
The old adage “nature versus nurture” epitomizes a long-standing debate about the cause of developmental disorders, with many psychologists clinging to the infamous gray area where both biology and environment have a significant effect on subsequent psychopathology. John Morton, an established leader and author in the field of cognition and development, addresses this debate by challenging readers to incorporate cognition as an additional etiological source in his causal modeling approach to understanding developmental disorders. Morton offers a diagrammatic model to delineate the intricate relationships that result in pathologic conditions, suggesting that biologic processes give rise to cognition, which leads to behavior. Environmental influences are also included at the biological and cognitive levels.

Although this book is titled *Understanding Developmental Disorders,* Morton vehemently reiterates throughout his work that it is not an all-encompassing review of research regarding developmental disorder etiology. Instead, he offers causal modeling as a tool to be used to simplify and understand existing research, compare and integrate theories, and allow for productive generation of hypotheses about autism, dyslexia, hyperactivity, and conduct disorders.

The outset of the book considers the concept of causation; the importance of weighing cognition, as well as physiological and biological factors, in conceptualizing and modeling behavior; and the framework of causal relationships. The book further discusses the establishment of causal modeling, which was the creation of John Morton and Uta Frith (another influential cognitive psychologist), who sought a model of mental structures in autistic persons. The conceptualization was intended for use in facilitating diagnosis, despite substantial variance in symptomatology. At the same time, Morton noted that language tends to be not only full of various connotations, making it less specific than one would assume, but also linear, while conceptualizations tend to be multidimensional. These compelling arguments for the use of diagrams over language led to creation of the causal modeling framework. Morton specifies that he is not attempting to make existing ideas correct and that the approach can appropriately represent all types of theory. This technique should be viewed as a tool to add clarity to present knowledge in order to increase the chances of verifying or falsifying theories. Essentially, causal modeling creates an outline for theorizing and testing with empirical methods.

Morton takes special issue with the common practice of circular reasoning within the field whereby behaviors are seen as both symptoms and causes. He proposes a focus on the true cause, which arises at the biological and cognitive levels, with environmental interaction taking place at both substrates. He cautions that causal diagrams should be interpreted in a probabilistic way, since variability can exist at any level, but they may be used in a computational fashion to predict and examine problem behaviors. The goal of explaining
and applying the causal model is clearly achieved. The benefits of the model include flexible application to various topics while allowing for acceptance across theoretical orientations. Similarly, the framework may be used to understand one case, as well as an entire disordered population.

Throughout the book, Morton provides exercises for readers to attempt and discusses the maxims of causal modeling in the context of several disorders, making this work a valuable learning device instead of simply an interesting read. In addition, the book appears to be not only a constructive tool for understanding psychological disorders outside the developmental realm but also an excellent aid to graduate-level studies in childhood development or childhood pathology. Overall, Morton's causal modeling approach seems an innovative and insightful advance in examining and understanding the causes and diagnosis of pathologic conditions.

Kathy L. Korell, Joanna Marino, and F. Richard Ferraro, University of North Dakota