

CASE TEACHING NOTES for “The ‘Lady’ of Charleston”

by

Kim R. Finer

Department of Biological Sciences
Kent State University/Stark Campus

INTRODUCTION

This particular case is based upon the real-life story of Dawn Langley Simmons, born Gordon Langley Hall in England in 1937. Much of the information about Dawn/Gordon comes from her autobiography ([Simmons 1995](#)) and a web-based personal interview. Other details come from Dawn’s obituary, which appeared in the *New York Times* in the fall of 2000 ([Smith](#)). It is interesting to note that occasionally the information contained in these resources is conflicting. Ultimately it is up to the reader (student) to decide where the truth lies.

The case was designed for a junior-level human genetics course filled mainly with allied health students. These students are required to have completed an anatomy and physiology course. The human genetics course can also serve as an elective for students enrolled in the Women’s Studies program. The overall purpose of the case is to understand the developmental basis of human sexual dimorphism and how under certain circumstances there may be a lack of concordance leading to gender misidentification. Students also consider the emotional, legal, and societal implications of gender misassignment and reassignment.

Objectives

- To understand the biological basis for sexual dimorphism in humans. This includes an emphasis on, and understanding of, the role of the SRY gene in determining the male developmental pathway.
- To discuss the events during embryogenesis that determine sex at the chromosomal, gonadal, and phenotypic levels.
- To become familiar with various genetic defects, which can lead to a lack of sexual concordance.
- To recognize syndromes that may involve gender misassignment.

CLASSROOM MANAGEMENT

The case is used during two class periods, each lasting 1 hour and 15 minutes. The case is presented using a discussion format. During the first class period ([Part I](#) of the case), the emphasis is on the genetic basis of sexual dimorphism and developmental biology. During the second class period, which focuses on [Part II](#) of the case, the students will use their knowledge of normal developmental paths to discuss defects and abnormalities that can occur. Hopefully, students will begin to question preconceived notions of what it means to be labeled male or female. During this period, we wrap up the discussion by bringing in information presented in the article “Turning a Man” ([Diamond 1992](#)). This paper addresses the social and cultural aspects and consequences of certain sexual developmental defects. (This discussion may take place during a third class period, depending on the response and breadth of the discussion during [Part II](#) of the case).

Assignments

Before coming to the first class, students must have read the text and supplemental material ([Cummings 2000](#); [Gilby 1996](#)) addressing the genetics of sex and the developmental pathways involved. Prior to the second class period, students must have explored the Online Mendelian Inheritance in Man web site at <http://www.ncbi.nlm.nih.gov/Omim/> and investigated some of the suggested topics—SRY, androgen insensitivity syndrome, 5 α -reductase deficiency, and congenital adrenal hyperplasia. For either the second or third period, students should read the article “Turning a Man” ([Diamond 1992](#)) and be prepared to discuss the details.

Assessment

Students may be required to answer questions before class discussion to assure their readiness to participate; answers may be turned in for a grade. Following the second class period, the class may debate the possibility or impossibility of Dawn giving birth. In large classes, an alternative to class debate is a position paper assignment, two to three pages in length, in support of or refuting Dawn’s ability to conceive and bear a child (the instructor should randomly assign positions to students).

Follow-up Assignments

Students may also use this case as a starting point to investigate other topics, and a summary or critique of these issues may be included in the course portfolio: documented cases of gender reassignment (e.g., surgical accidents-penile ablation, mistaken interpretation of ambiguous genitals) ([Diamond and Sigmundson 1997](#)); the validity of sex testing for athletic contests; and the guevedoces of the Dominican Republic (pseudohermaphrodites living in an isolated village in the southwestern region of the island).

ANSWER KEY

Answers to the questions posed in the case study are provided in a separate answer key to the case. Those answers are password-protected. To access the answers for this case, go to [the key](#). You will be prompted for a username and password. If you have not yet registered with us, you can see whether you are eligible for an account by reviewing our [password policy and then apply online](#) or write to answerkey@sciencecases.org.

REFERENCES

- Cummings, Michael. 2000. *Human Heredity, Principles and Issues*. 5th edition. Belmont, CA: Brooks Cole Thomson Learning.
- Diamond, J. 1992. Turning a Man. *Discover*, June issue:71-77. [Also available online at <http://www.discover.com/>; select “Archives” and search by the author’s last name.]
- Diamond, M., and H.K. Sigmundson. 1997. Sex reassignment at birth. *Archives of Pediatric and Adolescent Medicine* 151:298-304.
- Gilbey, E. 1996. Real lives: the woman brought up as a man. *Marie Claire*: February issue:54-58.
- Marx, J. 1995. Snaring the genes that divide the sexes for mammals. *Science* 269:1824-1825.
- Mealey, L. 2000. *Sex Differences: Development and Evolutionary Strategies*. San Diego: Academic Press.
- Money, J. 1994. *Sex Errors of the Body and Related Syndromes*. Baltimore: Brookes.

- Online Mendelian Inheritance in Man. <http://www.ncbi.nlm.nih.gov/Omim/>. [Instructors may want to direct their students to the OMIM Morbid Map, where a search can be run using “SRY” as a search term.]
- Simmons, D.L. 1995. *Dawn, a Charleston Legend*. Charleston, SC: Wyrick and Co.
- Smith, D. 2000. Dawn Langley Simmons, flamboyant writer, dies at 77. *New York Times* 18 September. Obituaries, p. 62.

An interesting aspect of this case is that it can be used as a multidisciplinary vehicle to unite science and literature. Suggested readings in addition to Dawn Langley Simmons’s autobiography include:

- Woolf, Virginia. 1928. *Orlando*. New York: The New American Library.

Acknowledgements: This case study was developed with support from The Pew Charitable Trusts and the National Science Foundation as part of the Case Studies in Science Workshop held at the University at Buffalo, State University of New York, on June 12-16, 2000.

Date Posted: 03/27/01 mb, revised 12/17/03 ns

Originally published at http://www.sciencecases.org/lady/lady_notes.asp

Copyright © 2003 by the [National Center for Case Study Teaching in Science](#). Please see our [usage guidelines](#), which outline our policy concerning permissible reproduction of this work.