

Since entering Ohio State University in the fall, Sarah had promised herself that every Sunday afternoon she would take a break from her studies and enjoy a cup of coffee while leisurely reading the newspaper. She was especially drawn to the entertainment and world news, but occasionally peeked at the obituary page to see if any deaths were reported among the rich and famous. While scanning the obituaries, her eye caught the photograph of a woman with an important sounding name: Dawn Langley Simmons. While reading the story, she noticed her roommate had slipped into the apartment after an early morning study session.

"Hey, Julie, listen to this. It's from an obituary I'm reading," Sarah called out. "On September 18th, at the age of 63, Dawn Langley Simmons, born Gordon Langley Hall, the illegitimate son of Marjorie Hurst Ticehurst and a man named Jack Cooper, died in Charleston, South Carolina.

"The column mentions something about Vita Sackville-West being Gordon's mentor when he was a budding author in England. Weren't you reading something by or about Vita Sackville-West for your 20th century novelists course?"

"Actually, I was reading *Orlando* by Virginia Woolf," replied Julie. "Woolf dedicated her book to Sackville-West. It's about a young nobleman who over a period of almost 400 years becomes a woman and ultimately has a child. I think the book's message is that society imposes artificial gender restrictions by limiting the roles and minimizing the importance and influence of women in society. Virginia Woolf was obviously a woman ahead of her time. That said, I've never heard of Dawn Langley Simmons."

Intrigued, Sarah continued. "There's more. Mrs. Simmons, or Gordon Hall, claimed that she was born with an adrenal abnormality that caused the female genitals to appear male at birth. Consequently, she was raised as a boy. After moving to America and settling in Charleston, South Carolina, she underwent a sex change operation and then a year later she married John Paul Simmons, an African-American sculptor and mechanic. According to the story, it seems her biracial marriage in 1969 caused more of a stir in Charleston than the fact that she lived 30 years of her life as a man."

Sarah read on, "Now this is really interesting. The paper says soon after her marriage, Dawn allegedly became pregnant and had a baby in 1972."

"Oh, come on," interrupted Julie. "I thought you said she was born male. How could she have a child? I don't think modern medicine has come that far, and it sounds like he, or she, took the story of Orlando a little too seriously."

"Well, I don't know," Sarah argued. "In my human genetics course we've been talking about sex determination, and I think we discussed something similar to this. I think it's possible."

"You're kidding, right?" Julie scoffed. "If Dawn Simmons was really Gordon Hall then there is no way she could have had a child. You must have missed the lectures on reproduction."

"Well, the obituary goes on to say that Mrs. Simmons wrote an autobiography in 1995 called *Dawn: A Charleston Legend*. I have *got* to get a hold of a copy of that book. Maybe I'll ask my genetics professor if she thinks any of this makes sense from a biological point of view."

Questions

- 1. How is sex determined in humans?
- 2. What role does the SRY gene play in triggering gonadal development?
- 3. List and describe the function of the hormones that play a major role in the development of reproductive structures.
- 4. Describe the developmental paths that ultimately lead to either the male or female phenotype.

Part II—A Medical Mystery

The next morning while studying in the library, Sarah spent a few minutes searching online for books about or by Gordon Langley Hall/Dawn Simmons. She was disappointed that the university library didn't have a copy of Mrs. Simmons's autobiography, but she was thrilled to see that it was in the collection of the county public library. A five-minute drive, a quick search through the stacks, and she had the book in hand. With the information from the obituary and the autobiography, she looked forward to her human genetics class in the afternoon and hoped that she could get a few minutes after class to speak with her instructor about the "Lady" Dawn.

Later, after she had had dinner and was relaxing on the couch with a cup of hot chocolate in hand, Sarah started reading Mrs. Simmons's book. Armed with the knowledge she had gained from her discussion with her genetics professor, she was ready to look critically at the biological possibilities that this story of sexual ambiguity raised.

In her reading, Sarah discovered that Mrs. Simmons was quite a namedropper, with an amazing cast of characters in her past including British aristocracy, famous writers, and American celebrities, most of whom were women. However, the truly interesting parts of the book were about Dawn's "secret," including a description of the bleeding episodes that caused her to be occasionally bedridden. Unfortunately, Mrs. Simmons provided little detail about her operation and reassignment as a female, and even less about her courtship and the conception of her child.

Sarah concluded from reading the book that Mrs. Simmons was pregnant twice, with the first pregnancy resulting in a miscarriage and the second in a live birth at a Pennsylvania hospital. Proof of the pregnancy and live birth were offered in the form of a birth certificate from the hospital identifying Dawn Langley Simmons and John Paul Simmons as the mother and father of a child born October 17, 1971.

"Well, this book and my conversation with my genetics professor have convinced me," Sarah murmured to herself. "This is a true story—stranger than fiction. Virginia Woolf could not have imagined that her Orlando would come to life."

Questions

- 1. What abnormalities or defects during development can lead to a lack of sexual concordance at either the chromosomal, gonadal, or phenotypic level?
- 2. Was Sarah correct in her assumption that Dawn bore a child? Suggest an explanation for the scenario (genetic/developmental) in which it would be possible for Dawn to conceive and carry a baby to full term.
- 3. Is it, or should it be, legally possible in any state to have the birth certificate changed to reflect sex reassignment?

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