

# PSYCHOLOGICAL DEVELOPMENT

*An Introduction to  
Genetic Psychology*

BY  
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TO  
MY PARENTS  
HENRY AND FANNY MUNN

*Nothing gives a better insight into the working of the mind than the study of the development of behaviour through the different animal species, and from the birth of the child up to maturity. It is not merely the bald facts acquired in such a study that are of value, but the attitude that it induces. The man who has heard the beginning of a story is ipso facto a more reliable judge of the credibility of the ending than the man who has come in at the middle.*

VICTORIA HAZLITT, *Infant Psychology*  
(Cambridge University Press)

## EDITOR'S INTRODUCTION

NO ONE who recognizes that human mental life is important can fail to believe that an understanding of the growth of mind is of fundamental significance.

In the present volume, Dr. Munn gives a clear and scholarly treatment of this development. The picture which he presents shows the growth of mind from its beginning, both in the animal series and in the individual. The field treated, therefore, is the one which was first surveyed in its general extent by such men as Darwin, Romanes, and Preyer, but, in many ways, the present author tells a story of mental growth that could not have been presented by any of these great early students of the evolution of mind. This is true because there has been so large an amassing of relevant experimental fact since the time that they wrote. As an example of this new material may be taken the observations now codified in the quantitative science of genetics. Dr. Munn has skilfully organized the most important facts of modern genetics which are significant for the psychologist, the psychiatrist, and the educator. Especially noteworthy also is his summary of present knowledge concerning the early development of behavior in the infant.

Based upon this biological foundation, the author gives a clear exposition of the experimental findings and general principles relevant to an understanding of the alterations in the capacity for adaptive behavior which are characteristic of more and more highly developed animals and of the growing human individual. In this connection, the parts played by symbolic processes are given special attention, and the function of language and of language-like responses is shown to be especially significant in explaining adaptive behavior that is peculiarly human.

Students of education and psychiatry, as well as psychologists, are necessarily interested in a factual understanding of the growth of the human mind. The present volume is a rare book in that it is at once valuable to the expert and at the same time not beyond the reach of the beginning student.

LEONARD CARMICHAEL

## FOREWORD

THE writer has attempted to sketch the chief trends of racial and individual psychological development in a manner which will make these understandable to undergraduate students of psychology and education.

The field of genetic psychology is so broad and the amount of literature so vast that an exhaustive treatment would prove too cumbersome for instructional purposes. It has thus been necessary to delimit topics and the studies with which to illustrate them. In making a selection of research material, the aim has been to consider the most relevant, the most recent, and the most representative studies. There has been no attempt to select data consonant with a given systematic viewpoint. Rather the writer has aimed to ascertain the viewpoint dictated by experimental findings.

Despite the fact that this is not a mere collation of research material, the bibliography is quite extensive. For the convenience of those who will wish to use this volume for purposes of reference, the citations have been grouped at the end. References at the conclusion of each chapter do not necessarily relate to studies cited, but are suggestions for further reading.

For courses in the psychological aspects of child development, one may eliminate Chapters I, III, IV, V, and VI, or use them as supplementary reading, yet still have an integrated presentation of development from conception until puberty, including a discussion (Chapter II) of basic hereditary and environmental relationships. The volume may also prove useful for courses which consider educational psychology in terms of its genetic aspects. Certain parts of Chapters III to VI may, in such instances, be used to supplement the later chapters on individual development.

The author desires, first of all, to acknowledge indebtedness to his students at the University of Pittsburgh and George Peabody College for Teachers who read and criticized the manuscript while it was being used as a basis for courses in genetic psychology.

Several colleagues have criticized specific chapters which are in line with their main interests. Dr. P. W. Whiting, of the Zoölogy Department of the University of Pennsylvania, offered valuable advice concerning the treatment of genetics. Drs. Davenport Hooker and John C. Donaldson, of the Anatomy Department of the University of Pitts-

burgh Medical School, performed a similar service in connection with the discussions of prenatal development. Dr. Wayne Dennis, of the University of Virginia, made many helpful suggestions concerning the material on maturation, conditioning, and learning. He also supplied the original drawings for Figures 65 and 66. The late Dr. Harry Ewert, of the University of Vermont, gave valuable criticism of the chapters concerning sensory processes, spatially coordinated behavior, and motor development. Dr. Dorothea Johannsen Crook, of Skidmore College, critically evaluated the discussions of symbolic processes, language, and intelligence, thus enabling the writer to improve his presentation of these topics. The chapter on language was also criticized in a helpful manner by Dr. Joe E. Moore, of George Peabody College. Dr. Harry Karn, of the University of Pittsburgh, read the entire manuscript and contributed many suggestions which have been followed in its revision.

The writer is especially indebted to Professor Leonard Carmichael who read and criticized the entire manuscript. His criticisms and his positive suggestions have contributed greatly to the exposition.

Thanks are also due to Margaret King, Elizabeth Rogers, and Elaine Pool, who typed the manuscript at various stages of its development; to Mr. Clarence Hankins, who made the drawings for Figures 25, 27, 28, 63, and 97; and to my wife, without whose constant help and encouragement this book would not have been written.

Many editors and publishers have kindly granted me permission to borrow from their publications. Specific acknowledgments appear at appropriate places throughout the book.



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## CHAPTER I

### INTRODUCTION

1. The field of genetic psychology considered historically: Origins of phylogenetic and ontogenetic psychology. The influence of recapitulation concepts. The problem of consciousness in relation to phylogenetic and ontogenetic psychology.
2. The genetic method of investigation.
3. Affiliations of genetic psychology.
4. Problems of genetic psychology.
5. Summary and conclusions.

#### THE FIELD OF GENETIC PSYCHOLOGY CONSIDERED HISTORICALLY

*Origins of phylogenetic and ontogenetic psychology.* Genetic psychology is concerned with the genesis and development of psychological processes in animals ranging from the simplest to the most complex, and in the individual from the time of conception until senescence.

This line of investigation began as an adjunct to the evolutionary biology of the latter half of the nineteenth century. With the publication in 1859 of Darwin's *Origin of Species*, doubt concerning man's relationship with other animals was considerably dissipated. By a painstaking accumulation of data Darwin demonstrated that the structural and many of the behavioral traits of man may be interpreted in the light of their prehuman origins. He regarded human traits as the culmination of developments initiated in lower animals. In a later book, Darwin (1873) suggested that many aspects of human emotional expression are meaningless unless one considers them as vestiges of similar emotional reactions in prehuman ancestors. Man's incipient or overt baring of the canine teeth during rage, for example, was traced to the snarling gestures made by many prehuman animals. In a somewhat similar vein both Darwin (1871) and Spencer (1855) accounted for many other processes of human behavior. Even the ability to reason, once regarded as an exclusively human possession, was claimed to be the culmination of essentially similar abilities evidenced earlier in the animal series.

Interest in the psychological evolution of animals led to the publication in 1883 of Romanes' *Animal Intelligence*, which may possibly be called the first book on comparative psychology. In this book Romanes collected and systematized most of the available information on the psychology of animals. Successive discussions dealt with the psychology of mollusks, ants, bees, wasps, termites, spiders, scorpions, fish, batra-