



Chapter

Different by Divine Design

OUR GOOD FRIEND CHRIS CAME OVER TO OUR HOME ONE SATURDAY morning to share some time together over a cup of coffee. Chris and his wife, Sherri, had been married for about six months. They had chosen Barb and me to be their marriage mentors, so we had met with them during their engagement and continued to do so after the wedding. After discussing our observations of the Denver Broncos' football season, Chris and I began talking about marriage.

“Walt,” he began, “when Sherri and I met with you and Barb before we were married, you taught us about some of the differences between men and women and our brains. I accepted what you said but didn’t realize exactly how big a deal it really is.”

“In what ways?” I asked.

“I don’t even know where to begin. There are so many ways we are different. When it comes to sex, Sherri likes thirty minutes of slow foreplay. For me, turning off our bedroom light is foreplay. I like watching football and *The Unit*, and she likes watching *Dancing with the Stars* and anything on HGTV.”

While he took a sip of coffee, I remained quiet, knowing more was coming.

“When I write a note to Sherri, it has the essentials—what she needs to know. When Sherri writes me a note, she uses scented, colored stationery and dots her *i*'s with little hearts. Even if she disses

me in a note, she puts a dorky little smiley face at the end. I *hate* that! What’s worse, she wants me to write notes the same way.”

He appeared to be deep in thought and then continued.

“Here’s another thing that bugs me. When I say I’m ready to leave the house, it means I’m ready to leave at that moment. When Sherri says she is ready to go, it means she will be ready sometime in the next hour—after she finishes her hair and makeup and changing her outfit two or three times.

“And don’t get me started on the bathroom,” Chris added. “I have, at most, six items in the bathroom—shaving cream, a razor, a toothbrush, toothpaste, a bar of soap, and deodorant. But Sherri must have sixty items! I don’t even know what fifty of them are for.

“And, Walt, isn’t a cell phone a communications tool? I use mine to communicate information in short calls and brief text messages or to get an answer. Sherri uses her cell phone to visit with a girlfriend for two hours *after* they’ve had lunch that same day!”

He finally stopped, and I was able to get a word in. “So, Chris, what does all this mean to you?”

He thoughtfully sipped his coffee and then nodded. “You were right when you told me that men and women are *so* different. Now I’ve got to figure out what to do about it.”

We Do See It Differently!

The story has been told of an English professor who wrote on a blackboard these words:

A woman without her man is nothing

The professor then directed the students to punctuate the phrase.

Most of the men wrote:

A woman, without her man, is nothing.

However, most of the women recorded:

A woman: without her, man is nothing!

It's Not Just Our Imagination

Chris is absolutely correct. Even without scientific evidence, the vast majority of us realize that men and women are *very* different. One online poll asked simply if people agreed with the statement “Men and women are so different.” Seventy percent clicked the “Yes, worlds apart!” answer. Eighteen percent chose “Not really. It’s all hype.” And 12 percent selected “I’m never sure.”²

My friends will talk about how their husbands are sometimes thoughtless or inconsiderate, don't listen like they should, think too much about sex and sports, aren't as compassionate as they could be, want to have sex rather than make love, and don't put the toilet seat down as they should.

From the other side, I often hear my male friends complain about the way their wives drive, that they can't read maps right-side-up, talk and cry too much, can't explain their intuitive feelings, don't initiate sex often enough, and leave the toilet seat down when it clearly should be left up.

In their book *Why Men Don't Listen and Women Can't Read Maps*, authors Barbara and Allan Pease make this observation:

Men can never find a pair of socks, but their CDs are in alphabetical order. Women can always find the missing set of car keys but rarely the most direct route to their destination. Men marvel at the way a woman can walk into a room full of people and give an instant commentary on everyone; women can't believe men are so unobservant.³

These differences are not something we imagine. They are not volitional choices we make just to annoy each other. They are not simply due to personality quirks. Many, if not most, of these dissimilarities have to do with the distinctive ways his brain and her brain function.

A mountain of brain research published during the last two decades reveals dramatic anatomical, chemical, hormonal, and

physiological differences between his brain and her brain. These differences impact the emotions, thinking, and behavior of children and adults. These differences are so profound that geneticist Anne Moir, PhD, and journalist David Jessel begin their book *Brain Sex: The Real Difference Between Men and Women* with this provocative assertion: “Men are different from women. They are equal only in their common membership in the same species, humankind. To maintain that they are the same in aptitude, skill or behavior is to build a society based on a biological and scientific lie.”⁴

Our Differences: Wired in the Womb

So, if his brain and her brain are so very different, are these differences inborn or infused? Are men’s and women’s brains different by nature or nurture? Are our brain differences designed or derived?

Our answer to these questions is simple: not only are his brain and her brain different; they are *designed* to be different by our Creator. At birth, his brain and her brain are so distinctly different that Cambridge University neuropsychologist Simon Baron-Cohen, PhD, describes them as having “essential differences.”⁵

There is ample scientific evidence that supports the fact that many of the dramatic differences between his brain and her brain are inborn. Louann Brizendine, MD, a neuropsychiatrist at the University of California, San Francisco, medical school, writes, “There is no unisex brain. Girls arrive already wired as girls, and boys arrive already wired as boys. Their brains are different by the time they’re born.”⁶

In surprisingly frank language, Dr. Anne Moir writes, “Infants are not blank slates.... They are born with male or female minds of their own. They have, quite literally, made up their minds in the womb, safe from the legions of social engineers who impatiently await them.”⁷

Our only quibble with Dr. Moir’s conclusion is that unborn children do not make up their minds in the womb. Rather, an unborn child’s brain and nervous system is intentionally and skillfully interwoven and knit in the womb. Or as King David observed:

*You [God] created my inmost being;
you knit me together in my mother’s womb.
I praise you because I am fearfully and wonderfully made;
your works are wonderful,
I know that full well.
My frame was not hidden from you when I was made in the
secret place.
When I was woven together in the depths of the earth,
your eyes saw my unformed body.⁸*

As we’ll discover together, plenty of differences are seen extremely early in development—even in the womb. And every mom reading this book who has raised a boy and a girl has observed these differences firsthand! Although some researchers persist in the assertion that the many differences we all observe between males and females are a result of “nurture over nature” (nurture meaning differences based on culture, socialization, teaching, or experience), there is one event that can shake this delusion to its core, namely, having children.

Marc Breedlove, PhD, an expert in the effect of hormones on the developing brain, was also a proponent of the “nurture over nature” theory—at least until he had a daughter. He was surprised that she had no interest in her older brothers’ toys. He was shocked that even before she could talk she loved going into her mother’s closet to try on her mother’s shoes. By the time she was six years old, Breedlove’s daughter avoided pants and would only wear dresses. As a result, Breedlove “uses the term ‘childless’ to describe people who think ‘society alone molds children into sex roles.’”⁹

Testosterone on the Brain

So what do we know about the processes in the womb that prewire girls to be girls and boys to be boys? During the past couple of decades, we've learned more than you would ever imagine, and it all begins with the male hormone, testosterone.

We've all heard the jokes about female hormones. We know how dramatically they affect women. We've all seen men roll their eyes, shake their heads, and mutter "female hormones" when life with a woman seems difficult. But let me tell you, what female hormones do to women is minor compared to what the male hormone, testosterone, does to an unborn boy's brain and body in the womb!

At about six weeks' gestation, an unborn boy's male hormones (called *androgens*) begin their work. One particular androgen, testosterone, becomes the key messenger to the unborn boy's brain and body. "There's a peak of testosterone in males . . . that's very important for future sexual behavior," writes Dr. Sophie Messenger of Paradigm Therapeutics in Cambridge, England. "If you block that, the male rats behave like females for the rest of their life."¹⁰

Testosterone tells all the potentially female equipment to go into hibernation while it spurs the male equipment (like the boy's genitalia) to grow like crazy. In addition, testosterone has an incredible effect on the little boy's skeletal muscles—causing them to almost continuously twitch, poke, and punch.

Those of us who have given birth to and then raised little boys can tell you that they are always moving, both in and out of the womb! Much of the activity is due to testosterone, which also thickens the boy's developing bones—even his skull. So when we mothers think little boys and the men they grow up to become seem a bit "hardheaded," we're exactly right.

Not only are a boy's genitalia, muscles, and bones dramatically exposed to the testosterone bath that occurs in the womb,

but it actually changes his inborn female brain into a uniquely male brain.¹¹ The developing female brain, not exposed to testosterone, undergoes very little fundamental change in structure or function, but the rush of testosterone is for him literally a mind-altering process!

For example, the corpus callosum is the largest structure connecting the right and left sides of the brain. This pipeline of more than 300 million fibers¹² functions like a powerful, lightning-fast monster cable that enables both sides of the brain to communicate with and process for each other. The gush of testosterone actually causes sections of the corpus callosum to decrease in size by dissolving portions of the connection or by decreasing the growth of the nerves.¹³

In unborn females, the opposite happens. Exposure to the female hormone, estrogen, actually prompts the nerve cells to grow more connections between the left and right brain. So not only is a girl's corpus callosum larger than a boy's before birth, it continues to be larger in childhood¹⁴ and adulthood.¹⁵

Testosterone also causes other areas of the male brain to be forever changed by preserving the nerve cells that think, while retarding the development of the fibers that connect the processing centers. The result? Your wife not only has a more developed corpus callosum, but she also has much greater subconscious processing power than you do.

It's More Than Hormones

The male hormones flooding in and through the unborn male child and the female hormones saturating the unborn female baby do not explain everything about the developmental differences between the male and female brain. There are structural and genetic differences as well.

Since a man's brain is, on average, about 10 percent larger than a woman's, you'd expect him to be more intelligent. However,

this is not the case. In general, men and women consistently score equally on intelligence tests. For neuroscientists, this has long been a paradox. However, researchers at the University of Pennsylvania Medical Center have found an explanation. Raquel E. Gur, MD, PhD, professor of psychiatry and neurology, writes, “Women’s brains appear to be more efficient than men’s in the sense that an equal increase in volume produces a larger increase in processing capacity in women than in men.”¹⁶

While male brains contain about 6.5 times more gray matter—the “thinking matter”—female brains have more than 9.5 times as much white matter—the “processing matter.”¹⁷ One example is seen in the corpus callosum. Not only do women have a relatively larger connection between the hemispheres, but theirs is composed almost completely of white matter. “The implication of women having more white matter connecting between the hemispheres of the brain is that they would have better communication between the different modes of perceiving and relating to the world,” says Dr. Gur. “On the other hand, men,” who have a relatively smaller corpus callosum that is made up of less white matter, “would demonstrate a stronger concentration on working within any one of those modes.”¹⁸

Understanding this can be critical in understanding our husbands—their stick-to-itiveness, steadfastness, determination, and single-mindedness. It also can assist their understanding and appreciation of us—our intuition and the way we can read people!

On the genetic side, Eric Vilain, PhD, who conducts research on the genetics of human sexual development at UCLA, has found genetic differences that play a role in the disparity between the male and female brain. He and his colleagues compared the production of genes in male and female brains in embryonic mice—long before the animals developed sex organs.¹⁹ To their surprise, the researchers found at least fifty-four genes that are produced in different amounts in male and female mouse brains *prior to* any male hormonal influence. Eighteen of these genes

were found at higher levels in the male brains, while thirty-six were found at higher levels in the female brains.

“We didn’t expect to find genetic differences between the sexes’ brains,” Dr. Vilain said in a news interview. “But we discovered that the male and female brains differed in many measurable ways, including anatomy and function.”²⁰ Although this study was in mice, these researchers believe it’s highly likely to be true in people as well.

Additional studies show that “sex chromosome genes contribute directly to the development of a sex difference in the brain.”²¹ To understand this impact, we need to review some sex chromosome basics.

At conception, one pair of sex chromosomes* is replicated into each cell of our body; one comes from each parent. As a general rule, males have one X and one Y chromosome and females have two X chromosomes. As a little boy begins to grow inside the womb, his genetic blueprint begins to deliver a message using his XY chromosomes. Little girls do the same but with XX chromosomes.

Many of the genes on the Y chromosome are involved in male differentiation and development. It is the male-making Y chromosome that starts the marathon of development that differentiates the little boy and his brain from the little girl and her brain. The Y chromosome directs the early gonadal tissue of the boy to become testes—and it’s the testes that are the primary factory for the production of testosterone that spurs the development of masculinity across the brain and body of the unborn boy.

A normal female has two X chromosomes—one from her mother and one from her father. One of the two X chromosomes in every cell in females is active, and the other X chromosome is usually shut off. Researchers have found that brain responses vary based on which X gene is inactivated.²² About one in five of these

* A chromosome is a rod-shaped or threadlike DNA-containing structure located in the nucleus of each cell in the body.

extra genes escapes being turned off and actually stays awake. When this occurs, these female cells get a “double dose” of X genes. These excess or fallback genes are believed to help protect women from a wide variety of physical, mental, and behavioral disorders.²³

These excess genes also result in more genetic diversity in the female brain. *New York Times* columnist Maureen Dowd wrote, “Women are not only more different from men than we knew. Women are more different from each other than we knew—creatures of ‘infinite variety,’ as Shakespeare wrote.” Dowd concludes, “This means men’s generalizations about women are correct too. Women are inscrutable, changeable, crafty, idiosyncratic, a different species.”²⁴

Regarding the advantages of two X chromosomes, Duke University genome expert Huntington Willard, PhD, says, “We poor men only have 45 chromosomes to do our work with because our 46th is the pathetic Y that has only a few genes.... In contrast, we now know that women have the full 46 chromosomes that they’re getting work from and the 46th is a second X that is working at levels greater than we knew.”²⁵

There is more to be known, more detail and qualification perhaps to add—but the nature and cause of brain differences are now known beyond speculation, beyond prejudice, and beyond reasonable doubt.²⁶

Anne Moir, PhD

Dr. Willard, along with Laura Carrel, PhD, a molecular biologist at the Pennsylvania State University College of Medicine, found that a whopping 15 percent (200-300) of the genes on the second X chromosome in women, thought to be inactive and silenced, are active, giving women significantly more gene activity than men.²⁷ The two X chromosomes in women are another part of the explanation of how the very different behavior and traits of

men and women are hardwired in the brain, in addition to being hormonal or cultural.²⁸

Divine Design

Since it is apparent that many of the differences between his brain and her brain are real and inborn, the next logical question is, “What is their origin?” Most published researchers on this topic seem to believe that the distinctions and dissimilarities between men’s and women’s brains are simply the divergences and diversity of evolution. We are convinced, however, that his brain and her brain are not only divinely designed to be delightfully different but are, in fact, deliberately designed differently. The foundation for our belief is found in the book of Genesis, where Moses writes this:

Then God said, “Let us make man in our image, in our likeness, and let them rule over the fish of the sea and the birds of the air, over the livestock, over all the earth, and over all the creatures that move along the ground.” So God created man in his own image, in the image of God he created him; male and female he created them. God blessed them and said to them, “Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish of the sea and the birds of the air and over every living creature that moves on the ground.”²⁹

It seems clear from this passage that men and women were created equally in the image of God: “male and female he created *them*. God blessed *them*” (emphasis ours).³⁰ The biblical point of view is not that men are from Mars and women are from Venus. Rather, men and women were lovingly created on earth in the image of God. Thus, we carry in our innermost being the stamp of our Creator.

The Bible is also clear that “equal” is not synonymous with “the same.” Men and women were created equal, but men and

women were not created the same or in the same way. We were created different and differently—in other words, males and females are designed differently and designed to be different.*

Different from Day One

The genetic, hormonal, and created differences in his brain and her brain occur long before birth and any chance of socialization. The resulting differences can be seen in the womb, throughout infancy and childhood, and into our adult years.

For example, in the newborn nursery and in one-year-olds, girls consistently make more eye contact with adults than boys of the same age.³¹ The differences become more obvious as children grow and develop. In preschool, when a new toy is brought to the playground, boys invariably leave whatever they are doing and go look it over. However, when new children come to the playground, the girls are more likely to go meet them than boys are.³² Furthermore, when compared to boys, girls learn to speak earlier, know more words, recall them better, pause less, and glide through tongue twisters.³³

Harriet Wehner Hanlon, PhD, and her associates at Virginia Tech University examined the brain activity of more than five hundred children aged two months to over sixteen years and concluded that the areas of the brain involved in language, spatial memory, motor coordination, and getting along with other people develop in a different order, time, and rate in girls compared with boys.³⁴

These differences play out in a number of ways. For example, talking is central to the friendships of females at every age. Physician and psychologist Leonard Sax, MD, PhD, observes, “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.”³⁵ On the other hand, boys don’t spend a lot of time talking to each other,

* We will explain this concept in detail in chapter 13.

nor do they want to hear each other's secrets. They are much more likely to build models, operate toys, or play video games.³⁶

Do these brain differences between the genders even out over time? Not usually. Females and males maintain unique brain characteristics throughout life. There are advantages and disadvantages to these differences. For example, females derive strength and consolation from intimate friendships and conversation. When girls and women are under stress, they'll often look to each other for support and comfort.³⁷ Not males. When boys and men are under stress, they usually want to do something physical or be left alone.³⁸

Researchers are beginning to recognize that these differences are not bad but good. Ruben C. Gur, PhD, says, "Most of these differences are complementary. They increase the chances of males and females joining together. It helps the whole species."³⁹ To us, these differences also point to the way God designed and created us.

Walt and I observed many inborn differences between boys and girls as our children, Kate and Scott, grew up. We would dress Kate in her Sunday best, and she'd be just perfect when we arrived at church. Scott, dressed for the same event, could rarely make it to the car without finding a puddle to stomp in or a stick needing an adventure.

Scott's room was chronically malodorous and messy. Kate's room was occasionally messy but always smelled good.

With her dolls, Kate would play house and make up elaborate stories. Scott would take Kate's dolls and set them up to battle each other. Then he would tear off their heads, arms, or legs.

Kate began to think of her future mate at a very early age. At the same age, Scott thought girls had cooties and should never be touched.

At an even earlier age, Kate could talk in complete sentences. At the same age, Scott could only make the sounds of machine guns and bombs blowing up.

It was obvious to Barb and me that these differences between Kate and Scott were not a result of culture, environment, or socialization—not a result of how they were taught or what they saw modeled in our home. Our parents saw the same traits in us, and we still see them in each other.

I dress up in my Sunday best to go to church and will still be clean and unwrinkled when we arrive. But somehow, Walt rarely makes it through the garage without having to fiddle with something and seems to always pick up grease or dirt.

OK, I admit, my side of the closet is mildly messy and has the faint odor of wet socks—while Barb’s side is orderly and always smells good. And if Barb accidentally burps (well, belches), she is embarrassed and always says, “Excuse me.” I hardly notice when air or gas escapes—although Barb can pick this up across the room.

I still make more eye contact with my friends than Walt does. I like talking with my friends. Walt likes briefer and louder, more boisterous conversations with his friends. I like people—Walt likes projects.

Ah, we are different! And Barb and I have come not only to see but also to appreciate the differences between her brain and my brain. We see it as a part of a divine design—differences that are created and woven together before we ever take our first breath.

As we’ve shared with our friends Chris and Sherri what we’ve learned, they too have come to appreciate how very different his brain and her brain are designed to be. Now, instead of saying, “I’ve got to figure out what to do about these brain differences,” Chris smiles and says, “*Vive la difference!*” Understanding these differences is resulting in a strengthening of their marriage of eight years. We believe it will help your marriage too.