



Book review

Entwined Lives: Twins and what they tell us about Human Behavior

Nancy L Segal, Dutton: New York, 396 pp, 1999, US\$27.95
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Nancy L Segal, PhD, is well known and highly respected in the fields of twin research, genetic epidemiology and developmental psychology. She is currently Professor of Developmental Psychology and Director of the Twins Studies Center at California State University, Fullerton, USA. Segal has published numerous scientific papers on twins. She was contributing research editor of *Twins* magazine from 1984 to 1988 and has previously co-edited a book entitled *Uniting Psychology and Biology*, one of her academic passions. However, she is particularly associated with the work of the Minnesota Center for Twin and Adoption Research, where she served as Assistant Director from 1985 to 1991. The Center itself is best known for its studies of twins reared apart and reunited later in their lives. The study of twins contributes enormously to knowledge about genetic and environmental influences on behaviour, health and development. This is the theme of her new book, *Entwined Lives: Twins and what they tell us about Human Behavior*. The general public is increasingly aware of twin research because of television documentaries, newspaper and magazine articles devoted to what is probably universally regarded as a fascinating topic.

What is unknown to many is that Segal herself is a non-identical twin. She notes in the book's Afterword that she was cautioned against revealing this earlier in her career, because some bias may be perceived in her work by others. It was one of the first things I noted when I read a paper she wrote some time ago about twins and twinning (we twins are quick to note other twins!). Her own 'twinship' has clearly been a driving force for her career and for this book. In *Entwined Lives* she talks about many twins she has met in the course of her personal life, her teaching and her research. Segal writes in the first person with enthusiasm, fondness, and a deep-seated fascination for twin pairs. She even includes in her scope twins who

have lost their co-twins ('twinless twins'). Segal feels deeply the plight of such twins and has been involved both in research on this topic and on the Advisory Board for the Center for Loss in Multiple Birth.

Entwined Lives is a monument to twinship. Segal's book comes with glowing tributes on the back cover from Professor David Lykken and Professor Irving Gottesman. Their enthusiasm for the book is surpassed by the enthusiasm of the author for her subject and all the twins she has met. This volume is described with acclamation by Thomas J Bouchard, PhD in his Foreword as a 'book extraordinaire!'. It certainly is. Nancy Segal writes about twins with verve and enjoyment in a style which will appeal to the general reader. All readers, including academics, will learn. There are extensive notes and references for each chapter, and a glossary to explain more technical terms, although these are avoided where possible. The personal style of the book intentionally and very successfully allows easy translation of the technical into the generally comprehensible.

The twin researcher will find interesting snippets and perspectives from Segal's extensive experience. Insights from evolutionary psychology are often provided; there is a novel and stimulating analogy, example or link. For example, in the chapter on twins' special relationship Segal takes over three pages to explain simply and clearly Darwinian theory, natural selection, altruism, and inclusive fitness. She draws on other research and analyses evolutionary predictions about altruistic behaviour, highlighting Steven Pinker's distinction between the 'real motives' of individuals and the 'metaphorical motives' of genes. But while noting the freshness of evolutionary psychological perspectives, Segal also raises the controversial effect of these views, and concern that researchers have slighted environmental effects.

I think this book will help students and academics (who are not necessarily in these fields and who are not necessarily twins) to enjoy the insights and experiences of the inside world of a researcher recounted with honesty, warmth and empathy. The researcher

comes to life; she is professional, clever, a great communicator and loves what she does! *Entwined Lives* is therefore more than a book about twins. It is also about research and the academic pursuit of scientific truth. Segal should inspire young students to follow a human research path. *Entwined Lives* would make very useful required reading for undergraduate students in a wide range of fields. Segal's memory must be outstanding and her journals impeccably kept for her to have recourse to such detail about her encounters with so many twins. It is admirable that so many twins have agreed that their personal details and Segal's perceptions of them may be published in this way. To be part of an anonymous twin study is a major contribution to knowledge; to be identified and discussed in this book is another, and clearly shows the respect of these twins for Segal herself and for her professionalism in the field of psychology.

Parents and relatives of twins will enjoy the book. Readers will find much interesting information about relating to twins and twinship in general (the 'twin thing' as Segal calls it), for example concerning developmental issues and how to deal with them. They will learn much about what twin researchers do and why we study twins. This is sometimes hard to explain in a way that study participants and potential participants (and even collaborators) will understand. Not uncommonly they do not see the relevance of twin research to understanding reasons for individual differences and variation in the general population. *Entwined Lives* will do a great service to twin research by adding to public understanding and bridging these gaps.

Although the chapters have catchy titles, which will appeal to the non-scientific audience, the academic reader, who is familiar with the field and the methodological issues that are central to it, will recognise the issues behind the titles. That the chapters are relatively self-contained makes the book easy to dip into. They cover a wide range of topics, including some unusual ones — twins in the courtroom, non-human twins, noteworthy twins and conjoined twins. There is a clear leaning

towards the psychological and the author's areas of expertise, for example, Chapter 4: Developing in Tandem: Intelligence and Special Mental Skills. Chapter 5, devoted to personality traits, mental disorders and atypical behaviour, provides a good example of the book's style. Segal not only summarises and interprets twin study findings on psychopathology, she also adds many personal touches. By way of illustration, it was important to resolve the question of whether higher MZ co-twin concordance for suicide reflected a genetic predisposition or the deeper sense of loss by MZ rather than DZ twins of a co-twin's suicide. Segal notes 'I wondered if an answer lay hidden in our sea of data when the elusive research strategy became clear. It was important to compare suicidal attempts between identical twins and fraternal twins whose partners' deaths were not due to suicide.' (p 92). She adds extra life to the book with colourful descriptions of study participants, for example one set of twins recalled Simon and Garfunkel's 'voices out of rhythm, couplets out of rhyme', from the song 'The Dangling Conversation', about two lovers who had lost their early intimacy and rapport. The chapter concludes with a scan of problematic behaviour where genetic influences have been identified. This is preceded by some possible answers to the evolutionary question – why does such debilitating behaviour remain in the population when it causes such pain?

Readers will have different reasons for wanting to consult one or more of the book's 16 chapters – facts about twins, practical information, guidance, wisdom and entertainment. There are some wonderful monochrome photographs, which make the book particularly interesting and illustrate some important points. There are some identical co-twins who look much less alike than a pair of non-twin same-sex siblings, and nonidentical twins who look like 'peas in a pod'. There are twins who have died, twins who are gay, twins who are famous (or one of them is), identical twins where one looks much older than the other because of smoking and sun exposure, and just ordinary twins. All photos have interesting captions that invite the reader to delve further into the text. The photograph on the cover of two beautiful young women is enchant-

ing; their closeness is clear, their similarities striking, but their differences still distinguishable.

There is much beyond the well publicised theme of reared-apart twins to captivate readers, although it makes a most engaging chapter. Novel insights are provided, for example evolutionary reasons for the differing responses of identical and nonidentical twins to their newfound twinship, showing the importance of genetic and environmental influences in shaping social relations. Other chapters also focus on twins' special relationships (Chapter 6, *Friendship Extraordinaire*, and Chapter 9, *Lonesome Crowd: Loss of a Twin*). The latter may be of more interest to twins themselves, or to psychologists, than to genetic epidemiologists or behaviour geneticists. Nonetheless, the more researchers can learn about twinship, the better informed their research must be. The chapter on noteworthy twins highlights not only great achievements and similarities, but differences and even rifts between twins, and importantly incorporates the twins' own views and quotes their own words. For example, one of the Duke twins, Charlie, was an astronaut who walked on the moon, his brother Bill a physician. They had some difference of opinion on their relative 'detail-orientation'. Segal does not always interpret – she gives their own views without imposing her own, and leaves the question open. However, it appears harder to be famous outside the United States, and many other famous twins are ignored, such as the McWhirter twins (*Guinness Book of Records*), the Kray twins (infamous British criminals), and the Waugh twins (of current Australian cricketing fame). If there is any criticism to be made of the book it might be that its focus is very American, but this has its own charm. The chapter on physical growth and athletic prowess is entitled *Two-Base Hits and Triple Toe Loops*, which for an Australian reader is somewhat mystifying.

Many readers will find Chapter 10, *Making Multiples: New Fertility Treatments and Beyond*, of interest. This new audience is less likely to have a family history of twinning, and hence there may be fewer voices of experience and support from within their families. Information such as that in this book becomes more important for such fami-

lies. Topical issues such as cloning humans are dissected and challenging ideas are offered. Chapter 8 on children adopted together will also be of interest to the general reader, and especially to those from families where children have been adopted.

The book concludes with a chapter (16, *Double Entendre: Twinship's Many Meanings*) in which Segal draws together and summarises some key points – from findings of twin studies, methodological issues such as the equal environments assumption, and other potential biases, eg social, primary and recruitment. She defends twin research methods clearly and well, although quite briefly and with few references to the many pertinent published papers, thereby clearly aiming for the general reader. In this chapter, however, Segal is also not afraid to tackle very serious issues head on, for example Mengele's experiments on twins, child abuse, stresses on parents and siblings of twins, and not-so-happy relationships between co-twins. There are negative aspects to twinship, a balance to the 'friendship extraordinaire' shared by most twins. However, at the same time she finds the opportunity to provide another example of twinship's importance. As a subject of Dr Mengele's often sickening experiments, keeping one's co-twin alive was central to one's own survival in the Auschwitz-Birkenau concentration camp between 1943 and 1945. If your co-twin died, you were 'slaughtered for medical purposes'. Segal states that she always makes reference to Mengele's experiments in her lectures on twins, and acknowledges their particular impact on herself as a Jewish twin. She is not reluctant to share her emotional response to this and other less disturbing events.

The book is a goldmine of information, of anecdotes, of insightful observations. Twin research to Segal is 'bliss'. She reveals this in the very personal 'Afterword: Part of Me'. Her enthusiasm is infectious. Her 'bliss' is contagious. I love this book!

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