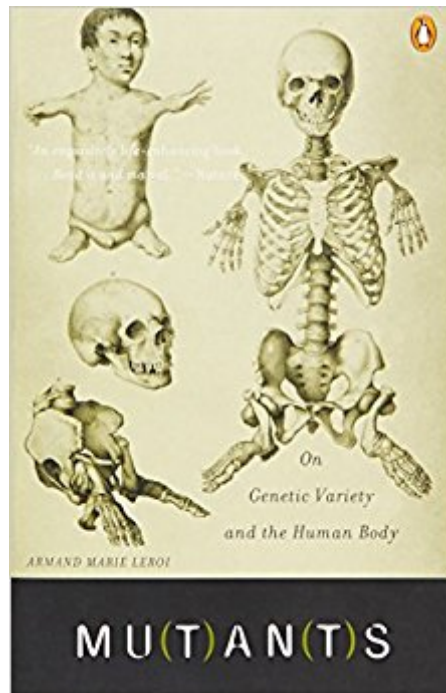




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# Mutants: On Genetic Variety And The Human Body



## Synopsis

Visit Armand Marie Leroi on the web: <http://armandleroi.com/index.html> Stepping effortlessly from myth to cutting-edge science, *Mutants* gives a brilliant narrative account of our genetic code and the captivating people whose bodies have revealed it: a French convent girl who found herself changing sex at puberty; children who, echoing Homer's Cyclops, are born with a single eye in the middle of their foreheads; a village of long-lived Croatian dwarves; one family, whose bodies were entirely covered with hair, was kept at the Burmese royal court for four generations and gave Darwin one of his keenest insights into heredity. This elegant, humane, and engaging book captures what we know of the development of what makes us human. • (Nature).

## Book Information

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## Customer Reviews

In a book that's as disturbing as it is enlightening, as unsettling as it is compelling, Leroi examines all sorts of genetic variability in humans and explains how that variability helps scientists understand the processes associated with human growth and development. Leroi, recipient of a Scientist for the New Century medal from the Royal Institution of Great Britain, demonstrates, in both text and pictures, that an enormous amount can go wrong as humans develop from fertilized eggs and progress toward old age. The missteps can result from genetic or environmental causes, with the latter occasionally responsible for the former. Although the subjects Leroi presents conjoined twins, individuals with cyclopia (a single eye), deformed or missing limbs, abnormal height, supernumerary breasts, an overabundance of body hair, piebald coloring often appear grotesque, he approaches all

of his topics and each of his human subjects with great respect. Leroi uses each example to demonstrate the developmental lessons they illustrate: e.g., the role of fibroblast growth factors in the formation of limbs, the pituitary's impact on body size. By explaining that each of us carries hundreds of mutations within us, he asserts that we are not all that different from those who, on first glance, appear very disparate. Similarly, he effectively dismisses the belief that human races are anything more than a convenient social construct, establishing that there is no biological basis for such categorization. While the graphic pictures might deter some, they add immeasurably to the text. Copyright 2003 Reed Business Information, Inc. --This text refers to an out of print or unavailable edition of this title.

This book is "about the making of the human body." Armand Leroi, a reader in evolutionary developmental biology at London's Imperial College, thus joins the multitude of writers who are attempting to gratify our narcissistic focus on "the body." His slant is genetic, and his approach is to employ the story of variation, hence the title and subtitle of his book. Leroi takes vignettes from famous historical cases of human "mutants" to provide interest and background for his discussions of the principles of developmental biology (what used to be called "embryology"). The nature of the subject leads him to emphasize genes and morphogenesis, certainly a fascinating area in recent years. Leroi starts his discussion with famous "monsters" in history -- some mythical, some well known, and some obscure, but all quite interesting. Famous examples include cases of conjoined twins, persons with hypertrichosis, and cyclops. The author is at his best in his lively writing regarding the historical context of these cases. He takes up examples of limb malformations, disorders of stature, and cases of intersex (more commonly known as hermaphroditism). The mysteries and medical theorizing of the past are presented in a sensitive voice and are followed by explanations of the current biologic thinking about the processes that appear to underlie these disorders. Leroi's accounts of the human lives touched by these variations are revealing of our historical biases. For example, he illuminates the curious association between ectrodactyly (the lobster-claw syndrome) and the cruel punishment of two religious dissenters in 1685 and shows how the connection reflects the pervasive belief that malformed children are born as retribution for parental transgression. These stories exhibit the wide range of human variation as well as the sometimes astonishing ways in which the affected human beings have managed to fit within their culture and society. In trying to craft scientific explanations that fit the tone and detail of the historical account, the author runs into a few problems. It is always difficult to convey complex ideas about, say, transcription factors and their role in sex determination to a readership that presumably does

not have a detailed knowledge of the entire process of transcription. As the biologist Lewis Wolpert has noted, much of modern science is counterintuitive, so Leroi's task is especially daunting. He has attempted much, but it seems to me that his explanations are apt to be more mystifying than edifying to many readers. To the student of current biology, these passages will be a useful summary, but for the hypothetical "general, well-informed" reader, discussions of morphogens, cell receptors, and aromatase are likely to be underappreciated. Although Leroi simplifies and streamlines as best he can, there are some places where this approach can seem to be misleading -- for example, when he asserts early in the book that mutations are "deficiencies in particular genes." To be fair, toward the end of the book, he tries to reverse this rather flat-footed definition of mutation. Sometimes, too, the distinction between genetic causes and nongenetic developmental accidents (e.g., virus infections) is not made sufficiently clear. Read this book for the fascinating tales of human variation and the lives of those affected; the clinical genetics may also be of interest.

William C. Summers, M.D., Ph.D. Copyright © 2004 Massachusetts Medical Society. All rights reserved. The New England Journal of Medicine is a registered trademark of the MMS. --This text refers to an out of print or unavailable edition of this title.

This is a fantastic book! It deals with the subject matter delicately and respectfully. Leroi's style is very pleasing to the eye and his penchant for alluding to things Classical is appreciated. Leroi's explanation of the science is well done. The pictures are tasteful (only one or two are actually disturbing). I can't recommend this enough to anyone. It's helped me place this seemingly unreasonable feature of life on this Earth in an appropriate context.

I ordered the book more out of curiosity than anything else, assuming it was a book about what caused genetic mutations. What I found was a book that taught me more about genetics than anything else I had read. The book is beautifully written and for such a tediously scientific subject, I enjoyed every page. If you want a fascinating book on genetics, with information about basic human physiology, you really want to read this book (I learned things like, you can actually see on an xray how much more growing your child can do, because the growth tips get smaller and smaller til around 18 they close. Which hormones account for growth and how they can go wrong. Aging is a mutation, and what causes it). It is ALMOST, but not quite, as easy to read as a novel. Unlike a novel, you will learn a lot...about science, genetics and humanity.

my family (the family i raised, not my parents) is one that always got every book we could find on

circus 'freaks' and human anomalies. why? i am not sure, but in recent years as i have tried to work out the genetics of giants and bigfoot, etc, i have constantly found perhaps the only information available about the population genetics of the rarer pockets of human variety.while this book has the familiar cover with drawings of the skeletons of mutated humans, the author has done what the older books could never do-tell what mutation on the DNA has caused the problem. it is generally a mutation that occurs within the first cell divisions of a developing fetus.his chapter on gender presents cases of children raised as female who at puberty suddenly become male. he relates the histories of a young french girl named Marie who lept over a style and had a penis fall out. several tribes in the world have an abnormally high incidence of this occurring. when such a child is born, they raise it first as a girl, understanding that at puberty it will become a boy.the author discusses the spotted hyena which made the defect into a functioning population with some rather gnarly nasty bits.if you are a person who wants to know about this sort of thing, i do not think there is another book that offers what this one does.

It was a very good book, perhaps a little overly technical but a very informative read. The style was elegant but dry.If you are interested in genetic variations and mutations [the different types of mutations as well] then this is a book you should read.If, however, you are a casual reader that does not want to have to work to hard with a book then you'll be wanting to give this book a pass.As other reviewers had noted, this is not a book for pregnant women or women planning on have a family.Recommended for like the Science without the condescension.Some vocabulary is specialized but is often explained and what isn't explained is readily available online.

I ordered this book because I am interested in science, but especially genetics. This book is a great one for anyone who wants to know why some people can be completely different from others. I'm a college student studying biology and genetics right now so this was an interesting read for me. I explained what it was about to my roommate and he decided to read this book when I was done. Some of the chapters have a very scientific and technical vocabulary, but if you have a basic background in science then you should be able to figure out what most things mean. After taking some classes in this kind of stuff I still didn't know what some of the terms were so this was a great book to teach me new things about a topic I love. I would definitely recommend this book to anyone who has a love for science.

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