SOCIAL ORIGINS OF Mental Ability

GARY COLLIER

A VOLUME IN THE WILEY SERIES ON PERSONALITY PROCESSES

IRVING B. WEINER, Series Editor

Social Origins of Mental Ability

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Series Preface

This series of books is addressed to behavioral scientists interested in the nature of human personality. Its scope should prove pertinent to personality theorists and researchers as well as to clinicians concerned with applying an understanding of personality processes to the amelioration of emotional difficulties in living. To this end, the series provides a scholarly integration of theoretical formulations, empirical data, and practical recommendations.

Six major aspects of studying and learning about human personality can be designated: personality theory, personality structure and dynamics, personality development, personality assessment, personality change, and personality adjustment. In exploring these aspects of personality, the books in the series discuss a number of distinct but related subject areas: the nature and implications of various theories of personality; personality characteristics that account for consistencies and variations in human behavior; the emergence of personality processes in children and adolescents; the use of interviewing and testing procedures to evaluate individual differences in personality; efforts to modify personality styles through psychotherapy, counseling, behavior therapy, and other methods of influence; and patterns of abnormal personality functioning that impair individual competence.

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Foreword

This book fills an urgent, long-felt need. In principle, everyone agrees that intelligent behavior depends heavily on motivation, cultural experience, and acquired cognitive skill. But in practice, no one has taken the crucial next step, which is to survey the research literature in those domains and see how it adds up. It is easy to see why not: The sheer number of relevant topics is daunting enough. They include not only a host of well-studied individual characteristics—personality traits, cognitive styles, linguistic skills, mnemonic strategies, modes of attention—but also a formidable array of social phenomena: discrimination, segregation, stereotyping, schooling. Who could possibly work through all those different fields carefully enough to assess their implications for intelligence? Gary Collier could, that's who.

Although the range of topics Collier addresses here is admirable in its own right, his success in bringing them together is even more so. For him, the old rubric "personality and social psychology" names one continuous domain, not two independent topics. Whereas many chapters begin with a classical person variable, most of them culminate in a discussion of some related group difference or some policy-related issue (gender and "fear of success," racial segregation, the effects of television on children). The title is meant seriously: This is a book about the *social* origins of mental ability.

Nevertheless, it is also a book about individual differences. Many familiar concepts from the classical psychology of personality—level of aspiration, need for achievement, locus of control, field dependence, the authoritarian personality—are carefully reviewed in these pages, along with others more recently defined, such as fear of success, mastery orientation, learned helplessness. It is a brute fact about American society that such traits are unevenly distributed; most of them show significant correlations with race, sex, and socioeconomic status. If we are ever to understand group differences in apparent mental ability, those correlations cannot be ignored.

Even "personality" and "social psychology" taken together do not exhaust the relevant range of topics here. In Part Three of his book, Collier goes beyond the demands of its title to survey the *cognitive* roots of mental ability; language and its relation to thought; perception, attention, and cognitive style; memory and metamemory; and methods of problem solving and heuristics for creativity. Here, too, the social implications of the research

are never out of sight for long. When we finally reach the last chapter, focused on practical issues and unashamedly political in its recommendations, we are conscious of having traversed a very large and significant intellectual terrain.

Years ago, I used to teach a course called "Thought and Intelligence," in which I tried to present the disputed issues of this field to undergraduates as clearly as possible. It seemed to be something they ought to know—indeed, something everyone ought to know. Although the course worked tolerably well, I eventually gave it up. It had come to include too many topics, too incoherently related. Many of those topics lay outside my own expertise, and there was no organized reference source to which I could turn for information. Nor was there any appropriate text for the students, at least none that covered the range of relevant issues in a serious way. Now, at last, there is *Social Origins of Mental Ability*. Courses like mine are possible again, and I will not be the only professor in the United States or Canada who thinks about offering one. As teachers, as researchers, as psychologists, and simply as citizens concerned with social issues, we all owe Gary Collier a vote of thanks for this remarkable book.

ULRIC NEISSER

Emory University
February 1993

Preface

This book attempts to examine the nurture side of the nature–nurture controversy as it pertains to intelligence. Although the importance of the social environment in shaping mental abilities has long been recognized, treatments of its impact have tended to be quite general (for the most part) and this book differs from previous discussions because it attempts to provide a broad overview of the ways that motivation and cultural conditions shape the development and use of cognitive skills. Those who support the environmental position have been far more successful in attacking the genetic position than in building a coherent case of their own.

The book discusses two major areas of concentration. The first focuses on motivation, and the second covers the development of cognitive skills. These two areas are not just different topics, but are different spheres of research, with very little overlap. Although there are many notable exceptions, those who study motivation tend to treat cognition in a very general way and fail to consider the processes and subprocesses responsible for individual differences. Cognitive psychologists, on the other hand, often ignore motivation altogether, apparently assuming that it plays little or no role in information processing or that it can be added to theories of cognition later on. The recent work on helplessness and metacognition may help bridge this gap, bring the two areas together, and serve as a useful model for future research.

Each chapter begins with a brief discussion of the broad-based theoretical position related to the research and includes a general discussion of cultural conditions and cognitive consequences. These intellectual traditions serve as the glue used to hold together the various areas of research within each chapter. The chapter on achievement motivation, for example, begins with a general discussion of Max Weber's concept of the Protestant work ethic. The chapter on intrinsic motivation includes discussions of Gordon Allport's concept of functional autonomy and Abraham Maslow's theory of self-actualization. Several chapters focus on differences between blacks and whites in American society, whereas others stress gender or cross-cultural differences. The overall aim is to bring together a wide range of theory and research drawn from psychology, sociology, anthropology, linguistics, and history. The book is intended primarily for teachers and professionals working in psychology, education, or one of the

social sciences; but it could also be used as a supplementary text for graduate or undergraduate courses in cognition, intelligence, or the sociology of knowledge. Because it covers both motivation and cognitive development, it has no predecessors and no direct competition.

The first nine chapters were circulated and discussed in a graduate seminar at Emory University in 1990. I would like to thank the people who participated in this seminar, read parts of the manuscript, and made comments and suggestions. These include Davido Dupree and Professors Jacqueline Irvine, David Jopling, and Ulric Neisser. Parts of the manuscript have also been read by Professors William Clemens, Richard Keshen, and Graham Reynolds at the University College of Cape Breton. Research was funded, in part, by a series of internally administered grants provided by the Social Science and Humanities Research Council of Canada.

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January 1993

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PART ONE

Introduction

CHAPTER 1

The Social Psychology of Intelligence

Traditional research on intelligence can be extended by applying various aspects of social psychology. The social psychological contributions fall into three major areas: (1) Social psychology can help show how specific cultural conditions lead to various forms of adaptive and maladaptive behavior; (2) social psychology has had a long history of research on various aspects of motivation associated with intelligence; (3) social psychology can help uncover some of the biases and distortions occurring during information processing that limit people's ability to solve problems or perceive and recall situations accurately. The chapter ends with a brief discussion of Lev Vygotsky's "zone of proximal development" and its potential role in integrating much of the diverse literature on the social origins of mental ability.

Although research on intelligence[1] has progressed considerably in recent years, there is still a great deal to be done. Part of the problem stems from the fact that the three areas most closely associated with intelligence research—the psychometric approach, cognitive psychology, and artificial intelligence—have all shared a common neglect of motivational and contextual factors responsible for mental development and have tended to draw analogies from the type of rational deductive reasoning associated with computers. Although the deliberate suspension of motivational and contextual factors may have been a useful strategy when cognitive science was in its infancy, mental ability must now be redefined to include these neglected areas.

Social psychology is in many ways uniquely suited to address these deficiencies because motivation and the social context have been central issues in a long history of research. By "social psychology," I do not mean the narrow academic discipline typically associated with psychology but a more broad-based academic coalition consisting of psychology, anthropology, sociology,

[1] In this work, the terms *intelligence* and *mental ability* or *mental abilities* are completely interchangeable. Although the term mental abilities is more accurate because it suggests that there may be a number of different types of intelligence, the term intelligence is also used to stress that the topic being discussed is what psychologists traditionally think of as intelligence or, more specifically, the rather specialized set of skills typically associated with academic achievement.

linguistics, and history (see Collier, Minton, & Reynolds, 1991, for a more extensive discussion of this "potential" discipline). This broad-based coalition will have to link up with an equally broad coalition currently referred to as "cognitive science" (see Chapter 2), as well as such traditional areas as educational and developmental psychology. Much research has already been conducted, but researchers working in separate areas are unfamiliar with each other's findings. The contributions of these broad coalitions fall into three separate areas: (1) the role of the social context in the development of cognitive skills, (2) motivational factors that promote or inhibit the development and/or use of cognitive skills, and (3) biases and distortions in information processing that lead to errors in perception and problem solving and poor recall.

THE SOCIAL CONTEXT OF MENTAL DEVELOPMENT

At the most general level, social psychology can help show how the social and cultural context contributes to cognitive and intellectual development. A concern with the social context is not new, but it is an area that has waxed and waned. During the 1930s, there was what Boring (1950) called "an invasion of 'general psychology' by 'social psychology'" (p. 748), and a lively partnership developed between psychology and anthropology (e.g., Klineberg, 1940). Social psychologists began to examine how individual psychological processes, such as learning, perception, and memory, were shaped by social conditions. Although this interest has subsided to a large extent, there are still pockets of research that can be tapped.

The social context not only provides the information that is processed—the beliefs, attitudes, and cultural norms promoted by society—but also helps to foster the development or nondevelopment of certain types of cognitive skills. The economic and cultural context forces people to adapt by developing skills to handle new situations, which are then perfected and automated through practice. Some skills are used so habitually that they recede from awareness and become "second nature." As Vygotsky (1930–1935/1978) has pointed out:

> In psychology we often meet with processes that have already died away, that is, processes that have gone through a very long stage of historical development and have become fossilized. These fossilized forms of behavior are most easily found in the so-called automated or mechanized psychological processes which, owing to their ancient origins, are now being repeated for the millionth time and have become mechanized. (pp. 63–64)

One of the primary focuses of this book is aspects of intelligence that have become *second nature.* These are primarily cognitive skills involved in

attention, perception, problem solving, and memory which have been learned incidentally for the most part, practiced to the point where they have become automatic, and are now used routinely to deal with day-to-day situations.

A second focus is on the deliberate use of cognitive strategies to aid problem solving and memory. These metacognitive skills allow people to gain control over their mental operations and improve performance. With time, these operations also become more and more automatic, so that experts within a particular domain focus primarily on the problem at hand and have very little self-conscious awareness. Both cognitive and metacognitive skills seem to develop within one domain at a time and may or may not generalize to other areas (see Ceci, 1990).

The social context leads not just to the development of skills but to maladaptive behavior as well. A good example can be seen in Carol Dweck's (1975) contrast between *mastery-oriented* and *helpless* children, which will be discussed in more detail in Chapter 3. When mastery-oriented children are faced with a temporary setback or the possibility of failure, they regard the task as a challenge, work harder, and generally improve their performance. Helpless children, in contrast, find such tasks aversive and have difficulty concentrating or sustaining interest. Their thoughts frequently wander to task-irrelevant areas, and their performance deteriorates over time. Other examples of learned maladaptive behaviour include the fear of success and failure (Chapter 3), an external locus of control (Chapter 4), and various forms of self-handicapping strategies (Chapter 5).

The significant improvement of intelligence in recent years underscores the importance of the social context. Tuddenham (1948) compared the tests of white enlisted men from World War I and World War II and found that test performance had increased by almost a full standard deviation. The median performance on the Army Alpha during World War II fell at the 83rd percentile of the corresponding World War I population. More recently, Flynn (1984) has shown that there has been the equivalent of a 13.8-point increase in IQ between 1932 and 1978. His study showed that every sample used to standardize the Stanford-Binet and Wechsler tests between 1932 and 1978 used higher norms and, thereby, made it more difficult for those who would have previously scored high to receive comparable scores. An average person scoring 100 on a test standardized in the late 1970s would have scored 114 or almost one full standard deviation above the norm on a test standardized in the early 1930s. Flynn discusses various possible reasons for the change and concludes that the most important factor is probably increases in education. Similar increases in IQ have been reported by Anderson (1982) for people in Japan.

Technology helps determine not just the "amount" of intelligence but the kind of intelligence that occurs. The advent of low-cost home computers, for example, has helped produce a new generation of computer whiz kids in which

programming skills and certain types of logical thinking are more or less second nature. Commercial television, on the other hand, seems to limit people's ability to attend to information and to concentrate for extended periods (see Chapter 7). Although there has been a common tendency to see intellectual development as something that *evolves,* modern industrial conditions both promote and limit cognitive development and there are enormous variations between individuals and subgroups even in the same culture. If specific skills can be altered so radically in such a short period, there is no reason to assume that even more radical differences across cultures and subcultures have not produced similar effects. A person who is quite able to adapt to society at one time may feel extremely out of place once cultural conditions change. Indeed, many middle-aged white-collar and blue-collar workers in our society are in very real danger of being left behind by the computer revolution.

Research on cross-cultural differences in intelligence has frequently been avoided by more progressive thinkers because there is a common tendency to see intelligence along a continuum that ranges from "primitive" to "civilized," with the implication that civilized is better (e.g., Werner, 1948). The basic premise behind what Medin and Cole (1975) have called the "search for historical antecedents" is that subjects who are younger or are from less technologically advanced cultures share certain characteristics that vary along a scale from primitive to advanced. The ethnocentrism and chauvinism of this position is sufficiently strong to dissuade many progressive people from even attempting research in the area. What is needed is a radical realignment so that a concern with cultural differences is viewed as progressive. Culture helps shape intelligence, for better or worse, because it determines the kinds of opportunity available (a person cannot become computer literate in a society without computers). Individual differences occur, at least in part, because of individual differences in cultural conditions and, therefore, improvements among disadvantaged groups can be expected only when resources are more widely shared.

There is *no* strictly linear continuum which runs from "primitive" to "advanced." The cultural context occurring in modern industrial society facilitates the development of some skills and limits others. Cole and Means (1981) point out that "departures from typical performance patterns in American adults are not necessarily defects, but may indeed be excellent adaptations to the life circumstances of the people involved" (pp. 161–162). Similar differences occur across subcultures even in the same society. What is adaptive for a young black slum dweller may be very different from what is adaptive for a wealthy middle-aged professional. Atkinson (1974) has stressed that scores on *so-called* intelligence tests measure performance on particular tasks in a particular situation. He goes on to suggest that "one really needs a whole social psychology to make complete coherent sense out of what happens in that setting. *Mental testing is, or should be, a subfield of*

social psychology" (p. 406). The social environment also contributes indirectly to mental development through the development of various motives that then help determine what a person learns or fails to learn.

MOTIVATION AND MENTAL ABILITY

Social psychologists have long been involved in research on motivational factors directly or indirectly involved in mental ability. This includes research on achievement motivation, internal-external locus of control, level of aspiration, intrinsic reinforcement, and most recently, various forms of self-handicapping strategies. Many of these areas have a long history of research. Research on achievement motivation can be traced back to Max Weber's (1904–1905/1958) description of the Protestant work ethic, discussions of intrinsic reinforcement draw partly from Gordon Allport's (1937) theory of "functional autonomy," Leon Festinger's doctoral dissertation, completed under Kurt Lewin in 1938 was based on level of aspiration, and Julian Rotter's (1954, 1966) research has helped inspire a swarm of studies on attribution and locus of control. The most recent work on self-handicapping shows that people do not always aspire to succeed. They frequently create obstacles so that they can attribute failure to sources other than their own ability.

Each of these motives has different social origins, different cognitive consequences, and a somewhat different effect on various target groups. The early research on achievement motivation described in Chapter 3, for example, was carried out primarily with males, and there was an early recognition that the same processes were not consistently related to achievement motivation in females. Because of this, Martina Horner (1968) postulated an additional motive—the fear of success—to help explain lack of achievement among certain females. The more recent research based on attribution theory has also found consistent gender differences in the way males and females explain success and failure. In general, males take more credit for success than females and are more likely to deny responsibility for failure. This helps perpetuate the myth of male superiority and discourages high levels of achievement among females.

Although gender differences also occur in locus of control, the most visible differences are those occurring between blacks and whites. Among white males, an internal locus of control in which people believe that they can control what happens to them is usually associated with a warm and protective home environment that stresses independence and frequently rewards success. Among blacks, an external locus of control seems to be based on black children's growing awareness that lower-class blacks have less control over their own lives. An adequate understanding of these processes requires an understanding of the conditions of blacks in the United States today.

Similar differences among larger groups are also evident in the literature on level of aspiration and self-esteem discussed in Chapter 5 and in the research on intrinsic motivation, which is the focus of Chapter 6. Level of aspiration is typically lower among underclass blacks, and intrinsic motivation is rare among people in jobs that have been oversimplified and reduced to a few simple repetitive operations. These effects are often subtle and indirect. Intrinsic interest in a particular activity, for example, helps to determine the amount of information that is learned, which in turn affects people's ability to acquire more information, recall previous information, and use the information to solve new problems.

Motivation affects mental ability in three ways. First, certain forms of motivation, such as intrinsic motivation, achievement motivation, an internal locus of control, and high levels of aspiration, promote the development and use of cognitive skills. People with high achievement motivation select tasks that are moderately difficult and challenging and are more persistent and goal oriented, as well. Those with an internal locus of control have been found to seek out information more often and process, recall, and use it more effectively. Intrinsic motivation and high levels of aspiration promote the development of academic and nonacademic skills, leading ultimately to high levels of knowledge that make information processing more rapid, more structured, and more profound.

Second, motivation, as mentioned previously, can also inhibit the development of cognitive skills or lead to the development of processes which are counterproductive. Helpless children or those with a high fear of failure, for example, have difficulty concentrating when tasks become difficult. They are more likely to devalue the tasks and give up. The need to maintain high levels of self-esteem causes people to place obstacles in their path so that they will have an excuse for their poor performance. The most common obstacle is simply not to try at all. For a variety of reasons, the correlation between measures of motivation and academic achievement are typically quite small, but there is an additive effect in that those who experience low achievement motivation often experience low levels of aspiration, intrinsic motivation, and self-esteem plus an external locus of control.

Third, there is a complex interplay between motivation and metacognitive skills that is just now beginning to be explored (see Pressley, Borkowski, & Sullivan, 1985; Schneider & Weinert, 1990). Intensive training in various memory strategies, for example, leads to the recognition that there is a direct link between effort and good recall, and this metacognitive awareness leads to increased effort in the face of potential failure. It is thus possible to undermine the "helpless" pattern described by Dweck (1975) by providing people with explicit knowledge of their cognitive skills. Motivational factors determine not just the goals toward which people aspire but the way in which they seek out, process, and use information.