmental science fair. "You're more than just smart," Ms. Griffith told Melanie after the fair. "Lots of scientists are smart. The great scientists are those who have imagination." Melanie beamed.

At Ms. Griffith's suggestion, Melanie signed up to take AP physics in her senior year. Ms. Griffith assured her she wouldn't have any problem. "Physics will come naturally to you," Ms. Griffith said. "You have an analytical mind."

The first day of physics class seemed to go okay. The instructor, Mr. Wallace, plunged right in, presenting formulas and equations relating distance, velocity, and acceleration. At the end of class, as students were standing up and gathering their books to leave, he called out, "First seven problems in chapter 1, due tomorrow" (the class groaned), "in writing, show your work, make it neat, hand them in at the start of class!"

Melanie looked at the problems that evening. The first five weren't too difficult. The last two were harder. They didn't seem to fit any of the formulas in the book.

That semester, Melanie was also taking AP Spanish, AP English, AP European history, and AP calculus. She had homework assignments in each of those subjects already as well. She wrote out the answers to the first five physics problems. Then, rather than waste time trying to figure out the two remaining problems, she decided to do her homework in her other subjects, and to meet with Mr. Wallace for help during her morning study period.

She didn't have any trouble finding Mr. Wallace during second period the next morning. He was in the physics lab, checking the equipment for the first experiment. She introduced

herself, and then asked: "About the homework assignment, I had a question. The first five problems were pretty easy, but I had trouble with the last two. They didn't fit any of the problems that were solved in the chapter. Like the problem where the boy is trying to catch the bus. The bus is pulling away from the bus stop, it's accelerating at a constant rate, which means that its speed is increasing, and we're supposed to figure out whether the boy can catch the bus, and if so how long it will take him to catch up with the bus . . ." She paused to give Mr. Wallace a chance to say something, to suggest how to solve the problem.

Mr. Wallace said nothing. He glanced at her, then looked out the window. It was almost as though he hadn't heard anything she had said.

"Would you like me to show you the problem?" she asked, taking her book out and flipping to the page.

He shook his head.

"It's right here on page twenty-two," she began.

Mr. Wallace interrupted. "I think maybe you're in the wrong class," he said.

"What?" Melanie asked.

"Physics isn't for everybody," Mr. Wallace said. "Ms. Griffith told me what a hardworking student you are. In subjects like biology, students who work hard will do well. But physics is different. Either you have the right kind of mind for it or you don't."

"But you don't even know me," Melanie protested. "How do you know what kind of mind I have?"

"I just don't want you to hurt your grade point average," Mr. Wallace said. "Ms. Griffith told me that you're a straight-A student, that you might be the class valedictorian. I'd hate for you to lose that by staying in this class."

"You're saying I should drop this class?" Melanie said in disbelief. "After one day? One homework assignment? Which we haven't even discussed yet?"

Mr. Wallace nodded. "I'm sorry," he said.

Melanie slammed her book shut and left the room without another word. She wanted to go to Ms. Griffith and ask: What is *wrong* with this guy? Or maybe she would go to the school counselor and complain.

But she did neither. Instead, she dropped the course. "If he doesn't want me in his class, then I don't want to be in his class," Melanie told me later. "I mean, what if he gives me a lower grade just because he doesn't like me? I have to think about my college transcript. I don't want a B on my transcript in the last semester that colleges will see."

Some people would say that this incident illustrates the way in which sexist male teachers drive well-qualified girls out of physics classes. Those critics would point to the fact that Melanie was one of only six girls in a class of twenty-three students as evidence that the school was biased against girls taking physics. Those critics might also mention the fact that the homework problems in this particular textbook refer to boys, almost never girls, chasing after buses, hitting baseballs, driving race cars, and so on.

That analysis has some merit, but I don't think it's the whole story, in part because I know Melanie. Melanie was a victim, yes, but not primarily a victim of sexism. She was more a victim of Mr. Wallace's lack of understanding of the differences in how girls and boys learn. Here's my assessment of what happened and why.

First, here's the "why": girls and boys have different educational styles, and different expectations for the teacher-student relationship. Because teachers are often unaware of those differences, male teachers especially often misunderstand and misinterpret the behavior of their female students. Most girls will naturally seek to affiliate with the teacher. They expect the teacher to be on their side, to be their ally. Most girls won't hesitate to ask the teacher for help when they need it. Educational researchers have consistently found that girls are more concerned than boys are with pleasing the teacher and more likely

than boys to follow the teacher's example.⁴ Remarkably, a similar finding has recently been described in our closest genetic relative, the chimpanzee. In 2004, anthropologists who had spent three years observing chimpanzees in the wilds of Tanzania reported sex differences in learning similar to what we see in human children. Girl chimps follow their teacher's example—in this case, regarding the proper way to dig for termites—while boy chimps completely disregard the teacher, preferring to do it their own way—or they ignore the teacher's example altogether and go off to swing from a nearby tree or wrestle with another male chimp. The boy chimps are consequently much slower to master the task than the girls are.⁵

Sex differences in how students relate to their teacher give rise to sex differences in motivation to study and in the weight that students give to their teacher's opinions. As a result, according to educational psychologist Eva Pomerantz, girls are at greater risk of being harmed by a negative assessment from a teacher:

Girls generalize the meaning of their failures because they interpret them as indicating that they have disappointed adults, and thus they are of little worth. Boys, in contrast, appear to see their failures as relevant only to the specific subject area in which they have failed; this may be due to their relative lack of concern with pleasing adults.⁶

Girls are more likely to do their homework even if the particular assignment doesn't interest them. Girls want the teacher to think well of them. Boys on the other hand will be less motivated to study unless they find the material intrinsically interesting. Likewise, most boys will consult the teacher for help only as a last resort, after all other options have been exhausted.

Mr. Wallace was a student himself once, of course. When he was a student, he probably had the typical male study pattern. Most likely he studied alone, asking the teacher for help rarely

and only after he had agonized for hours over a problem. When Melanie asked him for help on the second day of class, he probably assumed that she had been working on the problem for hours. He knew from Ms. Griffith that Melanie was a smart, hardworking student. He thought: If this smart, hardworking student has worked on this problem for hours and she still can't figure it out, then she probably doesn't belong in my class. When he suggested that she drop the class, he was sincerely trying to act in her best interests.

If Mr. Wallace had taken a few minutes to ask Melanie how much effort she had put into solving the problems on her own, he would have realized his mistake. She hadn't spent even five minutes on those problems. However, Mr. Wallace and Melanie would still have had to reconcile their conflicting educational styles. If she had explained to Mr. Wallace that she was asking him for help *before* making a sustained effort to solve the problem on her own, he would have been surprised, even annoyed. He might conclude that maybe she wasn't such a hard worker after all. Melanie would most likely have sensed his annoyance and been irked by his response. "Why *shouldn't* I ask the teacher for help? Isn't that what the teacher is there for? Why should I waste hours working on the problem the wrong way, when the teacher can show me the right way?" That's what other girls have told me in similar situations.

Melanie went on to get straight A's again that semester. She was accepted at her first-choice school, the University of Maryland. I hear from her mother that Melanie is majoring in marketing. There's nothing wrong with marketing, except that Melanie never expressed any interest in it when she was in high school. She was really on fire in that biology class. I can't help wondering whether she might have gone on to become the great scientist Ms. Griffith predicted she could be, if only her high school physics teacher had known more about the different educational styles of girls and boys—if he had encouraged her instead of pushing her out the door.

Face-To-Face, Shoulder-To-Shoulder

Friendships between girls are different from friendships between boys. Girls' friendships are about being together, spending time together, talking together, going places together. Friendships between boys on the other hand usually develop out of a shared interest in a game or an activity. We might characterize the difference this way: girls' friendships are *face-to-face*, two or three girls talking with one another. Boys' friendships are *shoulder-to-shoulder*, a group of boys looking out at some common interest.⁷

Conversation is central to girls' friendships at every age. Girlfriends love to talk with each other. When they start having trouble talking, the friendship is in trouble. The mark of a truly close friendship between two girls or two women is that they tell each other secrets they don't tell anyone else. They confide in each other about their most personal doubts and difficulties. *Self-disclosure* is the most precious badge of friendship between females. When she tells you a secret she's never told anyone else, then you know that you are truly her dear friend.

Boys are different. Most boys don't really want to hear each other's innermost secrets.⁸ With boys the focus is on the activity, not on the conversation. Four boys can spend hours playing a video game without exchanging a single complete sentence. You'll hear screams of agony and shouts of exultation, but you may not hear much that qualifies as conversation.

Girls' friendships then are more intimate and more personal than most boys' friendships. That has advantages and disadvantages. The advantage of course is that each girl derives strength from the intimacy of the friendship. When a girl is under stress, she looks to other girls for support and comfort. When girls are under stress, they want to be with their friends *more*. When boys are under stress, they usually just want to be left alone.⁹ (Many mothers don't know about these differences. When a mother sees that her son is under stress, she often tries to comfort him. Almost invariably she will be rebuffed.) Psychologist Shelley

Taylor, who has specialized in the study of gender differences in the response to stress, summarizes her findings this way: "Women maintain more same-sex close relationships than do men, they mobilize more social support in times of stress than do men, they turn to female friends more often, and they report more benefits from contact with their female friends and relatives."¹⁰

Girls' Friendships Have Distinct Values and Exhibit Different Dynamics Compared with Boys' Friendships

	Girls	Boys
Friendships form among . . .	Two or three girls	Two to twelve boys
Friendships focus on . . .	Each other	A shared interest in a game or activity
Games and sports are . . .	An excuse to get together	Central to the relationship
Conversation is . . .	Central to the relationship	Often unnecessary
Hierarchies . . .	Destroy the friendship	Build and organize camaraderie
Self-revelation is . . .	A precious badge of friendship	To be avoided if possible

These differences are relevant to education for many reasons, chief of which is that girls and boys relate to teachers differently. For most boys, being friends with a teacher is a sure sign of geekdom.* Professor Bishop at Cornell University writes:

In the eyes of most students, the nerds exemplify the "I trust my teachers to help me learn" attitude that prevails in most elementary school classrooms. The dominant middle school crowd is telling them that trusting teachers is baby stuff. It is "us" [the boys] versus "them" [the teachers].

*The coach is an exception to this rule. It's okay for boys to be friends with the coach—as long as the coach himself is a real jock, not a dork or a geek.

Friendships with teachers make you a target for harassment by peers. . . . Boys are not supposed to suck up to teachers. You avoid being perceived as a suck-up by avoiding eye contact with teachers, not raising one's hand in class too frequently, and [by] talking or passing notes to friends during class (this demonstrates that you value relationships with friends more than your reputation with the teacher).¹¹

Girls are less likely to think friendship with teachers equals geekiness. On the contrary, a girl student may actually raise her status in the eyes of her friends if she has a close relationship with a teacher—especially if the teacher is young, "cool," and female. I know of a young teacher at an all-girls school who occasionally invites two or three girls in her class to go to the movies with her. Being invited to see a movie with that teacher is a major status booster. (Being friends with a teacher is less likely to boost a girl's status if the teacher is male, as other girls may suspect that she is using her sexuality to get a better grade.) With boys, it's different. A boy who is buddy-buddy with the teacher does not thereby raise his stature in the eyes of his peers. On the contrary, being friends with the teacher can *lower* a boy's status in the eyes of other boys.

Girls are more likely to assume that the teacher is an ally and a friend. Boys are less likely to make that assumption. So, when encountering difficulties, girls are more likely to consult the teacher early. Boys, as I said a moment ago, usually consult the teacher only as a last resort. And girls are much more likely than boys are to ask a teacher for advice about personal matters, totally unrelated to the academic material.

Continuing with our discussion of friendship: girls' friendships work best when the friendship is between equals. If you're a girl or a woman and you think your friend believes herself to be "better" than you, then your friendship with her is not likely to last. Boys on the other hand are comfortable in an unequal relationship, even if they are the lesser party. The third-string linebacker may enjoy being the best buddy of the star quarter-

back. He may not resent the quarterback's higher status. He may even try to magnify his friend's status in the eyes of others. This male characteristic has roots that go very deep. If you know the stories of Gilgamesh and Enkidu, Achilles and Patroclus, David son of Jesse and Jonathan son of Saul, or for that matter Don Quixote and Sancho Panza, then you've heard this story before. Those friendships were not less strong because of the difference in status between the friends. On the contrary, the hierarchical character of the relationship defined and even ennobled the friendship. "Jonathan and David made a pact because *Jonathan loved David*," we read in 1 Samuel. Not because David loved Jonathan. "Jonathan took off the cloak and tunic he was wearing and gave them to David, along with his sword, bow, and belt . . ." Jonathan said to David, "You are going to be king over Israel and *I shall be second to you*."¹² Jonathan's dream was a world in which his hero, David, would be king and he, Jonathan, would be the king's right-hand man.

These differences explain a useful tip that several teachers have shared with me. If you're working with a girl, *smile and look her in the eye* when you're helping her with a subject. That gives her nonverbal reassurance that you like her and you're her friend. Too many teachers (especially men) don't make eye contact with their female students. "I asked him a question, and he answered it, but he just seemed to be talking into empty space. He didn't even look at me," said one girl. "He didn't care about me. It was almost like I wasn't even there."

If you're working with a boy, sit down *next* to him and spread out the materials in front of you, so you're both looking at the materials, shoulder-to-shoulder. Don't hold an eye-to-eye stare with a boy unless you're trying to discipline him or reprimand him. Don't smile. "Whenever that old witch smiles, it gives me the creeps," one boy told me. "When she smiles, she looks like the evil lady in *101 Dalmatians*. She looks at me like I'm one of those Dalmatians."

Another application of these differences is that *small group*

learning is a good teaching strategy for girls, but seldom for boys. How come?

First reason: Girls are more comfortable asking the teacher for help when they need it. If you give four girls a group assignment, you can be confident that if they get stuck, at least one of them will come to you for help.

Not so with boys. If four boys get stuck, there's no guarantee that any of them will ask the teacher for help, unless one of the boys is a geek, and even geeks know that asking the teacher for help lowers their status in the eyes of the other boys. If the boys get stuck, they may just throw spitballs and get rowdy instead of asking for help.

That leads us to a second reason why small-group self-directed learning works for girls but not for boys. Boys can raise their status in the eyes of other boys by disrupting the teacher's program. If the teacher breaks the class into small groups and two boys in a group of four start being disruptive, those boys raise their status in the eyes of at least some of the other boys in the room, no matter how puerile their behavior. (Incidentally, the word *puerile* is derived from the Latin word *puer*, meaning young boy. There is no pejorative word corresponding to the Latin *puella*, young girl.) That's what education writer Elinor Burkitt was trying to communicate when she wrote that "teen culture celebrates public displays of contempt for education and authority," which if unchecked will cause the class to disintegrate into "total anarchy."¹³

Hearing the Difference

In chapter 2 we noted that girls hear better than boys. Anytime you have a teacher of one sex teaching children of the opposite sex, there's a potential for a mismatch, if only in decibel level. If a male teacher speaks in a tone of voice that seems normal to him, a girl in the front row may feel that he is yelling at her.

I talked with Melanie around Thanksgiving of her senior year. That's when she told me the story about Mr. Wallace advising her to drop the course on the second day of school. I asked her how she felt about a teacher telling her to drop a class for no good reason.

"No big deal," she said. "I don't think I could have put up with Mr. Wallace for very long, anyhow," she added.

Why not, I asked.

"He was a shouter," she said, "That one day I was in his class, he was shouting right in my face. I wanted to put my hands over my ears."

Recall our discussion in chapter 1 of the misdiagnosis of attention deficit disorder. Some boys diagnosed with ADD may just need the teacher to raise her voice a bit. This fundamental fact is not taught in most schools of education. When I speak to teachers, they are fascinated to learn that girls and boys do indeed differ in their ability to hear. Experienced teachers often figure this out on their own—after five or ten years of teaching. One veteran teacher told me that she puts the boys in the front of the class and the girls in back. That's pretty much the opposite of how girls and boys normally seat themselves. In most classes you'll have two or three academically talented boys sitting in the front row, the rest of the boys at the back, and the girls in the middle. That's the "natural" way for kids to seat themselves, because most girls like to affiliate with the teacher and most boys don't. (In chapter 9 we'll talk about the two or three boys who do.)

The Teacher's Guilty Secret

The differences in girls' and boys' ability to hear is one hard-wired reason why both girls and boys are shortchanged by gender-neutral education. Another reason has to do with differences in the way girls and boys respond to threat and confrontation.

"I really yelled at one of my students one day," middle school

teacher Tina Spencer confessed to me. "I was just so frustrated with him, because Sam is a smart boy, but he just wasn't doing the work. He never did the homework. So one day I just lost it. I really let him have it. I yelled at him, in class, in front of the other students. I didn't mean to but I did.

"Right afterward, I was worried he'd never speak to me again," Tina said. "I expected to get an angry phone call from the parents. But the next day, Sam turned in his homework perfect and on time, for the first time ever. He even asked me whether I would like to look at his collection of baseball cards. Those baseball cards are his most prized possession. He'd never shown them to me before.

"Then three weeks later, the parents finally did call," Tina told me. "I was so nervous! I was sure they were going to be angry with me for screaming at their son. But they weren't. They were calling to thank me. They didn't seem to know anything about that episode. They wanted to know what magic I had used to get Sam so energized about his schoolwork. I didn't know what to say. I didn't feel I could tell them what really happened."

That kind of confrontational, in-your-face approach would be precisely the *wrong* approach to use with most girls. "If I had done that with a girl, I'm sure she wouldn't have spoken to me for the rest of the semester, at the very least," adds Ms. Spencer. Teachers report more success with girls when they use a supportive, nonconfrontational approach.

Laboratory animals also exhibit sex differences in learning under stressful situations. Professor Tracey Shors and her colleagues at Rutgers, Princeton, and Rockefeller University have demonstrated that stress improves learning in males while it impairs learning in females.¹⁴ "Exposure to the stressor had diametrically opposed effects" on learning in females compared with males, Professor Shors has reported.¹⁵ She has also shown that exposure to stress enhances the growth of neural connections in the male hippocampus while it inhibits growth of connections in the female hippocampus. Shors has conclusively demon-

strated that the beneficial effect of stress on learning in males depends on *prenatal* masculinization of the male brain.¹⁶

Reports like these prove that there are innate differences in how females and males respond to stress. I still hear educators insist that if we just raised girls to play with trucks and boys to play with dolls, then most differences in how girls and boys learn would just go away. Laboratory animals don't get to play with trucks or with Barbies, so it's hard to use that argument to explain Professor Shors's findings. And if female laboratory animals learn differently than male laboratory animals do, isn't it reasonable to look for sex differences in how human children learn?

Professor Shors's work also ties into what we discussed earlier about gender differences in response to stress. Many young boys are energized by confrontation and by time-constrained tasks. Few young girls will flourish in high-pressure, do-it-in-five-seconds-or-you-lose formats. What application does that have for the schoolroom?

Recently I had the privilege of sitting in on Trent Anderson's seventh-grade English class at Stuart Hall for Boys, an all-boys school in San Francisco. Mr. Anderson had divided the class into teams. They had to answer questions about John Steinbeck's *The Pearl*.

"What did the doctor give Coyotito after Coyotito began convulsing? Team A!"

The boys in Team A huddled, whispering frantically. "Some white powder?" one boy said at last.

"NO!" Mr. Anderson said. "Team B!"

The boys in Team B whispered to one another. "A capsule? A capsule of medicine?" another boy ventured.

"NO!" Mr. Anderson said. "Team C!"

The boys in Team C talked with one another for a few seconds. "A few drops of ammonia, diluted in water," a boy said.

"YES!" Mr. Anderson said. All the boys in Team C high-fived each other and cheered. Then Mr. Anderson began calling on a particular boy from each team in turn. The team's score goes up

or down depending on whether the boy knows the answer. All the boys are called on at least once. That means it's not enough to have just one guy on your team who knows the book well. *Everybody* has to know the book or your team will lose. So the boys work together. They collaborate as a team to win the competition.

I've seen similar tactics used in other all-boys classrooms. Sometimes the teacher will put a ticking timer at the front of the class, allowing just ten or fifteen seconds for each answer before the timer emits a loud buzz. Sometimes Mr. Anderson will award certificates for a free pizza to the winning team. Other times he may announce that the winning team doesn't have to take the quiz on the book; all members of the winning team get an automatic A. The boys will study the material just because they don't want to let their teammates down.

This approach is not as useful for girls. Fewer young girls will get excited about the opportunity to shout out answers to questions in a time-constrained way. Girls are more likely to regard such an exercise as silly. Older girls will complain that the exercise forces them to focus on small details from the book when they'd rather talk about larger themes.

Amy Van Dragt—who teaches at an all-girls school, also in San Francisco—told me about her routine on test days. "I have the girls start by taking their shoes off, relaxing," she said. "We sit in a circle and just help each other chill for a few minutes. Then I pass out the tests. But I *never* use timed tests," Ms. Van Dragt said. "I let each girl have as long as she needs."

"What happens if all the other girls have finished, and one girl still needs more time?"

"Then I give her more time," Ms. Van Dragt said.

I think that makes sense. After all, in real life very few tasks are truly time-constrained in the sense that a few minutes matter. Unless you're a professional athlete or a soldier or a pilot, in most adult jobs if you need five or ten or fifteen more minutes to figure out the answer to a question, you can take that time. Ms. Van Dragt is de-stressing her classroom, by removing the

time constraints and having the girls kick off their shoes. That's a good way to keep stress from impairing the girls' test performance.

Rule of thumb: moderate stress improves boys' performance on tests—the boys do *better* than you might expect—whereas the same stress *degrades* young girls' performance on tests (this effect may be smaller in adult women than it is in school-age girls).¹⁷ Differences in the effect of stress on test performance may explain one of the most robust findings in educational testing: namely, that girls on average don't do quite as well as you might expect on standardized tests such as the SAT, based on their grades in school. The girl who gets straight A's in school doesn't necessarily get a perfect score on the SAT or even a score above the ninetieth percentile. Conversely, boys often do better than you would expect on time-constrained, stressful standardized tests such as the SAT. "That boy is so smart when he takes those standardized tests, but he just doesn't apply himself in class or when he's supposed to be doing his homework. He rarely gets anything better than a B."

A Different Sequence

In chapter 1, I related how—ten years ago—I started seeing a wave of young boys flooding my office. Each boy's parent carried a note from somebody at the school (teacher, guidance counselor, reading specialist) suggesting that Justin or Brett or Carlos or Simon might have ADD. I evaluated each of these kids to determine whether each one met the criteria for ADD. Some kids did meet the criteria; others did not. I've already mentioned how some of the boys who were sent to my office with a presumed diagnosis of ADD actually were normal boys who were sitting in the back of a class in which the teacher was a young woman who didn't talk very loud.

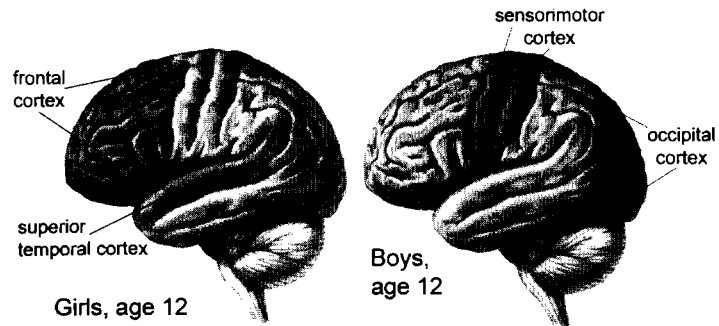
But there was another important difference that the school was overlooking. Girls and boys differ in their developmental

timetables. Those differences in brain maturation are detectable while the baby is still in its mother's womb.¹⁸

The differences are larger and more complex than you might expect. Researchers at Virginia Tech examined brain activity in 508 normal children—224 girls and 284 boys—ranging in age from two months to sixteen years. This study, the largest and most carefully executed of its type, demonstrated that various regions of the brain develop in a different *sequence* in girls compared with boys. It's not correct to say, "Boys develop along the same lines as girls, only slower." The truth is more nuanced. These researchers found that while the areas of the brain involved in language and fine motor skills mature about six years earlier in girls than in boys, the areas of the brain involved in targeting and spatial memory mature about four years earlier in boys than in girls. These researchers concluded that the areas of the brain involved in language, in spatial memory, in motor coordination, and in getting along with other people develop in a "different order, time, and rate" in girls compared with boys.¹⁹

Their conclusion—that different areas of the brain develop in a different sequence in girls compared with boys—is supported by other studies looking at specific skills in young children. Researchers in France watched two-year-olds building bridges out of blocks. At that young age, they found that a boy is about three times more likely than a girl to be able to build a bridge out of blocks.²⁰ On the other hand, researchers at Wellesley College found that three-and-a-half-year-old girls could interpret facial expressions as well as or better than five-year-old boys could.²¹ So it's too simple to say that boys mature more slowly than girls do. Boys mature faster than girls in some areas, slower in others.

This leads us to another important point. *Sex differences in childhood are larger and more important than sex differences in adulthood.* By thirty years of age, both females and males have reached full maturity of all areas of the brain. When people over thirty years of age think about their own experience as adults,



Girls, age 12

Boys,
age 12

In girls, the superior temporal cortex and the frontal cortex mature earlier than areas involved in visuospatial processing and targeting. In boys, the areas of the brain involved in visuospatial processing and targeting develop earlier than other areas of the brain.

they may not see enormous sex differences in how women and men learn new material or master new tasks. So some adults assume that if they're not seeing big differences in how adult women and men learn to do new things, then there probably aren't big sex differences in how six-year-old girls and boys learn. That assumption is wrong.

Thirty years ago, when kindergarten was all about finger-painting and singing together and playing duck-duck-goose, sex differences in brain maturation didn't matter as much. Thirty years ago, kindergartners weren't expected to sit in chairs and do pencil-and-paper exercises all day long. First-graders had to do that, but kindergarten was more about socialization, about learning to get along with other kids. Thirty years ago, the primary mission of kindergarten was to acclimate the kid to school, not to get a jump start on academics.

No more. Today, educators throughout North America make no apologies for the academic character of the twenty-first-century kindergarten. The curriculum of kindergarten today is essentially the first-grade curriculum of thirty years ago.²² The objective of kindergarten today is simple: achieving literacy and numeracy. While that sounds good, there's a problem. Many

five-year-old boys just don't have the fine motor skills necessary to write the letters of the alphabet. Remember that the Virginia Tech researchers found that boys are *years* behind girls in the development of the area of the brain responsible for fine motor skills. In the jargon of educational psychology, the objectives of today's academically oriented kindergarten are not *developmentally appropriate* for many kindergarten boys.

The unspoken assumption behind the push to teach reading and writing in kindergarten is that earlier exposure will guarantee improved performance. But that assumption is valid only if what you're teaching is developmentally appropriate for your students. If you try to teach your seven-year-old kid to drive a car, you won't end up with a better driver. Starting kids reading before they're ready to read can actually boomerang and turn them *off* to reading.

When I share this with kindergarten teachers, they often respond, "Oh, we understand that! We understand that not every five-year-old is ready for reading, not ready for paper-and-pencil exercises and all that. We customize what we do to each child's individual needs."

That sounds nice. But what does it really mean in practice? What it actually means is that many modern kindergartens are divided in two. Over here, with the teacher, are the kids who can handle the academic curriculum of today's accelerated kindergarten. These kids are sounding out words, writing short sentences, remembering to put a capital letter at the start of the sentence and a period at the end. This group is mostly girls with a few precocious boys.

Over there are the kids who aren't ready to handle the accelerated academic curriculum. Those kids are playing with blocks or putting together puzzles—activities most of us recognize as traditional kindergarten activities from our own childhood.

A five-year-old boy may not be very good at fine motor skills such as writing the letters of the alphabet, and he may not be developmentally ready to learn about vowels and consonants. But there's one thing most five-year-old boys are very good at:

figuring out that they've been put in the "dumb group." And they don't like it.

That's what happened to Matthew, the boy whose story opens chapter 1. Before starting kindergarten, Matthew had always been the star, the leading player in the drama of his life. "He was always ready to try anything," his mother told me. "Last July, I suggested to my husband that we paddle a canoe across the Potomac, at White's Ferry. My husband didn't want to. But Matthew did, so we rented a canoe, just me and five-year-old Matthew, and we had a great time. The rental place gave him this little plastic paddle. He loved it. He talked about it for days afterward. But now it's different. It's like he's turned into a completely different kid. He never used to throw temper tantrums before, but he's throwing a tantrum almost every morning now, for no reason, refusing to get dressed, refusing to go to school. I have to carry him kicking and screaming into the car, and then drag him from the car into the school. You'd think they were torturing him or doing something horrible. But they're not. I've sat in on his kindergarten and there's nothing wrong with it. The teacher is wonderful, in fact. She's very gentle, very patient. I've talked with her many times now, and she's reassured me that this is nothing unusual. She keeps saying I shouldn't worry. But I'm still concerned. Matthew's starting to hate school."

While Matthew's reaction was extreme, many studies now have shown that when the main emphasis in kindergarten is on learning to read at the expense of other less structured and more developmentally appropriate activities, many boys tune out and turn off. Those boys develop negative feelings toward school that are likely to persist and color the child's entire academic career.²³ Deborah Stipek, now dean of the School of Education at Stanford University, has shown that boys who fail to do well in kindergarten develop "negative perceptions of competence," and those negative attitudes are "difficult to reverse as [they] progress through school."²⁴

When Matthew's mother, Cindy, told me how her son was

throwing a tantrum every morning, I advised her to take him out of kindergarten and put him back in preschool. This is the educational equivalent of a medical emergency, I told her. One more month in that kindergarten and his whole attitude toward school might be irreparably damaged.

Cindy refused. She kept saying, "But he's bright. Who's ever heard of a bright child flunking out of kindergarten?"

He's not flunking out, I said. This kindergarten is just not developmentally appropriate for him.

Cindy insisted on keeping Matthew in kindergarten. A month later she told me that the problem had been solved: Matthew wasn't throwing tantrums anymore. The teacher said that he was behaving better in class.

One year later Mom was back with Matthew, now in first grade. This time Cindy had one of those papers from the school. "Matthew is inattentive and easily distracted in class . . . Would you please evaluate to determine whether Matthew might meet criteria for ADHD [attention deficit hyperactivity disorder] . . ." And of course the teacher was absolutely right. Matthew *was* inattentive and easily distracted in class. He was now firmly convinced that school was just one big bore, an annoyance to be endured for a few hours each day until that wonderful moment when school let out and he could go home and do all the fun things he enjoyed. As far as Matthew was concerned, each day really began only when school ended.

"What's your favorite thing to do at school?" I asked.

"Recess," he said.

"What's your next favorite thing at school?" I asked.

"Lunch," he said.

There are no good choices for parents at this point. "Retention in grade," holding Matthew back a year, won't solve the problem at this stage. You've already missed your best chance. There's a big difference between *delaying* a child's entry to kindergarten versus his *repeating* first grade a year later. Studies have shown that if you delay entry into kindergarten for a boy like Matthew, he'll do much better than if you start him

at age five; but if you let him start kindergarten when he's not ready for it, and then you make him repeat first grade when the time comes, he may do *worse* than if you didn't make him repeat.²⁵ The stigmatizing effect of having to repeat a year of school has a long-lasting effect that is not easily purged. The boy labels himself as "dumb," and he believes that label, and no amount of talking on your part will change his mind.

Mom and I weren't getting along at this point, so I referred Matthew to a child psychiatrist. The psychiatrist said that Matthew had ADHD *and* depression. He prescribed Ritalin and Prozac. When that didn't help, the specialist switched Matthew to Adderall and Wellbutrin. That didn't work either. The following month Matthew slapped a student in his first-grade class, resulting in a two-day suspension. When the psychiatrist heard about that, he added clonidine, a sedative, assuring Mom that the new medication would prevent Matthew from acting out. So now six-year-old Matthew was on *three* medications.

Matthew's story is all too common today. A report published in 2003 found that the proportion of young children on anti-depressant medications has more than tripled in the past ten years.²⁶ We're not talking now about medications for ADHD such as Ritalin and Adderall, we're talking about medications for *depression*, such as Prozac, Zoloft, Paxil, Celexa, Lexapro, Wellbutrin, Pamelor, Elavil, and so forth. I have to wonder how many of these young children, boys especially, are depressed because they're trapped in a school that just is not geared to their needs. And they have no way out.

Girls Are Shortchanged, Too

When I speak to groups about differences in how girls and boys learn, I talk so forcefully about the harm done to boys in an overly academic kindergarten that I am often pegged as a "boys' advocate." But girls are being shortchanged as well, although the effects show up differently. The failure of schools to recognize differences in how girls and boys learn affects each sex

at different ages. Boys are harmed most in kindergarten and the early elementary years.

For girls, the negative effects of gender-blind education become manifest in the middle school and high school years. Gender-blind education leads paradoxically to a strengthening of gender stereotypes, with the result that fewer girls take courses in physics, computer science, trigonometry, and calculus.

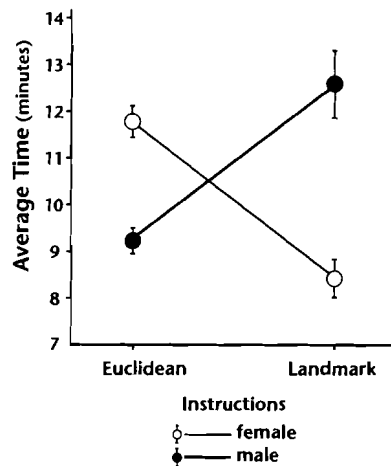
Why is gender-blind education harmful to girls? To understand the answer you have to know more about the differences in how girls and boys learn. Sex differences in learning aren't confined to differences in hearing, or differences in responses to confrontation, or differences in developmental timetables. There are consistent and significant brain-based sex differences in how girls and boys learn geometry and how they understand literature. Let's look more closely now at gender differences in how girls and boys learn geometry and number theory.

Recall our discussion of gender differences in how females and males give directions. In chapter 2 we learned that girls are more likely to use visible landmarks whereas boys are more likely to use compass directions: north, south, east, west. Psychologist Deborah Saucier and her colleagues wanted to see whether females could use the male-typical strategy (compass directions), and whether males could use the female-typical strategy (landmarks). They recruited students and divided them randomly into two groups. Both groups had the same task: to find an unknown location on campus, using directions provided by Dr. Saucier. In one group, both the females and the males were given directions in terms of landmarks. "Go straight down this road until you get to the small house with the green door. Then turn right and walk down the sidewalk until you get to College Avenue. Make a left onto College Avenue," and so forth. In the other group, both the women and the men were given compass directions: "Go north one block, then turn east and walk two blocks, then turn north," and so forth.

The results were dramatically different. When women and

men were both required to use compass directions, the women made many more errors than the men did, and the women took substantially longer to get to the target than the men. But when the volunteers were given visible landmarks rather than compass directions, the women did much better: the women made fewer errors than the men did and reached the target faster. When the researchers assigned a similar task using a video game, the differences were even more dramatic: women did much better using landmarks rather than compass directions whereas men did better using compass directions instead of landmarks.²⁷

What's going on in the brain during these tasks? Georg Grön and his colleagues at the University of Ulm in Germany rigged up a nifty video game apparatus to answer that question. They created virtual reality goggles that allowed volunteers to play a video game while lying in an MRI brain scanner. In the video game the volunteer was trying to find a way out of a maze.



Males outperform females on spatial tasks when the task is framed in Euclidean terms (north, south, east, west); females outperform males when the task is geared to landmarks. Note the large differences between the sexes and the small variation within the sexes (from Saucier et al., 2002).

Their findings: females and males use completely different areas of the brain for the spatial task. Women use the cerebral cortex to solve the maze. You'll recall that the cerebral cortex is the most advanced area of the brain. We use our cerebral cortex for talking, for understanding, indeed for most of our interactions with the outside world. Men, on the other hand, do not use the cerebral cortex during the spatial task. Instead, they use the hippocampus, a phylogenetically primitive area of the brain that is prewired for spatial navigation.²⁸

The unique function of the hippocampus was first demonstrated in the 1970s by John O'Keefe and Lynn Nadel. These neuroscientists demonstrated that the hippocampus functions as a *cognitive map*.²⁹ They found they could map an animal's environment right onto the animal's hippocampus. When the animal moved in a straight line north to south across a room, the locus of activity in the hippocampus moved "north to south" as well, so to speak, tracking the animal's movement. Research over the subsequent three decades has confirmed O'Keefe and Nadel's hypothesis: The hippocampus is prewired to function as a dedicated microprocessor for spatial geometry, at least in males. O'Keefe and Nadel studied only *male* laboratory animals.

Remarkably, scientists have found sex differences in the performance of laboratory animals on spatial tasks that are similar to sex differences found in humans. Female laboratory animals use landmark cues while males use Euclidean cues ("compass directions").³⁰ Scientists have even proven that female laboratory animals use the cerebral cortex for spatial tasks while male laboratory animals use the hippocampus³¹—just as Dr. Grön's group showed to be the case in humans. Again, in view of the sex differences in how female and male laboratory animals navigate mazes, it's hard to argue that similar sex differences in humans are created by human culture. These differences are genetically programmed, not culturally constructed.

These differences also have major implications for teaching, especially for math and geometry. As I said, the hippocampus is

an ancient nucleus buried deep in the brain, with no direct connections to the cerebral cortex. And that's the nucleus boys use for math problems. That may help explain why boys are comfortable with math "for its own sake" at a much earlier age than girls are. You can fascinate a group of twelve-year-old boys by getting them to think about transcendental numbers such as Φ (pronounced "Fie," not to be confused with π). Here's a good way to introduce Φ to twelve-year-old boys.

I'm thinking of a number between 1 and 2.

The reciprocal of that number is equal to that same number minus 1.

We can write that statement in equation form, like this:

$$1/x = x - 1$$

Can you tell me what number I'm thinking of?

Some boys may think this is an easy problem. They'll call out answers. "It's $1\frac{1}{2}$," one boy might say. But that's not the right answer. The reciprocal of $1\frac{1}{2}$ is $\frac{2}{3}$, and $\frac{2}{3}$ does not equal $\frac{1}{2}$ (which is $1\frac{1}{2}$ minus 1).

After a couple of minutes, one of the boys will figure out that the equation above can be simplified if you multiply both sides by x , yielding:

$$1 = x^2 - x$$

Subtracting 1 from both sides yields:

$$x^2 - x - 1 = 0$$

You can then use the quadratic formula to solve for x :

$$x = (1 \pm \sqrt{5})/2$$

We're looking for a number between 1 and 2, so we choose the positive solution:

$$= (1 + \sqrt{5})/2$$

$$= 0.5 + 1.11803398874989 \dots$$

$$= 1.61803398874989 \dots$$

You can tell the boys that mathematicians refer to this number as Φ . Sure enough, this number Φ has the characteristic we

were looking for: the reciprocal of this number exactly equals this number minus 1:

$$1/1.61803398874989 \dots = 0.61803398874989 \dots$$

Now you change the subject (or appear to change the subject). You tell them about the Fibonacci series. A Fibonacci series is formed by adding two numbers to yield a third number, and reiterating the process to form a sequence. The simplest Fibonacci sequence is:

$$1 + 1 = 2$$

$$1 + 2 = 3$$

$$2 + 3 = 5$$

$$3 + 5 = 8$$

$$5 + 8 = 13$$

$$8 + 13 = 21$$

$$13 + 21 = 34$$

This yields the series: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144 . . .

Now, ask your boys to take each number in the Fibonacci series and divide it by the number before it, starting with 3, and list their answers.

$$3/2 = 1.5$$

$$5/3 = 1.666 \dots$$

$$8/5 = 1.6$$

$$13/8 = 1.625$$

$$21/13 = 1.61538 \dots$$

$$34/21 = 1.61905 \dots$$

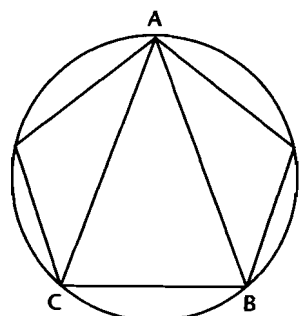
$$55/34 = 1.61764 \dots$$

$$89/55 = 1.61818 \dots$$

$$144/89 = 1.617977 \dots$$

$$233/144 = 1.61805 \dots$$

Now you can point out to the boys (if they haven't noticed already) that this process seems to be converging on Φ . Why is that? you ask them. While they're thinking about that, show them a pentagon with a triangle inscribed in it. Have them look at the triangle. Let them know that the side of the triangle is exactly equal to Φ times the length of the base. Why is that? Why does Φ keep popping up where you don't expect it?



$$AB/BC = \text{PHI}$$

While the boys are pondering this question, you can step over to the girls' classroom to cover the same material. But to get girls the same age* excited about "pure" math and geometry, you need to connect it with the real world. Remember that in girls, geometry and "pure" math functions appear to be localized in the cerebral cortex, the same division of the brain that mediates language and higher cognitive function. So you need to tie the math into other higher cognitive functions. Here's how you might teach the same lesson about Φ and Fibonacci numbers to girls. You'd begin by explaining how a Fibonacci series is formed:

$$1 + 1 = 2$$

$$1 + 2 = 3$$

$$2 + 3 = 5$$

$$3 + 5 = 8$$

$$5 + 8 = 13$$

$$8 + 13 = 21$$

$$13 + 21 = 34$$

And so forth. You write down the first twelve numbers in the Fibonacci series: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144 . . . In preparation for this session, you've already asked your girls to

*College women may be just as interested in "pure numbers" as college men are. But few twelve-year-old girls are interested in disembodied numbers for their own sake. Remember the Virginia Tech study on sex differences in how the brain develops (see note 19).

bring in any of the following: artichokes, sunflowers, pineapples, pinecones, delphiniums, black-eyed susans, field daisies, African daisies, and Michaelmas daisies. Start with the flowers. (We start with flowers not because flowers are "feminine" but because it's easier to count the number of petals on a flower than it is to count the rows of bracts on a pinecone.) Count the number of petals. You'll find that the number of petals is almost always a number in the Fibonacci series: 8 petals for delphiniums, 13 for double delphiniums, 21 for black-eyed susans, 34 for field daisies, 55 for African daisies and Michaelmas daisies.³²

Then you can move on to the artichokes, sunflowers, pinecones, and pineapples. These are more complicated. In these, you're studying the number of rows, or bracts, rather than the number of petals. The number of rows counted vertically or obliquely will, again, be a number in the Fibonacci series. You can get more examples like these from the book *Fascinating Fibonacci* by Trudi Hammel Garland. Older girls may enjoy *The Golden Ratio: The Story of PHI, the World's Most Astonishing Number* by Mario Livio. Or you might even let them read Dan Brown's suspense thriller *The Da Vinci Code* and challenge them to verify or invalidate each of the many claims made in that book about Φ and the Fibonacci series. Show them examples of natural phenomena that manifest Φ , such as a dying leaf or a spiral nebula. At this point you might also mention the fact that

$$\Phi - 1 = 1/\Phi$$

But don't expect the girls to ooh and aah over that fact the way the boys do. Twelve-year-old girls are likely to be more interested in the real-world applications of number theory than in remote abstractions. That difference reflects the fact that the girls are using the cerebral cortex while the boys are using the hippocampus. The girls are also more likely to be interested in the beliefs of the ancient Pythagoreans regarding the magical and mystical properties of Φ .

Now these girls will start asking questions. Why do numbers in the Fibonacci series keep showing up when you count the petals on a delphinium or the bracts on a pinecone? Why is it

that a dying poinsettia leaf and a spiral nebula share similar structural features? How can abstract number theory explain these similarities? And you will have accomplished something that some of the gender experts we discussed in chapter 1 have deemed impossible: you've got a classroom of twelve-year-old girls excited about number theory.

I like this example because it illustrates the basic point I'm trying to make. *There are no differences in what girls and boys can learn. But there are big differences in the best ways to teach them.* At the end of the day you will have taught both girls and boys about the properties of Φ , using the Fibonacci series as an introduction to number theory. Girls and boys are equally capable of learning that material. But if you teach that material the way it's usually taught (the way we taught it to the boys in my example above), then many of the girls will tune out and be bored. Conversely, if you bring in pinecones for the boys, many of the boys will snicker and start throwing the pinecones around like hand grenades. "Incoming!"

Facts, Fiction, and Feelings

In chapter 2 we discussed brain imaging of emotion in girls and boys. We reviewed research done at Harvard University showing that activity in the brain of the teenage girl associated with negative emotion is localized to the cerebral cortex, the same part of the brain we use to comprehend and generate language. In teenage boys, brain activity associated with negative emotion is localized in the amygdala, a phylogenetically primitive nucleus at the base of the brain that makes few direct connections with the cerebral cortex.

That gender difference in brain organization has clear implications for education. In particular, questions of the form "How would you *feel* if . . ." don't work well for most boys. That question requires boys to link *emotional* information in the amygdala with *language* information in the cerebral cortex. It's like trying to recite poetry and juggle bowling pins at the same time. You

have to use two different parts of the brain that don't normally work together. When most teenage boys experience intense feelings, they talk *less*.

So how does this affect how teachers should teach literature to girls and boys? Girls and boys like to read different things, for starters. That's one of the most consistent findings in education research. Most girls prefer fiction: short stories and novels. Boys are more likely to choose nonfiction: descriptions of real events—battles or adventures—or illustrated accounts of the way things work, like spaceships, bombs, or volcanoes.³³ "Girls tend to prefer books where they can be analytical about a character's motives and behaviors. Boys tend to prefer action," says Victoria Ehrhardt, an English teacher in Lewis County, New York. "Boys and girls have different reading interests," agrees Judy Hayn, professor of education at Loyola University in Chicago. She adds that "girls like stories about experiences that might happen over one summer and the emotional agonies that a character endures. Boys want stories with male protagonists that are exciting." "War stories and books about struggles really resonate with boys," adds Ehrhardt. "They see life as a battle, and war stories appeal to that side of their nature."³⁴

Good teachers do their best to split the difference in educational style. They look for books that are halfway between *Are you There, God? It's Me, Margaret* (for girls) and, say, *The Jackie Robinson Story* (for boys). They're looking for books that appeal equally to both girls and boys. Problem: there are very few such books, especially for children in the early elementary school years. William McDonald, assistant superintendent for curriculum in Montgomery County, Maryland, told me that at least 80 percent of books targeted for early readers fall into the category of "girls' fiction." This preference for "girls' fiction" in the early reading curriculum has arisen not because girls' fiction is the best thing for all young children to read, McDonald says, but because girls' fiction is what appeals to the women who teach young children. Over 95 percent of teachers in kindergarten through third grade are women, McDonald told me. Nonfiction

books targeted toward boys, geared toward early readers, "just aren't available," according to McDonald. "And when they are available, they often go out of print as soon as we start to use them."³⁵

The difference lies not only in what books you choose to teach, but in how you teach them. Think about role-playing exercises, to consider one example. These sorts of exercises are popular in middle schools and high schools. Role-playing exercises work well for girls. For example, if you're teaching *Are You There, God? It's Me, Margaret*, one girl could be Margaret, another could be Margaret's mother, another could be Margaret's father, and another could be Margaret's grandmother. They could then discuss the pros and cons of moving from Manhattan to New Jersey, each girl talking in the voice of the assigned character. Or how about the fact that Margaret's mother was raised Protestant and her father was raised Jewish? "How would you feel if you were Margaret's mother and Margaret asked you whether she should join the JCC [Jewish Community Center] or the YMCA?" Let "Margaret's mother" answer, and then let's hear from Margaret's maternal grandmother (who is a devout Christian) and paternal grandmother (who is Jewish and proud of it), with different girls playing each role. Eleven- and twelve-year-old girls will take this very seriously and really gain a deeper level of understanding, not only of the book, but of their own feelings about religious heritage, relatives who don't get along with each other, and similar situations.

"How would you feel if you were this character?" That sort of role-playing exercise works for most girls. It gets them into the story. But that type of exercise doesn't work for most boys. They'll tell you it's dumb. "I'm not a grandmother, I'm never gonna be a grandmother, I'm not gonna pretend I'm a grandmother." So what *does* work to get boys into literature?

Three years ago I had the privilege of sitting in on Ben Williams's English class at the Georgetown Preparatory School. "G Prep" is a boys' school in Bethesda, Maryland. Mr. Williams

is chairman of the English Department there. He had assigned *Lord of the Flies*.

I myself had to read *Lord of the Flies* when I was in Mrs. Buehler's English class thirty years ago at Shaker Heights High School, just outside of Cleveland. One of my assignments was to write an essay describing "How would you feel if you were Piggy?" (the outcast boy, stranded with other boys on a tropical island). I expected Mr. Williams to assign a similar topic to his boys. After all, that's the way *Lord of the Flies* is usually taught, according to the many study guides available for this book.

But that's not what Mr. Williams did. "Let's see your maps," he said. Mr. Williams had given the boys a very different assignment: prepare a three-dimensional map of the island.

Making a map of the island is not an easy assignment. There's no map in the book. The island does have many unique features, but how to make a map?

As these boys learned firsthand, you can use the book to construct an accurate map, but only if you read the text with care. For instance, in the closing chapter you'll find the sentence, "The sunlight was slanting now into the palms by the wrecked shelter." You know that the wrecked shelter is near the beach. It's late in the evening. Knowing that the sun sets in the west, you deduce that if the beach were on the east side of the island, it wouldn't be possible for sunlight to be slanting into the palms late in the evening because the forest would block the sunlight. The beach can't be on the south side of the island; if it were, the mountain would block the sunlight. Nor can it be on the north side of the island, or the forest would block the sunlight. The beach has to be on the west side of the island.

Once you've figured that out, you can use other clues in the book to triangulate the location of the mountain, the lagoon, the Castle Rock, and so forth. The boys had each made three-dimensional maps using papier-mâché, cardboard, and paint. The maps were similar, but there were a few points of difference. The boys had to hammer out the differences, looking up clues

again in the book. "On page 23, it says that Ralph followed the outline of the crags up the mountain, so that part of the beach has to be right next to the mountain."

"Yeah, but on page 14 it says that the beach was 'miles in length.' So you don't really know exactly where those crags are." And so forth.

At this point I wanted to interrupt and say, "Mr. Williams, are you out of your mind? *Lord of the Flies* is not a travel guide or a set of clues to buried treasure. It's a book about the dark recesses of the soul! What does all this geometry and mapmaking have to do with that? You're missing the whole point of the book!"

But I noticed that the boys were really involved in the assignment. Mr. Williams was building on these boys' natural interests and their strengths: spatial relations, mapmaking. He was keeping the assignment objective. He wasn't asking them, "How would you feel if . . ."

And the skills these boys were learning are useful: carefully deconstructing a text, finding clues hundreds of pages apart, and using those clues to assemble a coherent picture. That sort of puzzle-solving is a skill that more of us could use. Imagine what might have happened a few years ago if more shareholders had read through WorldCom's financial reports and noticed, "Hmm, this line on page 21 doesn't seem to fit with what's implied in the second paragraph of page 76 . . ." Analytical deconstruction of a text is at least as useful as being able to write an imaginative essay about "how you would feel" in a given situation.

Furthermore, the boys were really learning the text. It's impossible to do this mapmaking assignment without reading closely and attentively. I decided to get out my old copy of *Lord of the Flies* to see whether I could make the map myself. I didn't want to read the whole book. I thought I'd just skim it quickly, look for clues, and draw a map. I couldn't do it. The words "north," "south," "east," and "west" never appear in the book. The only way to make the map is to pay careful attention to every detail. I myself have a tendency when I'm reading a novel to skip long descriptions and just go to the next bit of dialogue.

But you can't do that if you want to draw the map. In fact, you have to read the descriptions more carefully than you read the dialogue. So I stayed up until 3 A.M., reading the book straight through. It's a much better book than I remembered from Mrs. Buehler's class—maybe because I was alienated by the assignment. Or maybe I was just too young to appreciate it.

What other strategies work for getting boys excited about reading? Recall the old idea about boys preferring fact to fiction. Some educators have found that assigning articles from the daily newspaper is a good motivator for boys. Edward DeRoche, director of the International Center for Character Education at the University of San Diego, has reviewed about two dozen studies of the effectiveness of newspapers for motivating below-average readers, especially boys. The studies show that "students in such classes score significantly higher in spelling, vocabulary development, and comprehension than comparable students who did not use newspapers." He adds, lyrically, "Something happens to teachers and students when they encounter newspapers together. The four walls of the classroom open to the real world. The class comes alive. Relationships change. Conversations are enriched."³⁶ DeRoche has found that language arts classes based on newspapers are effective not only at the high school level, but all the way down to the early elementary years.

There are several problems, though, with using the approach of "fiction for the girls, nonfiction for the boys." I'm hearing about middle school reading classes where the girls are reading John Steinbeck and F. Scott Fitzgerald while the boys are reading *Sports Illustrated*. Kids notice that contrast. Boys start to believe that maybe great literature is only for girls.

In fact, there is plenty of great literature that appeals to boys in middle and high school. Few American teachers assign it anymore, though. Boys *do* like fiction, if it's the right kind of fiction: strong male characters doing unpredictable things. Hemingway, Dostoyevsky, and Mark Twain, for starters.

Last summer I met with Darryl, who had just finished seventh grade. "How'd you do in school this year?" I asked.

"Great," Darryl said. "I got straight A's, except for a C in reading."

"How come a C in reading?" I asked.

"It was boring," Darryl said.

"What'd they ask you to read?"

"Well—" Darryl scrunched up his eyes, as though trying to recall a painful repressed memory. "There was *Of Mice and Men*, which is about this retarded guy and all the sad things that happen to him, and then he dies. Then we had to read *Flowers for Algernon*, which is also about a retarded guy, actually, and how he gets smart and then he gets dumb again, and then he dies, too, actually."

Both the books Darryl mentioned are "touchy-feely" books in which weak, disabled male characters are helpless to change their miserable destiny. Most boys don't care for those kinds of stories. Most boys prefer to read about strong male characters who take dramatic action to change their world. There's plenty of great literature that fits the bill. Mark Twain's *Huckleberry Finn* is a good place to start. *For Whom the Bell Tolls* by Hemingway is another good choice. How about *Treasure Island* or *Robinson Crusoe*? Classic boys' literature is "classic" for a good reason.

Critics object that this approach reinforces gender stereotypes. I respond that the most pernicious gender stereotype is the one that says boys don't like to read. Let's break down that stereotype first. Get every child excited about learning. Once kids have discovered for themselves that reading can be fun and exciting, then you can worry about broadening their taste in literature.

Right now I'm seeing many boys who have never had the experience, not even once, of reading a book that really excites them. They've never read a book that punched them in the gut. They've never cried while reading a book. They have no clue how powerful books can be.

The first priority of schools must be education. Social engineering comes second.

When Is an A Not an A?

Remember Melanie, the gifted student who wanted to take physics her senior year? One of the things about Melanie that always impresses me is her willingness to try something new. She is supremely self-confident. In that respect, Melanie is, unfortunately, not your typical girl.

Beth is another girl I know. Beth is every bit as smart as Melanie, but she doesn't have Melanie's self-confidence. Like Melanie, Beth "aced" biology and was a favorite student of Ms. Griffith. But when Ms. Griffith suggested that Beth sign up for physics, Beth hesitated. "I just don't think I'm smart enough for physics," Beth said. "I've never done anything like that, and I don't want to risk getting a B or worse on my transcript." She ended up taking psychology in her senior year instead of physics.

Girls on average outperform boys in school (as measured by report card grades), in most subjects and in all age groups.³⁷ Because girls do better in school, one might imagine that girls would be more self-confident about their academic abilities and that they would have higher academic self-esteem. But that's not the case. Paradoxically, girls are more likely to be excessively critical in evaluating their own academic performance. Conversely, boys tend to have unrealistically high estimates of their own academic abilities and accomplishments.³⁸

Those are some of the paradoxes teachers face: the girl like Beth who gets straight A's but has no real confidence in her own abilities; the boy who's getting B's and C's but thinks he's brilliant. That leads us to a basic difference in teaching style for girls versus boys. You need to encourage girls and build them up. Boys on the other hand more often need a reality check. You have to make boys realize that they're not as brilliant as they think they are and challenge them to do better.

The great mission of education is to enable every child to fulfill their potential, to discover that corner of the field of knowledge they can call their own. Almost every child is a gifted child, I believe. The trick is to discover where your child's talents lie.

Our educational system isn't doing very well in this regard. Girls and boys are being pushed into pink and blue cubbyholes regardless of their individual aptitude. And this pink-and-blue stereotyping is worse now than it was twenty years ago. Twenty years of gender-blind education has not ameliorated gender differences in important educational outcomes; in some cases it has exacerbated them. A smaller proportion of boys now study subjects such as advanced foreign languages, art, and music, and a smaller proportion of girls study advanced math, computer science, and physics.³⁹

In the closing chapter, I'll suggest strategies that have been shown to break down gender stereotypes in education, by *embracing* gender differences.



Contemporary culture encourages precocious sexuality. Too often popular culture and peer groups, rather than parents or other responsible adults, call the cadence in contemporary teenage life.

—Professor Joan Jacobs Brumberg, Cornell University¹

There was no sense of there needing to be a connection. No boyfriend-girlfriend. Used to be, you know, "Will you still love me tomorrow?" There is no tomorrow. It's all today. "Meet me after study hall at 4, we'll sleep together," and then on to the next partner tomorrow. Slam, bam, thank you ma'am.

—Michelle Burford, journalist, describing her interviews with teenagers²

I don't kiss girls on the mouth because if I'm not in a relationship why should I kiss?

—Zachary, age seventeen, talking about "hooking up"³

Tina and Jimmy

Tina Jimenez faced a potential triple whammy when she started ninth grade. Ninth grade at a new school isn't easy for anybody. Everybody's trying to figure out who's who, who's cool, where do I fit in. But in addition to the challenge of a new

school, Tina also had the additional burden of having just moved to the area, not knowing anybody, and also of belonging to a minority group with almost no representation at her new school. Her family had just moved to the Washington area from Miami, Florida. Both her parents had immigrated to the U.S. in the 1970s from the Dominican Republic.

Being a dark-skinned Hispanic girl at Seneca Valley High—which is overwhelmingly white—might have been a major problem for some girls, but Tina made friends easily. Three weeks into the new school year she was off to a good start. Her soccer teammates were impressed by her fearlessness on the field. She was a skillful player, but she didn't make a big deal about it. The other girls included her in everything they did, adopting her as one of their own.

She and most of the other soccer girls were invited to a party the last Saturday in September at a large house in the older, "nicer" section of Germantown. Tina stayed close to her friend and soccer buddy Jennifer, a tenth-grader. After they had been at the party for half an hour, Tina noticed an older boy staring at her. "Who's that?" she asked Jennifer.

"Who's what?" Jennifer shouted over the music.

"That blond guy over there, wearing the Redskins sweat-shirt," Tina said.

"Oooh. That's Jimmy. Jimmy Mandeville. Senior. Football player. Not so great as a football player. But in other departments he's supposed to be a *monster*," Jennifer winked.

Tina rolled her eyes and shook her head. "I'm *totally* not interested," she said.

Jimmy came over to them, his eyes fixed on Tina. "Hi," he said. His breath smelled of beer—which was not surprising, as he was holding an open Budweiser can in his right hand.

"Hi," both girls said.

Jimmy looked Tina up and down, his glassy eyes lingering on her chest. He was nodding his head in time to the beat of the music. "Wanna hook up?" he asked Tina, point-blank.

Tina's eyes went wide.

"Hey Jennifer!" Another boy appeared out of nowhere and grabbed Jennifer by the arm. "You gotta see this! Come on!" Jennifer gave Tina a sad look as if to say, Sorry to leave you all by yourself. And Jennifer was gone.

Please don't leave me, Jennifer, Tina thought. Her heart sank. Jimmy towered over her. The way he was nodding his head in time with the music began to irritate her. And, she was worried that he might spill some of his beer on her blouse.

"Wanna hook up," he said again, more a statement than a question.

"What do you mean?" she asked, stalling for time. She knew what he meant. But she didn't know how to say "no" without offending him or sounding lame. And as a freshman talking to a popular senior, she didn't have the confidence to just turn her back and walk away.

He snorted in amazement, then burped. "Freshman girl. Come on, I'll show you." He grabbed her by the arm, tossed the half-empty beer can onto the carpet, and pulled her into a small study lit only by a tabletop lamp on a desk. Tina saw another couple already in a corner of the room, fondling each other. Before she could say anything, Jimmy pulled her down to the floor beside the desk.

Jimmy groped at her breasts with one hand while he fumbled with the snap on her pants with his other. Tina's mind was in a whirl. This was crazy. How could this be happening? She wanted to push him off, to scream . . . but what would happen next? The other kids would laugh at her. *Freshman girl. Prude. Dork.*

"Come on," Jimmy said. "What's your problem?"

"I—I don't know how . . ." Tina said.

"Seriously? I'll show you," Jimmy said. "Come on!" he snapped, standing up and pulling her to a kneeling position, facing him. He unzipped his fly.

Tina had never given a boy oral sex before. She had heard other girls talk about it, of course, but the idea repulsed her. Why would any girl want to have a boy's you-know-what in her

mouth? Yuck. Now a total stranger, a boy she had never met, a boy she wasn't even attracted to . . .

Three minutes later it was over.

"Sweet. A little clumsy on your end, but sweet," Jimmy said. "With a little more experience, you could be dynamite, sister. See ya later." Zipping up his fly, he left the room without looking back.

"I couldn't see. Did you spit or swallow?" The question came from a skinny, pimply boy Tina had never seen before, who had apparently been watching from across the room. He giggled.

Tina thought she would vomit.

Hooking Up

Girls and boys face very different challenges when it comes to sex. Most young women enjoy physical intimacy more when it develops in the context of a loving relationship. Few women or girls really understand how different sex is for many men and for most boys. And the type of intimacy most common among teenagers today—hooking up—feeds into the worst kind of male sexuality. "Hooking up"—in case you didn't know—means being physically intimate with the understanding that *no* romantic relationship is implied and none is expected. It's sex without love, sex without the "bother" of a relationship.

"I can't tell you how many girls come in who are bereft about having had sex too soon," says New York psychologist Marsha Levy-Warren. She's seeing more and more teen and preteen girls whose emotional lives are in turmoil after some kind of sexual encounter. "They went to a party . . . they hooked up and did what they assumed everyone was doing. Then, they feel awful." Teachers and counselors are hearing about more and more sexual activity "of a detached, unemotional kind" among preteens and young teens. "I call it body-part sex," says Dr. Levy-Warren. "The kids don't even look at each other. It's mechanical, dehumanizing. The fallout is that later in life they have trouble forming relationships. They're jaded."⁴

"Oral sex is definitely a trend," says Professor Peter Leone of the University of North Carolina at Chapel Hill. "And it's happening in public because teenagers don't see it as a big deal." In some places "oral sex is taken so lightly that it's treated like a racy version of Truth or Dare or Spin the Bottle. . . . At one party, they played something called Make a Rainbow: the girls put on different colored lipsticks and took turns making a rainbow on all the boys' penises [with their lips]." Parties where oral sex predominates are sometimes called "chicken parties," because of the way all the girls' heads are bobbing up and down as they go down on their partner-of-the-moment.⁵

"A girl who did it for her boyfriend on a school bus was upset when she found a line of guys in school the next week wanting her to go down on them," says Tamara Kreinin, president of the Sexuality Information and Education Council. Another girl "went down on a bunch of guys at a party, and then the next week in sex ed, the other kids said, 'Amy was going down on guys at this party—she should teach the class.' The girl wasn't ready for that. I've had lots of kids tell me that they got this sick feeling in their stomachs the next day."⁶

Here's what one sixteen-year-old girl told me: "I was in a hook-up with this guy Zachary. I tried to kiss him and he wouldn't let me. That was weird. I mean, we were doing stuff way beyond kissing, but he didn't want to kiss. I asked him why he didn't want to kiss me and he was like—'I don't kiss girls on the mouth because if I'm not in a relationship why should I kiss.'"

Several boys have told me, in words similar to Zachary's, that they deliberately avoid kissing a girl when they're hooking up. These boys really believe that they're being virtuous—in a weird, twenty-first-century way—by *not* kissing the girl they're hooking up with. These boys believe that kissing a girl on the lips sends the message, "I'm interested in having a romantic relationship with you." They don't want to send that message. By keeping face-to-face interactions *out* of the encounter, by restricting their intimacy to fellatio or a groping "quick feel,"

these boys believe that they are at least being honest about their intentions—which are purely physical.

Another girl said: “I know it was just a hook-up. But it felt so right, I was sure he would call. I just couldn’t believe it when he never called. Then two weeks later, after I hadn’t heard from him at all, I saw him at a party and he wanted to hook up again. It made me feel dirty. Like he just wanted to, like, *use* me, use my body. Like I wasn’t really even there. Like he was just jerking off, using me instead of some porn magazine.”

Choosing Virginity?

The Centers for Disease Control recently reported that the number of high school seniors who say they’ve had sexual intercourse decreased between 1991 and 2001, from 54 percent in 1991 to 46 percent in 2001.⁷ That sounds like good news. Even if it’s not a huge change, it’s a change in the right direction. Isn’t it?

Shortly after the CDC report was released, *Newsweek* magazine ran a cover story entitled “Choosing Virginity.” The editors at *Newsweek* interpreted the CDC report to mean that teens have become less sexually active.

The *Newsweek* cover story makes for strange reading. The editors at *Newsweek* were determined to find teens who conformed to the editors’ interpretation of the CDC report, teens who would say that they have decided to remain sexually inactive. They had to look pretty hard. In the country town of Longmont, Colorado, they finally found a teenage couple who had mutually agreed not to engage in sexual activity until marriage. Longmont is a small town about forty-five minutes’ drive from Denver. “It figures you had to come all the way out here to find a virgin,” one local told them.⁸

In fact, the *Newsweek* staff had goofed. They had misunderstood the CDC report. It’s true that there has been a slight drop in the rate of *penile-vaginal* intercourse (which was the only sexual activity the CDC report measured). But that’s not because

teens have become less sexually active. It’s because the dominant form of teenage sexuality has changed. It’s not penile-vaginal intercourse anymore. It’s oral sex.

“Oral sex is the new second base,” says Alexandra Hall, a journalist who spent weeks interviewing students at suburban high schools in the Boston area. “Things are very, very different in high school from the way they used to be. Not different from two or three generations ago, but different from just five or ten years ago . . . [There has been a] profound shift in the culture of high-school dating and sex, with no-strings ‘hooking-up’ replacing dating.”⁹ “Kids don’t date nowadays,” agrees physician and bioethicist Leon Kass.¹⁰ “Traditional dating is dead,” concurs journalist and author Barbara Dafoe Whitehead.¹¹

Monica, a seventeen-year-old high school student, says that oral sex has become the new kissing. “People just assume you do it, because most everybody is.”

“No one I know considers oral sex to be sex at all,” says Rob, a senior at a private high school. “Oral sex just isn’t what [the word] ‘sex’ means.”

“Twenty years ago, teenage sex not only was much less pervasive, it also had a different context. That context was called ‘dating,’” says journalist Hall. “These days, something else is much more common. Single boys and girls go in a group to a friend’s house (where the parents may or may not be home), drink or smoke pot, then pair off and engage in no-strings ‘hook-ups.’ A week later, when the same scenario happens again, they hook up with someone else.”

Michael Milburn, professor at the University of Massachusetts, agrees that “the days of a boy showing up at a girl’s front door and meeting her parents before he takes her on a date are almost obsolete. Dating has been replaced by house parties and a culture of ‘hooking up.’”¹²

Don’t be fooled by talk of “the new abstinence.” The shift from penile-vaginal intercourse to oral sex signifies a shift from personal sex to impersonal sex. That shift is not a cause for celebration.

For many boys, and for some men, sex is an object in itself. The challenge for a teenage boy is to integrate the desires of the soul and spirit with the needs of the body, to weld his sexual drive to his desire for friendship and companionship. For many teenage boys (and for some adult men) that doesn't come easily. Some never reach that level of maturity. But there *are* some things a parent can do to help. First, though, we need to look more closely at basic differences between girls' sexuality and boys'.

Oxytocin, Testosterone, and Rape

What's the relation between love and sex? The neurochemical basis for both love and sex in females involves the hormone oxytocin, the same hormone released when a mother breastfeeds her newborn baby. "Oxytocin's effects on both [romantic] attachment and sexual behavior are estrogen dependent and gender specific," observes neuropsychologist Lisa Diamond, adding that there appear to be "more extensive oxytocin circuits in female than male brains."¹³ In males on the other hand the hormone underlying sexual attraction is not oxytocin but testosterone, the same hormone that mediates the aggressive drive.

The first brain-imaging study comparing brain areas activated in women and men during sexual arousal was published in 2002. Doctors found fundamental differences between females and males. The men showed lots of activation at the base of the brain, in the thalamus and especially the hypothalamus, while the women showed proportionately more activity up in the cerebral cortex.¹⁴ Another study, published in 2004 by researchers at Emory University, showed that sexually aroused men show more activity in the base of the brain compared to women, even when the women report *feeling* more sexually aroused.¹⁵

If you recall our discussion of cortical/subcortical in chapters 2 and 5, you'll recognize the significance of this finding: it sug-

gests that the sexual experience in women is "happening" more up in the cerebral cortex and is therefore more connected with the rest of what's going on in their mind. The sexual experience in men is less connected with the cortex, less connected with the outside world.

I've already mentioned the work of UCLA psychologist Anne Peplau on the difference in how females and males experience sexual desire. Peplau has concluded that "women's sexuality tends to be strongly linked to a close relationship. For women, an important goal of sex is intimacy; the best context for pleasurable sex is a committed relationship. This is less true for men."¹⁶

You can say that again. For many boys, as for some men, the sexual urge is closely tied to aggression. That's not surprising when you remember that both the sexual urge and the aggressive urge, in males, are mediated by testosterone. In one carefully designed study, a surprisingly high percentage—35 percent—of "normal" college men said that they not only fantasized about rape, they would actually rape a woman if they had the chance and they were sure they wouldn't be caught.¹⁷ In another study of "normal" college men, more than half of the men said they would actually rape a woman if they were assured of not being punished.¹⁸ These men are not Neanderthal cavemen. In fact, researchers have found no association between the liberality of a man's gender-role beliefs and the likelihood that he finds rape sexually appealing. Some men who are strongly in favor of equal rights for women, who approve of women in leadership roles, and so on also say that they would rape a woman if they had the opportunity. Nor is there any association, positive or negative, between a man's intelligence and the likelihood that he will be sexually aroused by depictions of rape.¹⁹ Highly intelligent men are no less likely to fantasize about raping a woman than are men of below-average intelligence.²⁰ The most common sexual fantasy in sex magazines is rape and/or bondage of a young woman.²¹

If you get mad at your partner, are you more or less likely to

have sex *while* you are still angry? For women, being angry is a turnoff. Most women say that if they're mad at their boyfriend or husband, they won't want to have sex with him—at least, not until the argument is settled. They need to kiss and make up first. Not so for men. Many men will have sex with their girlfriend or wife even if they are angry at her.²²

Even more troubling: for many teenage boys, the idea of inflicting pain on a woman is sexually arousing. Psychologist Neil Malamuth, who has specialized in studying the responses of "normal" college men to rape fantasies, has found that most young men experience greater sexual arousal when the imaginary rapist deliberately hurts the woman he is raping. The greater the victim's pain, the greater the sexual excitement experienced by these young men. For most young men, according to this research, the most arousing fantasy is the rape of a young woman in which the woman experiences both pain and orgasm.²³

In real life, of course, that never happens. No woman enjoys being raped—although curiously, a substantial number of women answer "Yes" to the question of whether some *other* woman might enjoy being raped.²⁴ Malamuth found that when women listened to tape-recorded rape fantasies, any sexual arousal the woman listening might have felt was immediately extinguished if the rapist hurt the woman victim.²⁵ Nevertheless, the myth that some women want to be raped is so pervasive in our culture that it affects women's opinions about how *other* women might respond to being raped.

For young men, sex and violence are so closely tied together that—according to psychiatrist Robert Stoller—"hostility, overt or hidden, is what generates and enhances sexual excitement, and its absence leads to sexual indifference and boredom."²⁶ (I personally consider Dr. Stoller's statement too extreme and too general. Also: for a minority of teenage boys, about 10 percent, the link between aggression and sexual arousal is not strong at all. We will return to these exceptional boys in chapter 9.)

One thing's for sure. The motivation for sex is fundamentally different for most teenage boys compared with teenage girls. Teenage boys want to have sex to satisfy sexual desire. It's a gut-level, base-of-the-brain impulse, not far removed from the need to have a bowel movement when you feel the urge. Many boys will tell you that the urge feels just that irresistible.

Not so for girls. As psychologist Roy Baumeister recently wrote, "Male desire aims at the sexual activity itself, whereas female desire aims beyond it toward other outcomes and consequences."²⁷ Professor Joan Jacobs Brumberg, who has written two books about the psychosexual development of teenage girls, agrees. Sexual pleasure is usually not the motivating factor when young teenage girls engage in sex, Brumberg has found. That's especially true for oral sex. Girls today provide far more oral sex for their boyfriends than in previous generations, but Brumberg says that "they do so without pleasure, usually to please their boyfriend or to avoid the possibility of impregnation."²⁸ Deborah Tolman, a director at the Wellesley College Center for Research on Women, concurs that sex in the twenty-first century remains heavily weighted in favor of boys' needs and desires. With regard to oral sex, Tolman says, "The boys are getting it, the girls no. It's the heterosexual script that entitles boys and disables girls."²⁹

When you ask teenage girls and boys why they're having sex, you'll hear very different answers from the girls compared with the boys. Boys usually answer that question with a snort. "Why *wouldn't* I have sex? As long as the girl wants it, too—I mean, as long as she doesn't kick me or slap me or yell 'Fire!'—why shouldn't I?" Boys want to have sex because they feel sexually aroused. Simple, base-of-the-brain motivation.

It's different for girls. In one major study, girls didn't even list sexual arousal as a reason for having sex.³⁰ Teenage girls have sex for other reasons. Girls may hope that having sex will earn them points in the popularity contest, or they may just want to please the boy they happen to be hooking up with, or they may feel

pressured either by the boy or by other girls who *are* having sex. Oprah Winfrey recently devoted a session of her talk show to this topic. She invited several teen girls on to the show to describe why they began having sex so young. One girl, Shana, began having sex at age thirteen. By age sixteen, when she appeared on the show, she had had intercourse with seven different boys.

Oprah Winfrey: When you started having sex, at 13, was it to fit in or was it just because you wanted to have sex?

Shana: It was definitely to fit in, because, I just figured, you know, this is what everyone's doing and I was getting ready to go into high school and I'm like, "this will make me popular."

Oprah: And has it?

Shana: No, it . . . I paid a big price for it. I paid a huge price.

Oprah: What is the huge price you've paid?

Shana: Just socially. Luckily, I didn't get pregnant or anything like that, but emotionally I have scars that are never going to go away. After he leaves, you know, you give him what he wants, then you feel, like, horrible.

Oprah: So if you do that a couple of times, and you know if you do it again, it's going to feel the same, why do you keep doing it?

Shana: I really can't answer that. Honestly, when I get an answer, I'll tell you.³¹

Journalist Michelle Burford appeared on the same show to describe her interviews with young teen girls. Ms. Burford herself was only thirty years old when she spoke with the teenage girls, but she found that a lot had changed since her own student days. Girls she spoke with, some as young as twelve, "were completely cavalier in the stories they were telling me. There was absolutely no sense of shame. There was no sense of there needing to be a connection. No boyfriend-girlfriend. Used to be, you know, 'Will you still love me tomorrow?' There is no tomorrow. It's all today. 'Meet me after study hall at 4, we'll sleep together,'

and then on to the next partner tomorrow. Slam, bam, thank you ma'am. It's really shocking."³²

Gender roles in our society load the dice against girls as well. According to a survey published in 2003, 89 percent of teen girls say they feel pressured by boys to have sex. But in the same survey, more than nine out of ten teenagers (girls *and* boys) agree that a girl can get a bad reputation because she has sex with a boy.³³ The space between prude and slut has narrowed from a broad highway to a tightrope. If a girl refuses to have sex, she's a prude. If she is too willing to have sex, she's branded a "ho" and a slut.

The Male Paradigm

For many teenage boys, sex is an impersonal urge that has its own agenda, not necessarily connected to a relationship with another person. That's not news. Teenage boys have always been that way. For most teenage girls, a satisfying and fulfilling sexual experience is most likely to occur in the context of a loving and mutually caring relationship. That's not news, either. What's changed?

The fundamental change that has occurred over the past thirty years is a change from the female paradigm to the male paradigm. Thirty years ago, a boy usually had at least to give lip service to the notion of being in love if he expected a young woman to be sexually intimate with him. No longer. That's the significance of the hook-up replacing the romantic relationship as the primary sexual mode in teenage culture.

That change has led to a fundamental transformation in the dynamics of sexual activity. In engineering terms, it's a change from linear dynamics to zero-order dynamics. The likelihood of sex is no longer related to the closeness of the relationship. It used to be the case—as recently as ten or fifteen years ago—that the more serious the relationship was between a girl and a boy, the more likely they were to have sex. That correspondence no longer holds. A recent survey by the Kaiser Family Foundation

found that teenagers nationwide are now just as likely to engage in sex during a casual "hook-up" as they are in a serious, committed relationship.³⁴ The major difference in sexual behavior in an ongoing relationship compared with a hook-up, in this study, is *not* in the type of sex the teenagers engage in, but only in whether or not a condom is used. Condoms are used more often in a "hook-up" than in a committed relationship. (A New York school stirred up controversy when teachers proposed passing out fruit-flavored condoms, to make the experience of fellatio more agreeable for the girls.)³⁵

What's the result? Barbara Dafoe Whitehead concluded that the effect of today's "sex-drenched teen culture . . . is not to help young people learn how to choose a future life partner" (that's an understatement). At best, it helps them only to "manage their sex lives."³⁶ But what good is a sex life without any emotional connection?

Dr. Drew Pinsky recently made an important observation about gender differences in hooking up. Both girls and boys are usually partly or totally drunk when they hook up. (Remember the sexual assault Jimmy perpetrated on Tina? He was drunk when he did that.) Dr. Pinsky has found that girls and boys give completely different reasons *why* they get drunk before they hook up. Boys like to get drunk because it slows down their sexual response, allows them to relax, and decreases the likelihood of premature ejaculation. Girls like to get drunk because it numbs the experience for them, making it less embarrassing and less emotionally painful.³⁷

Another change: kids are having sex earlier than before. The National Longitudinal Study of Adolescent Health is the largest study ever conducted of teenage behavior in the United States. Over ten thousand teenagers—a representative sample of kids from cities, suburbs, and rural areas, rich and poor, Asian and white and black and Hispanic—were periodically interviewed about everything from cigarette smoking to sex to thoughts of suicide. In 2002 the doctors running the study reported that

there has been a "dramatic trend toward early initiation of sex." In 1988, 11 percent of adolescent females fourteen years of age and younger reported having had sexual intercourse; a decade later it was 19 percent. In other words, about one girl in five age fourteen and younger has now had sexual intercourse.³⁸ A separate study, published in 2003 by the National Campaign to Prevent Teen Pregnancy, independently arrived at the same conclusion: among girls age fourteen or younger, one in five has had sexual intercourse.³⁹ This study also found that most parents of sexually active daughters are NOT aware that their daughters are having sex. "Parents are overwhelmingly clueless about their kids' sexual experiences and knowledge," agrees journalist Hall. "Most teens [interviewed by Hall] said their parents have no idea what their real sex lives are like."⁴⁰

Clueless

Pediatrician Thomas Young and psychologist Rick Zimmerman wanted to find out just how much parents know about what their kids are really doing. They asked 140 middle school students and their parents about smoking cigarettes, smoking marijuana, drinking alcoholic beverages, and having sexual intercourse.

Question for parents: Does your child smoke cigarettes? 12% of parents said yes.

Question for the kids: Do you smoke cigarettes? 43% of students said yes.

Question for parents: Has your child smoked marijuana? 3% of parents said yes.

Question for the kids: Have you smoked marijuana? 34% of kids said yes.

Question for parents: Does your child drink alcoholic beverages? 5% of parents said yes.

Question for the kids: Do you drink alcoholic beverages?
49% of students said yes.

Question for parents: Has your child had sexual intercourse?
2% of parents said yes.

Question for the kids: Have you had sexual intercourse? 52%
of kids said yes.

The authors titled their report "Clueless: Parental Knowledge of Risk Behaviors of Middle School Students."⁴¹ It's not hard to see why.

Are Boys Human?

Three big changes have occurred since you and I were in middle school and high school:

- Girls and boys are engaging in sexual activities earlier than they used to;
- Girls and boys who are going steady today are no more and no less likely to have sexual intercourse than are girls and boys who are just hooking up;
- Oral sex has become the most common mode of sexual interaction.

Most of the articles and books about these changes in teenage sexual behavior have focused on the harm done to teenage girls. There's no question that teenage girls are the most obvious victims. A girl is more likely to feel used and abused after a typical twenty-first-century sexual encounter. In the most common type of hook-up, oral sex, the girl is far more likely to be servicing the boy than the other way around. And if the hook-up progresses to sexual intercourse, girls bear the risk of an unwanted pregnancy.

The impersonality of twenty-first-century adolescent sex vic-

timizes girls. No argument there. But to focus only on that side of the story misses the harm done to boys. What harm? you may ask. How does impersonal sex harm boys?

I see plenty of harm. By the time a heterosexual young man is in his early twenties, he will rely on his girlfriend or his wife to be his primary emotional caregiver.⁴² And that reliance only becomes greater as he moves through adult life. For the great majority of heterosexual adult men, the wife or girlfriend is the man's most important source of emotional support. Straight men who don't have a wife or girlfriend are substantially more likely to become seriously depressed, commit suicide, or die from illness.⁴³ It's not unreasonable to conclude that a heterosexual man's happiness and maybe even his life expectancy depend on his ability to establish a sound relationship with a woman he loves and who loves him.

Women are different in that respect. Women as a rule have more diverse support systems than men do. Husbands and boyfriends matter to them, sure, but so do their girlfriends, coworkers, and (often) family, especially a sister or mom. One reason for this has to do with the difference between female-female friendship and male-male camaraderie. Remember what we discussed earlier about differences between girls' friendships and boys' friendships. Close friendships between girls are usually intimate and personal. Friendships between boys are usually built around shared activities. David may have a great time playing video games with Juan, but that doesn't mean that David will confide in Juan about how he feels when his parents get divorced.

So here's the irony. Even though many of us think of teenage romance as something that interests girls more than it interests boys, it's the boys, ultimately, who will have greater need for an intimate and durable romantic relationship in their lives.

Playing a Role

Here's what we know:

- Most kids don't date anymore. They hook up instead.
- Kids are just as likely to have sex if they're just hooking up as they are if they're in an ongoing relationship.

As a result, relationships are no longer defined by sexual intimacy. Relationships today are defined by group affiliation. What does that mean?

To use the jargon employed by psychologists who study teenage dating: "Romantic pairs form most often on the basis of rank order rather than personal characteristics." Here's what that means: When fourteen-year-olds form romantic relationships, they do so less on the basis of individual characteristics and more on the basis of how popular the teenager is in the teenager's group. The most popular boy in the group is "going out with" the most popular girl, the second most popular boy goes out with the second most popular girl, and on down the line, with the least popular boy paired with the least popular girl.⁴⁴ "Going out with" usually doesn't mean actually going anywhere together. It just means that in the collective consciousness in the group, that girl is linked with that boy. Sexual relationships in this age group, far from involving intimate personal connection, usually are more of an exercise in role-playing.

Journalist Linda Perlstein spent a year living with middle schoolers, much as Dian Fosse lived with the gorillas. Perlstein described what relationships are really like at the middle school she visited. Girls choose who they will "go out with" mostly "because the guy is someone her friends would approve of. It's mostly about the superficial stuff. He's got the right look, he's got the right clothes. . . . The asking out and dumping are done through intermediaries. . . . Jackie and Anton [a girl and boy who are "going out together"] don't go anywhere together. They don't talk much, on the phone or at school. Mainly their rela-

tionship means Jackie checks herself in the bathroom every day after lunch and runs around Anton on the playground, except when she carefully ignores him." In this age group, Perlstein observes, *going out together* "doesn't have much meaning. Generally they just realize the roles they are supposed to play and pretend to do so."⁴⁵

The average high school romantic relationship lasts about eleven weeks.⁴⁶ In middle school, not even that long. The typical high school romantic relationship—with its two weeks of infatuation, four weeks of relative happiness, and five weeks of gradual disintegration—may be the worst possible preparation for a lasting and loving relationship, for a lifetime commitment to stick together even when times are tough and when both you and your partner are less attractive than you used to be.

We all want our children to grow up to enjoy a loving, mutually supportive and *lasting* relationship. Many parents imagine, reasonably enough, that romantic relationships in adolescence provide good "practice" for more serious relationships in adulthood. You can't run before you walk. Practice makes perfect.

Psychologists who study romantic relationships in adolescence are coming to a different conclusion. Practice makes perfect only if you're practicing the right task. Most adolescents aren't. Psychologists Wyndol Furman and Elizabeth Wehner have studied adolescent romantic relationships for years. For middle school and even most high school students, they report that "adolescents are not very concerned with the fulfillment of attachment or caregiving needs. . . . Instead, their focus is on who they are, how attractive they are . . . and *how it all looks to their peer group.*" Adolescents often develop bad habits in their dating relationships. A boy may get in the habit of regarding his girlfriend as a source of sexual gratification without really connecting with her as a human being. A girl may get in the habit of seeing her romantic partner as a "trophy boyfriend" without any idea of how to integrate him into her life. And both of them may get in the habit of dumping their current partner whenever a better-looking or more popular one becomes available. Over

time, Furman and Wehner have found, "these individuals may become more skillful, but more skillful in developing the relationships they have come to expect."⁴⁷ By the time they reach adulthood and it's time to build a marriage that will last a lifetime, they've accumulated all sorts of bad habits that they need to break. They might be better off had they never had those teen relationships.

There are other reasons to be skeptical about the value of romantic relationships in early adolescence. According to a large survey published in 2003, kids who become sexually active before fifteen years of age are three times more likely to be regular smokers, four times more likely to have tried marijuana, and six times more likely to drink alcohol once a week or more.⁴⁸ Maybe we should regard sexual relationships in the same way we regard alcoholic beverages: as an adult pleasure to be enjoyed by adults only. As with alcoholic beverages, romantic relationships can be wonderful when responsible adults are partaking. But if unprepared teens use them, they can be deadly. Drunk driving kills. So does AIDS. And the boy who gets in the habit of exploiting his girlfriend sexually while ignoring her emotional needs is setting himself up for a lifetime of frustration, loneliness, and failure.

So What Can You Do about It?

I hope I've persuaded you that for most teens, early sexual activity—whether in or out of a romantic relationship—does more harm than good. But so what? Your kid won't ask you for permission to hook up at a party Saturday night. What difference does it make what you think?

It makes a big difference. As much as your teen may mock you and claim to consider your opinions out of date and irrelevant, study after study confirms that teens almost universally regard their parents as being the most important and influential people in their lives.⁴⁹ That doesn't mean that you can change

your teen's behavior just by telling her or him that you don't think hooking up is a good idea. It does mean that you can have some leverage, if you know what to do and how to do it.

Think about *when* and *how* your teen might engage in sexual activity. Researchers have found that teens typically engage in sex in one of two opportunistic settings. The most common venue for teens to have sex is in their own home or their partner's home, right after school, before parents come home. That leads to rule number one:

- Know *where* your teen is. Make it a habit to call your teen after school. And vary the time you call. If your teen is supposed to be at an after-school activity, verify that she or he actually went to that activity. If you're into high-tech, you can even buy one of the new GPS watches for your teen to wear. You lock the watch on your teen's wrist and then monitor your child's location in real time, online. Some brand names include the Wherify GPS Locator and Lojack for Kids.
- Second rule: Know *who* your child is with. Even when your child is at home, you need to know who she's with. Ask her: Is anyone at home with you? Will anyone be coming over? *Why* are they coming over?
- The third rule has to do with *parties*. You need to know everything about the party: where it is going to be, who your teen is going with, and so on. When your teen announces that she or he is going to a party, ask whose house it will be at. Call ahead and speak to the parents. Verify that the parents will be present and supervising, not just upstairs with the door closed. Announce that you may drop in on the party. (Your teen will be mortified if you actually show up, but the mere possibility that you *might* has some deterrent value.) And don't forget about teen party-hopping: teens often start at one party, then move on to another party later in the evening. Make it an ironclad rule that your teen *must* notify you before going to another party.

If you have a daughter, then there's a fourth rule:

- No more than *three years'* age difference between your daughter and the oldest boy in the group. Girls who go out with substantially older boys are more likely to be pressured into having sex, more likely to get a sexually transmitted disease, and more likely to experience an unwanted pregnancy.⁵⁰

With girls, there's another way to decrease the risk of early sexual activity and teenage pregnancy: encouraging girls-only activities. Girls who participate in activities that are mostly or entirely girls-only—such as a girls-only soccer team, or ballet, or horseback riding—are less likely to be sexually active and much less likely to experience an unwanted pregnancy.⁵¹ Competitive sports have been shown to be especially effective in getting girls to focus on something other than the rating and dating game. The more involved a girl is in competitive sports, the less likely she is to be sexually active and the less likely she is to get pregnant.⁵²

That doesn't hold for boys. Boys who play competitive sports are actually somewhat *more* likely to be sexually active than nonathletes. How come? Why does participation in sports have opposite effects on girls and boys with regard to sex?

The answer has to do with self-esteem. Athletes, both girls and boys, typically have higher self-esteem than nonathletes.⁵³ Higher self-esteem increases the likelihood that a boy will have sex, while higher self-esteem *decreases* the likelihood that a teenage girl will have sex. Why the difference? Athletic boys usually rate somewhat higher in the popularity game than nonathletic boys do. So, athletic boys will have more opportunities for sex than boys who are not athletic. More opportunity for sex equals more sex—if you're a boy.

Girls choose to have sex not so much because they want to have sex but for other, more complex reasons. A girl with low self-esteem may be looking for affirmation of her femininity. She may think she's not pretty. She may think she's not popu-

lar. A boy who tells her she's beautiful, a boy who listens to her with interest, may be the boy she allows into her bed.

So. Tell your daughter to play sports and everything will be fine? Maybe. Encouraging your teenage daughter to sign up for sports or to continue in a sport she has been playing is not as easy as it sounds. A recent study of teenage American girls found that girls drop out of sports in droves beginning in middle school and continuing into high school.⁵⁴ Girls often perceive competitive sports as unfeminine, and girls often become more concerned with femininity as gender becomes more salient. Group membership also becomes more important as kids move through adolescence. In many middle schools and in most high schools, it's become uncool for any but the most talented jock girls to play competitive sports.

Another factor, often overlooked, is that most adolescent girls don't like boys staring at them. Several researchers have found that girls drop out of sports because they don't like the spooky feeling that boys—and even men—are watching their practices and their games just to stare at their bodies. "You can feel them looking at you," says one girl.⁵⁵

So what can you do about that? Make sure that girls-only sports and physical education are available at your daughter's school, for one thing.⁵⁶ Psychologist Anna Engel found that girls were much more likely to participate in physical education if P.E. classes were girls-only rather than coed.⁵⁷

More generally, you should encourage your daughter to participate in activities where the focus is on what she *does* rather than on how she *looks*. In cheerleading, poms, ice skating, and ballet, for example, a major focus of the activity is on how you look. Is your uniform clean? Do your socks match? And don't forget to smile! In soccer, field hockey, and basketball, on the other hand, the focus is on what you *do*. Your daughter's soccer coach doesn't (and shouldn't) care whether your daughter's socks match or whether her uniform is spotless. Nor should you.

The two basic rules for guiding your child's behavior are:

First, make clear what's forbidden, and enforce that prohibition.

Second, offer alternatives.

Remember when we talked about violent video games, in chapter 4? I advised: First, prohibit violent antisocial video games such as *Grand Theft Auto*. Second, encourage healthier real-life alternatives, such as playing soccer or football.

In the case of sex, this strategy means: First, make sure your kid understands that you don't approve of sexual activity involving genital contact between young teens. No oral sex. No penile-vaginal intercourse. And you're going to do your best to enforce that prohibition.

Second, offer alternatives. For girls, as I've said, that means sports, ballet, jazz dance, and other all-female activities. We have good data, as you've seen, showing that girls who participate in these activities are less likely to be sexually active.

For guys, it's tougher. There are no alternative activities that are unequivocally proven to decrease boys' proclivity to engage in premature sexual activity. I have a theory about what might work, though: encourage *cross-generational* community activities in which boys and men work together.

A school near my home sponsors a summertime program called *Somos Amigos*, "We Are Friends." A group of sixteen teenage boys under the leadership of three or four adult men travels to the Dominican Republic for the summer. Their mission: to build three small houses for the local villagers. The boys eat what the villagers eat, mostly beans and rice. No McDonald's, no Burger King, no Pizza Hut. There's no air conditioning. The conditions are brutal: hot and humid all day and all night. The boys are doing work, real work, shoulder-to-shoulder with the adult men: hammering four-by-fours, putting up drywall, installing toilets. Despite the rugged conditions, each year between forty and fifty boys apply for the privilege of spending their summer this way. Those who've participated say it was among the most meaningful experiences of their lives.

Here's what's really interesting, though: the organizers have

told me that those boys *subsequently* are more respectful to women. You don't hear about those boys sleeping around with every girl who will let them. That's not scientific proof. But these boys are impressive.

My other hope is that if we can generate enough real change in teen culture—if we can empower enough girls to take charge of their sexual agenda, so that girls will stop providing oral sex on demand—then such a change might offer another way to shift teenage sexuality toward a more person-centered, relationship-oriented basis and away from the impersonal, experience-oriented bias that is skewing teenage sexuality at the present time. We need more girls to say No.