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## Chapter One

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# Learning Disabilities: The Controversy

For a crash course in the learning disability (LD) controversy, one need look no further than a venomous letter-to-the-editor exchange in the February 13, 1991 issue of the *Journal of the American Medical Association (JAMA)*. The first letter, written by Gerald Coles, (Coles' book, *The Learning Mystique: A Critical Look at "Learning Disabilities,"* lambastes the entire LD field), is ostensibly in response to a report by Shaywitz, Shaywitz, Fletcher, and Escobar on LD diagnosis and gender that appeared in an earlier issue of *JAMA*. Shaywitz et al. (1990) had found that school referrals of LD students indicated a three- or four-to-one ratio of boys to girls who are reading disabled, while groups not referred by schools showed no significant difference in the number of males and females who were reading disabled. The authors explain that since boys in grade school typically are rated by their teachers as having more behavior problems than do girls, more boys than girls are ultimately labeled LD. The original article, aimed at physicians who recommend services to aid in many aspects of their patients' lives, advises pediatricians not to rely solely on schools for referrals of LD children, but to be aware themselves of identifying characteristics of LD, especially among girls. Coles' letter, however, and Shaywitz et al.'s reply to it, barely mention the original report entitled "Prevalence of Reading Disability in Boys and Girls." Rather, the correspondence serves as a microcosm of the broader, deeper chasm that is the learning disability controversy.

Coles' letter attacks not merely this one report but characterizes virtually all empirical LD research as being "quasi-scientific." He says any references to a biologically based cause for LD are rooted in "more belief than fact," a phrase that captures his book's argument

in a nutshell. Coles goes on in his letter to propose, as he does at more length in his book, that reading difficulties are caused by “defective school practices,” which LD researchers virtually ignore in their effort to do what Coles calls a “pseudo medical diagnosis” (1991, 725–26). In their response to Coles, Shaywitz et al. write that Coles’ difference of opinion is “primarily philosophical” and conveniently ignores years of neurological research that shows brain differences in LD and non-LD people. They also point to reading research by Frank Vellutino, Isabelle Liberman, and others that shows significant phonological coding differences between LD and non-LD students, differences that Coles, they say, does not fully recognize. While they acknowledge that bad teaching can influence the reading ability of students, they argue that this explanation does not account for why most students in the same class read well and only a small number of them do not. They say that Coles’ proposed focus on educational practices would be too narrow a search for the cause of certain kinds of reading difficulties.

The essential arguments of each letter demonstrate the basic rift in the two main camps of the LD controversy: those who believe LD is an identifiable phenomenon caused primarily by biological differences, and those who believe that LD, if it exists, is caused primarily by social factors. These letters, which discuss students’ reading difficulties and general educational practices, are also interesting for where they appear: in a journal aimed not at elementary, secondary, or college instructors or educational administrators, but at medical doctors. Although the issues are multifaceted, and the authors’ views may be more moderate than these letters suggest, this exchange illustrates not only the basic research agenda of both sides of the controversy but also how far it extends into fields (and journals) not usually investigated by college composition professors.

This chapter is intended as an overview of the learning disability (LD) field and the controversies surrounding it. It explores terms, definitions, manifestations, causes, and diagnoses, as well as disagreements regarding how the legislation applies and what research is valid. There is also a controversy regarding teaching methods appropriate for LD students—whether they learn better in a whole language class or in one based on explicit, multisensory, structured phonics instruction. The differences between these two approaches are explained briefly in this chapter and examined at more length in Chapter Three.

What exactly is a learning disability and what do we know about it? How is it defined and diagnosed? Is there any basis to the theory underlying it? How many students are likely to be affected?

Is *dyslexia* or *learning disability* a real syndrome that can be identified and remediated, or is it simply a label for people who cannot read well for a host of sociological reasons? What does the research indicate, and how reliable is it? Do LD students learn in the same way others do? Attempting to explain the LD controversy is like unraveling a multi-colored knitted blanket the size of a football field. My purpose in this chapter is to give interested observers an overall idea of the complexity and extent of the controversy surrounding learning disabilities, the terms themselves a part of the dispute and often surrounded with derisive quotation marks.

The LD field has been influenced greatly by the Orton Dyslexia Society, which began in 1949 and has 37 branches and over 9000 members (Rawson 1988, 146). It holds yearly, national, and multi-day conferences, bringing together for lectures and workshops teachers, medical doctors, and psychiatrists. This organization has as its basic tenet the theory that one segment of the population is working from a different neurological framework and processes language in a way that is, while not necessarily deficient, at least different from those for whom reading and writing seem to come easily. LD theory, just now beginning to be addressed in Composition journals and conferences, has been of major concern in reading, special education, neurological, psychological, and medical journals for decades. *Dyslexia*, sometimes called by other, long-defunct terms, is a condition that has been more or less recognized since the turn of the century. Journals, reports, monographs, essay collections, and textbooks on this subject have been proliferating since 1896. *Learning disabled* is sometimes a generic label for anyone who has any psychological, sociological, or neurological impediment to learning. The causes and treatments of dyslexia and/or learning disability have frequently been the subject of professional debate, parental frustration, and student humiliation.

## The Law

One aspect of the LD controversy, and the one perhaps responsible for the increased attention to other aspects—definitions, causes, treatments, etc.—is the recent legislation regarding all disabled or handicapped people, including those with identified learning disabilities. How will this legislation affect colleges and universities? This question can best be addressed by briefly explaining two applicable laws: Section 504 of the Rehabilitation Act of 1973, and the 1990 Americans with Disabilities Act (ADA). To a large extent, the 1990 ADA focuses on removing architectural barriers for physically

challenged people and preventing discrimination not just in federal or state-owned facilities but also in the private sector (University of the State of New York 1991, 18). This includes private colleges because of the federal aid they directly or indirectly receive. It was the 1973 law that substantially altered how learning disabled people were treated with regard to education and that impacted the accommodations typically available today in higher education. The 1973 law mandated that "no otherwise qualified handicapped individual . . . shall, solely by reason of his handicap be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving [f]ederal financial assistance" (Rothstein 1986, 229). The 1990 ADA places more emphasis on the requirements initiated in the earlier legislation and steps up the removal of architectural barriers. It insists on equal opportunity for all disabled people in all areas, including equal access to computer technology (Castorina 1994, 46).

Many have noted that the terms used in the 1990 ADA are ambiguous and will need to be more specifically defined by case law. Colleges are required to provide "reasonable accommodation" for "otherwise qualified" individuals, providing it does not involve "undue hardship." Obviously, the adjectives used here are subject to interpretation. At a time when many colleges are already facing financial crisis and the cost and need for accommodations rise, this interpretation becomes critical. Neither law specifically details practical applications in higher education. Because of imprecise terminology in both the 1973 and the 1990 laws, the following questions are currently being debated: If note takers, scribes, or readers for LD students are found to be needed accommodations, who will pay for them? Who will decide if students need them in the first place? How much do academic programs need to be altered for LD students, and who will say so? Who should be admitted to an academic program and what are legal means of ascertaining applicants' abilities? Recent judicial rulings as well as ongoing lawsuits address some of these questions. While some court decisions have helped clarify some guidelines, further litigation will be needed before institutions have a clear idea of what is expected. At a 1993 conference on disabilities, an Assistant Counsel for State University of New York Central Administration said, "The courts will do slowly what legislation should have done quickly" (Hasselback 1993).<sup>1</sup>

Case law continues to develop from the earlier legislation. In a unanimous decision on November 9, 1993, the Supreme Court upheld a lower court's ruling regarding a sixteen-year-old LD student. In 1985, her parents took her out of a South Carolina public high school, where she was found to be functionally illiterate and

where administrators had proposed that she receive three hours of tutoring a week, a plan that lower courts had found to be inadequate. The girl's parents had placed her in a private academy specializing in LD, where she graduated successfully in three years. Even though the parents' decision was opposed by the school district, and the private academy was not officially state approved for special education, the parents nevertheless won the \$35,700 judgment for payment of three years' tuition and board. In her opinion, Sandra Day O'Connor wrote that the Federal law mandated "free appropriate" education for LD students (Greenhouse 1993, B19.)

Another recent case may have implications for LD students and the institutions they attend. In a class-action lawsuit featured in the *Chronicle of Higher Education*, a quadriplegic student is one of several people suing the University of Miami for not providing paid note takers. As reported in the article, the student's mother sits in class and takes notes for him. While some institutions such as Miami-Dade Community College pay for separate note takers, other colleges have students' peers in the class take notes, sometimes on a voluntary basis, sometimes for a small stipend. At the university in question, volunteers are provided with carbon paper so that copies of their own notes can be given to those who are unable to take their own. The students filing suit claim, however, that the volunteer note takers are not reliable and that they, the disabled students, are "made to feel like charity cases" (Jaschik 1994, A39). Although that case is pending, others relevant to this issue already have been decided.

Katherine Raymond, Assistant Counsel for the City University of New York, speaking at a 1993 conference, said that note takers are a "clear requirement" of the ADA, and that institutions must provide them for students who need them, even if those students can afford to pay. Readers and extra time for exams should also be provided free of charge to students who need those accommodations. She spoke of one case involving a student with a language disability in which a culture course was substituted in one program for a language requirement. Raymond stressed that what courts look at most closely in these decisions is whether or not the institution has taken an individualized look at each person's needs and has documented evidence to that effect. Shelly Kehl, of the National Association of College and University Attorneys, speaking at the same conference, also stressed that judicial decisions involving ADA compliance frequently depend on whether or not a college has given careful, nondiscriminatory consideration to each case. She too advises that all institutional decisions and actions involving LD or other students covered under the law be documented. Robert Boehlert, Deputy Advocate Counsel for the New York State Office of

the Advocate for the Disabled, stressed at the same conference that complying with the ADA is not a one-time action. Changes do not need to be made overnight. What matters, he said, is that "readily achievable" accommodations be accomplished first, and that there be in place a plan for achieving longer-term goals.

In an excellent article summarizing recent court decisions, Brinckerhoff, Shaw, and McGuire (1992) write that who pays for what services often depends on what is normally available to all students. For example, if all students are routinely provided with free tutoring or counseling services, then so must LD students be provided with those same services for free. Colleges may only charge LD students for services that go beyond what is normally provided for free. Colleges are also not usually required to provide for free such services as special LD tutoring programs or readers for students' leisure-time activities (424). They also point out that colleges are usually not required to pay for testing of potential LD students, but if the institution decides to challenge an earlier diagnosis of LD, then it would most likely have to pay for subsequent evaluations (421). Most experts agree that legally, college students themselves must initiate testing procedures or requests for accommodations.

Who pays for LD diagnosis can depend on the situation, according to University of Houston law professor Laura F. Rothstein, writing in 1986 for the *Journal of College and University Law*. For example, if other kinds of psychological testing are normally provided through a campus health clinic to any student, then LD testing should probably also be similarly available. On the other hand, if students usually pay for other psychological services, then they would probably also have to pay for LD testing (236). Rothstein predicted correctly that this issue would become more critical as these diagnostic evaluations become more expensive and that in most cases the students, not the institution, would be obligated to pay for the testing to document their disability (237).

Documentation of the disability is, of course, crucial to being entitled to accommodations for it. Rothstein cites case law establishing that colleges cannot be held liable for not providing accommodations to students who had disabilities of which the institution was unaware. The 1990 law places much responsibility on the college student to make the disability known through proper channels and to suggest appropriate accommodations for it. Rothstein continues: "Colleges and universities not only have no duty to inquire into the existence of a handicap, but they are specifically prohibited from making preadmission inquiries about handicaps except where the inquiry is for the purpose of remedial action or to overcome limited participation" (237).

As is obvious from these few examples, questions regarding this legislation rarely have simple answers. What seems to be emerging from case law, however, is that courts are carefully examining each case on an individual basis. While the law “does not require modifications that would fundamentally alter the nature of services provided by the public accommodation” (U.S. Equal Employment Opportunity Commission 1992, 21), institutions have been expected to demonstrate challenged educational requirements clearly and to document decision-making processes regarding the participation of LD students (Raymond 1993; Kehl 1993; and Boehlert 1993). The substantial questions and ambiguities concerning relevant legislation are just the tip of the iceberg that is the LD controversy.

### Terms and Definitions

The terms *dyslexia* and *learning disability* have almost as many definitions as the number of people who employ them. Some people use them interchangeably to mean, in a general way, a difficulty in reading and writing. In fact, *dyslexia* means, literally, difficulty with reading. For many professionals and diagnosticians, *dyslexia* is a subcategory under the general heading *learning disability*, but because it is often referred to as *specific learning disability*, it is sometimes shortened and essentially equated with *learning disability*. Many, however, are vehement about keeping these terms distinct, and most books on the subject have lengthy introductions explaining how a particular author defines these terms. Related to and sometimes subsumed in these categories are the lesser-known terms *dysgraphia*, which means difficulty with writing, and *dysnomia*, or difficulty recalling the names of things. Dyslexia is sometimes called *developmental reading disorder*, and dysgraphia is sometimes called *developmental writing disorder* (National Institute of Mental Health 1993, 7–8). Although discussions of learning disabilities sometimes also include *dyscalculia* (difficulties with math), and *attention deficit disorder* (ADD), this book, intended for writing instructors, will not address those aspects of LD. In this text, I will employ the terms *dyslexia* and *learning disability* interchangeably to mean a difficulty with reading and/or writing that goes beyond what one might expect, given a particular student's apparent intelligence and educational background.

I have substantial objections to this nomenclature because of its connotation of dysfunction. Preferable terminology (if distinctions between people ought to be made at all) might refer to a difference rather than a disability—although any departure from “normal”

inevitably connotes something negative in our society. Nevertheless, *dyslexia* and *learning disability* are generally recognized and used regularly in legislation and public policy statements. This book's use of *learning disability* or *dyslexia* refers specifically to difficulty processing linguistic symbols.

For most experts today, *dyslexia* has become a somewhat unfashionable term and has been replaced by *specific learning disability*, as defined in 1975 by the U.S. Congress Public Law 94-142:

a disorder in one or more basic psychological processes involved in understanding or using spoken or written language but specifically excluding those children having learning problems from visual, hearing, or motor handicaps, from mental retardation, from emotional disturbances, or from economic, cultural, or environmental deprivation. (Senate Report No. 94-168, 1975, 1465)

As many have pointed out, this definition is problematic for a number of reasons. First of all, it uses negative terms such as *disorder*, and it by definition excludes those children who might have a specific learning disability *and* another condition such as a motor handicap or an economic disadvantage. In order for students to obtain funding for LD tutoring, they must conform to this definition. They must be of average or above-average intelligence.

To deal with some of these definition problems, the National Joint Committee for Learning Disabilities, in 1981, defined the condition this way:

Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g., sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g., cultural differences, insufficient/inappropriate instruction, psychogenic factors), it is not the direct result of those conditions or influences. (Hallahan et al. 1985, 14)

This definition has fewer outmoded terms and allows people to be both specifically learning disabled *and* affected by outside social factors.

As Michael Rutter (1978) observes, the term *dyslexia* is usually invoked as a syndrome caused by inborn cognitive problems when other factors cannot fully explain why a child fails to learn to read. The World Federation of Neurology uses the following definition, which Rutter criticizes as being essentially useless as a diagnostic



tool: "[specific developmental dyslexia] is a disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence and sociocultural opportunity. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin"(12).

Rutter objects to what he calls this "negative definition" (12) because it implies that children of below-average intelligence cannot also have *specific developmental dyslexia*, that is, a constitutional impairment regarding linguistic development. It also implies that children with low IQ's cannot be taught to read, which is not necessarily the case. Marie Clay reports that some adolescent Downs Syndrome children with mental ages of about five years had reading levels of normal seven- or eight-year-olds (1987, 158). The World Federation's definition, which Leon Eisenberg calls "a non-definition of a non-entity" (1978, 31), also makes no provision for children from a lower socioeconomic group who may *also* have this "constitutional" deficit (12). Like the Public Law 94-142 definition, it attempts to give a label, and call it a reason, to a condition of not being able to read. As Martha Bridge Denckla points out, *dyslexia* (or *specific developmental dyslexia* and other variations on that theme), can be employed to mean "a symptom or it may be used with the implication that a specific neurologically based syndrome is being diagnosed" (1978, 243). In other words, *dyslexia* can mean simply that someone has a lot of trouble reading, or it can mean that *dyslexia* is *why* a person has a lot of trouble reading.

Others have had even stronger objections to these labels and definitions. Anne E. Bennison, in Barry Franklin's collection, *Learning Disabilities: Dissenting Essays*, links today's *learning disabled* category with the classification *feeble-mindedness* which existed at the turn of the century. She says that "those labels have multiple interpretations at any given time, and that the concepts are applied differentially according to current social concerns." Bennison sees the LD label as an excuse to discriminate, and she calls for "a strong commitment to social justice" as a solution (1987, 26). Most contributors to Franklin's collection of dissenting essays say that *learning disability* is nothing more than the latest in a series of increasingly euphemistic terms for a group society does not know what to do with. They say expressions such as *feeble-minded* and *brain-injured*, like *learning disabled*, blame the individual for problems that are societally caused.

Another well-written critique of the LD field is James Carrier's *Learning Disability: Social Class and the Construction of Inequality in American Education* (1986). As does Gerald Coles, Carrier sees LD as an attempt to blame the failure of a system not on the system itself,

but on its children. In his essay, "The Politics of Early Learning Disability," Carrier explores the history of the phrase *learning disability* and explains that it had semantic advantages over previous terms because it implied "an accidental condition which was unfortunate and troublesome, but which did not implicate the child's basic mental ability or reflect adversely on the parents" (52). Carrier accuses traditional LD theory of being more concerned with "the desire to explain unequal educational achievement" (72) than by the desire to teach students to read. He brings up the powerful influence of teacher expectations, pointing out the probability that "the social class of pupils influences the way teachers treat them" (77).

With views similar to Carrier's, Gerald Coles argues that the learning disability terminology seemed to be a more attractive label for middle-class children than did *mentally retarded*, *emotionally disturbed*, or *disadvantaged*. Coles also argues that in some parts of this country, the LD category was used in various ways to initiate or maintain a form of racial segregation (1987, 203–07). In a recent *New York Times* article, Lynda Richardson corroborates this view: "Nationwide, black students are twice as likely to be in special education programs as white children, with much higher rates in predominantly white districts, according to Federal studies" (1994). The special education programs we have today for LD students, says Coles, are a result of frustrated parents who lobbied heavily for the term *learning disability* and for special programs to cope with such a thing. Coles points out school systems' penchant for assessing students and then being satisfied if students live up to (or usually down to) that assessment. He observes that it does not take long for children placed on the low end of the scale to become discouraged and for teachers to become disillusioned. He implicates destructive school atmospheres and criticizes the built-in notion that there will always be failing students and that the cause of their failure can be found in the children themselves. According to Coles, any dysfunction lies not in the individual child but in "social relationships and activities" (1987, 186).

Peter Johnston and Richard Allington (1991) also criticize what they see as a "sickness" approach inherent in the terms and programs regarding the learning disabled (1985). They believe all students should be taught with solid learning principles, and that the "individualized" learning in special education classes is more often than not reduced to different worksheets for different students (1992–94). They point out that "success" and "failure" are social constructs, and that an unpleasant experience with school may actually cause, rather than eliminate, a learning disability. Instead of the

label *learning disabled*, they prefer phrases which indicate the social aspect of the problem, such as “children-with-different-schedules-for-reading-acquisition,” or “children-we-have-failed-to-teach” (1986). In a 1985 article entitled “Understanding Reading Disability: A Case Study Approach,” Peter Johnston discusses adults’ reading problems as being exacerbated by their early learning of an “inappropriate concept regarding reading or by an appropriate concept *not* being learned” (his emphasis, 158). Intense anxiety on the part of poor readers contributes to their avoidance of reading and to a resulting lack of practice. Johnston also points to studies which show that when students are told they are learning disabled, or neurologically different, they might conclude that nothing can be done, and thus they stop trying to read and write (170–71). Priscilla L. Vail, author of the popular mass market book, *Smart Kids With School Problems*, prefers the phrase *learning difference*. She emphasizes throughout her book that these children are smart, an adjective that perhaps partially accounts for the book’s popularity with desperate parents.

Challenging the view that reading level is not a function of IQ, Michael Rutter says that IQ score taken at age five “predicted reading at age seven better than a psychological battery designed to identify children with special disabilities” (1978, 9). In other words, for Rutter, reading ability is seen as a function of intelligence, a theory not likely to be popular among parents of dyslexic children. They are more likely to welcome Katrina De Hirsch’s view of IQ tests. While she says they are fairly good indicators, she ranks them only twelfth as predictors of reading performance, well behind measures that test time and space orientation in children, matching and letter naming, and gestalt awareness—tests that are usually part of a battery administered by LD experts (1984, 50–51). Determining a person’s IQ is itself a related imbroglio, which I will discuss in more detail later in this chapter.

While *dyslexia* and *specific learning disability* seem to be the most utilized terms for this difficulty in learning to read and write despite normal or above average intelligence and an unremarkable social situation, the never-ending list of names reflects experts’ desire to pin down once and for all this baffling syndrome. Hyla Rubin and Isabelle Y. Liberman use the phrase *language disabled* to refer to children with “phonological deficiencies in the accuracy of stored representations and in short term memory coding” (1983, 118). To distinguish it from environmental factors, it was also referred to as *constitutional reading disorders*. Note the plural. No one has been able to completely isolate one set of problems

common to all dyslexics. There is also the more blunt phrase, *general reading backwardness*, which includes *all* poor readers without regard to IQ (Rutter 1978, 14–15).

Katrina De Hirsch differentiates four *disorders of learning*, but her third category, *disorders of printed and written words*, comes closest to what most people generally call dyslexia, and her definition is similar to the legal definition in that it limits the category to those with at least average intelligence who have had “adequate educational opportunities” (1984, 91). It should be noted that Marie Clay would question De Hirsch’s assumption here of “adequate educational opportunities,” since Clay believes that a school system’s “inappropriate programme” is the primary cause of many children’s reading problems (1987, 160). But for De Hirsch, nothing obvious, such as unfavorable educational or environmental conditions, can explain why these children have trouble. For her, and for many others who use the term *dyslexia*, this name by definition excludes social problems. It would seem that *dyslexia*, or the next most common appellation, *specific learning disability*, is reserved for that kind of reading trouble which is maddeningly inexplicable.

## Manifestations

What are the symptoms and manifestations of dyslexia? Those reputed to be afflicted with it have tried to explain it. What people say about themselves as recognized dyslexics is important, but like other evidence in this troubled field, also subject to debate. Donald Lyman, a self-defined dyslexic who has taught many other dyslexics, describes his adventures with abstract written language: “Those typewritten *a*’s looked so strange to me that I was never sure which letter I was dealing with. I was always saying *how* for *who* or the other way around. I don’t know why it happened but I sometimes mixed up *y* and *v*. Everybody laughed when I read that Tom went out to play in the vard” (Lyman 1986, 7). Gloria Tannenbaum (1989) quotes one child as saying, “The words dance around the page.” I’ve already related how my student Barbara claimed that for her, letters would “jump around.”

Some critics, however, question an individual’s description of letters that move around, arguing that people are taught this response, and that the only way they would be aware of the concept of “upside down” or “reversed” letters is if they are told this by others. This objection to people’s testimony could be equally applied, however, to the objectors. In other words, critics of such testimony are themselves influenced by what they have read or been told. If they

have decided that reading problems are caused primarily by society, their objection to what students say about their reading is predictable. Although students' testimony regarding what happens when they read should be heard with the critics' objections in mind, children's voices should not be silenced simply because those with more authority choose to discount what they say. Gerald Coles refers to current beliefs in the LD field regarding word reversals "lore" and cites studies by F.W. Black (1973) and Kaufman and Biren (1976-77), among others, which show that "normal" children also experience reversals (Coles 1987, 30). Critics of Coles' diatribe against the LD field say that criticism of reversals is not news and in any case is not important to the diagnosis of LD.

Decades ago, when some LD experts theorized that dyslexic children saw things backward, practitioners sometimes employed various eye exercises to remedy the problem. Coles says many states still test for perceptual deficits and continue to use them as part of their definition of learning disability (1987, 37). In the last twenty years, Frank Vellutino has repeatedly concluded from his research that there is nothing wrong with dyslexics' vision (1987, 34). Coles cites Vellutino's research disproving old beliefs regarding visual perception problems. However, according to an article in the science pages of the *New York Times*, several recent studies add a new element to the vision debate, which had been considered long settled. Stephen Lehmkuhle of the School of Optometry at the University of Missouri discovered timing problems in the visual pathways of dyslexics.<sup>2</sup> In related research at Harvard, Margaret S. Livingstone also studied brain activity in dyslexics and reported that this group has a timing difference regarding visual information, and that this may affect reading ability (Rennie 1991, 26). One element of the vision question is apparently still open.

In other research, Vellutino and Scanlon write that it is dyslexics' short-term memory for linguistic symbols, not their vision, that seems to give them more problems than most of us experience (1991, 245), especially if the words are abstract, such as *were*, *at*, *through*, *where*, *when*, etc. Although this kind of empirical research has methodological factors which may not be transferable to real life (see discussion below), results regarding the recollection of concrete and abstract words have been somewhat replicable. Other researchers have raised the possibility of short-term, linguistics-related memory problems (Rubin and Liberman 1983, 118; Farnham-Diggory 1978, 108; Rawson 1988, 66; and Blalock 1982, 607).

Katrina De Hirsch (1984) points out that while dyslexic children have no problem remembering sounds in nature, such as the different sounds made by various animals, they seem to have problems

associating the sound/symbol system of our alphabetic code (93). She has hypothesized that dyslexics have difficulty remembering letter shape (21). Frank Vellutino, however, found that both dyslexic and normal readers performed equally on tasks requiring them to remember letter shapes lacking meaning for them—in this case Hebrew words and letters for children not familiar with Hebrew. From this, Vellutino concludes that for both dyslexic and normal readers, “visual form perception seems to be comparable in the two groups” (1987, 36). On the other hand, when poor and normal readers are tested on their ability to recall colors, numbers, pictures, and words from their own language, the groups differ only on their ability to recall the words (1979, 254). Therefore, the problem is not visual perception or memory per se but rather “access to specific word meanings or meanings coded contextually . . .” (263).

Sylvia Farnham-Diggory believes this difficulty in remembering linguistic symbols may not necessarily be a defect, but simply a difference (1978, 95). Bernard M. Patten (1978) contends that it is a mistake to insist, as our present educational system essentially does, that everyone learn the same way. In emphasizing verbal thought, it is possible that we are squelching a very creative, alternative system of thought possessed by a certain portion of the population. Patten contends that Albert Einstein was one such individual. Gerald Coles (1987) criticizes what he calls this “affliction of geniuses” argument of the LD field—the “romanticization of learning disabilities” (107) achieved by citing all the famous people reputed to have been dyslexic. In his book he first summarizes three respected studies which concluded that learning disabilities are inherited. He then refutes them, referring to Einstein’s reputation as a dyslexic as “LD lore.” He criticizes biographies of famous and reputedly dyslexic people by claiming the authors did not adequately consider these children’s old-fashioned, rigid teachers and their probable negative effect on students’ learning (124). For those who attribute reading problems primarily to societal influences, teachers are inevitably implicated. Einstein’s instructors, conveniently unable to defend themselves, are particularly handy scapegoats.

## Approaches to Teaching

Two different approaches are used in schools to teach reading and writing—one a “whole language” approach, one a structured, phonics-based, often multisensory approach influenced by techniques developed by Samuel Orton, Anna Gillingham, and Bessie Stillman.

Although these two approaches do contain some elements of each other, they are each based on different assumptions about learning and are therefore philosophically and methodologically quite different. Which one is more appropriate is yet another part of the LD controversy.

Although whole language does allow for different rates of learning, it does not address learning differences arising from a neurological basis. The whole language philosophy, basically, is that exposure to meaningful texts, coupled with limited explicit instruction, will be sufficient. Robert Blake, in the introduction to his collection of essays on whole language, puts it this way: "Children are capable of intuiting the purposes of print if they are constantly exposed to all kinds of writing" (1990, v). Gordon S. Anderson, in *A Whole Language Approach to Reading*, writes that "Communication is largely accomplished and learned without any direct teaching or instruction" (1984, 1). Lucy Calkins, in *The Art of Teaching Writing* (1986), a text for primary grades, has a more moderate view of whole language. Her version of whole language *does* involve some explicit instruction (204). She advocates what she calls "mini-lessons," short (approximately three-minute) lectures on such things as topic choice, mapping or brainstorming strategies, the form of a sympathy letter, or story endings (167–93). Calkins' mini-lesson can even include a sounding out strategy: "I sometimes encourage children to stretch out a word, listening slowly to the component sounds" (174).

This kind of exercise is similar to the explicit teaching of phonics that is used by some teachers using a highly structured, multi-sensory approach, sometimes called the Orton-Gillingham (O-G) method. The difference is that in whole language teaching, phonics is not emphasized, and the words used come from the children or from high-interest texts. In O-G more time is devoted to explicit sounding out techniques, more attention is given to memory aids, and the words come, for the most part, from programmed lessons. Whole language does include phonics instruction, but it is presented in context, secondary to the whole meaning of the text. O-G methods attempt to include interesting materials, but content is secondary to the structure and controlled vocabulary they say is necessary for LD students to be exposed to (Bertin and Perlman 1980).

Whole language instruction, while it includes some explicit teaching, makes little provision for children who may need a multisensory cue or a mnemonic link to help them remember. While Calkins recognizes developmental differences, she attributes them primarily to family background differences: "I have also been in

kindergartens where the children know *less* than I suspected. Usually these children come from homes without books and from families who do not read, from families where parents may not have time to talk with and listen to their children" (1986, 37). Her analysis of the problem is that the student's environment needs enrichment. Although Calkins may have documentation that these poor readers come "from homes without books and from families who do not read," she does not include this evidence in her argument.

Other reading researchers also emphasize society's influence on reading development. In their book-length study of poor readers, Jeanne S. Chall, Vicki A. Jacobs, and Luke E. Baldwin emphasize the sociological reasons children read poorly. While they recognize reading disorders of neurological origin, they go to great lengths to exclude children with such disorders from their study (1990, 17). Anyone reading their text, *The Reading Crisis: Why Poor Children Fall Behind*, might get the impression that most, if not all, problems are environmentally caused.

Each approach to teaching reading is geared to addressing what is believed to be the problem. The whole language approach is based on the idea that children exposed to and personally engaged in whole, interesting, relevant, meaningful, and interrelated acts of reading, speaking, and writing will implicitly come to know whatever linguistic structures are necessary. An O-G based, multisensory reading/writing method is based on the belief that some children will *not* as easily intuit the linguistic code and must be explicitly shown how it works. It is basically exaggerated phonics instruction, and strictly bottom-up—that is, students learn letters, phonemes (the smallest units of sound), and words in a formulated order. The sounds and letter shapes are constantly reinforced through all the senses and through whatever associative or mnemonic links the teachers or students can think of. Chapter Three includes a more detailed explanation of how these two approaches differ philosophically and practically, along with an account of one child's experiences with both methods in learning to write.

## Causes

The idea that some people are born with a neurological setup that gives them more difficulties than others have when dealing with linguistic symbols has been proposed for almost a century. As early as 1895, James Hinshelwood, an ophthalmologist from Scotland, called this reading difficulty *congenital word blindness* and theorized that different parts of the brain handled different memories



and processes. In 1912, Hinshelwood described an intelligent twelve-year-old, with good eyesight, who did well in math but had great difficulty learning to read (Farnham-Diggory 1978, 20). Gene transmission research, as reported in the September 18, 1991 issue of the *Journal of the American Medical Association* shows some support for the hypothesis that dyslexia is inherited. Whether this involves one primary gene or several groups of genes is still unclear, and the researchers qualify their conclusions by calling for more studies regarding the effects of environment on reading development. However, in a study of 204 families in three different states, researchers from the University of Denver and Yale University report that dyslexia seems to be inherited, at least in the majority of the families they studied (Pennington, et al. 1991, 1533).

Another key figure in the learning disability movement, which recognized children with specialized reading and writing problems that were congenitally (as opposed to socially) caused, was Samuel Orton, a professor of neuropsychology at Columbia University in the 1930s. Sometimes called "the father of dyslexia," Orton used his own term of *strephosymbolia* (meaning *twisted symbols*) to refer to this syndrome he noticed in his patients. Orton defined *strephosymbolia* as "The instability in recognition and recall of the orientation of letters and the order of letters in words" (Orton 1966, 122). Orton's compassion for children with this problem is evidenced in his call for more understanding and less ignorant treatment of them (Eisenberg 1978, 34).

Orton studied the writing and error patterns of these children and noted that many of them were left-handed or ambidextrous. Theorizing that language was handled primarily in the brain's left hemisphere in most "normal" people, Orton suggested that dyslexics had differences in the parts of their brains that handled language processes. It was likely, he said, that the right side of dyslexics' brains was attempting to handle a process meant as a job for the left side, or perhaps both sides of a dyslexic's brain were unproductively competing to process language, resulting in the reversals and mirror writing Orton reportedly observed in his patients.

Albert Galaburda's research into brain configuration and neuron lineup has also suggested that Orton's theory may have been partially correct, although as is usually the case when dealing with this subject, lab results can be and often are variously interpreted. According to Galaburda, who does postmortem brain analyses of people said to be dyslexic, the brains of dyslexics are different from those of normal people. Although both sides are needed for integration of words and meaning, and no one side is the pure custodian of the brain's language files, it is the left side of the brain in normal

people that is the larger hemisphere. This is thought to be due to its development as the handler of language. Galaburda (1983) claims that in many dyslexics, the right side is as developed as the left, whereas normally the left side is more developed (45). Galaburda argues that in normal people, a certain amount of "neuronal death" occurs naturally in the right side of the brain while the organism is still in utero. However, in dyslexics, there is less neuronal death in the right hemisphere than might be expected. Galaburda suggests that perhaps that is why there seems to be "a disproportionate number [of dyslexics] with talents in music, visio-spacial abilities, and left-handedness" (51). These are talents believed to be handled by the right side of the brain. Galaburda summarizes earlier research by W. E. Drake that also showed neurological differences in the brains of dyslexics: "The first post-mortem report on the brain of a dyslexic patient stated that excessive numbers of neurons were present in the sub cortical white matter" (49). If this seems like too simple an explanation, it is. There are "normal" people who also have more developed right hemispheres, and "dyslexics" whose neurons are normal. Even Galaburda, who seems convinced that there are enough differences between the brains of dyslexics and those of normal people to warrant a neurological explanation for their language problems, calls for more study.

In his critique of the LD field, Gerald Coles (1987) devotes several pages to problematizing Galaburda's research. Sponsored by the Orton Dyslexia Society, Galaburda's autopsies involved the dissection and examination of the brains of people reputed to be dyslexic. Coles critiques this research, which he says involved only four brains, and challenges the original diagnosis of dyslexia in the subjects. One of the individuals, for example, although reportedly dyslexic, had earned a doctorate in engineering, a feat Coles says is unusual for a dyslexic. He also takes issue with Galaburda's findings of hemisphere differences, saying that it is unclear whether the perceived differences were due to dyslexia, as Galaburda claims, or to other medical conditions had by the individuals such as circulatory problems, brain hemorrhages, and epilepsy. Coles further points out that although these relevant details are available in the original reports, they are often omitted from subsequent summaries of such research as they appear in Orton Society publications (86-91).

In her book, *The Early Detection of Reading Difficulties* (1979), Marie M. Clay also criticizes what she sees as a long-disproven belief regarding how the brain works. Orton-Gillingham advocates often speak of people having a different neurological makeup. Clay's argument, while it does not totally eliminate the possibility

of neurological difference, attributes reading difficulties to a learned, rather than an innate difference, which she believes can be remediated with proper instruction (1972, 964). Clay's Reading Recovery program is founded on this fundamental belief. Coles, too, says that differences in neuron lineup or hemispheres, if they exist and could be accurately measured, are caused by in-life experiences, not inborn differences. To argue this point, Coles points to rat studies which suggest that life experience can alter the brain's neuron patterns (1987, 175). Any neurological differences can be explained by what he calls an "interactivity theory": "biological makeup that appears to be or in fact is dysfunctional may be caused not by an inherent breakdown in the organic processes but by exogenous social and psychological conditions which reciprocally interact with biological functioning" (176). Barry Franklin criticizes similar cognitive research done in the 1930s by Alfred Strauss and Heinz Werner, who identified two types of neurological conditions they called "endogenous" (hereditary) and "exogenous" (due to trauma). Franklin questions the tests Strauss and Werner used to distinguish between the two "types" and finally dismisses virtually all research the LD field traditionally cites as its beginnings, therefore debunking the entire theory of a neurologically based cause (1987, 29–46). Kenneth Kavale and Steven Forness, in their book *The Science of Learning Disabilities*, are not at all subtle in their accusations regarding research in the LD field. They compare LD experts to "astrologers in the Middle Ages" and call what some LD professionals view as fact nothing more than "magical belief" (1985, 11).

Although the theory regarding hemisphere dominance has not been disproven, John Hughes cites research demonstrating that brain differences are also seen in good readers (1978, 234). Michael Rutter, in summarizing research done in at least six different studies, also disputes claims that handedness is related to dyslexia. In the same paragraph, however, Rutter admits that "a *confusion* between right and left is associated with reading difficulties," and that it is possible "that a *delay* in the acquisition of left-hemisphere dominance may be associated with some cases of reading difficulty. . . ." He adds that "the evidence on this point remains inconclusive" (1978, 9). For Ursula Bellugi, a neuroscientist and director of the Laboratory for Cognitive Neuroscience at the Salk Institute for Biological Sciences in La Jolla, there is no question that the left hemisphere is primarily responsible for language. In her continuing studies of deaf users of sign language who have suffered strokes, she has found that deaf signers with damage to the right hemisphere—the side thought to handle space perception—had trouble drawing

the left side of a picture but could still use sign language normally. Those with damage to the left side of their brains could draw both sides of a room, but lost most of their ability to sign (Radetsky 1994, 66).

Results from tests with names like "positron emission tomography," "magnetic resonance imaging," and "roentgenographic computed tomography" are reported in journals such as *Archives of Neurology*, *Brain and Language*, *Psychology Bulletin*, and *Annals of Neurology*. According to routine summaries of relevant literature that appear in these reports, such tests indicate hemispheric differences between dyslexics and non-dyslexics. Coles, however, summarizes other studies challenging these findings. No matter how recent the research or how clearly documented the differences appear to be, Coles objects that the subjects' dyslexia diagnosis was not sufficiently established. Thus, he can discount any conclusions.

Do EEG's, CAT scans, MRI's, and other unpronounceable technologies show brain hemisphere differences in people? Available published answers to this question are not along the lines of "maybe" or "sometimes," but are deeply entrenched in definitive "yes" and "no" camps. The rhetorical stance of many LD-related EEG and CAT scan reports is, "Of course this technology shows brain differences in dyslexics. Everybody knows that." The rhetorical stance in Coles' (1987) chapter section regarding this research is, "Of course this technology has failed to show brain differences in dyslexics. Everybody knows that now."

This element of the LD controversy has a tiresome, school yard "is/is not" tone to it. What are English professors to do? Short of pitching in and buying our own roentgenograph and tinkering with it ourselves, we are forced to rely for our summaries of this research on opposing camps with apparent difficulties contextualizing their own conclusions. First, there are the neurologists, whose expensive machines become more valuable if they promise answers for desperate children, parents, and educators. Then there are critics whose backgrounds in clinical psychology may predispose them to look for familial and societal causes for any and all learning difficulties.

I originally wanted an answer to the above question because I felt it might influence my pedagogy. However, exasperated at least temporarily by the polemics, I have decided that the answer may not matter. EEG results are not needed to confirm for me that my nephew has linguistic recall problems that respond favorably to multisensory associations. (See Chapter Three.) They are not needed to demonstrate that a small number of my students speak far better and faster than they can write and that they possess talents it

would behoove more linguistically talented students to develop. (See Chapter Four.) What these LD students themselves say about the way they learn best is as good a place as any to begin the restructuring of mainstream education at all levels that needs to be done to improve learning for all students. (See Chapter Five.)

Newer brain-related technology builds upon and extends the earlier, less sophisticated studies. Research studying the brain activity of individuals who are asked to perform linguistic tasks has been going on for decades, but new findings on Williams syndrome, a birth defect that occurs in one of 20,000 children, may reveal more insights on language development and the brain. Researchers now know that Williams syndrome, discovered in 1961, results from a missing gene copy on a chromosome. Children with this syndrome have low IQ's, extremely poor spatial abilities, and heart defects. However, they are highly sociable and can speak in grammatically correct, complex sentences, using sophisticated vocabulary. The admixture of strengths and weaknesses common in all Williams syndrome children is an area with possible implications for LD research because it raises questions about IQ, language development, and which areas of the brain handle different language tasks (Blakeslee 1994b).

Research by psychologists Rosaleen McCarthy and Elizabeth K. Warrington and reported in *Nature* has suggested that the brain may store and retrieve information partly according to category (i.e. animate and inanimate objects), and modality (sight, sound, etc.) (1990, 599). If individuals differ in their reliance on various modalities to recall words and images, it may account for different learning styles and differences in using written language, which depends primarily on the visual mode. The differences researchers report in the thinking patterns of dyslexics and non-dyslexics are also intriguing. For example, Judith M. Rumsey reports in the *Journal of the American Medical Association* that when subjects were asked to identify rhyming words, dyslexics performed at levels below that of the non-dyslexics, and the areas of the brain activated by this task reportedly differed from those areas activated in the brains of the non-dyslexics (1992, 915).

In what may be the most exciting new brain research yet, Paula Tallal and her colleagues at Rutgers University have discovered a different explanation for dyslexia: a difficulty one area of the brain has in handling fast-arriving sounds. For example, words like *boy* and *pet*, which begin with "stop-consonant syllables," require the listener to rapidly process the *b* and *p* sounds before those consonants melt into the vowels that follow them. These vowel sounds, which last only forty milliseconds, are much shorter in duration

than the *m* sound in *ma*, for example, which can last more than one hundred milliseconds. Albert Galaburda has studied the “medial geniculate nuclei” area of the brain and reports that dyslexics’ left hemispheres have fewer of the cells required to discriminate between these rapid sounds—the stop-consonant syllables. Glen Rosen of Beth Israel Medical Center and Holly Fitch of Rutgers have carried out related animal research. They found that brain lesions in a corresponding section of rats’ brains caused auditory timing difficulties similar to those found in human dyslexics. (Curiously, it affected male rats only, not females.) If this auditory timing problem is indeed the cause of dyslexia, a treatment seems promising. Michael Merzenich from the University of California in San Francisco, along with Tallal, has developed computers that extend the sounds of the stop-consonant syllables, allowing dyslexics to hear and process them (Blakeslee 1994a).

Gerald Coles criticizes most LD research as being biased toward a confirmation of the researchers’ preconceived ideas concerning a neurological cause. In his opinion, there is virtually no reliable evidence to support the claims and practices of people in the LD field. He ridicules many LD practitioners, painting them as unscientific quacks clinging ignorantly to unproven beliefs in a type of “amnesia” that allows them to recall only that which supports their view (1987, 31–32). Coles attributes virtually any learning problems to social, educational, and cultural forces. The research flaws Coles details concerning much LD research are serious, but whether or not researchers’ alleged predisposition to find neurological differences should make us discount all research is debatable. After all, as mentioned above, it is impossible for any of us, including Coles, to step away from our own philosophical grounding and expectations, or even to be completely aware of them. The best, most well-designed clinical research has inescapable problems, which even Coles’ exhaustive critique does not mention. A short examination of a sample research report will illustrate some of these problems.

Any one research project can be examined regarding a number of components: the appropriateness of its pool of human subjects, methodology, statistical analysis, interpretation of results, and conclusions. In order to illustrate the importance of careful scrutiny, I will examine briefly the methodological implications of one researcher’s work, Frank Vellutino, whose reports have been widely circulated in many texts, among them his 1979 book *Dyslexia: Theory and Practice* and his 1987 article on the same subject in *Scientific American*. If there are uncontrolled and/or unacknowledged variables in the methodological approach, the resulting findings will be questionable, or at the very least, colored by such

factors. Since his work is always of the highest quality, and since my own views of dyslexia are influenced by having read much of his writing, I will examine one aspect of one of his reports.

In 1987, Frank Vellutino and Donna Scanlon conducted research designed to test their hypothesis regarding poor readers' difficulties with phonemes, the smallest unit of sound. For example, "cat" has three phonemes: /c/, /a/, and /t/. Vellutino and Scanlon found that "deficiencies in phonological coding and phonemic segmentation are a direct cause of deficiencies in word identification" (1987, 321). Indeed, they conclude: "These results provide strong support for the contention that deficiencies in phonemic segmentation and alphabetic mapping are basic causes of difficulties in word identification" (339). Advocates of a structured, explicit teaching method often cite studies such as this as support for their phonics-based pedagogy. (See Chapter Three.) Such support, however, should be tempered by the following considerations of the research methods involved in this particular study by Vellutino and Scanlon. First, the tests for phonemic segmentation and alphabetic mapping occur in highly artificial testing environments. Second, in addition to the skills they were intended to examine, these researchers may have been inadvertently testing other skills not acknowledged by the researchers.

For example, one of the tests "presented the child with three pairs of rhyming words and required that, for each pair, he or she provide a third word that rhymed with the words in the set" (324). The directions to the children regarding such a task are not provided verbatim, but it is obvious that the children being tested must understand the word and concept of *rhyme* and *set*. They must also be passive or cooperative enough to perform this task without the strong positive motivation that might be present in a real-life reading situation with stories of interest to them. As part of the five- or six-day training period required of the children before taking part in the research proper, they were sometimes asked to "vocal[ize] syllables in reverse order. The stimuli used for these exercises consisted of both real words and pseudowords, presented both auditorily and visually" (334). The explanation given of the tasks required makes no allowance for the inquisitiveness of normal kindergartners who might be so preoccupied by what they might see as the absurdity of the tasks—saying words backward or repeating pseudowords—that they consciously or unconsciously refuse to answer seriously. The researchers, of course, have many logical, well-thought-out reasons for using these particular tasks, to which the kindergartners are obviously not privy. Real children might be bored or perverse enough to answer not according to the involved

directions they were trained in but according to whatever contrary game they might conceive of during the course of the test, making their answers not wrong, but merely resistant.

In another task, children are tested on their memory of nonsense syllables linked with "novel cartoon-like animal pictures" (337). Although this is an ingenious way to simulate vocabulary acquisition, it may indirectly assess a child's willingness to perform such tasks. It makes no allowance for motivation on the individual child's part to associate the researchers' nonsense or pseudowords with unrealistic-looking creatures. A child who has trouble in this clinical setting might easily perform similar tasks at home involving, say, X-Men.

In their rather lengthy accounts of these and other research projects, as written up in the specialized professional journals, Vellutino and his colleagues are very conservative in their conclusions and careful not to make sweeping generalizations about the reading habits of all children based on this limited research. They acknowledge some (but not all) of the possible problems in the actual research—cautions that are less obvious in the subsequently-summarized accounts of the complete project likely to be scanned by reading and writing practitioners who have neither the time nor the inclination to decipher the more involved reports.

Similar objections regarding methodology could be raised about virtually every component of every study. If the generally high quality of Vellutino and Scanlon's research can generate a myriad of control problems, research conducted with less care can yield even more caveats. While control problems in empirical research should no doubt be acknowledged more frequently than is presently the case, and those that are duly explained in original reports should at least be mentioned in summarized references to the work, these problems should not become the basis on which all similar research is cast aside. Clinical research is always done in artificial conditions. Many people, therefore, object to any clinical studies on reading or writing, claiming that such research is not naturalistic. It is certainly true that the tasks subjects are asked to perform are not similar to real-life reading and writing tasks, and that components are difficult to control, even in a clinical situation. However, in a natural learning environment, nothing is controlled and few results can be satisfactorily documented. Such issues regarding the methodological implications of research traditions founded on different philosophical assumptions can and do result in standoffs, with involved parties often refusing, on theoretical grounds, to recognize any conclusions made by researchers with different methodologies. Stephen M. North and others have warned of the dangers inherent



to this kind of methodological isolationism. (See Chapter Five for a more complete discussion.)

Laboratory testing is, by definition, not naturalistic. Granted, there are often unacknowledged variables that must be considered when discussing results of such empirical research. In spite of the fact that empiricists traditionally have not been methodologically self-aware, their best work is somewhat repeatable, and preserves the possibility that there are differences in the ways individuals process linguistic symbols, and by extension suggests that people learn differently. Pooling our resources, discussing—even shouting about—our different methodological assumptions would seem to be more in the best interests of our mutual students, who stand to benefit or suffer from whatever public policy results from interdisciplinary squabbling, or worse, from silent assumptions that we always know what we are doing.

The learning disability field has existed for almost a century. According to many professionals on one side of the controversy, there is a percentage of the population who, for reasons not related to intelligence (whatever *that* is), seem to have more problems in picking up spoken language or in learning to read and write than could be predicted. As convinced as the Orton Dyslexia Society is that dyslexia or learning disability is a real phenomenon, and a neurologically caused one at that, there is another group equally convinced that dyslexia for the most part is a myth, and that if children cannot read well, there are sociological or educational reasons to explain why. As we have seen, Coles' main criticism of LD research and conclusions is that its claim for a neurologically based cause uses "biologically reductionist explanations" to account for what Coles views as a sociologically based problem. The LD movement, according to Coles, serves society by keeping things as they are and focusing on the individual's need to change. Coles condemns the LD movement for requiring only minor "adjustments" in a dysfunctional school system rather than the large changes he sees as necessary. Coles believes learning disabilities are caused not by nature, but by the destructive effects of late capitalism and general "social inequality." They are "part of a larger failure of U.S. middle-class life to achieve post WWII promises and expectations." Attempts to explain reading difficulties any other way are, for Coles, "misguided" (1987, 194–99).

In his eagerness to implicate social situation rather than neurological make-up in determining a child's language difficulties, Coles chooses to highlight studies suggesting that family life greatly influences a child's speech patterns. According to the studies Coles

cites, the “factors” supposedly responsible for children’s linguistic problems include “the mother’s effectiveness in teaching her children (whether there were sufficient positive messages and few negative ones)” (60). A child’s failure to thrive linguistically is blamed on the primary care giver’s failure to properly engage the child in conversation. If it is discovered that the child did indeed have an abundance of encouragement, then the reason for the difficulty must be that *too much* emphasis was placed on the child learning to speak and write. For anguished parents, the sociological view is a dilemma. Unless the parent (usually the mother) manages to provide some ideal balance of encouragement coupled with the right amount of *laissez-faire*, she may find herself labeled as the cause of her child’s problems: “Family research has found that mothers hold the primary responsibility for a child’s cognitive development” (146). Although for Coles, “suburban life” in a decadent Western capitalist society is the primary culprit responsible for the situation women find themselves in, he never addresses what assumptions may have preexisted for those researchers who “found” that mothers are responsible for a child’s development. It seems that only those researchers whose findings Coles disagrees with have preexisting assumptions.

No one can dispute the fact that environment influences a child’s language development. But if this theory is carried to an extreme, parents (especially mothers) will be haunted by the possibility that they must have done something wrong, that perhaps their children watched one too many episodes of *Mighty Morphin Power Rangers* or were yelled at too often (or not enough) when they spilled their milk. In this explanation, LD is caused by “parents either uninvolved or overly intrusive” (142). In other words, parents cannot escape indictment. If a parent says, “But I was always involved,” then researchers can respond, “Ah *ha!* You must have been *too* involved!” If it is unclear what it was that the parent did or did not do to cause the child to be LD, this too fits the theory because “The specific ways in which family relationships are involved in the creation of learning disabilities remain to be determined” (146). How convenient: a one-size-fits-all explanation for LD, which, although it cannot be proven, also cannot be disproven.

Coles’ primary aim is to protect children from a blame that might be more justly bestowed on their environment, but in looking almost exclusively to social causes for reading failure—a condition he readily admits no one really understands—Coles’ accusations regarding a child’s early experiences invites already distraught and confused parents to blame themselves for their child’s difficulties. Although Coles ridicules other people’s explanation for dyslexia (a

neurological glitch) as being unproven, his own explanation (mothers and teachers not providing some ideally appropriate response to their children) has also not been proven and merely substitutes one hunch for another. In fact, recent research seems to challenge Coles' emphasis on the importance of one's parents' conversational habits. Hearing children of deaf parents—children who hear no speech at all in their early childhood—learn sign language as toddlers and then just as easily learn speech when they are eventually exposed to it (Radetsky 1994, 68).

The term *radical* is, in this field, a relative one. Coles' critique calls for an overhaul of society and chastises opponents for perpetuating what he views as a decadent and classist economic and educational system. Ironically, Orton-Gillingham enthusiasts view themselves as the radicals bent on reforming what they claim is an outdated *look-say* educational system that discriminates against children who have a right to learn differently.

The social-scientific research Coles employs as support for his interactivity theory—that learning differences are primarily socially caused—is no less tainted than the neurological research he rejects for being designed with the neurologists' preconceived ideas of what they would find. Coles' social-scientific studies feature families deliberately chosen for what the researchers already knew about them (1978, 142). As Michael Polanyi has explained in *Personal Knowledge* (1958), no scientific research—neurological or sociological—can be conducted without the background, expectations, and paradigmatic worldview of the researchers playing a part in the research design or in its findings. Such personal knowledge is not only desirable, but unavoidable and should be recognized and utilized for the insights it can provide.

While Coles painstakingly dismantles neurological research for setting out to find a neurological basis for learning disabilities, he accepts with nary a peep the psycho-social analyses made by sociologists whose profession is founded on the power of psycho-social relationships. In a postmodern world, it almost goes without saying that neurologists will set out, consciously or unconsciously, to find neurologically based cases for LD, and that sociologists will similarly set out to find socially based ones. That we recognize this does not mean we should summarily dismiss research results of these professionals, but rather that we should view all data with a critical eye on the particular researcher's educational background, funding, and methodological paradigm—all data, not just those collected by "them."

Even with all these factors considered (and whoever is doing the considering is similarly trapped by personal and educational

schema), some research—both neurological and sociological—will be of a higher quality than other research. Useful discrimination between and among sloppy and careful studies, however, cannot occur if the critic is willing to condemn for tainted preconceptions only the folks on the other side of the campus. By limiting his impressive analytical and rhetorical powers to the dismantling of only one kind of research and then uncritically summarizing the conclusions of those whose results it benefits his argument to accept, Coles' own credibility is diminished and his substantial contributions to understanding LD are rendered less helpful. Those who wish to become better informed about the LD controversy cannot remove whatever sturdy lenses color their perceptions of what they read. They can, however, be aware that they are wearing such lenses when they examine all research, including that which confirms their own worldview.

After Coles' book was published, its argument was addressed by a number of professionals in the LD field. Several reviews appeared, as might be expected, in the *Journal of Learning Disabilities*. Virginia Mann, a cognitive scientist at the University of California, Irvine, agrees with Coles that "reversals" in reading are not, contrary to notions sometimes discussed in the popular press, indicative of LD. She disagrees with him, however, in what she sees as his dismissal of "language-based theories." She argues further that if a substandard educational background alone accounted for reading disabilities, many more students would be labeled LD than is presently the case, and enrichment programs would show more success than they presently do. She also points to the presence of dyslexia across many cultures as evidence against Coles' sociopolitical explanations of reading difficulties (Mann 1989, 283–84).

Albert Galaburda, whose autopsy studies were discussed earlier, disputes Coles' argument that brain differences between LD and non-LD people could develop primarily from social factors. Galaburda argues that while education is no doubt influential and can contribute to reading development or lack thereof, asymmetries in the brain "are visible in the fetal brain shortly after the middle of pregnancy" and therefore "could not have been caused by a detrimental educational system" (1983, 280–81).

A psychologist from Oakland University in Michigan, Keith Stanovich spends a large section of his review of *The Learning Mystique* praising Coles for drawing attention to an issue that needs to be addressed outside isolated professional fields. He writes that Coles is correct to debunk the "nonsense" that famous people such as Albert Einstein and Woodrow Wilson were dyslexic, and to stress the importance of adequate reading instruction, especially

regarding phonological awareness. He further agrees with Coles that much "sloppy" research and testing results in many people being misdiagnosed as LD. Finally, he acknowledges that Coles, unlike many experts on both sides of the controversy, points out that brain differences are not necessarily inborn but may develop as a result of experiential influences (Stanovich 1989b).

Stanovich then goes on to point out what he sees as major flaws in Coles' theory of "interactivity"—the belief that social factors account for most major differences in reading abilities among children. He says that Coles' theory addresses "*generic* learning problems, not LD" (his emphasis, 288) and that Coles does not sufficiently address the primary definitional factor of discrepancy. In other words, Coles blurs generally poor academic achievement with specific learning disabilities, ignoring the fact that LD is traditionally defined by a discrepancy between IQ and achievement. If Coles had chosen to, says Stanovich, he could have attacked IQ testing and the discrepancy model, which do have serious flaws and which have been attacked as such, as we will see, by many in the LD field. How and if poor readers can be reliably distinguished from LD readers is an issue Stanovich says is presently "unresolved" in the LD field, and one that Coles does not adequately address. While Stanovich welcomes Coles' contribution to a needed debate, he feels Coles' overemphasis of the "interactivity" model overlooks differences between children who perform generally poorly in school and those whose problems are specifically linguistic (288).

Coles labels the motivation behind most LD research "misdirected thinking" which has led to "a fundamental misunderstanding of children's difficulties" (Coles 1987, 15). What he does not explain, however, is how anyone can "misunderstand" what even Coles admits no one really understands: "Little is known about the neurological and mental processes involved in successful learning—indeed, how any child actually learns to read remains, on the whole, something of a mystery—" (xiv). Curiously, this statement is not fundamentally different from a rarely cited opinion by Samuel Orton, the man usually thought of as being totally opposed to Coles philosophically. Orton said that specific reading difficulties could be due to "both the hereditary tendency and the environmental forces which are brought to play on the individual" (Orton 1966, 127).

Interestingly, both Coles and Orton recognize the possibility that learning disability may be a construct of *both* an inborn difference *and* the individual's social experiences. From these assumptions, each man heads in extreme and opposite directions. However, when these more moderate views of Coles' and Orton's are carefully studied, it would seem that they are not as far apart in

philosophy as condensations of their work often make them appear. Writing instructors wishing to explore the LD field should not rely on secondhand summaries of either Coles' or Orton's work but should read for themselves from a variety of sources before dismissing or embracing any recommendations.

### IQ and the Discrepancy Model of Diagnosis

There has been much debate recently both in LD journals and in general interest publications regarding the diagnostic procedures for LD. If there is one element common to most definitions, it is the discrepancy between intelligence quotient and linguistic achievement. Only children of average or above-average intelligence who have trouble reading are eligible to be called dyslexic. The disability must be *specific* if it is to be called dyslexia. That is, if a child is below average in intelligence and has trouble reading, or if the cognitive disability seems to affect the child's performance regarding other tasks, then he or she might be labeled something else, but not LD. In addition, IQ testing of young children presents some methodological problems similar to those discussed in regard to clinical research. Children wary of what they view as a strange or threatening testing atmosphere may score poorly on IQ tests, not because they *cannot* answer correctly but because they *will* not. Unless test administrators are alert enough to distinguish between valid and less valid test results, children with misleadingly low IQ scores may be slotted into a disastrously inappropriate educational track.

Kenneth A. Kavale and James H. Reese (1992) discuss further the problems inherent in the discrepancy model of LD diagnosis. As has been seen, LD students are supposedly of average or above-average intelligence. But, what happens if a student falls a few points below the numerical gauge of average intelligence or has a gap not quite severe enough to meet the discrepancy requirements? As Kavale and Reese point out, since scores are recognized by most professionals as being inexact, it makes sense to include students just short of the cutoff points in order to provide educational resources that may greatly improve their skills (81.) On the other hand, if cutoffs and categories are too fluid, it blurs the distinction between "real" LD students and people who simply cannot read well. This blurring is what several researchers are presently discovering. As many have observed, the point spread between expected and actual reading achievement can vary widely from state to state, with some school districts strictly adhering to an "average" IQ and a strict discrepancy cutoff, while other districts, so as not to deny

services to borderline students on the basis of somewhat arbitrary numbers, include students with below-average IQ's or with discrepancies not strictly within prescribed boundaries.

The results of Yale research on LD diagnosis and the comments about it overflowed from professional journals to appear in several general-interest publications. John Rennie in *Scientific American* (1992) and Geoffrey Cowley in *Newsweek* (1992) discuss the work of Sally Shaywitz, who claims that poor readers cannot be reliably distinguished from LD students, and that all poor readers, labeled or not, display similar problems such as difficulties with phonological processing. Shaywitz would like to see help available to all poor readers, not just to those who meet what she views as an arbitrary discrepancy gap. Other experts disagree with her, objecting to her subject selection and other methodological procedures. As Anne Marshall Huston points out in a letter in the *Chronicle of Higher Education*, LD diagnosis ideally includes more than a simple discrepancy between the scores of two tests (1992, B7). In practice, however, whether or not an individual is labeled LD is heavily dependent on IQ score.

Based on her own research and on her analysis of other studies, Linda S. Siegel, of the Ontario Institute for Studies in Education, concludes that dyslexic children and poor readers differ only in IQ, not in reading behaviors. As did Shaywitz, Siegel says that regardless of diagnosis, poor readers experience similar phonological processing problems (1992, 618). That is, they have trouble recognizing sounds from the phonemes contained in words. To put it more simply, they have trouble sounding out words. Siegel would instead prefer that a reading disability diagnosis be based solely on reading score, with no special category for dyslexics (627). While Keith Stanovich has some objections to Siegel's conclusions, he agrees with her basic findings that it is very difficult to show differences between LD students and plain old poor readers. He questions the judgment to withhold specialized reading instruction from students who might fall a few points below the number line drawn regarding amount of discrepancy needed for LD labeling. Stanovich, who would rather examine discrepancies between listening comprehension and reading comprehension, says it is "nothing short of astounding" to use IQ scores, themselves so controversial, in diagnosing LD (1989a, 487).

As might be expected, Siegel's conclusions, published in a special series in the *Journal of Learning Disabilities* regarding the IQ controversy, have also sparked sharp disagreement. Peter G. Cole, of Edith Cowan University in Australia, takes issue with Siegel, contending that if the IQ discrepancy model is no longer used, then

mentally retarded students could be labeled LD (1993, 9). Peter Cole's objection itself raises a serious ethical issue. Who would object if students with below-average intelligence could benefit from reading instruction intended for their officially more intelligent peers and designed to address problems with phonological coding? If IQ measurements are themselves controversial and inexact, then all categories blur to some extent, including *mentally retarded*, which by definition excludes students from LD labeling and designated funding. While mentally retarded groups are entitled to different government funds, one wonders if any amount of money could possibly compensate for the negative stigma associated with that category.

The LD label is in many ways a failed attempt to spare some children the discrimination against retarded people that is blithely accepted in this society. LD students endlessly fight the stereotype that they are "stupid." They are well aware of how this culture views mentally retarded children. Although providing "special" schools or programs for "special" children was intended to help them, and there are unquestionably professionals in those fields who do a heroic job doing that, the categorizing of our children has overall deficits so severe that any good this system is doing may not be able to override them. Students so isolated, whether categorized as LD or as something even less accepted in society, are ostracized academically and socially, while "regular" children are made to feel superior to these other children and learn nothing about what integration with them might teach. It may be time to remove all the labels and treat everyone the way we would all want to be treated—like normal people. Parents wary of such an inclusive mainstream may fear that their "gifted and talented" children will function only as tutors to LD or retarded (gasp!) youngsters. There are, of course, stories of how extremely disabled or disturbed children, when "dumped" into a regular class, disrupt learning for everyone, especially when there is inadequate training for teachers. There are also stories of how inclusion has demonstrated that all children have much to teach each other about the perspective, the creativity, and the talents to be found beyond linguistic skills.<sup>3</sup>

The present education system, in spite of serious, enduring questions about intelligence measurements, insists on sorting, separating, and labeling all students based on those measurements. Those with the lowest IQ scores are the groups most isolated in restrictive environments—resource rooms, special education classes, or even different buildings from those in which "regular" classes are held. This practice is no doubt directly responsible for much of the ridicule and rejection many youngsters must endure,



and it is nothing short of appalling that so little effort is made to help “normal” children and their parents understand the normalcy of “special” children.

Ostracizing children socially and educationally from the mainstream is what recent legislation was intended to prevent, by requiring that LD students be placed in the “least restrictive environment.” That is, they are to be included as much as possible in regular classes and receive only those special services that specifically “meet their needs.” However, the people who most often decide what constitutes this least restrictive environment are specialists with an arguably vested interest in the concept of LD labeling and special services. This is not to single out one group of professionals. Advocates of mainstreaming may have vested interests in having students mainstreamed. No one is immune, including the author of this book, from advocating for students what may indirectly benefit themselves. There is a dangerous cycle regarding LD, however, in that what may harm students the most may be both expensive and well intentioned: restriction and isolation in the form of “special” services. On the other hand, without these services, many LD students who are barely coping now with a reading-based education system might fail altogether.

It would be better to change the mainstream than to continue the divide-and-treat-differently model that has developed—for mostly noble reasons—in recent decades. Even as I argue for more inclusionary classrooms, I am not arguing that we teach all students in the same way or make the binary leap in thinking that because diagnosing LD is such a tricky business, we therefore should conclude that LD does not exist. We must not simply and comfortably adopt, or return to, pedagogical models of reading and writing based on theories that all human beings naturally and easily intuit linguistic processing skills. While we need to mainstream, we also need to change the mainstream—to make it wide enough to accommodate tributaries from diverse terrain, and to remove unnecessary boulders so that all can flow through it more smoothly. To divert what may be some of its most creative elements weakens the flow and constricts what might be productive meanderings until it dries to an overfiltered trickle. We need to make general education flexible enough, broad enough, and creative enough to challenge all students, regardless of IQ measurements.

Now is an ideal time to alter the mainstream in these ways. Writing across the curriculum, in spite of funding problems, is evolving toward more sophisticated concepts of critical thinking and discourse analysis, and is having an influence throughout educational levels. This results in more collaboration between faculty and

students in different disciplines, which can only further communication and exploration of discipline-specific, as well as individualized, ways of knowing.

## Summary

In summary, experts disagree with each other or are admittedly baffled by the causes and manifestations of learning disabilities. However, in spite of the varying and problematic definitions, and the conflicting and often outlandish reasons given to explain it, I believe there exists for some people a learning difference in regard to linguistic symbols that is a real phenomenon. Its nature and cause remain inexplicable.

If it is even partly true that normal, intelligent people sometimes think or process language differently, then writing teachers may want to rethink current practices that are based on what is believed to be the learning process of the majority, but not this minority. Trouble with written language becomes a "disability" only in a society that values a certain kind of literacy. To insist that everyone think the same way is to truncate the thoughts of those who may be the most creative people. In describing his experiences as a dyslexic child, Donald Lyman speaks of a "lost world" of "wordless memories" (1986, 27). His trouble, he says, was with symbols: "This was my learning disability—an inability to make sense of a representational world, a world in which an object as named was more important than the object itself" (28). Bernard Patten, rather than labeling dyslexia a deficiency, calls it a "visual form of thinking," which he sees as a possible improvement over "auditory" forms. He observes, "Our present verbally oriented schools should not prevent geniuses with visual or other forms of thinking from achieving their full potential. Indeed, the total thinking power of even an average person can also be expanded" (1978, 224). In other words, the dyslexic's "difficulties" may be unrecognized assets. This is, of course, an extreme view of what dyslexia entails, but it raises interesting questions about privileging in our schools what might be called a "linguisto-centric" view of thinking.

Why is this controversy important to college composition instructors? First, the proliferation of reading and writing research notwithstanding, there is certainly enough disagreement in the field to keep the question open as to whether neurological differences might account for linguistic difficulties in children and in adults. Second, estimates of people who might have this difference in

learning vary so widely that we cannot afford to ignore the numbers of adults who may be showing up in college composition classes. While occasional general interest articles put the dyslexic population at close to 20 percent, most experts say that is much too high a figure. A 1993 pamphlet distributed by the National Institute for Mental Health says that between 2 and 8 percent of children are dyslexic. Frank Vellutino (1990) believes that between 1 and 5 percent of children are what he calls "different" in how they learn to read. Even the most vehement critics of the LD field do not totally rule out a neurological difference.

Marie Clay, who dismisses most claims of learning disability by emphasizing the role of appropriate instruction, recognizes that some small portion of the population may indeed be different: "Diagnostic teaching can reduce the number of readers who become disorganized because their experiences have been inadequate for their needs, and *then we can discover the nature of the residual group of children who may perhaps be organically impaired*" (my emphasis, 1972, 161). And Gerald Coles, who has written most prolifically about the problems of LD empirical research concerning neurological difference, admits "there is a modicum of evidence suggesting that a very small portion of the children identified as learning disabled do have some degree of neurological dysfunction that may interfere with learning and academic achievement" (1978, xvii). It is precisely because experts in this field are so opposed, and opinions are as strong as they are divided, that composition specialists need to join the fray. Even if only one student—a member of what Clay calls that "residual group" who may have a difference in learning not related to dialect, social class, or educational background—appears in a composition class, the instructor owes it to that student to be informed. We need to read widely, to argue, and to conduct our own research.

As will be discussed in Chapter Two, writing instructors are not sufficiently prepared, either in graduate school or through their professional affiliations, to sort through the impassioned rhetoric of the LD controversy. The Works Cited section in this book reveals only a small portion of the material written about the learning disability field. Composition specialists cannot be expected to explore thoroughly all aspects of this complicated subject. However, one danger of relying on thumbnail summaries or critiques of Orton's theories, is that they will reflect the speaker's enthusiasm or scorn for the ideas being discussed. A neutral position about serious issues is, of course, virtually impossible for anyone to achieve. In order to form an educated opinion on the LD issue and to discover how it may impact on their teaching, composition specialists are encouraged to

read from different sources, to talk with different people, and to form their own interpretations. They need to listen both carefully and critically to people from a variety of fields, and they need to trust their students' experiences as learners and their own experience as teachers.

## Notes

1. The conference, entitled "Higher Education for Persons With Disabilities: Challenges and Opportunities," was sponsored by the University of the State of New York and the New York State Education Department. It was held at Empire State Plaza, Albany, New York, November 30, 1993.

2. "Reading Problems Tied to a Deficit of Timing in Visual Pathways." *New York Times*, 13 April 1993.

3. For newspaper reports reflecting different views of mainstreaming or inclusion, see the following:

Bryce, Jill. "Special Education Pupils Mix Well into Mainstream Classes." *Daily Gazette* (Schenectady, NY), 20 June 1994.

Fallick, Dawn. "Inclusion: How Inclusive? Placement of Special Ed Students in Regular Classes Raises Complicated Issues for All." *The Record* (Troy, NY), 3 July 1994.

———. "Special Education Students Not Only Ones Affected: Critics: Gifted Students Being Slowed." *The Record* (Troy, NY), 5 July 1994.

———. "Including Children Makes Dollars, Sense for School Districts." *The Record* (Troy, NY), 6 July 1994.

———. "Inclusion: Everyone Helps Everyone." *The Record* (Troy, NY), 4 July 1994.

———. "Troy: Teachers 'Extremely Pleased' With Mixed Classes." *The Record* (Troy, NY), 4 July 1994.