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# PROTESTANT WORLDLY ASCETICISM: ITS EFFECT ON THEORY IN NORTH AMERICAN PSYCHOLOGY, EDUCATIONAL PSYCHOLOGY, AND EDUCATION; AND ITS IMPLICATIONS FOR CANADIAN RESEARCH IN SPECIAL EDUCATION, 1968 TO 1989

by

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Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

at

Dalhousie University
Halifax, Nova Scotia
March 15, 1991

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ISBN 0-315-71444-1

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## DEDICATION

This work is dedicated to the perserverance and integrity of my father. It was he who introduced me to other ways of knowing.

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## ABSTRACT

A resurgence of cognitivist psychology in the 1940s inspired a critical analysis of the accepted functionalist constructs of intelligence, learning, and human behaviour. This analysis has had little effect on researchers and practitioners in special education. The purpose of the study was to determine if there was some system of logic which sustained the entrenchment of the functionalist constructs of giftedness and learning disability. The study found that i) functional psychologists, in accordance with the mandate of a Protestant worldly asceticism, attempted to operationalize Calvinist assumptions regarding correct human behaviour in formulating these constructs; and ii) the majority of contributors to the Canadian special education literature between 1968 and 1989 continued to operationalize the functionalist constructs of giftedness and learning disability in the design of research problems. The findings of the study led to the conclusion that the entrenchment of functionalist constructs in special education is the result of a symbiotic relationship which exists between culture and social science. A relationship in which cultural assumptions, and the constructs of human behaviour they engender, are vindicated through the practice of a normal science which is, in turn, vindicated through the validation of its findings by the culture.

# ACKNOWLEDGEMENTS

A complete acknowledgement of the intellectual stimulation, encouragement, and understanding provided by the many individuals who contributed to the completion of this thesis would be impossible. The following individuals, however, deserve particular thanks. I would like to acknowledge the contributions of my thesis committee members, Dr. Patri Keane, Dr. David Leitch, and especially my supervisor, Dr. Surinder Sodhi, who patiently allowed me to explore the issues in my own unusual way. I wish to express my gratitude to Dr. Anne Wood who had a profound influence on my thinking and the substance of this work, and to Ms. Carole Sunley who made the words appear to be better than they are. Finally, I would like to acknowledge the many sacrifices made by my family, Ev, Michael, and Erin as the 'neverending story' took shape. Thank you all.

All things bright and beautiful
All creatures great and small,
All things wise and wonderful,
The Lord God made them all.

The rich man in his castle,
The poor man at his gate,
God made them, high or lowly,
And order'd their estate.

Cecil Alexander, Hymns for Little Children, 1848

# CHAPTER ONE

## PROTESTANT WORLDLY ASCETICISM AND THEORY IN PSYCHOLOGY AND EDUCATION

> Now this divorce of religion from secular life is manifestly incompatible with the Protestant idea. If in the individual conscience there is revealed a higher law than has yet found embodiment in the state, the law must find its realization objectively; the ideal must become the real. In Protestant countries there has therefore been a continual effort to purify the state by making it an embodiment of reason. That this is the logical consequence of the Protestant idea no one can doubt. The ideal is the real, and what contradicts the ideal must ultimately be annulled.
>
> John Watson
> Queen's Quarterly,1893[1]

In the late 1940s, challenges to the theoretical assumptions of a functionalist social science materialized in both Canada and the United States.[2] The mounting discontent among psychologists crystallized in the proceedings of the Hixon Symposium of 1948.[3] This symposium served as the impetus for a resurgence in cognitive theories of psychology which, in turn, prompted a critical analysis of practices in education, educational psychology, and special education.[4] David Leitch contends that in spite of this analysis there is little movement in these fields to evaluate, or restructure, the theoretical assumptions on which they are founded.[5] This dilemma may be comprehensible through analyzing the process of enculturation by which these assumptions became axiomatic.[6]

**Introduction**

Leitch's concern with the shortcomings of theory in educational psychology and special education is the latest in a series of challenges to functionalism -- the definition of human behaviour in terms of its utility in meeting the ends of a particular world view -- in psychology and education. These challenges are manifest in a growing volume of critical studies in psychology, education, educational psychology, and special education.[7]

One of the early challenges to functionalist theory was issued by J.B. Brebner in a study of Canadian higher education commissioned by the Social Science Research Council of Canada in 1945.[8] Brebner found that Canadian universities which viewed themselves as "service institutions of a rather narrowly utilitarian kind" had produced a body of theory in the social sciences which was of questionable validity. The dubious nature of these theories, in his view, was compounded by the dependence of the faculties of these universities on the financial support of philanthropic foundations with a constricted range of research priorities.[9]

Howard Gardner states that the Hixon Symposium of 1948 served as the catalyst for a growing challenge to the narrow constructs of normal behaviour and learning developed by faculties of psychology in the first half of the twentieth century in the United States.[10] He contends that the most significant objection to early theory presented at this symposium came from Karl Lashley, a former

student and assistant of J.B. Watson.[11] In a paper entitled "The Problem of Serial Order in Behaviour" he proposed to those in attendance that the functionalist "answer to questions of the human mind was no answer at all." Further, Lashley argued that adherence to the theoretical premises of functionalism was "making a scientific study of mind impossible."[12]

These studies provide evidence of the mounting apprehension over the conceptual models developed by social science faculties during the first half of the twentieth century. Gardner proposes that the ferment in psychology was incarnate in the revitalization of Freudian, cognitivist, and psycho-linguistic research areas which had been neglected by functionalism.[13]

Theodore Millon claims that by the late 1940s the work of the neo-Freudians Karen Horney and Eric Fromm was challenging the popular concept of the integrated personality by proposing that the institutional constructs of functionalism, with their emphasis on social conformity, were significant etiological factors in personality disorder.[14] Jerome Bruner's work in the Cognition Project at Harvard University in the early 1950s led him to conclude that overriding conceptual schemes made the component parts of a task comprehensible, a view that was antithetical to the tenets of serial-order learning.[15] This finding complemented the earlier research of D.O. Hebb at McGill.[16] Noam Chomsky's study of Syntactic Structures published in 1957 challenged the functionalist construct of the sequential arrangement of literacy skills in the language arts

curriculum. There was, in his view, an overriding syntactical structure of language which could better explain all the nuances of its various sub-systems.[17]

The mounting criticism of the shortcomings of functionalist theories in psychology and education has stimulated the reevaluation of practices in educational administration, curriculum design, and the definitions of exceptionality in special education.[18]

Raymond Callahan, Elisabeth Hansot, David Tyack, and Anne Wood have documented the instrumental use of functionalist principles in the organization of the public school systems of Canada and the United States during the first half of the twentieth century.[19] The critical analysis has focused on the application of these principles under the auspices of efficient student learning. Researchers argue that there is little evidence to substantiate functionalist claims.[20]

Arthur Wise has referred to the functionalist organization of schools and curricula as the "hyperationalization" of educational practice.[21] He defines hyperationalization as the extent to which bureaucratic procedures -- the use of scientific management techniques and measurable behavioural objectives -- are implemented without realizing projected educational goals.[22] Wise's study is an example of the proliferation of research which questions the educational logic of the rationalization, or hyperationalization, of the curriculum.

Frank Smith, in a study of the language arts curriculum, questions the efficacy of breaking literacy into a series of supposedly interrelated skills.[23] David

Nyberg and Kieran Egan lament a "logico-mathematical" notion of knowledge which thwarts the rational exchange of ideas.[24] Linda McNeil claims that the public schools curriculum includes a predetermined set of official facts so fragmented and innocuous that students become disinterested and teachers 'burn-out'.[25] Michael Apple alleges that the functionalist philosophy of education is a euphemism for a "hidden curriculum" which actively oppresses minorities, persons of low socio-economic status, and women.[26] Robin Barrow claims that similar shortcomings are evident in the Canadian curriculum.[27]

One of the most serious criticisms of functionalist psychology, and its contribution to the organization of the public school system in North America, is the accusation that its normative standards and practices have led to the marginalization of many students including those thought to be in need of special education services.[28]

James Ysseldyke, Bob Algozzine, and Gerald Coles have documented the systematic marginalization of individuals who deviate from the normative standards of functionalist psychology in the United States.[29] Ysseldyke and Algozzine have found that students are labeled on the basis of their intelligence (including those who are perceived to be too intelligent), appearance, sex, age, race, social status, physical, mental, or emotional handicap.[30] These authors term the routine exclusion of certain individuals and groups a "psychoeducational deception" -- the popular practice in education of using test instruments to

confirm presumptions of giftedness, deviance or disability.[31] This finding was substantiated by Coles, a neurologist, who conducted a comprehensive survey of the empirical research on learning disabilities and concluded that there is no substantive evidence that this disability is organically based.[32]

Similar findings by Canadian researchers have led them to conclude that many of the conceptual models of special education are mythical in nature.[33] Sid Sodhi, in his Myths of Special Education, claims that psychologists and special educators are complacently following "suspicion confirming" practices, rather than examining the assumptions on which the labelling of children proceed.[34]

Leitch and Sodhi have found that constructs such as learning disabilities may have little basis in fact.[35] These authors maintain that definitions of intelligence and learning disability vary from "province to province (and text to text!)" leading them to conclude these definitions are not founded in any specific physical reality.[36] This finding is consistent with the conclusion of Ysseldyke and Algozzine that the concept of neurologically based learning disabilities would likely not exist without the equivocal assumptions, and test instruments devised with these assumptions in mind, by which they are defined.[37]

In effect, these researchers contend that anyone whose behaviour, learning style, or reasoning does not conform with functionalist norms is at risk of being labeled and marginalized given current school practices.

The studies cited in the introduction of this thesis show the mounting challenge to the established standards of a functionalist psychology. A substantial body of theoretical and empirical research has found that the over-emphasis on the rationalization of the institution of the school -- incrementalizing the curriculum and classifying students as gifted, normal, or learning disabled according to their facility in memorizing these incrementalized bits of information -- seems to be inherent to functionalism and may have negative consequences for certain individuals and groups. Some contend that the challenge to functionalist standards has yet to be addressed. These findings bring us back to the question raised by Leitch; what are the causes of the apparent neglect of these research findings by practitioners in the fields of educational psychology and special education?

Coles findings are particularly important in the search for an answer to this question. He concludes that the research on learning disabilities is not a detached scientific analysis of the facts, rather it is a "collection of tracts" which are "intent on making the child or the child's neurology responsible for the learning problem."[38] The description of research findings as a collection of tracts calls to mind Seymour Sarason's contention that much of theory in psychology, theory which underpins special education, is founded in a Protestant world view which flourished in the early twentieth century.[39] Sarason argues that an understanding of the effects of this cultural phenomenon on theory is the central

issue for contemporary research, and that a failure to address this issue amounts to an inadvertent bias in modern research practice.[40]

**Overview of the Study**

According to recent findings in the history of social science, a Protestant worldly asceticism facilitated a metamorphosis in Calvinist doctrines which was of critical importance to the fields of psychology and education.[41] In the first phase of this metamorphosis these doctrines were embodied in the moral philosophy of British idealism.[42] In the second phase they were reembodied as normative principles of a functionalist social science.[43] In defining human behaviour in terms of its uniformity with Calvinist assumptions, early social theorists may have imbued the conceptual foundations of psychology and education with a quasi-religious character which fostered a tendency for their entrenchment in the institutions of Protestant cultures.[44] This tendency for conceptual entrenchment may be compounded by the continuing use of these theories as the basis of a normative scientific method in these fields.[45]

Max Weber states that following the Reformation there was a gradual convergence of various Protestant ideologies which culminated in a pan-denominational acceptance of a worldly asceticism -- a call for the objectification of Calvinist doctrines in the day-to-day relations of the institutions of society.[46] Ascetic Protestants held that a strict adherence to this process of objectification

was the only legitimate means to personal rede nption.[47]

Weber contends that the Calvinist doctrines of proof, predestination, duty, and grace were to serve as guides for the socio-moral restructuring of the State.[48] The doctrine of proof dictated that one's redemption was manifest in worldly actions and the achievement of material results.[49] The doctrine of predestination proposed that those who were to be redeemed -- the elect -- were recognizable by their success, or blessings, in this life.[50] The doctrine of duty was composed of the dual concepts of station and rationalization: i) the concept of station held that one was Divinely predestined to assume a specific role in society and demanded that all individual action fall within the boundaries of this prescribed role;[51] ii) the concept of rationalization proposed that, in pursuing the duties of their station, the individual was also to accommodate the scientific restructuring of institutional relations.[52] The doctrine of grace held that salvation lay in conforming with the duties associated with one's station in life, non-conformity with these duties constituted a lack of grace.[53]

It was the Protestant ideology known as pietism, according to Weber, that introduced an element of dynamism to the philosophical amalgam that was Protestant worldly asceticism.[54] Pietism demanded that Calvinist doctrines be objectified in the religious, scientific, and economic institutions of society through the efforts of the elect -- leaders identifiable through the material blessings which accrued to them as a result of their faithful adherence to the duties of their

station, or calling, in life.[55]

> On the other hand, though the means by which it [redemption] was attained differed for different doctrines, it could not be guaranteed by any magical sacraments, by relief in the confession, nor by individual good works. That was only possible by proof in a specific type of conduct unmistakably different from the way of life of the natural man. From that followed for the individual an incentive methodically to supervise his own state of grace in his own conduct, and thus to penetrate it with asceticism. But, as we have seen, this ascetic conduct meant the rational planning of the whole of one's life in accordance with God's will. And this asceticism was no longer an opus supererogationis, but something which could be required of everyone who would be certain of salvation. The religious life of the saints, as distinguished from the natural life, was -- the most important point -- no longer lived outside the world and its institutions. This rationalization of conduct within this world, but for the sake of the world beyond, was the consequence of the concept of the calling of ascetic Protestantism.[56]

A.B. McKillop and Louise Stevenson have documented the general acceptance of a worldly asceticism among an elect body -- Canadian and American academics -- during the nineteenth century.[57] Academics from all Protestant denominations were instrumental, according to these authors, in tempering the theoretical foundations of the emergent social sciences with the Calvinist assumptions of ascetic Protestantism.[58] This process was perpetuated at mid-century under the auspices of a British idealism in moral philosophy.

British idealism marked the first phase in the metamorphosis of Calvinist doctrine which culminated in its reembodiment in the scientific principles of a functionalist social science. Idealist moral philosophers in North America called for the rationalization of the whole of society -- individual behaviour, the human

relations of institutions, and institutional alliances -- according to the tenets of Calvinism.[59]

Manfred Kuehn provides evidence for the existence of a pan-denominational acceptance of a worldly asceticism in his study of the fusion of British and German Protestantism.[60] This early fusion culminated in the moral philosophy known as British idealism in the latter half of the nineteenth century. British idealism combined pietist dynamism with G.W.F. Hegel's idealist precept that self-realization was the product of actualizing a State polity comprised of interdependent social institutions.[61]

The effect of British idealism on Canadian moral philosophers is seen in a study by George Rawlyk and Kevin Quinn who found that idealists at Queen's University were convinced that a professional elect -- doctors, lawyers, businessmen, scientists, and educators -- would direct the rationalization of Canadian society.[62] This finding is supported by the research of Leslie Armour, Elizabeth Trott, and McKillop who studied Protestant culture in Canada between the mid-nineteenth and mid-twentieth centuries.[63]

Anne Wood has shown how the idealists planned to restructure the institutions of the family, school and state.[64] The family was seen as a means of promoting the value of cooperative self-sacrifice in realizing the larger interests of the group.[65] The school was to be stratified in terms of elementary, junior secondary, senior secondary, and university levels in order to sort certain

students into vocational and academic streams. The university was seen as the purveyor of an elite corps of professionals who would direct the continuous moral regeneration of society.[66] Overriding the idealist vision was the institution of the State which acted as the efficient centre of control for inter-institutional relations. The state, for example, would control schooling and direct "public opinion by gathering 'correct' information" assuring social stability in the public interest.[67]

Ascetic Protestants surmised, according to Weber and Wood, that the efficient ordering of individual behaviour, human relationships within institutions, and institutional alliances would lead to universal material opulence and the realization of God's kingdom on earth.[68] These assumptions served as the basis of a comprehensive religious, economic, and scientific world view that was instrumental in the foment of the definitions of normal, and abnormal, behaviour and the notion that intelligence, learning, economic well-being, and morality were intimately correlated.[69]

This body of research provides convincing evidence that a Protestant worldly asceticism, through the vehicle of a British idealism in moral philosophy, introduced in the minds of social theorists of the late nineteenth century an axiomatic design for correct individual behaviour and the organization of societal institutions. The arrival of the twentieth century triggered, among certain of the idealists, an empirical ethos which inspired the second phase of the

metamorphosis of Calvinist doctrine. In this phase the Calvinist social axioms of British idealism were reembodied in the normative standards of a utilitarian social science known as functionalist psychology.

Evidence of the transformation of Calvinist doctrine to normative standards in early social science was provided by Ramsay Cook, Marlene Shore, and Anne Wood.[70] Cook refers to this reembodiment as a "union of the sacred and the secular".[71]

It was E.B. Titchener who first alluded to the classification of human behaviour according to its utility in meeting specific ends as a functionalist psychology.[72] That these ends were likely determined by a Protestant world view has been established in a study of the religious affiliation of leading scientists in the United States between 1903 and 1943 conducted by Stephen Visher.[73] Visher claims that of the 303 most recognized scientific leaders of this period, including functional psychologists J.M. Cattell, Edward Thorndike, William James, and John Dewey, 296 were Protestant.[74]

Neil Coughlan, George Dykhuizen, Clarence Karier, and H.S. Thayer have documented the effects of Protestant worldly asceticism on early psychology.[75] Karier contends that Edward Thorndike's theories require a thorough analysis in light of the doctrines of worldly asceticism outlined by Weber.[76] Dykhuizen has provided evidence of John Dewey's fervent idealism.[77] Thayer and Coughlan insist that Dewey's empiricism was never antithetical to idealist precepts, it simply

made these religious antecedents of his psychology more obscure.[78] Coughlan has reported that Dewey spoke of ideals and norms interchangeably; as if they were synonymous.[79]

These studies indicate that leading social scientists at the turn of the century were in the vanguard of an evolving Protestant asceticism which reembodied Calvinist doctrines in the scientific principles of a functionalist psychology. It was Thorndike and Dewey who were founding members of what Barry Franklin and David Murray have described as the two leading schools of functionalism -- Columbia University in New York and the University of Chicago.[80] The zealousness with which psychologists at these institutions pursued their brand of empiricism might be construed as a displaced evangelism.

Barry Franklin, Russell Marks, and Joel Spring have verified the involvement of functionalist psychology at Columbia in devising educational standards and intelligence tests which were seen as a means of rationalizing not only the school, but the whole of society through a process of social eugenics.[81] The Columbia standards and tests were used to separate students into one of two primary educational categories: i) leaders, identified on the basis of intelligence or academic aptitude and whose duty it was to direct socio-moral progress; and ii) followers, whose duty it was to comply with the directions of leadership.[82]

Christine Shea found that Chicago functionalists set the standards for abnormal psychology and a mental hygiene movement which inaugurated the concept of special education.[83] In the institution of the school these standards determined that students who complied with the dictums of their assigned category -- leader or follower -- were normal, or gifted if they were exceptionally productive. But more importantly, with the popularization of the concept of specific etiology in medicine and psychiatry at that time, behaviours thought to be counter-productive were diagnosed as pathological and symptomatic of some organic dysfunction within the individual.[84]

These studies provide evidence for hypothesizing a link between the theories of functionalist psychology and Calvinist doctrine. The constructs of intelligence and academic aptitude contained in functionalist theory seem to be a parody of the doctrines of proof, predestination, duty, and grace described by Weber.

Columbia functionalists identified leaders on the basis of personal characteristics which were of greatest utility in actualizing their vision of a correct society -- proof of one's intelligence, or election, lay in their performance of actions consistent with those prescribed by Calvinist doctrine. They also proposed that it was the duty of both leaders and followers to acquiesce in the continuing rationalization of society within the limitations of their assigned role, or station. Chicago functionalism, on the other hand, devised a scheme for rating

the individual's mental competence on the basis of fulfilling the duties associated with the assigned station in life. Normality, giftedness, and pathology became measures of one's conformity with the dictates of a worldly asceticism -- measures of one's state of grace.

Thus, there is substantive evidence that functionalist psychology may have objectified, in theory and in the organization of the institution of the school, Calvinist doctrines inherent in a Protestant worldly asceticism. The theoretical foundations developed at Columbia University and the University of Chicago had a significant impact on the Canadian academy.[85]

The influence of the two leading schools of functionalism on Canadian academics has been documented by Shea, Marlene Shore, George Tomkins, Mary Wright and C. Roger Myers.[86] Shore and Tomkins have shown how faculties of moral philosophy in Canada were slow to convert to functionalist social science forcing many Canadian graduates who were interested in the functionalist perspective south to Columbia University and the University of Chicago.[87] Wood, Shea, Wright, and Myers have identified Peter Sandiford, William Blatz, and Helen Bott of the University of Toronto and Samuel Laycock of the University of Saskatchewan as graduates of these institutions or purveyors of the functionalist vision in Canadian faculties of psychology and education.[88]

The above studies investigated the final phase of the metamorphosis of Calvinist doctrine to the scientific principles of functionalist psychology. These

studies provide substantive evidence of the instrumentality of an evolving Protestant worldly asceticism in the development of the theoretical foundations of psychology and education. It appears that ascetic Protestant psychologists, and educators, objectified in theory a Calvinist moral philosophy from which they were purportedly seeking to extricate their sciences. Thus, the functionalist theories which underpinned the development of these fields over the first half of the twentieth century may not have been the product of a detached analysis of human potential. If this was the case, certain of the theoretical foundations of psychology and education may be quasi-religious -- pseudo scientific -- in nature.

The quasi-religious nature of functionalist theories, and the uniformity of these theories with cultural assumptions in Protestant societies, may provide a partial explanation for the entrenchment of certain models of exceptionality in special education. Recent studies of the effect of culture on the university may provide a more complete understanding of the significance of these early theories for contemporary research.[89]

A study by Paulo Freire has shown how the entrenchment of theory in the academic disciplines may be explainable by a cultural overdetermination inherent in the institution of the university.[90]

> It is true infrastructure, created in the relations by which the work of man transforms the world, gives rise to superstructure. But it is also true that the latter, mediated by men, who introject its myths, turns upon the infrastructure and 'overdetermines' it.[91]

Freire contends that it is the organization of the institutions of society, and

the interpersonal relations and attitudes this organization engenders, that overdetermine our perception of the legitimacy, and permanence, of their superstructural -- for our purposes theoretical -- perspectives. Freire terms this conserving disposition, astructural perception.[92]

Recognition of the effects of astructural perception on the academic disciplines of both Canadian and American Universities has prompted a number of recent studies.[93] Some of these studies found that the requirements of empirical method -- the division of complex phenomena into normative concepts such as learning disabilities -- leads, almost inexorably, to the esconcement of these concepts in the theoretical foundations of a discipline.[94]

Research by Henry Giroux, David Shumway, Paul Smith, and James Sosnoski provides further evidence for the hypothesis that the tendency for conceptual esconcement in normative science is partly an outgrowth of the efforts of succeeding generations of graduate students.[95] Graduate students, according to these authors, collect data according to the demands of the traditional conceptual base of a discipline to gain membership in its ranks. With the passing of time, the initial human involvement in the formulation of these concepts becomes lost in this process and they take on an axiomatic life of their own. The result is a gradual narrowing of scientific vision among the members of a discipline. Giroux, Shumway, Smith, and Sosnoski conclude that, to the extent these members fail to acknowledge the limitations of normative science,

their perception of research problems becomes astructural, and their findings astructurally skewed, or mythical.[96]

Studies cited in the introduction of this chapter found that a challenge to the theoretical standards established by a functionalism in psychology, standards which served as the basis for the rationalization of our modern institutions of education, had been virtually ignored by educational psychologists and special educators. A review of literature pertinent to this problem in the overview of the study provides evidence that functionalist standards may be the product of a Protestant world view which holds that the rationalization of the institution of the school, the curriculum, and student behaviour amounts to a moral imperative. Further, studies show that this rationalization process, and the standards which are a result of it, are perpetuated through the concentration of research in psychology and education on normative science, at the expense of theoretical science. A study of the effects of Protestant worldly asceticism on early theories of educational psychology, and the consequences of these theories for contemporary research practices in special education, may help to illuminate the entrenchment of certain theoretical constructs in these fields.

## Statement of the Problem

### Hypotheses

Earlier studies provide both theoretical and empirical support for hypothesizing: i) a connection between Protestant worldly asceticism and theory

in psychology and education; and ii) the perpetuation of these theoretical constructs through an emphasis on normative science in the research practices of these fields. Two pertinent questions about the connection between worldly asceticism and theory in psychology and education were addressed in this study. An ancillary set of questions examined the implications of these theories for contemporary research in special education by Canadian academics, practitioners, and graduate students. The following is an inventory of these questions.

## Questions

### The Effect of Protestant Worldly Asceticism on Theory in Psychology and Education

1. Were the theoretical foundations of functionalist psychology -- foundations instrumental in the organization of public schooling -- consistent with the tenets of a Protestant worldly asceticism; or were they the product of a detached scientific analysis of the natural operations of intelligence, learning, and human behaviour? Studies by Karier and Sarason have found that a Protestant world view may have interfered with the objective study of human psychology. These authors call for an analysis of functionalist theories in light of the philosophy of worldly asceticism.[97]
2. Is there evidence that the theoretical foundations of functionalist psychology were significant in the development of educational psychology

and special education in the Canadian academy? Shea, Wood, Wright and Myers have found that Canadians who did graduate work at American institutions which championed the functionalist view were instrumental in organizing the school systems of Canada. There are no studies, to this authors' knowledge, that have analyzed the theories developed by these graduates in light of their possible connection to a Protestant worldly asceticism.[98]

## The Implications of Protestant Worldly Asceticism for Definitions of Giftedness and Learning Disability in Contemporary Canadian Research

### Giftedness

1. Are definitions of gifted behaviour in the contemporary Canadian research congruent, or incongruent, with the conceptual models of giftedness developed by functionalist psychology? An early study by Paul Torrance has found that schools may discriminate against certain types of legitimate intelligence. This phenomenon might be explainable by their lack of uniformity with functionalist standards.[99]

2. If definitions of gifted behaviour as used by Canadian researchers are congruent with functionalist conceptual models, do these researchers question these models and what issues do they raise? A preliminary study of Canadian journals[100] and doctoral dissertations[101] indicates that

there is virtually no questioning of popular definitions of this concept, a failing which this study may help to explain.

**Learning Disability**

1. Are definitions of learning disability used in Canadian research congruent, or incongruent, with the conceptual model of learning disabilities developed by functionalist psychology? Coles, Leitch, Sodhi, Ysseldyke and Algozzine have taken issue with the theoretical construct of learning disability. This study tries to assess whether or not Canadian academics, practitioners, and doctoral candidates are acknowledging the concerns raised in the literature.[102]
2. If definitions of learning disability, as used by Canadian researchers, are congruent with functionalist conceptual models, do these researchers question these models and what issues do they raise? A preliminary study of Canadian journals[103] and doctoral dissertations[104] indicates that there is virtually no questioning of popular definitions of this concept. Again, a situation which this study may help to explain.

**Limitations of the Study**

The contribution of this thesis lies in its potential as a possible theoretical alternative or heuristic for further research in psychology and education. The data contained in Chapters Two and Three of the thesis was gathered in a

survey of both secondary and primary source materials produced by Canadian, British, and American theorists in psychology, educational psychology, and special education during the late nineteenth and first half of the twentieth centuries. This survey was limited to Protestant theorists associated with the Columbia and Chicago schools of functionalist psychology.

The second chapter provides an analysis of the integration of Protestant moral philosophy, and the philosophy of science known as positivism, which culminated in the emergence of the two schools of functionalist psychology. The third chapter explores the influence of the Columbia school of functionalism on theories of educational psychology developed by Peter Sandiford at the University of Toronto during the inter-war years. It also examines the implications of Chicago functionalism for theories of normal, and abnormal, behaviour developed by William Blatz and Helen Bott at the University of Toronto also during the inter-war years; and the synthesis of Columbia and Chicago functionalism in the theories of special education formulated by Samuel Laycock at the University of Saskatchewan after the second world war.

Chapter Four consists of an analysis of all Canadian journal articles and doctoral theses, of which the primary topic was the phenomena of giftedness or learning disability for the years 1968 to 1989. This sample encompasses the approximate lifespan of the modern special education movement in Canada. In responding to the questions about learning disability, the analysis centred on two

key factors: i) locus of etiology -- did researchers propose that learning disabilities were the result of a specific or ecological etiology; and ii) environmental factors -- did researchers subject the organization of schools, design of curricula, or instructional practices to a critical analysis, and if so, what issues were raised?

Chapter Five attempts to determine whether or not the entrenchment of certain theoretical assumptions in special education might be explainable by Freire's constructs of cultural overdetermination and astructural perception and Kuhn's construct of a normal science. Chapter Six provides a summary of theses findings and suggestions for further research.

**Definition of Terms**

**Worldly Asceticism** refers to a pan-denominational philosophy in Protestantism which demanded of its adherents the systematic objectification of Calvinist doctrine in the day-to-day relations of society to prove their personal redemption.[105]

**Pietism** refers to the dynamic element in worldly asceticism which is understandable through its three basic premises: i) it demanded **action**, as opposed to prayer; ascetic Protestants were to make God's kingdom visible on earth through the actions of an "invisible church" guided by the elect -- the redeemed of the Lord;[106] ii) it demanded the **objectification** of the Calvinist

doctrines of predestination, duty, grace, and proof in one's daily life and the institutions of society;[107] iii) it demanded **empirical evidence** that these doctrines had indeed been objectified; pietists eschewed biblical interpretations as prone to error and metaphysical theory as a threat to Christianity.[108]

**Doctrine of Proof** proposed that one's salvation was manifest in worldly actions and the achievement of objective material results.[109]

**Doctrine of Predestination** proposed that the redeemed -- the elect -- were recognizable by their success, or material blessings, in this life.[110]

**Doctrine of Duty** was embodied in the concepts of station and rationalization. The concept of **station** held that one's role in life was Divinely predetermined and demanded that all individual action fall within the boundaries of this prescribed role.[111] The concept of **rationalization** held that in following the dictates of station one must also contribute to the moral -- efficient -- ordering of society by participating in the scientific restructuring of institutional relations.[112] Smucker argues that this concept of rationalization involved a philosophy-specific logic in which rationality itself was "defined by the nature of the intended goals" of worldly asceticism -- outside of the boundaries of this circumscribed logic these goals might be considered irrational.[113]

**Doctrine of Grace** proposed that salvation lay in conforming with the duties associated with one's station in life; and that anyone who did not conform was damnable and deserving of social ostracism.[114]

**Positivism** was a philosophy of science which stressed the evolution of social, and moral, progress in its five key premises: i) it proposed that an evolving **social harmony** was dependent on a society's acceptance of a common system of moral principles founded in the normative elements of all human interactions; ii) it proposed that the **socio-moral evolution** of society, guided by an empirical social science, would pass through three critical stages; the theological, or fictional, stage; the metaphysical, or rational, stage; eventually arriving at the scientific, or empirical stage;[113] iii) it proposed a strict **empiricism** -- the only legitimate means of determining these normative elements was through an empirical science; iv) it proposed that the **sciences formed a hierarchy of abstraction** with mathematics at the apex, followed in order by astronomy, physics, chemistry, biology, and finally sociology;[116] and v) it stressed the **economy** of theoretical concepts; to gain credibility equal to that of the natural sciences the challenge for the social sciences was to reduce human behaviour to the highest, or mathematical, level of abstraction in the scientific hierarchy -- simple equations, for example an intelligence quotient, of utility in the prediction and control of social relations.[117]

**Functionalism** was the definition of human behaviour according to its functional utility -- its value in meeting the predetermined ends outlined by a Protestant worldly asceticism. Gregory refers to functionalism as a philosophical approach to a science which had rejected philosophy.[118]

**Giftedness**, according to the Marland Report, is manifest in "general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, [aptitude in the] visual and performing arts, and psychomotor ability".[119]

**Learning Disability**, according to the Canadian Association for Children with Learning Disabilities (CACLD), is a "generic term that refers to a heterogeneous group of disorders due to identifiable or inferred central nervous system dysfunction. Such disorders may be manifested by delays in early development and/or difficulties in any of the following areas: attention, memory, reasoning, coordination, social competence and emotional maturation".[120]

**Specific Etiology** proposes that the cause of a disease lies within the organic functioning of the individual; this assumption gives rise to the notion of **specific therapy** which calls for the diagnosis and remediation of a problem considered to be unique to the individual.[121]

**Ecological Etiology** proposes that disease is caused by a number of interrelated factors found in an environmental context which includes the individual.[122]

## Significance of the Study

The research in Canadian special education, over the past twenty years, has emphasized the identification of exceptional students -- gifted or learning disabled -- and the provision of services for these students. The cultural and

ideological antecedents of these categories have yet to be examined. The need for such an examination is well documented in the literature.

Sarason and Grant have found that the flawed theoretical foundations of psychology are inhibiting the development of the knowledge base of that discipline.[123] Sarason argues that the amelioration of this situation requires a reformulation of theory in psychology founded in an analysis of its cultural and intellectual history.[124] A failure to proceed with this analysis, in his view, could lead to a situation in which psychology becomes a "danger and not a benefit to society".[125] Sarason concludes that a recognition of the gravity of the situation has "barely surfaced" in the literature of the field.[126]

Studies by Wise and Smith have found that the rationalization of the curriculum has reached a stage where educational practice may actually inhibit student learning.[127] Apple contends that the ability to stem the process of hyperationalization lies in our comprehension of the cultural assumptions which underpin theory in education.

> [A] thoroughgoing analysis of the relation between ideology and the knowledge and social relations of schooling must include not only investigations of the material culture, but of subjectivity as well.[128]

Apple calls on researchers to go beyond a socio-economic analysis of educational assumptions. In his view, the key to understanding the hyperationalization of the curriculum lies in the intellectual history and current intellectual experience of a society's membership.

Studies by Leitch, Sodhi, Ysseldyke and Algozzine have found that the categories of giftedness and learning disability may be mythical by-products of the drive to rationalize student behaviour.[129] These findings are substantiated by the research of Coles who found that studies in educational psychology and special education did not scrutinize, or empirically support, the assumption that learning disabilities are a symptom of neurological impairment.[130] Studies by Freire, Giroux, Shumway, Smith and Sosnoski have found that a thorough understanding of the entrenchment of certain theoretical constructs in psychology and education involves both a cultural analysis of these constructs and an understanding of how they are perpetuated through the practice of a constricted normal science.[131]

A study by Charlesworth found that science is an evolving human enterprise of which the methods and findings are relative to social factors at work in society at any given time.[132] He contends that the historical relativity of scientific method is overlooked as it becomes entangled in the web of mythical symbols, rites, and religious beliefs of a culture. Charlesworth concludes that for science to remain useful it must overcome these cultural inhibitions through the evolution of constructs and theories which fuel scientific progress.[133]

These studies provide evidence that science is driven by both theoretical and normative forces. According to their authors what is needed now are alternative theoretical constructs to drive the revitalization of normative practice.

Previous research has documented the need for a critical analysis of the theoretical assumptions on which research in psychology and education are currently proceeding. A study by Wilfred Carr and Stephen Kemmis found that the generation of critical theory is of vital importance to the continuing progress of these fields.[134]

A recent study by Leitch sought to establish a critical theory of Canadian special education. In this study he emphasized the socio-economic factors which contribute to the underlying assumptions of the "industry of special education".[135] A study of the basic configuration of critical theories by Brian Fay found that these theories require both a socio-economic and an intellectual component.[136] In his view, affected groups need to be made aware of their own false consciousness; for example they need to know that a learning disability is not necessarily a product of neurological dysfunctioning in order for these theories to become effective vehicles for reform.[137] The significance of this study lies in its potential to contribute the intellectual element required for an effective critical theory.

Canadian research in special education has concentrated on the identification of gifted and learning disabled students, and programming for their perceived special needs, without questioning the underlying conceptual assumptions on which these categories of exceptionality are founded. According to the literature there is a critical need for the analysis of the cultural and

ideological antecedents of these key educational categories. Relevant studies maintain that such an analysis could lead to a growing public awareness of the deleterious consequences of these assumptions for certain individuals and groups in society and the reorganization of the institutions of education in light of emerging research findings.

**Summary**

Studies cited in this chapter found that the challenge to the theoretical standards established by a functionalism in psychology, standards which served as the basis for the organization of our modern institutions of education, have not been critically analyzed by practitioners in these fields. A review of the pertinent literature led to the hypotheses that the entrenchment of functionalist standards may be the result of their congruence with popular cultural assumptions, and their continued use as the basis of a normative science in psychology and education.

Canadian sociologist Michael Fullon has reported the deep personal meaning which educators attach to the organization and interpersonal relations of the institution of the school and their "bias by neglect" in matters of educational change.[138] The reluctance of educators to question the current patterns of schooling may originate in what Northrop Frye has described as a "cultural crisis which is at bottom a religious crisis".[139]

The merger of religion, economics, and science in Canadian and American culture may have imbued the institutional organizations and interpersonal relations of these cultures with a pervasive religious essence. If religious belief is now encompassed in the institutions and material relations of society, a reexamination of these structures is tantamount to the questioning of Divine volition. This is literally unthinkable for many individuals. Yet, it is this reexamination that seems to be necessary if we are to progress in our understanding of human intellectual potential and reorganize the institutions of education in light of new knowledge.

## Endnotes

1. John Watson, "The Middle Ages and the Reformation", Queens Quarterly 1(1) 1893, 11.

2. John Bartlet Brebner, Scholarship for Canada: The Function of Graduate Studies. Ottawa: Canadian Social Science Research Council 1945; Howard Gardner, The Mind's New Science: A History of the Cognitive Revolution. New York: Basic Books 1985.

3. Gardner, "Minds' New Science", 10-27.

4. Raymond E. Callahan, Education and the Cult of Efficiency: A Study of the Social Forces That Have Shaped the Administration of the Public Schools. Chicago: University of Chicago Press 1962; David B. Tyack, The One Best System: A History of American Urban Education. Cambridge, Mass.: Harvard University Press 1974; David Tyack & Elisabeth Hansot, Managers of Virtue: Public School Leadership in America, 1820-1980. New York: Basic Books 1982; B. Anne Wood, Idealism Transformed: The Making of a Progressive Educator. Kingston and Montreal: McGill-Queen's University Press 1985; Robin Barrow, The Canadian Curriculum. London, Ontario: University of Western Ontario Press 1978; Michael W. Apple, Ideology and Curriculum. London: Routledge and Kegan Paul 1979; Arthur E. Wise, Legislated Learning: Bureaucratization of the American Classroom. Berkeley: University of California Press 1979; David Nyberg & Kieran Egan, The Erosion of Education: Socialization and the Schools. New York: Teacher's College, Columbia University 1981; Michael W. Apple, Education and Power. London: Ark 1982; Michael W. Apple & Lois Weis (eds.), Ideology and Practice in Schooling. Philadelphia: Temple University Press 1983; Robin Barrow, Giving Teaching Back to Teachers: A Critical Introduction to Curriculum Theory. London, Ontario: Althouse Press, University of Western Ontario 1984; Frank Smith, Insult to Intelligence: The Bureaucratic Invasion of Our Classrooms. New York: Arbor House 1986; S.S. Sodhi, Myths in Special Education. Detroit: Harlo Press 1974; James E. Ysseldyke & Bob Algozzine, Critical Issues in Special and Remedial Education. Boston: Houghton Mifflin 1982; Len Barton & Sally Tomlinson (eds.), Special Education and Social Interests. London: Croom Helm 1984; David Leitch & S.S. Sodhi, Problematic Nature and Role of Theory and Practice in Special Education. Halifax, N.S.: Monograph 1, Atlantic Centre of Support for Disabled Students 1985; David Leitch & S.S. Sodhi, Politics in Special Education: A Canadian Perspective. 2nd. Ed., Halifax, N.S. 1987; Gerald Coles, The Learning Mystique: A Critical Look at 'Learning Disabilities'. New York: Pantheon 1987.

5. David Leitch, Special Education: A Search of a Critical Theory -- A Canadian Perspective on Theory and Practice in Special Education. Unpublished Ph.D. Thesis, Dalhousie University 1986.

6. H.S. Thayer, Meaning and Action: A Critical History of Pragmatism. New York: Bobbs-Merrill 1968; Willian H. Goetzmann (ed.), The American Hegalians: An Intellectual Episode in the History of Western America. New York: Knopf 1973; A.B. McKillop, A Disciplined Intelligence: Critical Inquiry and Canadian Thought in the Victorian Era. Montreal: McGill-Queens University Press 1979; George Rawlyk & Kevin Quinn, The Redeemed of the Lord Say So: A History of Queen's Theological College 1912-1972. Kingston, Ontario: Queen's Theological College 1980; Leslie Armour & Elizabeth Trott, The Faces of Reason: An Essay on Philosophy and Culture in English Canada 1850-1950. Waterloo, Ontario: Wilfred Laurier University Press 1981; Seymour B. Sarason, Psychology Misdirected. London: Collier Macmillan 1981; Ramsay Cook, The Regenerators: Social Criticism in Late Victorian English Canada. Toronto: University of Toronto Press 1985; Wood, "Idealism Transformed" 1985; Barry M. Franklin, Building the American Community: The School Curriculum and the Search for Social Control. London: Falmer Press 1986; Clarence J. Karier, Scientists of the Mind: Intellectual Founders of Modern Psychology. Urbana and Chicago: University of Illinois Press 1986; Louise L. Stevenson, Scholarly Means to Evangelical Ends: The New Haven Scholars and the Transformation of Higher Learning in America 1830-1890. Baltimore and London: Johns Hopkins University Press 1986; A.B. McKillop, Contours of Canadian Thought. Toronto: University of Toronto Press 1987; Marlene Shore, The Science of Social Redemption: McGill, the Chicago School, and the Origins of Social Research in Canada. Toronto: University of Toronto Press 1987.

7. Brebner, "Scholarship for Canada"; Gardner, "Mind's New Science"; Theodore Millon, Modern Psychopathology: A Biosocial Approach to Maladaptive Learning and Functioning. London: W.B. Saunders 1969; D.O. Hebb, The Organization of Behaviour. New York: Wiley 1949.

8. Brebner, "Scholarship for Canada".

9. Ibid., 32, 69.

10. Gardner, "Mind's New Science", 10.

11. Ibid., 11-12, 260.

12. Ibid.

13. Ibid.

14. Millon, "Modern Psychopathology", 24.

15. Gardner, "Mind's New Science", 93-4.

16. Hebb, "Organization of Behaviour".

17. Gardner, "Mind's New Science", 182-6.

18. Callahan, "Education and the Cult of Efficiency"; Tyack, "One Best System"; Tyack & Hansot, "Managers of Virtue"; Wood, "Idealism Transformed"; Wise,"Legislated Learning"; Smith, "Insult to Intelligence"; Nyberg & Egan, "Erosion of Education"; Linda McNeil, "Defensive Teaching and Classroom Control", In Apple & Weis, "Ideology and Practice", 114-42; Apple, "Ideology and Curriculum"; Apple, "Education and Power"; Barrow, "Canadian Curriculum"; Barrow, "Giving Teaching Back to Teachers"; Ysseldyke & Algozzine, "Critical Issues in Special and Remedial Education"; Coles, "Learning Mystique"; Sodhi, "Myths of Special Education"; David Leitch & S.S. Sodhi, "Specialness of Special Education", B.C. Journal of Special Education 10(4) 1986, 349-58.

19. Callahan, "Education and the Cult of Efficiency"; Tyack, "One Best System"; Tyack & Hansot, "Managers of Virtue"; Wood, "Idealism Transformed".

20. Wise, "Legislated Learning"; Smith, "Insult to Intelligence"; Nyberg & Egan, "Erosion of Education"; McNeil, "Defensive Teaching"; Apple, "Ideology and Curriculum"; Apple, "Education and Power"; Barrow, "Canadian Curriculum"; Barrow, "Giving Teaching Back to Teachers".

21. Wise, "Legislated Learning", 48.

22. Wise, "Legislated Learning", 47.

23. Smith, "Insult to Intelligence".

24. Nyberg & Egan, "Erosion of Education", 37.

25. McNeil, "Defensive Teaching".

26. Apple, "Ideology and Curriculum", 82; "Education and Power", 3.

27. Barrow, "Canadian Curriculum"; "Giving Teaching Back to Teachers".

28. Ysseldyke & Algozzine, "Critical Issues in Special and Remedial Education"; Coles, "Learning Mystique"; Sodhi, "Myths of Special Education"; Leitch & Sodhi, "Specialness of Special Education".

29. Ysseldyke & Algozzine, "Critical Issues in Special and Remedial Education"; Coles, "Learning Mystique".

30. Ysseldyke & Algozzine, "Critical Issues in Special and Remedial Education", 25.

31. Ibid., 107.

32. Coles, "Learning Mystique".

33. Sodhi, "Myths in Special Education"; Leitch & Sodhi, "Specialness of Special Education".

34. Sodhi, "Myths in Special Education", 3-5.

35. Leitch & Sodhi, "Specialness of Special Education".

36. Ibid., 349, 351.

37. Ysseldyke & Algozzine, "Critical Issues in Special and Remedial Education", 126.

38. Coles, "Learning Mystique", xv.

39. Sarason, "Psychology Misdirected".

40. Ibid., xi, 15, 45, 148.

41. McKillop, "Disciplined Intelligence"; Stevenson, "Scholarly Means to Evangelical Ends"; Rawlyk & Quinn, "Redeemed of the Lord Say So"; Armour & Trott, "Faces of Reason"; B. Anne Wood, "The Significance of Calvinism in the Educational Vision of Thomas McCulloch", Vitae Scholasticae 4(1&2) 1985, 15-30; B. Anne Wood, "The Function of Morality and Art: The Educational Policies of Alexander Forrester", paper International Society of Education Biography. Montreal, Quebec, May 2, 1987.

42. William Caldwell, Pragmatism and Idealism. London: Adam and Charles Block 1913, 13.

43. Cook, "Regenerators"; Shore, "Science of Social Redemption"; Wood, "Idealism Transformed"; Neil Coughlin, Young John Dewey: An Essay in American Intellectual History. London: University of Chicago Press 1975; George Dykhuizen, The Life and Mind of John Dewey. London: Feffer & Simons 1973; Karier, "Scientists of the Mind"; Thayer, "Meaning and Action".

44. Barry Franklin, "Building the American Community"; Barry M. Franklin, "Curriculum Thought and Social Meaning: Edward L. Thorndike and the Curriculum Field", Educational Theory 26(3) 1976, 298-309; Russell Marks, "Lewis M. Terman: Individual Differences and the Construction of Social Reality", Education Theory 24(4) 1974, 336-55; Joel Spring, "Psychologists and the War: Meaning of Intelligence in the Alpha and Beta Tests", History of Education Quarterly 12(1) 1972, 3-15; Lewis M. Terman, Genius and Stupidity, Reprint Ed., New York: Arno Press 1975 (Ph.D. thesis, Clark University 1906); Christine Shea, The Ideology of Mental Health and the Emergence of the Therapeutic Liberal State: The American Mental Hygiene Movement, 1900-1930. Unpub. Ph.D. thesis, University of Illinois 1980; McKillop, "Contours of Canadian Thought"; Shore, "Science of Social Redemption"; George S. Tomkins, A Common Countenance: Stability and Change in the Canadian Curriculum. Scarborough, Ontario: Prentice-Hall Canada 1986; Mary J. Wright & C. Roger Myers, History of Academic Psychology in Canada. Toronto: C.J. Hogrefe 1982.

45. Paulo Freire, The Politics of Education: Culture, Power, and Liberation. Massachusetts: Bergin & Garvey 1985; Henry Giroux, David Shumway, Paul Smith, and James Sosnoski, "The Need for Cultural Studies: Resisting Intellectuals and Oppositional Public Spheres", Dalhousie Review 64(2) 1984, 472-86; Max Charlesworth, Science, Non-Science, and Pseudo-Science: Bacon, Popper, Lakatos, Kuhn, and Feyerabend on Defining Science. Victoria, Australia: Deakin University Press 1982; Wilfred Cude, The Ph.D. Trap. West Bay, Nova Scotia: Medicine Label Press 1987; Allen Fenichel & David Mandel, The Academic Corporation: Justice, Freedom, and the University. Montreal: Black Rose Books 1987.

46. Max Weber, The Protestant Ethic and the Spirit of Capitalism: The Relationships Between Religion and the Economic and Social Life in Modern Culture. New York: Charles Scribners 1958 (Originally published 1904-05).

47. Ibid.

48. Ibid., 133.

49. Ibid., 123, 136.

50. Ibid., 133, 164.

51. Ibid., 85.

52. Ibid., 109, 117-18.

53. Ibid., 133-4.

54. Ibid., 129-30.

55. Ibid., 136.

56. Ibid., 153-4.

57. McKillop, "Disciplined Intelligence"; Stevenson, "Scholarly Means to Evangelical Ends".

58. Ibid.

59. Rawlyk & Quinn, "Redeemed of the Lord Say So"; Armour & Trott, "Faces of Reason"; McKillop, "Contours of Canadian Thought"; Wood, "Idealism Transformed"; Wood, "Significance of Calvinism"; Wood, "Function of Morality and Art.

60. Manfred Kuehn, Scottish Common Sense in Germany, 1768-1800: A Contribution to the History of Critical Philosophy. Kingston & Montreal: McGill-Queen's University Press 1987.

61. Roger Scruton, A Dictionary of Political Thought. London: Pan 1982, 199; Anthony Flew, A Dictionary of Philosophy. 2nd.Ed. New York: St. Martin's Press 1979, 139-43.

62. Rawlyk & Quinn, "Redeemed of the Lord Say So".

63. Armour & Trott, "Faces of Reason"; McKillop, "Contours of Canadian Thought".

64. Wood, "Idealism Transformed", 29,41.

65. Ibid., 29.

66. Ibid., 41.

67. Ibid.

68. Weber, "Protestant Ethic"; Wood, "Significance of Calvinism", 16.

69. Wood, "Function of Morality and Art", 9; Alexander Forrester, The Teacher's Textbook. Halifax: A&W MacKinlay 1867, 40,44.

70. Cook, "Regenerators"; Shore, "Science of Social Redemption"; Wood, "Idealism Transformed".

71. Cook, "Regenerators", 4.

72. Robert Boakes, From Darwin to Behaviourism: Psychology and the Minds of Animals. Cambridge: Cambridge University Press 1984, 162.

73. Stephen S. Visher, Scientists Starred 1903-1943 in "American Men of Science": A Study of Collegiate and Doctoral Training, Birthplace, Distribution, Backgrounds, and Developmental Influences. Baltimore: Johns Hopkins Press 1947.

74. Ibid., 141-2, 535-6.

75. Coughlin, "Young John Dewey"; Dykhuizen, "Life and Mind of John Dewey"; Karier, "Scientists of the Mind"; Thayer, "Meaning and Action".

76. Karier, "Scientists of the Mind", 102.

77. Dykhuizen, "Life and Mind of John Dewey", 65, 70-1.

78. Thayer, "Meaning and Action", 64; Coughlin, "Young John Dewey", 78.

79. Coughlin, "Young John Dewey", 78-9.

80. David J. Murray, A History of Western Psychology. Englewood Cliffs, N.J.: Prentice-Hall 1983, 199; Franklin, "Building the American Community", 45-75.

81. Franklin, "Building the American Community"; Franklin, "Curriculum Thought and Social Meaning"; Marks, "Lewis M. Terman"; Spring, "Psychologists and the War".

82. Ibid.

83. Shea, "Ideology of Mental Health".

84. Ibid., 85-6, 139-41, 163.

85. Shore, "Science of Social Redemption"; Tomkins, "A Common Countenance", 161; Wright & Myers, "Academic Psychology in Canada".

86. Ibid.

87. Shore, "Science of Social Redemption"; Tomkins, "A Common Countenance", 161.

88. Wood, "Idealism Transformed", 107; Shea, "Ideology of Mental Health", 231; Wright & Myers, "Academic Psychology in Canada", 86,181.

89. Freire, "Politics of Education"; Giroux, Shumway, Smith, and Sosnoski, "Need for Cultural Studies"; Charlesworth, "Science, Non-Science, and Pseudo-Science"; Cude, "Ph.D. Trap"; Fenichel & Mandel, "Academic Corporation".

90. Freire, "Politics of Education", 72.

91. Ibid.

92. Ibid., 47.

93. Giroux, Shumway, Smith, and Sosnoski, "Need for Cultural Studies"; Charlesworth, "Science, Non-Science, and Pseudo-Science"; Cude, "Ph.D. Trap"; Fenichel & Mandel, "Academic Corporation"; Robert Ornstein & Paul Ehrlich, New World New Mind: Moving Toward Conscious Evolution. London: Doubleday 1989, 247-9.

94. Giroux, Shumway, Smith and Sosnoski, "Need for Cultural Studies"; Charlesworth, "Science, Non-Science, and Pseudo-Science"; Ornstein & Ehrlich, "New World New Mind".

95. Giroux, Shumway, Smith and Sosnoski, "Need for Cultural Studies".

96. Ibid., 16.

97. Karier, "Scientists of the Mind", 102; Sarason, "Psychology Misdirected".

98. Wood, "Idealism Transformed", 107; Shea, "Ideology of Mental Health", 231; Wright & Myers, "Academic Psychology in Canada", 86, 181.

99. E. Paul Torrance, Education and the Creative Potential. Minneapolis: University of Minnesota Press 1963.

100. P.C. Smythe and R.G. Stennett, "Elementary Education for Gifted Students: A Review of Research and Current Trends", Special Education in Canada 47(2) 1973, 17-24; Margaret Parker, "What Can Be Learned From Brilliance in Children", Special Education in Canada 52(1) 1977, 19-21; Special Education in Canada 52(1) 1977, 19-21; C.H. Sangster and Georgina Adamson, "Nurturing Gifted Children", Education Canada 17(4) 1977, 26-9; Bob Arkell, "Educating Gifted Students: How Much Do You Know?", Special Education in Canada 52(3) 1978, 5-6; Stanley Blank, Joyce Fox, Gordon Nelson, "Facilitating Creative Thinking of Gifted Elementary School Pupils", Special Education in Canada 52(3) 1978, 10-15; Ruth Banks, "How would You Like it if You were Gifted", Special Education in Canada 53(2) 1979, 12-14; Denis Cassivi, "Special Programs for the Gifted: A Critique of some Arguments", McGill Journal of Education 14(2) 1979, 189-98; Bruce M. Shore, "Teacher Training for the Gifted and Major Issues in Gifted Child Education", Canadian Journal of Education 4(3) 1979, 75-88; Phillip E. Vernon, "Programs for Gifted Children", Special Education in Canada 53(4) 1979, 29-32; Joan L. Linn, "Should Learning Assistance Teachers Provide Programs for the Gifted, Talented and/or Creative Pupil in the Elementary School", B.C. Journal of Special Education 4(3) 1980, 227-40; J.S. Neufeld and Elaine Cozac, "A Study of the Self-Concept of Intellectually Superior Children", Alberta Journal of Educational Research 26(3) 1980, 149-58; Bruce M. Shore, "What Principals and Commissioners Can Do for Free for the Gifted", Special Education in Canada 55(4) 1980, 4-5; Rosemary Harris, "The Acceleration of Gifted and Talented Youth in Educational Programming: A Critical Examination of the Fact, Opinion and Myth", B.C. Journal of Special Education 5(2) 1981, 134-47; Garnet Millar, "Myths That Plague the Development and Implementation of Programs for the Gifted: A Visual Study", Special Education in Canada 56(1) 1981, 12-14; Claudio Violato and Stanley S. Blank, "An Evaluation of a Programme for the Gifted", B.C. Journal of Special Education 6(4) 1982, 323-41; Stanley S. Blank and David C. Thomas, "Enhancing Creative Thinking with Gifted Children in the Early Intermediate Grades", B.C. Journal of Special Education 7(2) 1983, 171-80; Francoys Gagne, "Perceptions of Programs

for Gifted Children: Agreement on Principles, but Disagreement Over Modalities", B.C. Journal of Special Education 7(2) 1983, 113-27; Donald W. Knowles, "Myth of the Greenhouse Child: Hazards of Viewing Giftedness as the Plant that Survives", B.C. Journal of Special Education 7(2) 1983, 99-111; Colin J. Laine, "The Implementation of Gifted Education in British Columbia: A Sketch of One Province's Experience", B.C. Journal of Special Education 7(2) 1983, 153-61; Ten Runions, "Mentorship Programming for the Gifted High School Student", Special Education in Canada 57(4) 1983, 28-30; Joan M. Sigler, "Introducing Economics Into An Elementary School Gifted Program", Special Education in Canada 57(4) 1983, 23-6; Joan M. Sigler, "An Evaluation of Trade Offs as a Program for the Gifted", Special Education in Canada 58(2) 1983, 59-62; Eloise Wood, "Gifted and Talented: Another Role for the Resource Teacher?", Special Education in Canada 57(4) 1983, 20-1; Francoys Gagne, "Gifted Programs in Quebec: Slow but Steady Progress", Special Education in Canada 58(4) 1984, 147-8; T.J. Hengen, "Education of the Gifted - The Saskatchewan Scene", Special Education in Canada 58(4) 1984, 144; Edna McMillan, "Counselling for the Gifted", Special Education in Canada 58(4) 1984, 125-6; R. Mulcahy, L. Wilgosh, B. Crawford, and B. Watters, "Gifted Education for Inuit Youngsters: Problems and Issues", Special Education in Canada 58(4) 1984, 127-9; Sally M. Reis and A.A. O'Shea, "An Innovative Enrichment Program: The Enrichment Triad/Revolving Door Model", Special Education in Canada 58(4) 1984, 135-8; Linda Ross and Bruce M. Shore, "The McGill-PSBGM Gifted Summer School", Special Education in Canada 58(4) 1984, 133-4; Don J. Simpson, "Half a Loaf Can Be Worse Than None, Special Education in Canada 58(4) 1984, 120-1; Elizabeth Smyth, "Educating Ontario's Ablest: An Overview of Historic and Emerging Trends", Special Education in Canada 58(4) 1984, 145-7; Dale Waldorf, "Enrichment as a Part of Gifted Education", Special Education in Canada 58(4) 1984, 139-40; L. Wilgosh and R. Mulcahy, "Feasible Enrichment Programs for the Gifted in Remote and Isolated Canadian Areas", Special Education in Canada 58(4) 1984, 130-2; David Willings, "The Gifted in the Maritime Provinces", Special Education in Canada 58(4) 1984, 148-9; Carolyn Yewchuk, "Changing Views of Gifted Education", Education Canada 24(4) 1984, 10-13; Carolyn Yewchuk, "Gifted Preschoolers: Educational Implications of Early Identification", Special Education in Canada 58(4) 1984, 122-4; Carolyn Yewchuk, "Gifted Education in Alberta: Current Developments", Special Education in Canada 58(4) 1984, 142-3; Julia L. Ellis, "Creatively Gifted Children in Regular School Programs: Their Problems and a Proposed Solution", B.C. Journal of Special Education 9(1) 1985, 69-87; Debbie Spina and Carol M. Crealock, "Identification of and Programming for the Gifted Student and the Gifted Underachiever: A Survey of the Current Situation in Ontario's Schools", Canadian Journal for

Exceptional Children 2(1) 1985, 8-13; C. Yewchuk and L. Wilgosh, "The Sixth World Conference on Gifted and Talented Children: The Continuing Worldwide Challenge of Educating the Gifted", Canadian Journal for Exceptional Children 3(1) 1986, 13-14; Stanley S. Blank and Julia L. Ellis, "Challenge Classes for Gifted Secondary Students: A Feasible and Potent Method of Programming for the Gifted", B.C. Journal of Education 11(4) 1987, 327-33; Susan Plaisance, "Negative Attitudes Toward Gifted Education", McGill Journal of Education 23(1) 1988, 50-7.

101. Hilda I. Pal, Childrearing Practices and Locus of Control in Gifted Adolescents. Unpublished Ph.D., University of Toronto 1977; Sandra M. Shiner, Curriculum Implications of the Profiles of Gifted High School Students. Unpublished Ph.D., University of Toronto 1979; Margaret Taylor, Effects of Instruction in Note Taking on Academically Gifted Children. Unpublished Ph.D., University of Toronto 1982; B.A. Perks, An Investigation into the Identification of Gifted Kindergarten Children. Unpublished Ed.D., U.B.C. 1984; Dianne Van Hesteren, Life in Classrooms for Gifted Children. Unpublished Ph.D., University of Alberta 1985; C. Antliffe-Froom, Information Processing Strategies Used by Intellectually Gifted, Retarded, and Normal Children. Unpublished Ed.D., University of Toronto 1986; Seokee Cho, Cognitive Strategies, Metacognition, and Knowledge Base of Gifted, Average, and Learning Disabled Children. Unpublished Ph.D., University of Alberta 1986; Margaret Lipp, An Analysis of Affective Factors in an Affective Judgement Task Performed by Intellectually Gifted Adolescents. Unpublished Ph.D., University of Regina 1986; Marian A. Stelmaschuk, Identified and Unidentified Gifted: A Comparitive Analysis. Unpublished Ph.D., University of Alberta 1986; Marcella E. Grenier, Patterns of Sibling Deidentification and Parent Identification in Families with Gifted Children. Unpublished Ph.D., McGill University 1987; Colin J. Laine, Relationships Between the Structure of Intellect and Characteristics of Students Identified as Gifted and Selected for Special Programming. Unpublished Ph.D., University of British Columbia 1987; Gillian B. Rejskind, Sex Differences and Specialization in the Divergent-Thinking Styles of Gifted Children. Unpublished Ph.D., Concordia University 1987; Martha P. Shivrattan, The Effect of Framework Based Conferencing on the Writing of Gifted Students. Unpublished Ed.D., University of Toronto 1987; Kathleen I. Davey, Social Skills Training with Gifted Children. Unpublished Ph.D., University of Toronto 1988; Norah E. Maier, A Reconceptualization of the Education of the Gifted Through the Preparation of Teachers Instructional Design. Unpublished Ph.D., University of Toronto 1988; Marion Porath, Cognitive Development of Gifted Children: A Neo-Piagetian Perspective. Unpublished Ph.D., University of Toronto 1988.

102. Coles, "Learning Mystique"; Sodhi, "Myths of Special Education"; Leitch & Sodhi, "Specialness of Special Education"; Ysseldyke & Algozzine, "Critical Issues in Special and Remedial Education".

103. Marianne K. Davis, "The Problem Reader in the Classroom", Canadian Psychologist 9(2) 1968, 162-73; Barbara Dawson, "Preparing Teachers for Children with Learning Disabilities", Special Education in Canada 42(3) 1968, 31; H.I. Day, "The Importance of Arousal as a Motivational Factor in Learning to Read", Canadian Psychologist 9(2) 1968, 154-61; Madeline I. Hardy, "Disabled Readers: What Happens to Them After Elementary School?", Canada Education and Research Digest 8(1) 1968, 338-46; Laurent Houde, "Combined Treatment for Children with Learning Disorders", Canadian Psychologist 9(2) 1968, 174-86; Caroline Jacques, "The Neurology of Learning Disability", Special Education in Canada 42(3) 1968, 32-4; David Lissak, "Reading Difficulty - A Psycho-Educational Analysis of a Cognitive Dysfunction", Canadian Psychologist 9(2) 1968, 121-32; M. Sam Rabinovitch and Rhoma Strassberg, "Syntax and Retention in Good and Poor Readers", Canadian Psychologist 9(2) 1968, 142-53; C.D. Roode, "The Relevance of Audio-Visual Feedback Mechanisms in the Acquisition of Reading Skills", Canadian Psychologist 9(2) 1968, 133-41;. J.S. Shamsie, "Reading Difficulties as a Cause of Behaviour Problems in Adolescence, Canadian Psychologist 9(2) 1968, 196-200; Selma Tischer, "Psycho-Motor Re-Education for Children with Reading Difficulties", Canadian Psychologist 9(2) 1968, 187-96; Francis X. Blair, "Where Are We Going in Learning Disabilities?", Special Education in Canada 43(2) 1969, 15-21; Doreen Kronick, "The Concept of Secondary Gain in the Child with Minimal Brain Damage and His Family", Special Education in Canada 43(4) 1969, 12-16; Eleanor Long, "Personal Adjustment Training for Young Adolescents with Learning Disabilities", Special Education in Canada 43(3) 1969, 13-14; Eleanor Long, "Programming for Adolescents with Learning Disabilities", Special Education in Canada 43(3) 1969, 14-15; Hugh Ritchie, "Special Service for Children with Learning Disabilities", Education Canada 9(1) 1969, 52-3; Norman S. Endler and Harold A. Minden, "Anxiety, Conformity, and Self-Concept as Related to Learning Disabilities", Special Education in Canada 47(1) 1972, 35-9; Stanley A. Perkins, "Learning Disabilities Some of the Issues", Education Canada 16(1) 1976, 38-43; Byron P. Rourke, "Issue in the Neuropsychological Assessment of Children with Learning Disabilities", Canadian Psychological Review/Psychologie Canadienne, 17(2) 1976, 89-102; James Cummins and J.P. Das, "Cognitive Processing and Reading Difficulties: A Framework for Research", Alberta Journal of Educational Research 23(4) 1977, 245-56; David Kendall, "Sheep or Goats? Learning Disabilities and Educational Services for Children with Special Needs: A Canadian Perspective", B.C. Journal of Special Education

1(1) 1977, 57-72; Bernice Wong, "Teaching and Improving Comprehensive Skills Among Learning Disabled Adolescents", B.C. Journal of Special Education 1(1) 1977, 73-8; Doreen Armitage, "Can Handicapping Conditions Be Prevented? A Focus on Primary Intervention", B.C. Journal of Special Education 2(2) 1978, 147-58; Hildy Goberman Barnett, "The Learning Disability 'Label' - Beneficial or Detrimental?", B.C. Journal of Special Education 2(2) 1978, 159-66; Marie Eaton, "Parents as Tutors: Help or Hindrance for the Learning Disabled?", B.C. Journal of Special Education 2(4) 1978, 279-84; Ursula Kritzsche, "Learning Disabilities in British Columbia: Parental Perspective", B.C. Journal of Special Education 2(1) 1978, 73-6; Anneliese M. Robens, "A Psychological Evaluation of Learning Disabilities in British Columbia", B.C. Journal of Special Education 2(1) 1978, 41-6; Bernice Wong, "The Role of Measurement in Remediation", B.C. Journal of Special Education 2(3) 1978, 253-64; John McLeod, "Overview of Learning Disabilities: Retrospect and Prospect", Special Education in Canada 54(1) 1979, 8-11; Larry Miller, "Applying Psycholinguistic Research to Reading Disabilities", Special Education in Canada 53(4) 1979, 15-17; R.O. Pihl, "Recent Evidence of Physical Abnormality in Children with Learning Disabilities", McGill Journal of Education 14(3) 1979, 353-65; B.R. Clarke and D.C. Kendall, "Learning Disabled or Hearing Impaired: A Folly of Forced Categories", B.C. Journal of Special Education 4(1) 1980, 13-27; Martin Kravitz, "Learning Disability - A Changing Perspective", Special Education in Canada 55(1) 1980, 16-19; Donald M. Little, "Learning Disabilities and the Severely Learning Disabled - Status Quo in B.C.", B.C. Journal of Special Education 4(2) 1980, 155-63; J. Grant McMurray, "Learning Disabled Adolescents: Perspective from Canadian Principals", Special Education in Canada 55(1) 1980, 10-14; Anne O'Conner, "Early Screening - Some Problems and Practices", B.C. Journal of Special Education 4(3) 1980, 271-82; Leone M. Prock, "Emotions: The Wasted Landscape of Learning Disabilities", B.C. Journal of Special Education 4(2) 1980, 201-7; John Scull and Glen McNie, "Residential Treatment for Children with Severe Learning Disabilities", Special Education in Canada 55(1) 1980, 25-9; Lillian Whyte, "Diagnosis and Remediation of Arithmetic Difficulties in Learning Disabled Children", Special Education in Canada 55(1) 1980, 5-8; Ed Wiens, "Secondary Special Education: A Practical Tutorial Approach for High School Students with Learning Disabilities", Special Education in Canada 54(2) 1980, 9-11; Elizabeth A. Blowers, "Grade One Test Scores of Pupils Later Classified as Educable Mentally Retarded, Learning Disabled and Normal", Special Education in Canada 55(2) 1981, 13-15; Frederic J. Boersma and James W. Chapman, "Academic Self-Concept, Achievement Expectations, and Locus of Control in Elementary Learning Disabled Children", Canadian Journal of Behavioural Science 13(4) 1981, 349-58; Robert A. Fisk and

Henry L. Janzen, "Identifying Learning Disabled Students with a Selected Psychoeducational Test Battery", Alberta Journal of Educational Research 27(3) 1981, 252-63; Ellen Horsman and Bernard Heydorn, "Learning Disabilities Conquered? (A Report on the Bannatyne System of Language Arts)," Special Education in Canada 55(3) 1981, 17-18; David B. Ryckman, "Reading Achievement, IQ, and Simultaneous-Successive Processing Among Normal and Learning-Disabled Children", Alberta Journal of Educational Research 27(1) 1981, 74-83; Barbara Bloom and Karen Coulter, "Study Strategies for the Learning Disabled Adolescent in the Mainstream", Special Education in Canada 56(3) 1982, 24-5; E.A. Blowers, "The C's - A Case History of a 'Learning Disabled' Family", Special Education in Canada 56(2) 1982, 15-18; Martin Kravitz, "The Inconsistently Learning Disabled Child: Identification and Management of Inattention and Some Forms of Hyperactivity", Special Education in Canada 56(4) 1982, 26-32; Derek Besner, "Deep Dyslexia and the Right Hemisphere Hypothesis: Evidence from the U.S.A. and the U.S.S.R.", Canadian Journal of Psychology 37(4) 1983, 565-71; Ann Hutchison, "The Relationship Between Word-Finding Ability and Reading with an Emphasis on the Language-Learning-Disabled Child", Special Education in Canada 57(3) 1983, 27-32; David Illerbrun and Pauline Greenough, "Classroom/Clinical Diagnosis of Young Language Learning Disabled Children: An Integrated Approach", Special Education in Canada 57(2) 1983, 23-7; Martin Kravitz, "Improving Classroom Attentional Behaviour of Learning Disabled Students", Special Education in Canada 57(4) 1983, 32-3; Walter J. Watts and Marie B. Cashion, "A Comparative Psycho-Educational Analysis of Learning Disabled and Normal Adolescents", Canadian Journal of Education 8(2) 1983, 188-202; Bernice Y.L. Wong, Wayne Jones, and Roderick Wong, "Differentiating Between Normally-Achieving and Learning-Disabled Adolescents on an Experimental Test Battery", B.C. Journal of Special Education 7(3) 1983, 261-71; Martin Kravitz, "Assisting 'Learning Different' Students in the Regular Classroom: A Practical Guide for the Classroom Teacher", Special Education in Canada 58(2) 1984, 68-81; L.L. Stewin, "A Comparison of Programs and Services for Learning Disabled Children in the USSR and North America", Special Education in Canada 58(3) 1984, 77-81; Lillian A. Whyte, "Characteristics of Learning Disabilities Persisting into Adolescence", Alberta Journal of Educational Research 30(1) 1984, 14-25; Janet Southern Adams, "A Summer Day Camp for Elementary School Children with Learning Disabilities", Canadian Journal for Exceptional Children 2(4) 1986, 136-8; Patricia G. Bowers, Richard A. Steffy and Lynn B. Swanson, "Naming Speed, Memory, and Visual Processing in Reading Disability", Canadian Journal of Behavioural Science 18(3) 1986, 209-23; Paula J. Caplan and Linda Dinardo, "Is There a Relationship Between Child Abuse and Learning Disability?", Canadian

Journal of Behavioural Science 18(4) 1986, 367-80; Veronica Hooker and Ann Foster, "A Survey of Services to Learn-ing Disabled Students in the Vancouver School District", B.C. Journal of Special Education 10(1) 1986, 59-64; M. Lipp, L. Schmunk, A. Waldie and M. Wallace, "Scholastica Institute: An Innovative Learning Disability Program for Teachers and Middle Years Students", Canadian Journal for Exceptional Children 2(4) 1986, 133-5; G.W. MacDonald, "Clinical Neuro-psychology: Its Role and Relevance for Children with Learning Disabilities", Canadian Journal for Exceptional Children 2(4) 1986, 118-22; Shirley R. McBride, "Service Delivery Systems for L.D. Students: Problems and Promises", B.C. Journal of Special Education 10(1) 1986, 49-58; Leone Mary Prock, "Coping with Learning Disabilities: A University Experience", B.C. Journal of Special Education 10(1) 1986, 65-73; John Walsh, "The Diagnostic Utility of Kaufman's Profile Analysis Procedures with Learning Disabled Children", B.C. Journal of Special Education 10(2) 1986, 121-9; Corinne A. Wiss, "A Comparison of the Performance of Learning Disabled and Educable Mentally Handicapped Children on a Concept Utilization Task", Canadian Journal for Exceptional Children 2(3) 1986, 84-9; Corrinne A. Wiss and Dan G. Bachor, "Issues in Assessment and Programming for Children with Learning Disabilities", Canadian Journal for Exceptional Children 2(4) 1986, 115-17; Bernice Y.C. Wong, "Instructional Strategies for Enhancing Learning Disabled Students' Reading Comprehension Test Performance", Canadian Journal for Exceptional Children 2(4) 1986, 128-32; Reid J. Linn, Bob Algozzine, Lester Mann, & Stuart E. Schwartz, "Communication Skills of Learning Disabled Adolescents", B.C. Journal of Special Education 11(4) 1987, 301-12; Sonya M. Regehr, "The Genetic Aspects of Developmental Dyslexia", Canadian Journal of Behavioural Science 19(3) 1987, 239-53; D.H. Saklofske and R.A. Yackulic, "Identifying Learning Disabled Children: An Analysis of Some Measurement Problems", Canadian Journal of School Psychology 3(1) 1987, 11-19; Janet F. Werker and Richard C. Tees, "Speech Perception in Severely Disabled and Average Reading Children", Canadian Journal of Psychology 41(1) 1987, 48-61; Jac Andrews and Henry Janzen, "Objectifying the Kinetic School Drawing (KSD): A Comparison of LD. vs. Non LD. Grade 5 Students", Canadian Journal of School Psychology 3(2) 1988, 27-51; Wolfgang Hackhofer, "Brain Insult as a Predictor of Specific Learning Disabilities in School-Age Children: Reproductive Causality Revisited", Canadian Journal of School Psychology 3(2) 1988, 1-7; Larry L. Morton and Linda S. Siegel, "Summer Vacation Effects on Aspects of Written Language in the Learning Disabled", Canadian Journal of School Psychology 3(2) 1988, 9-18; Corrinne A. Wiss and Wendy Burnett, "The Application of the Boder Test of Reading-Spelling Patterns to the Assessment of Learning Disabilities in French Immersion Poor Readers", Canadian Journal of School Psychology 4(1) 1988, 61-70;

Graham J. Fishburne, "Stimulant Drug Therapy and Children with Attention Deficit Disorder: An Ethical Issue", McGill Journal of Education 24(1) 1989, 55-68; Adele Thomas, "Problem Solving Among Pairs of Achieving and Learning Disabled Students, Alberta Journal of Educational Research 35(1) 1989, 80-95.

104. Evangeline Munns, The Development of a Teachers Observation Scale for the Identification of Children with Learning Disabilities. Unpublished Ph.D., York University 1971; Robert F. Wilson, Assessment of the Cerebral Dominance Theory of Dyslexia as Measured by a Visual-Auditory Integration Table. Unpublished Ph.D., University of Victoria 1971; Roy Ferguson, Errorless Discrimination Learning with Neurologically Impaired Children. Unpublished Ph.D., University of Alberta 1972; Marie O'Neil, An Evaluation of a Method for Developing Learning Strategies in Kindergarten Children with Potential Learning Disabilities. Unpublished Ph.D., University of Toronto 1975; Noel Williams, Arousal and Information Processing in Learning Disabled Children. Unpublished Ph.D., University of Alberta 1976; Clement King, Hyperactivity, Introversion-extroversion and the Strength of the Nervous System in Learning Disabled Children. Unpublished Ph.D., University of Alberta 1978; James Chapman, Affective Characteristics of Learning Disabled and Normally Achieving Elementary School Children: A Comparative Study. Unpublished Ph.D., University of Alberta 1979; John Fisk, Identification of Subtypes of Learning Disabled Children: Neuropsychological, Multivariate Approach. Unpublished Ph.D., University of Windsor 1979; Susan McKenzie, Attention and Distraction in Children with Learning Disabilities. Unpublished Ph.D., McGill University 1979; Barry Brooker, The Development of Selective Attention in Normal and Learning Disabled Boys: An Evoked Potential and Behavioural Analysis. Unpublished Ph.D., Queen's University 1980; John Warren, Placement of Learning Disabled Students. Unpublished Ph.D., University of Calgary 1980; Marc Wilchesky, Recognition of Peer Facial Expressions by Learning Disabled and Normal Children. Unpublished Ph.D., York University 1980; Anna Kirkbride, The Development of Classification and Memory Ability in Achieving and Learning Disabled Children: Piagetian and Levels of Processing Approaches. Unpublished Ph.D., University of Alberta 1981; Joan MacKenzie, Some Characteristics of Two Learning Disabled Subgroups Identified From WISC/WISC-R Factor Score Patterns. Unpublished Ph.D., McGill University 1981; John Strang, Personality Dimensions of Learning Disabled Children: Age and Subtype Differences. Unpublished Ph.D., University of Windsor 1981; Ruth Frost, The Arithmetic Achievement of Learning Disabled Students. Unpublished Ph.D., University of Calgary 1982; Gerard Klein, The Diagnostic Use of Geometric Form Copying Tests: An Investigation of Normal Kindergarten and Learning

Disabled Children's Error Production. Unpublished Ph.D., University of Western Ontario 1982; Helene Polatajko, Vestibular Function and Academic Learning: A Study of Normal Children and Children Identified as Learning Disabled. Unpublished Ph.D., University of Toronto 1982; Joan Daly, Identification of Subtypes of Learning Disabled Children with Discalculia at Three Age Levels: A Neurpsychological, Multivariate Approach. Unpublished Ph.D., University of Windsor 1983; Adele Hern, Neurological Signs in Learning Disabled Children: Persistence Over Time, and Incidence in Adulthood Compared to Normal Learners. Unpublished Ph.D., University of Victoria 1984; D.K. Faux, The Relationship of Spatial Memory Factors to Reading and Arithmetic Disabilities in Children. Unpublished Ph.D., University of Windsor 1985; Anthony Marini, Verbal Encoding Process in Learning Disabled Adolescence. Unpublished Ph.D., University of Toronto 1985; Lal S. Mattau, Role Analysis of Resource Room Teachers of Children with Learning Disabilities in Alberta. Unpublished Ph.D., University of Alberta 1985; D.W. Alexander, Learning Disabled Adolescents and Their Families: Reciprocal Relationships Between Self-Concept and Family Functioning. Unpublished Ph.D., University of Calgary 1986; John DeLuca, Identification of Subtypes of Learning Disabled Children with Arithmetic Disorders: A Neuropsychological, Multivariate Analysis. Unpublished Ph.D., University of Windsor 1986; Emily Freeman, Depression and Learning Disabilities. Unpublished Ph.D., Dalhousie University 1986; David Leitch, Special Education: A Search for a Critical Theory -- A Canadian Perspective on Theory and Practice in Special Education. Unpublished Ph.D., Dalhousie University 1986; G. Schurman, Teaching Learning Disabled Students Analytical Perception and Metacognition Strategies: Relationships to Reading and Spelling. Unpublished Ed.D., University of Toronto 1986; William S. Nodrick, Learning Disability Subtypes: Social Deficits and Validity for Social Skill Training. Unpublished Ph.D., University of Calgary 1987; Marliss E. Meyer, A Psychoeducational Evaluation of Precursors to Learning Disabilities in the Very Low Birthweight Population at 5 1/2 Years. Unpublished Ph.D., University of Alberta 1988; Karen M. Salter, A Process Approach to the Evaluation of Visual-Motor Skills in Children with Learning Disabilities: A Study Using the Rey Complex Figure Test. Unpublished Ph.D., University of Victoria 1988.

105. Weber, "Protestant Ethic", 136.

106. Ibid., 129-30.

107. Ibid., 133.

108. Ibid., 136.

109. Ibid., 123, 136.

110. Ibid., 133, 164.

111. Ibid., 85.

112. Ibid., 109, 117-18.

113. Joseph Smucker, Industrialization in Canada. Scarborough, Ontario: Prentice-Hall Canada 1980, 33.

114. Weber, "Protestant Ethic", 114-15, 122, 132-4, 141.

115. Scruton, "Dictionary of Political Thought", 84-5.

116. Richard L. Gregory, The Oxford Companion to the Mind. London: Oxford University Press 1987, 157.

117. Kurt Danziger, "The Positivist Repudiation of Wundt", Journal of the History of the Behavioral Sciences 15(3) 1979, 220-2.

118. Scruton, "Dictionary of Political Thought", 183; Gregory, "Oxford Companion to the Mind", 280.

119. S.P. Marland, "Education of the Gifted and Talented", Report to the Congress of the United States by the Commissioner of Education. Washington, D.C.: U.S. Office of Education 1972; In June Cox, Neil Daniel, and Bruce O. Boston, Educating Able Learners, Programs and Promising Practices: A National Study Conducted By the Sid W. Richardson Foundation. Austin: University of Texas Press 1985, 1.

120. Canadian Association for Children with Learning Disabilities, Definition of Learning Disabilities. Ottawa: CACLD 1981, 5.

121. Marc Renaud, "On the Structural Constraints to State Intervention in Health", In John Ehrenreich (ed.), The Cultural Crisis of Modern Medicine. London: Monthly Review Press 1978, 108.

122. Ibid.

123. Sarason, "Psychology Misdirected", 176; Edward Grant, "Review of Psychology Misdirected", Canada's Mental Health, June 1983, 23-4.

124. Sarason, "Psychology Misdirected", 180.

125. Ibid.

126. Ibid., 176.

127. Wise, "Legislated Learning"; Smith, "Insult to Intelligence".

128. Apple & Weis (eds.), "Ideology and Practice in Schooling", 22.

129. Leitch & Sodhi, "Specialness of Special Education"; Sodhi, "Myths of Special Education"; Ysseldyke & Algozzine, "Critical Issues in Special and Remedial Education".

130. Coles, "Learning Mystique".

131. Freire, "Politics of Education"; Giroux, Shumway, Smith and Sosnoski, "Need For Cultural Studies".

132. Charlesworth, "Science, Non-Science, and Pseudo-Science", 36.

133. Ibid., 39.

134. Wilfred Carr & Stephen Kemmis, Becoming Critical: Education, Knowledge and Action Research. London and Philadelphia: Falmer Press 1986.

135. Leitch, "Special Education: A Search For A Critical Theory".

136. Brian Fay, Critical Social Science: Liberation and its Limits. Ithaca, New York: Cornell University Press 1987, 27-41.

137. Ibid.

138. Michael Fullon, The Meaning of Educational Change. Toronto: O.I.S.E. Press 1982, 20.

139. Northrop Frye, The Modern Century. Toronto: Oxford University Press 1967, 118.

## CHAPTER TWO

## FUNCTIONAL PSYCHOLOGY: A UNION OF THE SACRED AND THE SECULAR

> Functional psychology is at the present moment little more than a point of view, a program, an ambition. It gains its vitality primarily perhaps as a protest against the exclusive excellence of another starting point for the study of the mind, and it enjoys for the time being at least the peculiar vigour which commonly attaches to Protestantism of any sort in its early stages before it has become respectable and orthodox.
>
> James Rowland Angell
> Psychological Review,1907[1]

In Chapter One the first hypothesis proposed a connection between Protestant ideology, described by Weber as a worldly asceticism, and theories of psychology and education developed in the late nineteenth and early twentieth century. The intent of this chapter is to test that hypothesis by answering the question: were the theoretical foundations of functional psychology -- foundations that were instrumental in the initial organization of public schooling -- consistent with the tenets of ascetic Protestantism; or were they the product of a detached scientific analysis of the natural operations of intelligence, learning, and human behaviour?

The testing of the first hypothesis involved a four-fold analysis of i) the compatibility of ascetic Protestantism and positivist social science; ii) Herbert Spencer's synthetic philosophy, principles of psychology, and the suppression of theories of mind critical of these principles; iii) the pragmatism and

psychology of William James; and iv) theories of psychology developed at Columbia University and the University of Chicago and the continuing neglect of alternative theories of human mentation at the turn of the century. This analysis provides evidence to support the hypothesis of a correlation between the assumptions embedded in the Calvinist doctrines of ascetic Protestantism described in Chapter One and the development of theory in functional psychology.

Ramsey Cook has shown that the union of Protestantism and positivism was both a move to restore stability during a time of great social change and an attempt to suppress free thought unleashed by scientists such as Charles Darwin in the nineteenth century.[2] A.B. McKillop has provided examples of this utilitarian interpretation of social science, which he calls a "disciplined intelligence", in the Canadian academy of the nineteenth and twentieth centuries.[3] Anne Wood has documented similar occurrences in the practice of Canadian educational psychology and the progressive education movement in Canada.[4] The work of these authors, and a number of their American colleagues, indicates that an evangelical positivism guided the development of early theory in psychology, educational psychology, and education.[5]

## The Compatibility of Ascetic Protestantism and Positivist Science

The beginnings of an answer to the question of whether or not Calvinist

doctrines shaped the theories of psychology and education at the turn of the century may be found in the apparent compatibility of ascetic Protestantism and the philosophy of science known as positivism. Anthony Flew, Richard Gregory, and Roger Scruton have reported that positivism shared a materialist outlook with Protestantism which manifested itself in the belief that empirical knowledge was a prerequisite to socio-moral progress.[6] According to Scruton, positivism also held that a widely accepted system of moral principles was needed for the progress of society, a need which the doctrines of Calvinism were ideally suited to fill.[7] These ideologies would grow together over the course of the nineteenth century leading to the merger of Calvinist doctrine and theory in psychology.

The materialis ı of these two ideologies is seen in their belief that efficient socio-moral progress would result from an empirical rationalization of human behaviour. Weber has shown that the philosophy of worldly asceticism was characterized by a profound distrust of scripture and metaphysical speculation as guides to socio-moral progress.[8] Its adherents harboured, instead, a predilection for the objectification of public morality through an empirically based rationalization of individual and interpersonal behaviour according to the dictates of Calvinist doctrine.[9] Flew, Gregory, and Scruton have reported that the positivist philosophy of Auguste Comte defined social evolution in a similar way.[10] Comte, according to these authors, saw social reform as a three phase transformation of society in which a theological phase, was superseded by a

more logical metaphysical phase, which was in turn displaced by a final scientific phase.[11] Kurt Danziger has shown that the positivists believed that it was the pursuit of scientific enquiry within the hierarchy of science which propelled this social evolution.[12] According to Gregory, Comte maintained that the sciences were ordered in a hierarchy of abstraction with mathematics at the apex followed in descending order by astronomy, physics, chemistry, biology, and sociology.[13] Danziger found that it was the task of positivist social science to reformulate sociological concepts at ever ascending levels in the hierarchy of science. This task was to culminate in an ability to conceptualize social phenomena as widely generalizable mathematical principles by which the progress of society would be precisely engineered.[14]

Scruton has observed that Comte's positivism also required a system of widely accepted moral principles on which the continuing rationalization of society could be founded.[15] This requirement was satisfied by the Calvinist doctrines implicit in ascetic Protestantism, a set of moral principles which studies by both McKillop and Weber indicate were gaining universal acceptance in Protestant societies during the nineteenth century.[16]

The evidence presented by these authors supports the hypothesis of a connection between ascetic Protestantism and the emergence of a positivist social science over the course of the nineteenth century. There was a high potential for the assimilation of Protestant doctrine in the founding theories of this

science for two major reasons. First, the two philosophies shared a materialist outlook which rejected metaphysical remedies to societal problems in favour of an empirically directed rationalization of social processes. Second, positivist social scientists needed a widely held set of moral principles to act as the normative basis for their science; the popularization of Calvinist doctrines within Protestantism during this period was ideally suited to meet this need.

It can be concluded on the basis of these studies that the sociological and intellectual prerequisites to a union of Calvinist doctrine and theory in social science were present during the nineteenth century. Our hypothesis, however, contends that these forces were not only present but shaped the theoretical development of psychology, educational psychology, and education. Flew has shown that, although ascetic Protestantism and positivism were generally compatible, the atheistic tendency of Comte's positivism was a stumbling block in completing the union.[17] A merger of Calvinism and positivism would require the reformulation of the positivist philosophy of science so it was in line with Protestant interpretations of the ordering of the universe. This ideological reformulation took two primary forms which are evident in the synthetic philosophy of Herbert Spencer and the pragmatism of William James. The formulations of these theorists were instrumental in the founding of the two leading centres of functional psychology in North America, centres which had a profound influence on the organization of public schools in Canada and the

United States.

**Herbert Spencer's Synthetic Philosophy and Early Psychology**

Spencer's work provides convincing evidence for the hypothesis that early theories of psychology were profoundly influenced by the doctrines of ascetic Protestantism. This influence may be seen in the logic of his synthetic philosophy which initiated the reformulation of Comte's atheistic positivism to suit Christian tastes, and in Spencer's proposal to use psychology as an instrument in implementing a plan for the moral rationalization of society. The works of Herbert Spencer, considering the Calvinist doctrines outlined in chapter one, might be better understood as the dutiful and pious actions of a devout ascetic Protestant.

Flew has documented how Comte's positivist philosophy was rooted in an atheistic humanism which led to his estrangement from the predominantly Christian societies he hoped to persuade.[18] The initial reformulation of Comte's philosophy of social science is evident in the synthetic philosophy of Spencer which would begin to rectify this situation and bring positivism into the Protestant fold.

In his First Principles, initially published in 1862, Spencer outlined a means of reconciling the theological differences between ascetic Protestantism and the positivist social science of Comte.[19] His synthetic philosophy, as it was

called, was unique in its deference to both theological and scientific formulations of the universe. This deference was manifest in Spencer's attempt to demonstrate the existence of a symbiotic relationship between the unknowable phenomena of religious belief systems and the knowable phenomena observed by enquiring scientists.[20]

It was Spencer's contention that the unknowable was a common thread which ran through both tribal and contemporary systems of religious belief.[21] In his view, the unknowable was the First Cause or Ultimate power in the universal order and lay outside the human capacity to understand. Spencer claimed that it was this force in the universe which theology attempted to explain. These attempts, in his view, were not only futile but pretentious and impious. Spencer concluded that the impiety of theological systems of belief was only remediable through the pious admission that this Ultimate force in the universe was unknowable.[22]

Spencer's concept of the knowable is characterized by the belief that science may serve as a means of objectifying the Higher rational order which exists in the universe. It was Spencer's contention that the understandings of theology were not threatened, but enhanced, by the process of scientific enquiry. In fact, he argued, science had been the impetus in each succeeding stage of the evolution of theology.[23]

> Thus it is with science in general. Its progress in grouping particular relations of phenomena under laws, and these special laws under laws more general is of necessity a progress to causes

> more and more abstract. And causes more and more abstract are of necessity causes less and less conceivable; since the formation of an abstract conception involves the dropping of certain concrete elements of thought. Hence, the most abstract conception to which science is even slowly approaching, is one that merges into the inconceivable or unthinkable, by the dropping of all concrete elements of thought. And so it is justified the assertion that the beliefs which science has forced upon religion have been intrinsically more religious than those which they supplanted.[24]

According to Spencer science was uniquely suited to serve as a vehicle for piety in its capacity to affirm universal order and the mental limitations of humanity simultaneously. It was his contention that science and religion were correlatives in an evolving piety. In the rationalization of universal phenomena the scientist was contributing to a limited human knowledge while simultaneously affirming a rationality beyond the human capacity to know -- the fundamental premise of all theological systems. In Spencer's philosophy the practice of empirical science became the consummate pious act.

Robert Richards has provided evidence which indicates that the central problem to which Herbert Spencer's scientific endeavours were devoted was that of moral conduct and the instrumentality of evolution in the production of a moral society.[25] Spencer's synthetic philosophy, in his view, was an expression of the systematic logic inherent in his Methodist upbringing and the belief that all natural phenomena were part of a larger moral process. According to Richards, Spencer envisioned a moral restructuring of society and attempted to objectify this vision scientifically in his principles of psychology and theory of evolution.[26]

Spencer's vision for a moral society would capitalize on the knowable to further the moral rationalization of individual behaviour and the institutional arrangements of society. His quest began with the development of a fundamental construct for explaining human behaviour, the Spencer-Bain principle.

Robert Boakes has determined that the moral philosophers John Stuart Mill and Alexander Bain inspired the psychology of Spencer.[27] According to Boakes these moral theorists proposed that mind was an aggregate of experience in which moral actions were perpetuated because they were pleasurable -- they were followed by material reward -- and immoral actions were gradually extinguished because they failed to produce material reward. This sociological theory of mind led to Mill's "general happiness principle" in which the material blessings which accrued to moral individuals would convince the less moral to persist in their attempts at morality, leading to the eventual reformation of society.[28] The theories of Mill and Bain were consistent with the teachings of Calvinism which maintained that moral action would yield material blessings, or proof, of one's salvation. True to his positivist bent, Spencer took these theories one step higher in the hierarchy of science by reformulating the Calvinist sociological principle of general happiness in terms of its physiological characteristics in the Spencer-Bain principle.

Spencer's Principles of Psychology first appeared in 1855.[29] Boakes reports that Spencer reformulated the sociological Mill-Bain theory at a higher, physiological, level of abstraction in what came to be known as the Spencer-Bain principle. This principle was comprised of two central postulates: first, Spencer proposed that when two percepts occur in immediate sequence they become physiologically associated in such a way that the recurrence of the first percept tends to elicit the second; secondly, borrowing from Bain's theory of trial and error learning, he proposed that the original association between two percepts was strengthened when followed by pleasurable sensations which the individual sought to perpetuate and weakened by painful sensations which the individual sought to terminate.[30]

Spencer then incorporated this principle in a plan for the reformation of society. Boakes has shown how it was applied in rationalizing all of human existence in his theory of evolution.[31] True to Calvinist doctrine this theory proposed an intimate correlation between morality, intelligence, and material well-being.

Boakes has documented that Spencer applied the Spencer-Bain principle in formulating a theory of evolution congruent with the doctrines of Calvinism. In this theory he proposed that moral actions were performed more frequently by intelligent persons because they evoked pleasure by yielding tangible material reward and eventually became habitual and unconscious. These unconscious

patterns of moral behaviour, or compound reflexes, were then accumulated in the progeny of the individual through the natural process of genetic transmission.[32] Through the application of this evolutionary theory to contemporary circumstances Spencer surmised that i) the most highly evolved, or intelligent, of the human species would also be the most moral; ii) proof of intelligence, or morality, was measured in terms of social adaptability and material well-being; and iii) socio-moral progress was enhanced by providing opportunities for the most highly evolved of the human species while the social ostracism of certain races, sexes, and classes was part of a natural order that should not be disturbed.[33] Spencer's theory of evolution and plan for socio-moral progress, known as Social Darwinism, would play an important role in the development of psychological theory at the turn of the century.

In his formulation of the synthetic philosophy, his principles of psychology, and his plan for the moral reformation of society, Spencer was acting in a manner wholly consistent with his duty as an ascetic Protestant. The Calvinist doctrine of duty required that the social scientist both accept his station in life and use the knowledge at his disposal in rationalizing individual behaviour and the behavioural patterns of society. Spencer fulfilled these sacred duties in fusing Protestantism and positivism in a philosophy of science which acknowledged a rational order in the universe beyond human comprehension, and in the development of the fundamental construct of his psychology the

Spencer-Bain principle. He proposed that this principle could be used to actualize the moral restructuring of society. Spencer's works are therefore best understood as the formulations of a pious Protestant scientist.

Boakes has shown how British and North American psychology were immersed in Spencerian theory during the last half of the nineteenth century.[34] Danziger has shown how this immersion of mainstream psychologists led to the premature dismissal of the cognitivism of Wilhelm Wundt.[35] Danziger and David Murray have shown how, in contrast to Spencer's physiological construct of mind, Wundt held that mind was composed of two mental capacities: i) voluntarism -- an ordering of the flow of psychic events through an act of volition; and ii) apperception -- a psychic entity, or thought, voluntary and distinct from any immediate perceptual constituents.[36]

Danziger's study indicates that Wundt's psychology was dismissed by positivist psychologists for two reasons. First, Wundt confronted the notion of a hierarchy of sciences in asserting that the phenomena which psychology studied were constitutionally different from that of the natural sciences. Second, the positivists viewed Wundt's concepts of voluntarism and apperception as metaphysical aberrations which could not be reduced to mathematical abstractions as required by their philosophy of science.[37] The neglect of Wilhelm Wundt's theory of psychology is an example of the effect of popular culture on research in the social sciences. Studies by Cook and McKillop indicate that the

Protestant-positivist union in the mainstream of early social science restricted intellectual enquiry to empirical observations which served its sectarian moral ends.[38] Thus a materialist anti-intellectualism, which reflected the values of Protestant cultures of that period, dictated against a fair hearing for the cognitive psychological theory of Wundt because, in the view of mainstream psychologists, it served no useful purpose.

In spite of these cultural pressures the theory of cognitive psychology developed by Wundt was not completely ignored. Cognitivists such as the Gestaltists and Sigmund Freud began to appear at roughly this time. More important to our immediate purposes, Wundt's psychology had a significant impact on the work of William James. While James' psychology did incorporate certain features of Wundt's cognitivism, his central premise -- functional habit -- remained consistent with the behavioural emphasis of ascetic Protestantism.

**William James' Pragmatism and Functional Psychology**

The second major reformulation of positivism by Protestant social scientists is exemplified in the tenets of pragmatism as popularized by William James. James' disagreements with Spencer stem from fundamental differences in their philosophy of science. As outlined above, Spencer's synthetic philosophy proposed a reconciliation of religion and science in which empiricism played the predominant role. In contrast James, in a series of essays on pragmatism

written in the 1870s, 1880s, and 1890s, argued that social science should accept religious ideals as the normative standards for an empirical process of social and moral evolution.[39] This bent of mind laid the foundation for James' concept of habit which became the guiding precept of functional psychology.

The growing acceptance of pragmatism in the late nineteenth and early twentieth century was the result of concerns with the reduction of God to a "deistic First Cause" in the universal order.[40] Canadian idealist John Watson of Queen's University argued that the positivist conceptualization of the First Cause in the universe as unknowable left social science without moral direction.[41] James' interpretation of pragmatism was an effort to address this concern and arbitrate a compromise between a Calvinistic idealism and positivist science.

In deference to concerns regarding the lack of moral direction in a strict empiricism, pragmatism was an attempt by James to assure that the findings of empirical science remained true to traditional religious assumptions.

> Never were as many men of a decidedly empiricist proclivity in existence as there are at the present day. Our children, one may say, are almost born scientific. But our esteem for facts has not neutralized in us all religiousness. It is itself almost religion. Our scientific temper is devout.[42]

The problem with Spencer's earlier attempt to reconcile Calvinist dogma and the philosophy of positivism, in James' view, was founded in his zealous empirical stance which failed to recognize the need for religious sentiment in society.[43] Spencer criticized religion for its presumptuousness in trying to explain

the unexplainable. This presumptuousness on the part of religion could only be rectified, in his view, through the acceptance of an indirect verification of some First Cause -- the unknowable. This indirect verification was made possible by empirical evidence, which supported the hypothesis of a rational order in the universe -- the knowable. With the philosophy of pragmatism, James proposed to correct the agnostic tendency in Spencer's concept of the unknowable by striking a balance between the need for empirical knowledge and the need for religious sentiment.[44]

> The pragmatist philosophy .. preserves as cordial a relation with facts, and, unlike Spencer's philosophy, it neither begins nor ends by turning positive religious constructions out of doors -- it treats them cordially as well.[45]

Pragmatism, according to James, offered a more pious middle-ground than did Spencer's positivist synthetic philosophy. He argued, however, that the pragmatic method was not completely enamoured of religious sentiment.[46] It would remain, James contended, militant in its skepticism of metaphysical proofs by subjecting each religious assumption to a rigourous evaluation in the secular domain. According to the pragmatist code, these assumptions would be substantiated, or true, if proven functional -- a practical means of facilitating one's adaption to the demands of the material world.[47]

The claim that the moral constructs of Protestantism would only serve as the starting point for an evolving social science runs counter to our thesis that Calvinist doctrines became entrenched in the normative standards of early

psychology. There is evidence, however, that consideration for alternatives to these constructs was severely limited. James argued that in addition to being functional, any proposed alternative to traditional conduct must also preserve:

> ...the older stock of truths with a minimum of modification, stretching them just enough to make them admit the novelty, but conceiving that in ways as familiar as the case leaves possible. An outré explanation violating all our preconceptions, would never pass for a true account of a novelty. We should scratch round industriously till we found something less eccentric.[48]

The philosophy of science espoused by James, while emphatic in its appeal for the subjugation of religious ideals to a rigourous empirical scrutiny, belied a dogmatic conservatism. In this passage he sets strict limitations on the pragmatic method.

James argued that any proposed social alternative that broke with orthodox religious assumptions would receive little or no consideration. Thus, his construct of a pragmatic social science imposed severe limitations on the findings of its practitioners. First, it mandated that the moral doctrines of ascetic Protestantism serve as the normative standards for this science. Second, it assured a high potential for the entrenchment of these standards because alternatives were virtually inadmissable according to James's definition of truth.

An attempt to establish religious ideals as the normative foundations in the social sciences is evident in James' Principles of Psychology published in 1892.[49] The central postulate in his psychology is a definition of habit which is an accurate reproduction of the fundamental doctrines of Calvinism described by

Weber.[50] James' argument for the inculcation of habits consistent with Calvinist dogma initiated an applied psychology which would organize the institutions of public education according to Protestant notions of correct and incorrect behaviour.

Clarence Karier, Robert Richards, and Bertrand Russell claim that James' life was dominated by Calvinist ideals which he sought to vindicate empirically in his principles of psychology.[51] The apparent truth of this claim may be seen in the central premise of his science, the concept of habit.

> Habit is thus the enormous fly-wheel of society, its most precious conservative agent. It alone is what keeps us all within bounds of ordinance, and saves the children of fortune from the envious uprisings of the poor. It alone prevents the hardest and most repulsive walks of life from being deserted by those brought up to tread therein. It keeps the fisherman and the deck-hand at sea through the winter; it holds the miner in the darkness, and nails the countryman to his log cabin and lonely farm through all the months of snow; it protects us from invasion by the natives of the desert and the frozen zone. It dooms us all to fight out the battle of life upon lines of our nurture of our early choice, and to make the best of a pursuit that disagrees, because there is no other for which we are fitted, and it is too late to begin again. It keeps different social strata from mixing. Already at the age of twenty-five you see the professional mannerism settling down on the young commercial traveler, on the young doctor, on the young minister, on the young counsellor-at-law. You see the little lines of cleavage running through the character, the tricks of thought, the prejudices, the ways of the 'shop', in a word, from which man can by-and-by no more escape than his coat-sleeves can suddenly fall into a new set of folds. On the whole, it is best he should not escape. It is well for the world that in most of us, by the age of thirty, the character has set like plaster, and will never soften again.[52]

James' definition of habit, the cornerstone of functional psychology, is consistent with the logical assumptions of Calvinism. Habit, in his view, maintained the "bounds of ordinance" -- it defined the boundaries of our earthly duties. Through habit, working people and the poor would come to a graceful acceptance of the duties of their subordinate station in life and not rise up against the "children of fortune." In turn, this fortunate elect would dutifully maintain a sense of philanthropy in not deserting the "repulsive walks of life". The elect are identifiable by the subtle mannerisms which provide proof that individuals such as businesspeople, ministers, and lawyers are among a select group destined to socio-moral leadership.[53]

As Spencer before him, James' psychology stressed the need for inculcating moral habits to promote social reform. The theoretical differences between the two men, differences that would lead to the eventual parting of functional psychology into two schools, centred around the formation of these habits.

The Spencer-Bain principle determined that compound reflexes were physiological bonds established between environmental stimuli and those adaptive responses which elicited sensual pleasure in the individual when performed. These bonds eventually became instinctual and were genetically transmitted to succeeding generations of progeny within distinct racial, sexual, and class groupings.[54] James, in his theory of emotion, maintained that adaptive

responses were the product of a complete -- simultaneously affective, or volitional, and effective -- experience from which a distinct stimulus-response pattern could not be extracted.[55]

For James, the emotion, or pleasure in Spencerian terms, did not follow the stimulating fact in direct serial order, rather it was some portion of an all encompassing event.[56] He concluded, according to Boakes, that understanding the affective experience of the individual was the key to an ability to predict, and control, the formation of habitual behaviours.[57] This led James to propose that an applied psychology could serve to perpetuate desirable habits in the institutions of society, in particular the institution of education.

> The great thing, then, in all of education, is to make our nervous system our ally instead of our enemy. It is to fund and capitalize our acquisitions, and live at ease upon the interest of the fund. For this we must make automatic and habitual, as early as possible, as many useful actions as we can, and guard against the growing into ways that are likely to be disadvantageous to us, as we should guard against the plague.[58]

James championed the application of psychology for inculcating habitual behaviours consistent with the moral ends of Calvinism. This is what led E.B. Titchener to refer to those who shared James' view as functionalists.[59] But before the nervous system could become an ally in rationalizing individual behaviour, the workings of those total situations in which habitual behaviours were formed would first have to be explored.

Boakes has shown that as psychology struggled to extricate itself from the status of a sub-discipline of moral philosophy, the initial debate within its ranks focused on the passive and active elements of human consciousness.[60] These elements of consciousness, in his view, were being interpreted in ways which are congruous with the varying theoretical positions of Herbert Spencer and William James. On the one hand, human consciousness was seen as essentially passive: a matter of perceptual stimulation, instincts, and genetic inheritance -- reflexive and automatic. On the other hand, human consciousness was seen as active: the product of a complex subjective experience in which volition served as the critical motivating factor.[61] This theoretical division led to the separation of functionalist psychology into the two schools which will now occupy our discussion.

**The Two Leading Schools of Functional Psychology**

The evidence presented to this point has demonstrated how the theories of psychology developed by Herbert Spencer and William James were steeped in the Calvinist doctrines and logical assumptions of ascetic Protestantism. This conclusion is consistent with the findings of recent studies by Karier and Richards.[62]

The theories of Spencer and James would serve as the source for the normative standards of what Barry Franklin and David Murray refer to as the two

leading schools of functionalist psychology in North America - Columbia University and the University of Chicago.[63] In essence then, these two schools became the twentieth century vehicles for an on-going Protestant reformation. Under the banner of an applied psychology, members of the two schools of functionalism set about rationalizing the institutions of society as was their duty according to the tenets of Calvinism.

While the psychologists at both Columbia University and the University of Chicago were in agreement that society could be reformed through the inculcation of functional habits, they were in open disagreement as to how this should be done. Boakes has reported that functional psychologists at Columbia elaborated on the Spencer-Bain principle in their search for environmental stimuli which triggered and reinforced desirable social habits in the individual.[64] Christine Shea has found that the Chicago functionalists, using George Herbert Mead's interpretation of the theories of James, attempted to identify human emotional responses to specific social situations and use this knowledge to control the development of habitual behaviour patterns in the individual.[65]

The differences between the two schools of functional psychology might be better understood by analyzing their opposing definition of the precursors of human action. Edward Thorndike, perhaps the best known of the Columbia functionalists, would elaborate on the works of Spencer in his theory of connectionism. John Dewey, a leading figure in the Chicago School, spoke of

situationalism and was the force behind Mead's appointment at that academy.[66]

Thorndike's theory of connectionism proposed that human actions could be understood as the creation of neuronal pathways between those bodily extremities which were stimulated by specific elements in one's environment and the bodily extremities which responded to these stimuli. The additive effect of these stimulus-response connections, or bonds, resulted in a complex repertoire of human cortical development and concomitant adaptive behaviours.[67] Dewey, on the other hand, argued that one's actions could not be explained by a simple reflex arc between stimulus and response, rather, they were the product of a conscious gathering of means for meeting comprehensible ends. For Dewey, psychic stimulation was the product of the entire situation in which one was immersed. Thus, in Dewey's view, the stimulus for action was an irreducible product of a total situation which included one's internal and external -- affective and effective -- experience.[68]

Connectionism, and situationalism, served to focus the definitions of learning which guided the research of the two schools of functionalism. Thorndike's laws of learning and George Herbert Mead's theory of mental development were the instruments by which functional psychology rationalized individual behaviour and the institutional arrangements of society.

The differences between Thorndike and Mead can be seen in their varying perspectives regarding the development of habitual behaviour patterns in the

individual. Boakes maintains that Thorndike's penchant for the experimental method led to his complete mistrust of subjective accounts of experience and emotion. His research was a reiteration of Spencer's psychologic... principles which, tempered by the influence of Francis Galton, Karl Pearson, and J.M. Cattell, were ardently hereditarian and couched in quantitative terms.[69] In contrast, Mead, a leading pragmatist recruited by Dewey, would formulate a theory of learning consistent with the premises of situationalism in which mind -- the repertoire of habitual behaviour he called the "generalized other" -- was a product of social interaction and one's emotional response to this interaction.[70]

Thorndike, in an argument characteristic of Spencer's positivism, maintained that the construct of mind which Mead suggested was a metaphysical aberration.[71] According to Boakes and Franklin, Thorndike proposed that one could facilitate an individual's production of desirable social behaviours through the introduction of pleasant stimuli following a behavioural event. From this observation he proposed to create a system of positive and negative reinforcement to manipulate the development of socially desirable habits, and discourage ...desirable habits, in the members of a society.[72]

Mead, on the other hand, proposed to manipulate the development of socially desirable habits by controlling the emotional content of experience. This was to be accomplished by inculcating in individual personality a sense of conscience which embodied the Calvinist dictums for correct social behaviour.

Once ingrained in personality, this guiding conscience would induce an emotion of tranquility or security when the individual's behaviour conformed with these dictums and anxiety, or insecurity, when they did not.

Franklin has described Mead's theory for the inculcation of this sectarian conscience as an amalgam of four elements: act, gesture, language, and the internal conversation.[73] Mead defined act, according to Franklin, as a sequence of social exchanges between two or more individuals in which the actions of the first serve as a stimulus for a response in the second and vice versa. This series of stimulus-response patterns served as the basis of an evolving social consciousness among individuals. Mead proposed, in Franklin's view, that this consciousness was a product of gestures -- the rudiments of action which assume a shared meaning; language -- the emergence of apperceptive mind through the linguistic definition of gesture; and finally the internalization of gesture and language in a mental conversation with one's self. It was Mead's contention that this internalized conversation, the generalized other, could serve to regulate the habitual benaviours of the individual in the interest of society.[74]

True to the spirit of ascetic Protestantism, Thorndike, Mead, and their functionalist colleagues applied these theories in rationalizing individual experience and the interpersonal relations of society. The theories promulgated by the two leading schools of functionalism were a reaffirmation of principles first formulated by Spencer and James. These principles, as described earlier, were founded in

the assumptions of Calvinist doctrine.

Boakes and Franklin have shown that Thorndike's use of Spencer's hereditarian theory of moral habit and intelligence influenced his three main premises regarding social adaptability: i) inherited intelligence; ii) a direct correlation between intelligence and morality; and iii) individual differences in the capacity to learn and speed of learning. These premises were crucial to his work at Columbia. Thorndike would design tests which would fix criteria for the identification of social leaders and followers, and curricula for stamping-in desirable reflex connections -- moral habits. Just as Spencer before him, Thorndike sought the reformation of society in his methodical rationalization of institutional arrangements, in particular the restructuring of the institution of the public school.[75]

Franklin and Shea have documented how Mead and the Chicago functionalists pursued James' call for the inculcation of habit in their attempts to develop a conforming personality type in society.[76] These theorists proposed to use Mead's construct of a generalized other to i) restrict individual choice in social situations to those actions which conformed to functionalist definitions of desirable social habits; and ii) thereby perpetuate Calvinist morality under changing societal circumstances. A study by Shea indicates that the functionalist construct of an "integrated personality" was instrumental in the development of theory in abnormal psychology and the conceptions of adaptive, and maladaptive behaviour which shaped the emerging sub-discipline of special education.[77] These attempts to

develop a conforming personality were consistent with the premises of James' pragmatism and its constricted interpretation of correct and incorrect behaviour.

The definition of mind as a compendium of sense perceptions and functional habits was cause for a continuing tension between functionalism and cognitivist psychology at the turn of the century. Boakes and Murray have reported that there were three schools of thought in psychology at that time -- the structuralists, the Gestaltists, and the psychoanalysts -- who were actively challenging the narrow interpretation of learning and intelligence proposed by the functionalists.[78]

Boakes has shown how Edward Titchener of Cornell University was seeking to determine the nature of consciousness through an analysis of the organizational processes of the mind which he called structuralism.[79] A study by Murray indicates that the German school of Gestalt psychology proposed that the whole of human experience was more than the mere sum of its perceptual parts, and that the work of psychoanalyst Sigmund Freud at Vienna was founded in the cognitive constructs of conscious, subconscious, and unconscious mental states.[80] Studies by Boakes and Murray have documented that these cognitive theories were rejected by functional psychologists because they were not empirically verifiable or otherwise offended the prevailing Christian ethos.[81]

By 1913, J.B. Watson of Johns Hopkins was arguing that the time had come for psychology to "discard all references to consciousness".[82] Titchener

feared that this rigid adherence to a single view of human experience might "make psychology either an introduction to philosophy or an aid to individual social welfare." The righteous intolerance which characterized functional psychology, in his view, would undermine the potential of this new discipline to make a significant contribution to the understanding of human mental faculties.[83]

Titchener's concerns with the intolerance of the functionalist point of view in the young science of psychology seem to have been vindicated by history. The pejorative implications of functionalism for scientific inquiry are well put by Danziger:

> For the historiography of psychology the major consequences of this stance is that the dependence of psychological theory and method on prior philosophical commitments is lost from view. Because only one kind of philosophy of science is regarded as legitimate (or even conceivable), differences on scientific issues are not seen as the consequences of philosophical differences. This is a comforting attitude for those who have no wish to question fundamental assumptions, and that usually includes the conservative majority. When a particular philosophical commitment becomes characteristic of the mainstream of development in a certain field, it is usually so much taken for granted that it is not even identified by its practitioners.[84]

Murray's study indicates that the vast majority of practitioners in the field of psychology during the early twentieth century were functionalists.[85] The intolerance of functional psychologists for alternative views of human mentation would restrict the definition of legitimate research in psychology during its formative period. Boakes has shown how this intolerance led to the trivialization of research in psychology for two reasons: i) functional psychologists routinely

accepted findings which were the product of crude experimentation simply because the experimenter followed an accepted empirical method; ii) major studies into the complexities of human consciousness were rare and the findings of these studies were summarily rejected by the functionalist mainstream of psychology.[86]

The intolerance of functional psychology for other explanations of human consciousness is highly ironic when one considers its practitioners' call for an objective pursuit of fact in scientific enquiry. This irony is explainable by the philosophical righteousness of functionalism, and a lack of awareness of this bias on the part of its adherents, to which Danziger eluded above.

The power of functional psychology in shaping the mainstream of research in the field would have a significant impact on the organization of the public school system in the first half of the twentieth century. This impact is evident in i) the continuing neglect of cognitive theories of psychology; ii) the construction of measures of intelligence and learning that were consistent with functionalist theories; and iii) the definition of the categories of adaptive, and maladaptive, behaviour in abnormal psychology -- categories which directed the identification of exceptional children in the emergent discipline of special education -- according to the tenets of functionalism. An analysis of the continuing impact of functional psychology on theory in psychology, educational psychology, and education -- with specific emphasis on the Canadian academy -- will occupy the next stage of

this discussion.

**Summary**

In Chapter Two an attempt was made to answer the question of whether or not the foundations of functional psychology were the product of a detached scientific analysis of human psychological experience, or primarily an affirmation of the beliefs of ascetic Protestantism. We were led to conclude that theories formulated by functional psychologists were an attempt to vindicate Calvinist doctrines in the material world by using these doctrines as norms for an applied psychology.

This conclusion is supported by evidence which has shown that i) ascetic Protestantism and positivist social science were fundamentally compatible ideologies with a shared vision of societal reform; ii) the major point of contention between the two ideologies -- the atheistic perspective of Auguste Comte's positivism -- was resolved when Herbert Spencer and William James gradually restored the construct of Deity in their philosophies of science and entrenched a system of Calvinist morality in the theories and normative standards of early psychology; and iii) acting on the theories and norms developed by Spencer and James, psychology emerged as an applied 'science' at Columbia University and the University of Chicago at the turn of the century. This evidence indicates that functional psychology amounted to a twentieth century manifestation of an on-

going Protestant reformation whose adherents developed the norms of their science with an eye toward reifying Calvinist moral ideals in society. The norms of functional psychology were, therefore, quasi-religious in nature.

In Chapter Three an attempt will be made to answer the second question which tests our hypothesis of an intimate connection between ascetic Protestantism and theory in psychology and education: the question of whether or not the theoretical foundations of functional psychology had an impact on the practices of psychologists, educational psychologists, and educators in the Canadian academy.

## Endnotes

1. James R. Angell, "The Province of Functional Psychology," Psychological Review 14(2) 1907, 61.

2. Ramsay Cook, The Regenerators: Social Criticism in Late Victorian English Canada. Toronto: University of Toronto Press 1985, 3-6.

3. A.B. McKillop, A Disciplined Intelligence: Critical Inquiry and Canadian Thought in the Victorian Era. Montreal and Kingston: McGill-Queen's University Press 1979.

4. B. Anne Wood, Idealism Transformed: The Making of a Progressive Educator. Montreal and Kingston: McGill-Queen's University Press 1985.

5. Richard Hofstadter, Social Darwinism in American Thought, Rev. Ed. Boston: Beacon Press 1955; Raymond E. Callahan, Education and the Cult of Efficiency: A Study of the Social Forces That Have Shaped the Administration of the Public Schools. Chicago: University of Chicago Press 1962; Richard Hofstadter, Anti-Intellectualism in American Life. New York: Knopf 1963; Richard Hofstadter, The Progressive Movement, 1900-1915. Englewood Cliffs, New Jersey: Prentice-Hall 1963; William H. Goetzman (Ed.), The American Hegalians: An Intellectual Episode in the History of Western America. New York: Knopf 1973; David B. Tyack, The One Best System: A History of American Urban Education. Cambridge, Mass.: Harvard University Press 1974; David Tyack and Elisabeth Hansot, Managers of Virtue: Public School Leadership in America, 1820-1980. New York: Basic Books 1982; Louise L. Stevenson, Scholarly Means to Evangelical Ends: The New Haven Scholars and the Transformation of Higher Learning in America 1830-1890. Baltimore and London: Johns Hopkins University Press 1986.

6. Anthony Flew A Dictionary of Philosophy. New York: St. Martin's Press 1979, 283-4; Roger Scruton, A Dictionary of Political Thought. London: Pan 1982, 364-5; Richard L. Gregory, The Oxford Companion to the Mind. Oxford: Oxford University Press 1987, 157.

7. Scruton, "Dictionary of Political Thought", 85.

8. Max Weber, The Protestant Ethic and the Spirit of Capitalism: The Relationships Between Religion and the Economic and Social Life in Modern Culture. New York: Charles Scribner's Sons 1958, 129, 132, 136.

9. Ibid.

10. Flew, "Dictionary of Philosophy", 69; Gregory, "Companion to the Mind", 157; Scruton, "Dictionary of Political Thought", 84.

11. Ibid.

12. Kurt Danziger, "The Positivist Repudiation of Wundt", Journal of the History of the Behavioral Sciences 15(3) 1979, 222.

13. Gregory, "Companion to the Mind", 157.

14. Danziger, "Positivist Repudiation of Wundt", 212, 222.

15. Scruton, "Dictionary of Political Thought", 85.

16. McKillop, "Disciplined Intelligence", 9-21; Weber, "Protestant Ethic", 132.

17. Flew, "Dictionary of Philosophy", 69, 283.

18. Ibid.

19. Herbert Spencer, First Principles, 5th Ed.. New York: A.L. Burt 1890.

20. Ibid., 1-107.

21. Ibid., 10-11, 37-9.

22. Ibid., 85-7.

23. Ibid., 87.

24. Ibid., 89.

25. Robert J. Richards, Darwin and the Emergence of Evolutionary Theories of Mind and Behaviour. London: University of Chicago Press 1987, 246.

26. Ibid., 246-7.

27. Robert Boakes, From Darwin to Behaviourism: Psychology and the Minds of Animals. Cambridge: Cambridge University Press 1984, 8-10.

28. Ibid.

29. Ibid., 10.

30. Ibid., 11-13.

31. Ibid., 10-12.

32. Ibid., 11.

33. Ibid., 11-14.

34. Ibid., 12-13.

35. Danziger, "Positivist Repudiation of Wundt".

36. Danziger, "Positivist Repudiation of Wundt", 207-8; David J. Murray, A History of Western Psychology. Englewood Cliffs, N.J.: Prentice-Hall 1983, 179-82.

37. Danziger, "Positivist Repudiation of Wundt", 220-2.

38. Cook, "Regenerators", 7-25; McKillop, "Disciplined Intelligence", 1-21.

39. William James, Pragmatism a New Name for Some Old Ways of Thinking: Together With Four Related Essays Selected from the Meaning of Truth. Toronto: Longman's-Green 1946. (Originally published in 1907; an anthology of essays written in the 1870s, 1880s, and 1890s).

40. Northrop Frye, The Modern Century. Toronto: Oxford University Press, 1967, 110.

41. John Watson, "The Critical Philosophy and Idealism", Philosophical Review 1(1) 1892, 9-23.

42. James, "Pragmatism", 14-15.

43. Ibid., 20-39.

44. Ibid.

45. Ibid., 40.

46. Ibid., 53-5.

requirements of the school, proved that one was predestined for a role of social leadership; and iv) an inferior measured intelligence, or a lack of conformity with the intellectual and behavioural requirements of the school, proved that one was predestined for social failure and should be segregated from the general school population in the best interest of other students.[16]

According to Christine Shea, when it was established that measured intelligence could no longer be used to explain all non-conforming behaviour, there occurred a paradigmatic shift in psychology which gave rise to the mental hygiene movement in North America.[17] In a position not entirely antithetical to that of the eugenicists, the mental hygienists reconceptualized social non-conformity as a symptom of mental illness rather than simply a lack of intelligence.

Acting on the Jamesian principle of habit, mental hygienists such as William Blatz and Helen Bott of the University of Toronto and Samuel Laycock of the University of Saskatchewan formulated procedures to foster conformity in children and students while claiming that non-conformity was the result of emotional disturbance or neurological impairment. The hygienists rejected the omnipotence of feeblemindedness as an explanation for social non-conformity but carried forward constructs of intelligence, intelligence testing, and educational tracking in a synthesis of social eugenics and mental hygienics which culminated in the emergence of the sub-discipline of special education.

During the inter-war period, Blatz and Bott assisted in the development of the construct of an integrated -- normal -- personality type characterized by an unquestioning conformity with the behavioural requirements of the various institutions of society.[18] This construct led to the formulation of two key premises that would shape the categorization of certain students as gifted or learning disabled. First, Blatz and Bott claimed that conforming behaviour was a moral obligation while implying that non-conformity was both immoral and abnormal.[19] Second, they defined learning as the development of correct habits in accordance with the intellectual and behavioural requirements of the school -- learning and conformity became synonymous.[20]

This body of research set in motion the theoretical synthesis of social eugenics and mental hygiene which resulted in the initial definition of giftedness and learning disability. It was this synthesis that would ultimately be crystallized in a programme of special education for the Canadian public schools.[21]

Blatz and Laycock proposed that future social leaders, the gifted, were characterized by both their superior measured intelligence and their steadfast conformity with the learning and behavioural requirements of the institution of the school.[22] They also proposed that gifted programming should involve further character training to prevent wrong thinking -- any critical analysis of the institutional arrangements of society or the interpersonal relationships within these institutions -- in the future leaders of society and insure their abiding conformity

under changing social circumstances.[23] Conversely, the learning disabled were said to be characterized by their non-conformity with the learning and behavioural requirements of the institution of the school. It was Laycock's contention that this disability was the product of student incorrigibility or some neurological impairment which required expert diagnosis and treatment beyond the scope of the regular classroom -- those who did not conform with the requirements of the institution of the school should be segregated from the general school population.

In the tradition of functionalism and normal science, legitimate challenges to the premises of social eugenics and mental hygienics offered by individuals such as Walter Lippman, John Dewey, Karen Horney and Erich Fromm (p.96-7, 103-4, 118-20) were neglected.[24] This pattern of vindicating cultural assumptions regarding correct human behaviour while ignoring counter-evidence would be repeated in studies of giftedness and learning disability contained in the Canadian special education literature produced between 1968 and 1989.

The research efforts of Peter Sandiford, William Blatz, Helen Bott, and Samuel Laycock serve to illustrate the effect of cultural overdetermination, astructural perception and the practice of a normal science on the development of the theoretical foundations of educational psychology and special education during the first half of the twentieth century. This effect is evident in their i) adherence to paradigms of social eugenics and mental hygienics which sought

to vindicate Calvinist assumptions regarding correct human behaviour embodied in the functional psychology of Spencer and James; and ii) neglect of evidence provided by individuals such as Walter Lippmann, John Dewey, Karen Horney, and Erich Fromm which challenged both the validity of the assumptions on which functional psychology was founded and the definitions of intelligence, learning, and normality being operationalized in the social eugenics and mental hygienics movements.

Thus, the astructural perception inherent in functional psychology, a perception initiated by the mandate of ascetic Protestantism to rationalize individual behaviour and the institutions of society according to the dictates of Calvinist doctrine, was further entrenched by the practice of a normal science in early Canadian educational psychology and special education. The cultural overdetermination of the experience of social scientists, and the astructural perception it engendered has, in turn, been perpetuated in the use of functionalist constructs of giftedness and learning disability in the design of research problems of contemporary Canadian psychology, educational psychology and special education as demonstrated by the findings in Chapter Four. The uncritical acceptance of these constructs by modern researchers in these fields exemplifies the continuing neglect of counter-evidence characteristic of a normal science.

**The Effect of Cultural Overdetermination and Astructural Perception on Contemporary Canadian Research and Practice in Educational Psychology and Special Education**

In Chapter Four it was determined that special education literature published or produced in Canada between 1968 and 1989 utilized functionalist constructs of giftedness and learning disability, while generally ignoring counter-evidence, in the design of problems for research. This literature was, then, another manifestation of an ongoing functionalist tradition and the practice of a normal science within Canadian special education. The uncritical acceptance of functionalist constructs of giftedness and learning disability is a further indication of both the overdetermining effect of cultural assumptions regarding human behaviour and the tendency of normal science to inhibit the range of explanation for the phenomena under observation.

Studies by Henry Giroux, David Shumway, Paul Smith, James Sosnoski, and Wilfred Cude have shown how the inhibition of the range of legitimate scientific inquiry which exists in Canadian special education might have evolved in the academic disciplines of the university and the graduate research of students seeking to become members of those disciplines.[25] Over time, according to these authors, the practice of normal science serves to quell scholarly innovation leading to the entrenchment of conventional disciplinary wisdom.

Giroux, Shumway, Smith, and Sosnoski found that most university scholars justify their existence by gathering data which verifies the conventional wisdom of their discipline.[26] They claim this process restricts the range of accepted theoretical models which guide the definition of research problems in the field. With the passing of time, the discipline's members tend to overlook the theoretical nature of the models and operational definitions which guide their research leading to the reification of these tentative constructions in disciplinary practice. The reification of these constructs discourages an on-going critical analysis of their validity, an analysis characteristic of a more rational approach to scientific research. This lack of critical analysis, or astructural perception as Freire called it, results in a skewing of data to fit orthodox theoretical structures.[27] Cude established that under such myopic conditions Canadian graduate research in the social sciences and humanities has been reduced to a paradoxical misnomer in which the ideal of an innovative thesis is undermined by disciplinary adherence to conventional paradigmatic assumptions.[28]

The studies of Giroux, Shumway, Smith, Sosnoski, and Cude provide us with an example of the effect of normal science on the theoretical structures and operational definitions extant in academic disciplines. The combined effects of cultural overdetermination, astructural perception, and the practice of a normal science provide us with a plausible explanation for the continuing entrenchment of the functionalist constructs of giftedness and learning disability in the Canadian

special education literature produced between 1968 and 1989.

As indicated above, during the first half of the twentieth century, Canadian functionalists in psychology, educational psychology, and special education claimed that giftedness was superior intelligence manifest in one's conformity with the intellectual and behavioural requirements of the school. Conversely, they defined learning disability as a failure to conform with these requirements, attributing this failure to incorrigibility or neurological impairment in the student.

The study contained in Chapter Four determined that Canadian journal articles and doctoral theses produced between 1968 and 1989 operationalized these constructs in the conceptualization of research. Intelligence and school achievement were the characteristics of the gifted most frequently cited by researchers in this sample. Intelligence was cited in 76% of articles and 88% of dissertations in the sample (pp. 141, 143). School achievement was cited by 55% of articles and 69% of dissertations sampled (pp. 141, 143). Similarly, learning disability was defined by researchers in this sample as a failure to conform with the intellectual or behavioural requirements of the school with 94% of articles and 97% of dissertations including this criteria for the identification of disabled students (pp. 148, 149); 52% of articles and 50% of dissertations claimed that learning disabilities were the result of student neurological dysfunction (pp. 148, 149); 42% of articles and 47% of dissertations claimed that these disabilities were the result of student behavioural dysfunction (pp. 148,

149).

The astructural perception of Canadian functionalists and many of their successors in the modern special education movement in Canada may have led to the perpetuation of restrictive assumptions regarding student intelligence and learning which still pervade the institution of the school. As described in Chapter One, the educative process as envisioned by proponents of functionalism stands increasingly at odds with research in human learning and educational policy statements which call for the development of the students' ability to think critically and learn independently. The conflict between functionalism and contemporary views of the purpose of education, and the questions this conflict raises about the organization of schools, design of curricula, and methods of teaching, was also evident in a minority of studies contained in the Canadian research sample of Chapter Four.

Breaking with functionalist epistemological assumptions, some Canadian researchers from the sample claimed i) intelligence can not be defined as inherited abilities manifest in individual differences in IQ scores, rather, it may be better explained in terms of one's opportunities to develop behaviours deemed intelligent in Anglo-European cultures;[29] ii) a multi-cultural analysis of intelligence would provide a more comprehensive understanding of this phenomena;[30] and iii) the functionalist model of schooling which stresses fixed curricula, unilateral instruction, and student conformity undermines educational policies which call for

the development of rational or critical thinking and self-directed or independent learning in gifted students.[31]

The implication that the current organization of schools and classrooms may be disabling for some students is repeated by several of the authors who prepared articles and theses in this sample of the Canadian research in learning disabilities. Again, these observations stand in marked contrast to the epistemological assumptions of functionalism which hold that responsibility for school failure rests with the student.

A minority in the Canadian sample claimed that: i) student failure was a product of the boredom and frustration experienced by students in a tedious classroom environment marked by its fixed curricula, unilateral instruction, and demands for physical and intellectual conformity;[32] ii) blaming learning failure on students, and purported emotional or physiological causes which were beyond the control of teachers, was a way for educationists to absolve themselves of the need to make fundamental changes to the institution of the school which would alleviate student learning problems;[33] and iii) the avoidance of research which challenges functionalist assumptions regarding learning disabilities allows stable employment for certain professional groups to continue at the expense of the clients they are pledged to serve.[34]

The concerns of these researchers indicates that the astructural perception of early Canadian psychologists and special educators, and many practitioners

in the modern special education movement in Canada, may be perpetuating restrictive definitions of intelligence and learning, and by implication, an inhibited understanding of the true nature of giftedness and learning disability. By claiming that intelligence is manifest in the students' intellectual and behavioural conformity with school requirements and that learning is manifest in behaviours conducive to short term memory and speedy recall of isolated facts, these practitioners may be discriminating against students who are critical or independent thinkers and those who need or want more time to reflect on, discuss, and integrate facts into meaningful conceptual schemes. That is, a minority of researchers in our sample indicated that limited constructs of intelligence and learning may be a factor in disabling, rather than enabling, student performance.

An illustration of the effects of cultural overdetermination, astructural perception and the practice of a normal science on modern research was provided by the findings of the study discussed in Chapter Four. The Canadian research on the gifted and learning disabled produced between 1968 and 1989 exemplifies: i) a continuing attempt to vindicate quasi-religious assumptions regarding correct human behaviour by operationalizing functionalist constructs of giftedness and learning disability in the design of contemporary research problems; and ii) a general neglect of legitimate alternative explanations for the behavioural phenomena under observation. The ongoing practice of a

functionalist normal science by contemporary educational psychologists and special educators in Canada may be impeding a more comprehensive understanding of the true nature of human intelligence and learning.

A recent study by Mary Midgely describes the tendency of normal science to break reality into partial observations consistent with the imperatives of mainstream paradigmatic theory. This tendency, in her view, leads to superficial and distorted explanations for the anomalous phenomena which appear during scientific investigations.[35] The astructural, or distorting, perception inherent in a strict practice of normal science is exemplified in the recent category of gifted-learning disabled students formulated by special educators. As described in Chapter Three, it is anomalies such as the paradoxical concept of gifted-learning disability which herald the search for a new means to explain the phenomena under observation -- what Kuhn refers to as paradigmatic shifts.[36]

**The Paradox of the Gifted-Learning Disabled: Anomalies and the Emergence of New Paradigms**

Paul Daniels' recent study of the gifted-learning disabled exemplifies the effects of a functionalist astructural perception, and the continuing practice of a normal science, on recent findings in special education.[37] Rather than investigating the possible involvement of a highly rationalized classroom environment in the etiology of the disability, Daniels classifies students of superior intelligence who fail to learn in school as learning disabled. In this act, he

demonstrates both an inhibited perception of reality and its distorting effect on the interpretative abilities of one involved in the normal science of special education.

Daniels found that the gifted-learning disabled were generally identifiable by their failure to achieve in the classroom in spite of measured superior intelligence.[38] Daniels claims that the identifying characteristics of this disability are: i) flat affect in the classroom described as plodding and always needing to "think things through"; ii) a failure to develop the speed of response necessary for the successful answering of teacher queries and items on timed achievement tests; and iii) neurotic defensive behaviours manifest in a denial of the disability and claims that the school or some aspect of the learning experience is the cause of the problem.[39]

The functionalist model of schooling requires students to quickly memorize isolated bits of information in order to respond accurately to teacher questions and achievement test items. According to Daniels, the behaviour of students who are frustrated with this model, or require more time to integrate these bits of information in order to understand them, is dysfunctional and pathological in some way.

Daniels' claim that students who fail to conform with the intellectual, behavioural, and temporal requirements of a highly rationalized classroom environment are emotionally or neurologically impaired illustrates the continuing

effect of astructural perception and normal science on the development of theory in special education. He neglects to consider the possibility that the etiology of student learning problems might reside in the epistemological axioms and organizational structures of the functionalist model of schooling. The problem, in Daniels' perception, resides with the student and a construct which explains the phenomena in accordance with the orthodox theoretical foundations of special education -- gifted-learning disability -- is formulated. The fact that this formulation is paradoxical is unimportant as long as it is consistent with the governing functionalist system of logic.

The paradox of the gifted-learning disabled is a clear example of a paradigmatic anomaly. It is a manifestation of the limited explanatory power of the existing paradigm of special education and the need for a new paradigm which can provide a more comprehensive explanation for the phenomena under observation. The continuing rationalization of student experience according to standards of functional psychology, standards that were the product of an ascetic Protestant world view embodying Calvinist axioms for correct human behaviour, demonstrates the effect of a culturally induced astructural perception on scientific practice. It is this process of reciprocity between culture and science which contributes to the entrenchment of functionalist definitions of intelligence and learning in the paradigmatic agenda of special education. Once we understand this process and acknowledge its effect on research, given a

preference, sex, and even place of residence -- urban or rural.[18]

Studies presented to this point indicate that during the early part of this century functional psychologists sought to regulate human resources in hopes of fomenting socio-moral progress. The functionalists believed that the construct of individual differences, and the creation of te . struments to measure these purported differences, would allow them to engineer a more efficient, hence moral, society. The functionalists' affinity for intelligence testing and social engineering, however, did not go unquestioned.

In a debate with Terman published in the New Republic between 1922 and 1923, Walter Lippman alleged that the prospect of absolute control implicit in intelligence testing piqued the credulity of functional psychologists and compromised their scientific integrity.[19] He argued that psychometrists who were convinced that they were truly measuring human intelligence would gain unprecedented decision-making power in determining the life expectancies of the individual -- deciding the placement of children in differentiated tracks in elementary school, who should enter high school or university, and who would become common laborers or professionals.[20]

> Readers who have not examined the literature of mental testing may wonder why there is reason to fear such an abuse of an invention which has many practical uses. The answer, I think, is that most of the prominent testers have committed themselves to a dogma which must lead to some abuse. They claim not only that they are really measuring intelligence, but that intelligence is innate, hereditary, and predetermined. They believe that they are measuring the capacity of a human being for all time and that this capacity is fatally fixed by the child's heredity. Intelligence testing

> in the hands of men who hold this dogma could not but lead to an intellectual caste system in which the task of education had given way to the doctrine of predestination and infant damnation.[21]

Lippmann's description of the early psychometrists' dogmatic adherence to the Spencerian construct of inherited intelligence, and his analogy between the premises of intelligence testing and Calvinist assumptions of predestination and damnation, is relevant to this study. The behaviour of functional psychologists involved in the creation of intelligence tests, as described by Lippmann, is consistent with the hypothesis that the 'scientific' principles of functionalism were rooted in religious sentiment and promulgated by the stringent practice of a normal science.

The studies cited above demonstrate that functional psychologists were absorbed in the practice of a normal science which attempted to operationalize Spencer's evolutionary theory, a theory founded in Calvinist assumptions, while ignoring other possible explanations for human behaviour. Galton and Pearson initiated this process with their advocacy of a programme of social eugenics which adjudged the intelligence of human behaviour according to its compliance with Spencerian principles. They then devised statistical techniques which allegedly confirmed this judgement. Inspired by this work, Binet and Terman produced test instruments which assigned an intelligence quotient based on how closely the individuals' behaviour approximated the functional standards first proposed by Spencer. The work of the social eugenicists did not go

rational scientific environment, there arises the need for a paradigm which looks critically at these definitions in light of this more comprehensive perception of reality.

**Summary**

In Chapter Five the findings contained in Chapters Two, Three, and Four were analyzed utilizing the constructs of cultural overdetermination, astructural perception, and normal science proposed by Paulo Freire and Thomas Kuhn. This analysis leads to the conclusion that the entrenchment of definitions of giftedness and learning disability in the theoretical foundations of modern special education may be explained as the product of an ongoing state of reciprocity which exists between Protestant culture and social science.

The conclusion that Protestant culture overdetermined scientific practice in special education was based on evidence which indicated that: i) Herbert Spencer and William James reconceptualized positivist social science, and devised a functional psychology which embodied Calvinist assumptions regarding human behaviour, in accordance with the mandate of an ascetic Protestantism; ii) Canadians Peter Sandiford, William Blatz, Helen Bott, and Samuel Laycock, also true to the Protestant mandate, sought to vindicate the Calvinist assumptions of functional psychology in their constructs of giftedness and learning disability; and iii) modern psychologists, educational psychologists and special educators

perpetuate the influence of Protestant culture on social science in the use of functionalist constructs of giftedness and learning disability in their design of research as demonstrated by the Canadian special education literature produced between 1968 and 1989.

The Calvinist assumptions of an ascetic Protestant culture, embodied in the functionalist constructs of giftedness and learning disability, remain prevalent in contemporary special education research. As a result, our perception of behaviours we observe may be astructural -- distorted by cultural expectations and the strictures of a functionalist paradigm. The paradoxical construct of the gifted-learning disabled serves as both an illustration of this distorted perception and an example of what Kuhn describes as a scientific anomaly. Such an anomaly indicates the limitations of the explanatory usefulness of the existing paradigm and initiates the search for more comprehensive theoretical explanations for anomalous phenomena -- a new paradigm.

The findings of this study indicate the need for a new paradigm in special education -- a research paradigm which takes into account the effects of culture and social circumstances on human behaviour and mentation including its effects on the research practice of educational psychologists and special educators themselves. This observation will be discussed further in Chapter Six.

## Endnotes

1. Wilfred Cude, The Ph.D. Trap. West Bay, Nova Scotia: Medicine Label 1987, 52.

2. Paulo Freire, "Cultural Action and Conscientization", Harvard Educational Review 40(3) 1970, 452-77; Thomas S. Kuhn, The Structure of Scientific Revolutions. 2nd.Ed., Chicago: University of Chicago Press 1970; Paulo Freire, Pedagogy of the Oppressed. New York: Continuum 1970; Paulo Freire, Education for Critical Consciousness, New York: Continuum 1973; Paulo Freire, The Politics of Education: Culture, Power, and Liberation. South Hadley, Massachusetts: Bergin & Garvey 1985; Paulo Freire, A Pedagogy for Liberation: Dialogues on Transforming Education. South Hadley, Massachusetts: Bergin & Garvey 1987.

3. Freire, "Politics of Education", 72; See also Peter L. Berger & Thomas Luckman, The Social Construction of Reality: A Treatise in the Sociology of Knowledge. Garden City, New York: Doubleday 1966.

4. Freire, "Politics of Education", 72.

5. Ibid., 47.

6. Kuhn, "Structure of Scientific Revolutions", 24.

7. Max Weber, The Protestant Ethic and the Spirit of Capitalism: The Relationships Between Religion and the Economic and Social Life in Modern Culture. New York: Charles Scribner's Sons 1958, 129, 132, 136; Anthony Flew, A Dictionary of Philosophy. New York: St. Martin's Press 1979, 69, 283; Roger Scruton, A Dictionary of Political Thought. London: Pan 1982, 84; Richard Gregory, The Oxford Companion to the Mind. Oxford: Oxford University Press 1987, 157.

8. Herbert Spencer, First Principles, 5th Ed. New York: A.L. Burt 1890, 10-11, 37-9, 85-7, 89; William James, Pragmatism A New Name for Some Old Ways of Thinking: Together With Four Related Essays Selected from the Meaning of Truth. Toronto: Longman's-Green 1946, 14-15, 20-40, 53-5, 60.

9. Kurt Danziger, "The Positivist Repudiation of Wundt", Journal of the History of the Behavioral Sciences 15(3) 1979, 205-30.

10. Robert Boakes, From Darwin to Behaviourism: Psychology and the Minds of Animals. Cambridge: Cambridge University Press 1984, 8-13.

11. Ibid., 10-14.

12. William James, The Principles of Psychology, Vol.1., Cambridge, Massachusetts: Harvard University Press 1981, 125-26.

13. Ramsay Cook, The Regenerators: Social Criticism in Late Victorian English Canada. Toronto: University of Toronto Press 1985; B. Arne Wood, Idealism Transformed: The Making of a Progressive Educator. Kingston and Montreal: McGill-Queen's University Press 1985; See also A.B. McKillop, A Disciplined Intelligence: Critical Inquiry and Canadian Thought in the Victorian Era. Montreal and Kingston: McGill-Queen's University Press 1979; A.B. McKillop, Contours of Canadian Thought. Toronto: University of Toronto Press 1987; Marlene Shore, The Science of Social Redemption: McGill, the Chicago School, and the Origins of Social Research in Canada. Toronto: University of Toronto Press 1987.

14. Bertrand Russell, A History of Western Philosophy: And Its Connections with Political and Social Circumstances from the Earliest Times to the Present Day. New York: Simon and Schuster 1945, 811-12; Stephen S. Visher, Scientists Starred 1903-1943 in "American Men of Science": A Study of Collegiate and Doctoral Training, Birthplace, Distribution, Backgrounds, and Developmental Influences. Baltimore: Johns Hopkins University Press 1947, 141-2, 535-6; George Dykhuizen, The Life and Mind of John Dewey. London: Feffer and Simmons 1973, 65, 70-1; Neil Coughlin, Young John Dewey: An Essay in American Intellectual History. London: University of Chicago Press 1975, 78-9; Robert Boakes, From Darwin to Behaviourism: Psychology and the Minds of Animals. Cambridge: Cambridge Univerity Press 1984, 68; Clarence J. Karier, Scientists of the Mind: Intellectual Founders of Modern Psychology. Urbana and Chicago: University of Illinois Press 1986, 29, 102; Robert J. Richards, Darwin and the Emergence of Evolutionary Theories of Mind and Behaviour. London: University of Chicago Press 1987, 246-7, 441-2.

15. Peter Sandiford, "Exceptional School Children", School 4(10) 1916, 836; Peter Sandiford (ed.), Comparative Education: Studies of the Educational Systems of Six Modern Nations. Toronto: Dent 1918, 363-6.

16. Sandiford, "Comparative Education", 432; Peter Sandiford, Educational Psychology: An Objective Study. Toronto: Longmans-Green 1928, 164, 180-1; B. Anne Wood, "Hegelian Resolutions in the New Education Movement: The Putman-Weir Report", Dalhousie Review 62(2) 1982, 254-77; George S. Tomkins, A Common Countenance: Stability and Change in the Canadian Curriculum. Scarborough, Ontario: Prentice-Hall Canada 1986, 158, 161.

17. Christine Shea, The Ideology of Mental Health and the Emergence of the Therapeutic Liberal State: The American Mental Hygiene Movement, 1900-1930. Unpublished Ph.D., University of Illinois at Urbana-Champaign 1980, 138, 141, 153, 155-6.

18. Ibid., 256-61.

19. William E. Blatz & Helen M. Bott, Parents and the Pre-School Child. Toronto: Dent 1928, v-ix, 82, 88, 211, 225-6; William E. Blatz & Helen M. Bott, The Management of Young Children. Toronto: McClelland and Stewart 1930, 42, 56.

20. Blatz & Bott, "Management of Young Children", 42, 56, 231-7; W.E. Blatz, Understanding the Young Child. New York: William Morrow 1944, 50, 52, 159.

21. Shea, "Ideology of Mental Health", 178, 184, 335; George A. Ferguson, "Psychology at McGill"; In Mary J. Wright & C. Roger Myers, History of Academic Psychology in Canada. Toronto: Hogrefe 1982, 46.

22. J.D.M. Griffin, S.R. Laycock & W. Line, Mental Hygiene: A Manual for Teachers. New York: American Book 1940, 97, 138, 144, 146, 149; Blatz, "Understanding the Young Child", 50, 52, 159; Samuel R. Laycock, Gifted Children: A Handbook for the Classroom Teacher. Toronto: Copp-Clark 1957, 9, 11, 29.

23. Griffin, Laycock & Line, "Mental Hygiene", 96, 138, 144, 146, 149; Blatz, "Understanding the Young Child", 57; Laycock, "Gifted Children", 9, 29.

24. John Dewey, "Psychology and Social Practice", Psychological Review 7(2) 1900, 105-24; John Dewey, "The Need for Social Psychology", Psychological Review 24(4) 1917, 266-77; Walter Lippman, "The Reliability of Intelligence Tests"; "A Future for the Tests"; "The Abuse of Tests"; In N.J. Block & Gerald Dworkin, The IQ Controversy: Critical Readings. New York: Pantheon 1976 (Originally Published in New Republic 1922-3); Karen Horney, The Neurotic Personality of Our Time. New York: Norton 1937; Erich Fromm, Escape From Freedom. New York: Avon 1937.

25. Henry Giroux, David Shumway, Paul Smith & James Sosnoski, "The Need for Cultural Studies: Resisting Intellectuals and Oppositional Public Spheres", Dalhousie Review 64(2) 1984, 472-86; Cude, "Ph.D. Trap".

26. Giroux, Shumway, Smith & Sosnoski, "Need for Cultural Studies".

27. Ibid.

28. Cude, "Ph.D. Trap", 50-2.

29. Margaret Parker, "What Can Be Learned from Brilliance in Children", Special Education in Canada 52(1) 1977, 20; Denis Cassivi, "Special Programs for the Gifted: A Critique of some Arguments", McGill Journal of Education 14(2) 1979, 191,193-4, 197; Joan L. Linn, "Should Learning Assistance Teachers Provide Programs for the Gifted, Talented and/or Creative Pupil in the Elementary School", B.C. Journal of Special Education 4(3) 1980, 228; Donald W. Knowles, "Myth of the Greenhouse Child: Hazards of Viewing Giftedness as the Plant that Survives", B.C. Journal of Special Education 7(2) 1983, 101, 104-5, 107; Marian A. Stelmaschuk, Identified and Unidentified Gifted: A Comparative Analysis. Unpublished Ph.D., University of Alberta 1986, 3, 29-32; Colin J. Laine, Relationships Between the Structure of Intellect and Characteristics of Students Identified as Gifted and Selected for Special Programming. Unpublished Ed.D., University of British Columbia 1987, 8-9, 96, 109; Norah E. Maier, A Reconceptualization of the Education of the Gifted Through the Preparation of Teachers Instructional Design. Unpublished Ph.D., University of Toronto 1988, 84.

30. Colin J. Laine, "Relationships Between the Structure of Intellect", 2, 6, 10-11; Gillian B. Rejskind, Sex Differences and Specialization in the Divergent-Thinking Styles of Gifted Children. Unpublished Ph.D., Concordia University 1987, 6-7, 21.

31. Parker, "What Can Be Learned", 19-21; Cassivi, "Special Programs for the Gifted", 193, 196; Stanley Blank, Joyce Fox & Gordon Nelson, "Facilitating Creative Thinking of Gifted Elementary School Pupils", Special Education in Canada 52(3) 1978, 10; Ruth Banks, "How Would You Like it if You were Gifted", Special Education in Canada 53(2) 1979, 12-14; Phillip E. Vernon, "Programs for Gifted Children", Special Education in Canada 53(4) 1979, 31-2; Stanley S. Blank & David C. Thomas, "Enhancing Creative Thinking with Gifted Children in the Early Intermediate Grades", B.C. Journal of Special Education 7(2) 1983, 172-3; Donald W. Knowles, "Myth of the Greenhouse Child", 110; Julia L. Ellis, "Creatively Gifted Children in Regular School Programs: Their Problems and a Proposed Solution", B.C. Journal of Special Education 9(1) 1985, 69-71; Dianne Van Hesteren, Life in Classrooms for Gifted Children. Unpublished Ph.D., University of Alberta 1985; Stelmaschuk, "Identified and Unidentified Gifted", 63, 372; Laine, "Relationships Between the Structure of Intellect", 7, 95-6.

32. Larry Miller, "Applying Psycholinguistic Research to Reading Disabilities", Special Education in Canada 53(4) 1979, 15-17; Donald M. Little, "Learning Disabilities and the Severely Learning Disabled -- Status Quo in B.C.", B.C. Journal of Special Education 4(2) 1980, 158-9; Anne O'Conner, "Early Screening - Some Problems and Practices", B.C. Journal of Special Education 4(3) 1980, 273-80; Graham J. Fishburne, "Stimulant Drug Therapy and Children with Attention Deficit Disorder: An Ethical Issue", McGill Journal of Education 24(1) 1989, 56, 58, 60.

33. David Leitch, Special Education: A Search for a Critical Theory -- A Canadian Perspective on Theory and Practice in Special Education. Unpublished Ph.D., Dalhousie University 1986, vii, 10, 35-40, 84-7, 195, 251, 257.

34. Ibid., 10, 84-7.

35. Mary Midgely, Wisdom, Information, and Wonder: What is Knowledge for?. London: Routledge 1989, 18-19.

36. Kuhn, "Structure of Scientific Revolutions", 52-7.

37. Paul R. Daniels, Teaching the Gifted/Learning Disabled Child. London: Aspen 1983· See also Carolyn Yewchuk, "Learning Disabilities Among Gifted Children", Special Education in Canada 58(3) 1984, 95-6; Genevieve Fedoruk & Carolyn Yewchuk, "The Gifted Learning Disabled: Identification and Instruction", Education Canada 26(4) 1986, 25-9; C. Yewchuk, "Issues in Identification of Gifted/Learning Disabled Children", B.C. Journal of Special Education 10(3) 1986, 201-9.

38. Daniels, "Teaching the Gifted/Learning Disabled, 3-4.

39. Ibid., 9-15.

# CHAPTER SIX

## SUMMARY

> It may be useful to reflect periodically on the idea that it has been the questioning and testing of even our most fundamentally and long accepted convictions that have advanced knowledge. It takes courage as well as an intelligent vision to engage in a meaningful programmatic shift which is alien to one's personal professional history
>
> Florent Dumont
> Conrad Lecomte
> McGill Journal of Education, 1984[1]

A resurgence of cognitivist psychology in the 1940s inspired a critical analysis of functionalist constructs which permeated psychological theory.[2] A study by David Leitch found this analysis had little effect on special educators because these constructs were required to identify the clientele on which their livelihood depended.[3] The purpose of this study was to determine whether there was also a system of logic which sustained the entrenchment of the functionalist constructs of giftedness and learning disability in special education. It was proposed that a synthesis of socio-economic and intellectual explanations for the entrenchment of these constructs would contribute to a more extensive critical theory of Canadian special education.

### Overview of the Study

Studies discussed in Chapter One provided both theoretical and empirical support for hypothesizing i) a connection between the world view of ascetic

Protestantism and theory in psychology and education; and ii) the perpetuation of these theoretical constructs through the practice of a normal science in these fields.

To test these hypctheses data was gathered in two ways. For the historical portion of the study, contained in Chapters Two and Three, both primary and secondary sources were analyzed to determine whether or not the founding theories and principles of psychology and education were congruent with the Calvinist doctrines of ascetic Protestantism. A sample of Canadian special education research produced between 1968 and 1989 was analyzed in Chapter Four to establish whether or not such quasi-religious theories and principles were evident in the contemporary research practices of psychologists, educational psychologists and special educators.

This study revealed that the theoretical foundations of psychology, educational psychology, and special education were congruent with the Calvinist assumptions of an ascetic Protestant world view and that these assumptions were being perpetuated in contemporary research practices in Canada.

The conclusion that Protestant culture overdetermined scientific practice in special education was based on evidence which indicated that: i) Herbert Spencer and William James reconceptualized positivist social science and devised a functional psychology which embodied Calvinist assumptions regarding human behaviour in accordance with the mandate of an ascetic Protestantism;

ii) Canadians Peter Sandiford, William Blatz, Helen Bott, and Samuel Laycock, also true to the Protestant mandate, sought to vindicate the Calvinist assumptions of functional psychology in their constructs of giftedness and learning disability; and iii) modern psychologists, educational psychologists and special educators perpetuate the influence of Protestant culture on social science in the use of functionalist constructs of giftedness and learning disability in their design of research as demonstrated by the Canadian special education literature produced between 1968 and 1989.

In the discussion of the findings of this study contained in Chapter Five it was concluded that the entrenchment of definitions of giftedness and learning disability in special education research was the product of a state of reciprocity which exists between culture and science. This conclusion initiated a call for an analysis of student giftedness and learning disability in a more ecological context; that is, a context which includes a consideration of the effects of culture and social circumstances on human behaviour and mentation including their effects on those researching these phenomena.

**Concerns with the Functionalist Paradigm**

Seymour Sarason and Max Charlesworth claim that an analysis of the effect of culture on research practice is a necessary step in the theoretical evolution of the social sciences.[4] The present study attempted to take a tentative

first step along this path by analyzing the theories and principles which guided the design of research problems, and the formulation of the constructs of giftedness and learning disability, in the sub-discipline of special education. The analysis proceeded in light of the cultural and socio-historical events which contributed to the formulation of these theories, principles, and constructs.

This analysis indicated a need to investigate the epistemological, organizational, and technical assumptions active in the institution of the school. To what extent do traditional functionalist definitions of intelligence and learning, and the highly rationalized organization of schools, curricula, and teaching on the basis of these definitions, enable or disable student cognition? Such an investigation would move us beyond constructs of individual difference and specific etiology as determining factors in cases of student success and failure to an ecological study of the educative process -- a study which looks critically at the effects of the learning environment of the school on student performance.

**Epistemological Concerns**

James Ysseldyke and Bob Algozzine found that anyone defined as different is at risk of being categorized and marginalized given the preeminence of the epistemological assumptions of functionalism and the institutional arrangements, curriculum, and instructional practices these assumptions engender in the schools.[5] Are functionalist definitions of intelligence and learning, definitions which lead to the marginalization of certain students, legitimate?

Recent studies of human intellect challenge the functionalists' epistemological assumption that intelligence is genetically fixed -- is a phenomena independent of environmental stimulation and development. James Lawler and Stephen Jay Gould argue that the functionalist definition of intelligence neglected to explore societal and institutional culpability in the fostering of behaviours deemed to be intelligent and were, therefore, superficial and inadequate.[6] Robert Sternberg's construct of intellect as mental mechanisms stimulated by one's unique life experiences and the socio-cultural rubric in which these experiences occur, addresses the shortcomings of the functionalist definition of intelligence as described by Lawler and Gould.[7] Another construct of intelligence which addresses these shortcomings is Howard Gardner's "frames of mind". This construct proposes that intellect is a capacity for processing information and creating new knowledge manifest in a variety of forms.[8]

The popular definition of intelligence is not the only product of a functionalist epistemology to attract critical scrutiny. As discussed in Chapter One, a resurgence of cognitivist psychology also challenged functionalist assumptions in its call for a more comprehensive definition of learning.

Lashley found that learning could not be reduced to a sequence of stimulus-response events, rather, one must take into consideration both the individual's past experiences, or intellectual organization, and the process by which the individual integrates old and new knowledge.[9] Jerome Bruner, Janet

Goodnow, and George Austin found that learning, or cognition as they referred to it, was more than an ability to recall isolated facts, it also involved a process of conceptual organization -- categorizing these facts, and making inferences on the basis of these categories, leading to greater comprehension.[10] Studies by David Ausubel, Joseph Novak, Helen Hanesian, and Bob Gowin found that the process of intellectual organization involves the individual's active synthesis of old and new knowledge leading to a meaningful learning experience in contrast to the fragmented understanding tacit to serial order learning.[11]

These studies indicate serious epistemological shortcomings inherent in functionalist definitions of intelligence and learning, shortcomings which have gained only cursory acknowledgement in the Canadian special education literature as discussed in Chapter Four. In a parallel development, studies by Arthur Wise and John Goodlad found that the organization of schools on the basis of functionalist assumptions may actually impede student learning.[12]

**Organizational Concerns**

Wise found that highly rationalized models of school administration, curricula, and teaching techniques are predicated on the erroneous assumption that learning, and intelligence, is a matter of the serial-order acquisition of information and the maximization of achievement test scores. He claims that the current organization of schools fails to accommodate recent findings regarding the cognitive processes tacit to actual human learning.[13] Similarly, Goodlad

found that the organizational arrangement of schools into age-grades, intellectual tracks, and restrictive time structures, and the reduction of teaching to technique and knowledge to isolated bits of information, ignores the contemporary research in learning theory.[14]

Goodlad proposes that the organization of schools is an etiological factor in learning failure and incorrigibility in students.[15] This finding is substantiated by the findings of curriculists who claim that intellectual development in schools takes a back seat to demands for conformity leading to disillusionment and failure in both students and teachers.

**Technical Concerns**

Michael Apple, David Nyberg, Kieran Egan, Lois Weiss, Linda McNeil, and Frank Smith assert that the actual raison d'être of schooling -- the hidden curriculum -- is the production of functional members of society and the perpetuation of the status quo.[16] These authors claim that the hidden curriculum is embodied in a technical model of teaching which attempts to maximize the functional behaviour, or achievement, of students by modulating content and the pace of instruction and using achievement tests to assure that both teachers and students conform to modular objectives. This model is said to reduce the educative process to a series of work routines eliminating time for multilateral exchanges and rational, critical, or creative thinking.[17]

The findings of these authors demonstrates how functionalist models of curriculum and instruction may cause student learning problems. By eliminating time for multilateral exchanges, and the need for any sustained rational or critical analysis of information, these models hinder the very processes which the cognitivists claim students need to assimilate facts into meaningful conceptual schemes -- this model frustrates student learning. Ironically, any student whose behaviour does not conform with the demands of this model of schooling -- any student who fails to achieve in the prescribed manner -- is likely to be labeled deviant or disabled in some way by special educators.[18]

The brief review above indicates the need for a comprehensive investigation of the epistemological, organizational, and technical assumptions of functionalism which are predominant in the institution of the school. This investigation should determine whether or not these assumptions, and the institutional arrangements they engender, enable or disable student performance.

**An Ecological Paradigm: Questions for Further Research**

The continuing rationalization of human experience according to the Calvinist standards of functional psychology serves to illustrate how practitioners, once launched on their search for evidence to vindicate these standards, gradually lose sight of their cultural relativity and tentative nature -- the actions of these practitioners exemplify the effects of cultural overdetermination, astructural

perception, and the practice of a normal science on their scientific perspective. Once the relative and tentative nature of these standards is acknowledged, given a rational or scientific environment, the need arises for their subjection to a critical analysis in light of this more comprehensive perception of events. Such an analysis might address the following questions:

1. How does the definition of intelligence as genetically determined and embodied in IQ scores help or inhibit a comprehensive understanding of human intellect?
2. In what ways does the definition of student normality as conformity with the intellectual and behavioural requirements of the school help or inhibit the development of reflective, critical, divergent or independent thinking in students?
3. How does the definition of learning as the memorization of isolated bits of information measured by achievement tests help or inhibit a comprehensive understanding of human cognition?
4. Does the current organization and technical arrangement of schools and classrooms help or inhibit the learning of students who need or desire more intellectual stimulation and time to reflect on the information presented in order to assimilate it into some meaningful mental scheme?

5. Are students who fail to learn within the confines of these organizational and technical structures personally disabled, or are these essentially administrative structures contributing to student learning problems?

**Conclusion**

In proceeding according to the mandate of ascetic Protestantism, the functionalist movement in psychology, educational psychology, and special education may best be understood as a twentieth century manifestation of the Protestant reformation rather than an open minded analysis of human experience. Without an ecological perspective in the research practices of special education this field is destined to remain primarily an ideologically driven, rather than an evidence driven, enterprise.

The findings of this study indicate that the entrenchment of the constructs of giftedness and learning disability in the theoretical foundations of special education is more than the product of a burgeoning service industry and the economic self-interest of its practitioners. It is also the product of the reciprocity between cultural assumptions and the perspective of social scientists. This reciprocal alliance is seen in the perspective of nineteenth century moral philosophers who sought to vindicate Calvinist assumptions regarding proper human behaviour in the theories and principles of the emergent social sciences;

and the promulgation of these assumptions in the practice of a normal science by psychologists, educational psychologists, and special educators throughout most of the twentieth century.

The constructs of giftedness and learning disability remain entrenched in special education because they 'make sense' within a predominant functionalist system of logic tacit to both North American culture and the practice of social scientists acting within the domain of that culture. In this system of logic, conformity -- the performance of one's socio-moral duty -- is synonymous with normality and non-conformity synonymous with abnormality. Thus, it is more than superior measured intelligence which distinguishes the gifted student, true giftedness is manifest in exceptional conformity with the intellectual and behavioural requirements of the school. Learning disability, on the other hand, is manifest in a failure to conform with these requirements. Similarly, in light of functionalist logic, providing services for these students becomes more than a matter of economic self-interest, it is a moral obligation or duty.

The predominance of functionalism in the theoretical foundations of psychology, educational psychology, and special education inhibits our understanding of the nature of human intelligence and mentation. Unaware of the limitations this world view imposes on their perception, special educators routinely interpret conformity with the intellectual and behavioural requirements of the school as the mark of giftedness and deviation as a sign of emotional

disturbance or disability for which the student is mostly culpable. Astructural perception in special educators is the product of the union of culture and science. Its contribution to the distortion of reality is evident in the paradoxical construct of the gifted-learning disabled discussed in Chapter Five. This construct demonstrates a willingness to blame the victim of paradigmatic assumptions and the institutional arrangements they inspire rather than questioning the legitimacy of these assumptions and arrangements.

It would be erroneous to claim that no student is intellectually exceptional, neurologically impaired, physically disabled, or emotionally disturbed. There are students who require special services and no amount of alteration to the organization of schools or the design of curricula and instruction will change this fact. At issue here is the entrenchment of assumptions that lead to the mislabeling of many students and the inhibition of an avenue for legitimate research in special education.

A knowledge of the astructural perception induced by the theoretical foundations of a functionalist special education, and its constructs of giftedness and learning disability, signals the need for practitioners to explore the possible pejorative effect of these founding theories on student attainment. To what extent are these theoretical foundations and their application in the organization and technical practices of schooling at the root of a misperception of student success and failure?

## Endnotes

1. Florent Dumont & Conrad Lecomte, "Distortions in Educational Research: A Lattice of Constraints in the 1980s", McGill Journal of Education 19(3) 1984, 225.

2. Howard Gardner, The Mind's New Science: A History of the Cognitive Revolution. New York: Basic 1985.

3. David Leitch, Special Education: A Search for a Critical Theory -- A Canadian Perspective on Theory and Practice in Special Education. Unpublished Ph.D., Dalhousie University 1986, vii, 10, 35-40, 84-7, 195, 251, 257.

4. Seymour Sarason, Psychology Misdirected. London: Collier Macmillan 1981; Max Charlesworth, Science, Non-Science, and Pseudo-Science: Bacon, Popper, Lakatos, Kuhn, and Feyerabend on Defining Science. Victoria, Australia: Deakin University Press 1982.

5. James E. Ysseldyke & Bob Algozzine, Critical Issues in Special and Remedial Education. Boston: Houghton Mifflin 1982, 25,107.

6. James M. Lawler, IQ, Heritability and Racism. New York: International 1978, 39, 51-2; Stephen Jay Gould, Mismeasure of Man. London: Norton 1981, 21, 147, 156, 176, 198, 238-9; Stephen Jay Gould, An Urchin in the Storm: Essays About Books and Ideas. London: Norton 1987, 107-54.

7. Robert J. Sternberg, Intelligence, Information Processing, and Analogical Reasoning: The Componential Analysis of Human Abilities. London: Erlbaum 1977; Robert J. Sternberg, "Intelligence Research and the Interface Between Differential and Cognitive Psychology", In Robert J. Sternberg & Douglas K. Detterman (eds.), Human Intelligence: Perspectives on Its Theory and Measurement. Norwood, New Jersey: Ablex 1979; Robert J. Sternberg, Beyond IQ: A Triarchic Theory of Human Intelligence. London: Cambridge University Press 1985; Robert J. Sternberg, The Triarchic Mind: A New Theory of Human Intelligence. Markham, Ontario: Viking 1988; Robert J. Sternberg, Metaphors of Mind: Conceptions of the Nature of Intelligence. Cambridge: Cambridge University Press 1990.

8. Gardner, Frames of Mind: The Theory of Multiple Intelligences. New York: Basic 1983.

9. K.S. Lashley, "The Problems of Serial Order in Behavior"; In Lloyd A. Jeffress (ed.), Cerebral Mechanisms in Behavior: The Hixon Symposium. London: Chapman and Hall 1951, 112-13, 115-18, 125-6, 129, 135.

10. Jerome S. Bruner, Jacqueline J. Goodnow & George A. Austin, A Study of Thinking. London: Wiley 1956, vii, 231-6, 244, 246.

11. David P. Ausubel, Educational Psychology: A Cognitive View. Toronto: Holt, Rinehart & Winston 1968; David P. Ausubel, Joseph D. Novak & Helen Hanesian, Educational Psychology: A Cognitive View. 2nd.Ed., Toronto: Holt, Rinehart & Winston 1978; Joseph D. Novak & D. Bob Gowin, Learning How to Learn. Cambridge: Cambridge University Press 1984.

12. Arthur E. Wise, "Why Educational Policies Often Fail: The Hyperationalization Hypothesis", Curriculum Studies 9(1) 1977, 43-57; Legislated Learning: The Bureaucratization of the American Classroom. Berkeley: University of California Press 1979; John I. Goodlad, A Place Called School: Prospects for the Future. London: McGraw-Hill 1984.

13. Wise, "Why Educational Policies Often Fail", 43-6, 48-9, 51-2, 54, 57; Wise, "Legislated Learning", 74, 78-80, 98-9, 101.

14. Goodlad, "Place Called School", 266-7.

15. Ibid., 323-4.

16. Michael W. Apple, Ideology and Curriculum. London: Routledge and Kegan Paul 1979; David Nyberg & Kieran Egan, The Erosion of Education: Socialization and the Schools. New York: Teachers College, Columbia University 1981; Michael W. Apple & Lois Weiss (eds.), Ideology and Practice in Schooling. Philadelphia: Temple University Press 1983; Linda M. McNeil, "Defensive Teaching and Classroom Control"; In Apple & Weiss, "Ideology and Practice", 114-42; Frank Smith, Insult to Intelligence: The Bureaucratic Invasion of Our Classroom. New York: Arbor House 1986.

17. Apple, "Ideology and Curriculum"; Nyberg & Egan, "Erosion of Education", ix, 4, 13, 34-5; Apple & Weiss, "Ideology and Practice", 143; McNeil, "Defensive Teaching", 117-8, 120; Smith, "Insult to Intelligence".

18. Sid Sodhi, Myths in Special Education. Detroit: Harlo Press 1974; Ysseldyke & Algozzine, "Critical Issues", 25, 107; D. Leitch & S.S. Sodhi, "Specialness of Special Education", B.C. Journal of Special Education 10(4) 1986, 349-58; Leitch, "Special Education: A Search for a Critical Theory".

# APPENDICES

APPENDIX A

# CANADIAN JOURNALS

1. Alberta Journal of Educational Research
2. B.C. Journal of Special Education
3. Canadian Education and Research/Education Canada
4. Canadian Journal of Behavioural Science
5. Canadian Journal of Education
6. Canadian Journal of Psychology
7. Canadian Journal of School Psychology
8. Canadian Journal of Special Education
9. Canadian Psychologist/Canadian Psychological Review: Psychologie Canada
10. McGill Journal of Education
11. Special Education in Canada/Canadian Journal for Exceptional Children

APPENDIX B

## POINT OF ORIGIN: ARTICLES AND THESES

| | LD | GIFTED | TOTAL |
|---|---|---|---|
| **Canada:** | | | |
| British Columbia | 24 | 17 | 41 |
| Alberta | 24 | 11 | 34 |
| Saskatchewan | 9 | 5 | 14 |
| Manitoba | 1 | 1 | 2 |
| Northwest Territories | 0 | 3 | 3 |
| Ontario | 41 | 23 | 64 |
| Quebec | 8 | 5 | 13 |
| New Brunswick | 7 | 1 | 8 |
| Nova Scotia | 3 | 0 | 3 |
| **Other:** | | | |
| Great Britain | 1 | 0 | 1 |
| United States | 8 | 2 | 10 |

Note:

1. Discrepancy between number of articles and theses (180) and number of points of origin (192) is due to the fact that authors who collaborated on studies were from different locales.

2. Point of origin for theses was determined by the location of the university in which the doctorate was completed.

APPENDIX C

## ANALYSIS OF SAMPLE BY OCCUPATION OF AUTHOR

| | LD | GIFTED | TOTAL |
|---|---|---|---|
| **Academics:** | | | |
| University Faculty | 62 | 22 | 84 |
| Doctoral Candidate | 32 | 10 | 48 |
| **Practitioners:** | | | |
| Ministry Personnel | 0 | 4 | 4 |
| Administrators | 1 | 5 | 6 |
| Teachers | 22 | 16 | 38 |
| Hospital Staff | 5 | 0 | 5 |
| Private Consultants | 1 | 2 | 3 |
| Students | 2 | 2 | 4 |
| **Other:** | | | |
| Interest Groups | 2 | 1 | 3 |
| Unknown | 11 | 4 | 15 |

APPENDIX D

# CANADIAN UNIVERSITIES

Acadia
Alberta
British Columbia
Brock
Calgary
Concordia
Dalhousie
McGill
McMaster
New Brunswick
Ottawa
Quebec
Queens
Regina
Saskatchewan
Simon Fraser
St. Mary's
Toronto
Victoria
Waterloo
Western Ontario
Windsor
York

Note:

1. University affiliation of faculty or doctoral candidates whose studies appeared in the sample.

# BIBLIOGRAPHY

## BIBLIOGRAPHY

Adams, J.S. "A Summer Day Camp for Elementary School Children with Learning Disabilities", Canadian Journal for Exceptional Children 2(4) 1986, 136-8.

Alexander, D.W. Learning Disabled Adolescents and Their Families: Reciprocal Relationships Between Self-Concept and Family Functioning. Unpublished Ph.D., University of Calgary 1986.

Andrews, J. and H. Janzen. "Objectifying the Kinetic School Drawing (KSD): A Comparison of L.D. vs. Non-L.D. Grade 5 Students", Canadian Journal of School Psychology 3(2) 1988, 27-51.

Antliffe-Froom, C. Information Processing Strategies Used by Intellectually Gifted, Retarded, and Normal Children. Unpublished Ed.D., University of Toronto 1986.

Apple, M.W. Ideology and Curriculum. London: Routledge and Kegan Paul 1979.

Apple, M.W. Education and Power. London: Ark 1982.

Apple, M.W. and L. Weis, (Eds.). Ideology and Practice in Schooling. Philadelphia: Temple University Press 1983.

Arkell, B. "Educating Gifted Students: How Much Do You Know?", Special Education in Canada 52(3) 1978, 5-6.

Armitage, D. "Can Handicapping Conditions Be Prevented? A Focus on Primary Intervention", B. C. Journal of Special Education 2(2) 1978, 147-58.

Armour, L. and E. Trott. The Faces of Reason: An Essay on Philosophy and Culture in English Canada 1850-1950. Waterloo, Ontario: Wilfred Laurier Press 1981.

Ausubel, D.P. Educational Psychology: A Cognitive View. Toronto: Holt, Rinehart, and Winston 1968.

Ausubel, D.P., J.D. Novak and H. Hanesian. Educational Psychology: A Cognitive View. 2nd Ed., Toronto: Holt, Rinehart and Winston 1978.

Banks, R. "How Would You Like It If You Were Gifted", Special Education in Canada 53(2) 1979, 12-14.

Barnett, H.G. "The Learning Disability 'Label' - Beneficial or Detrimental?", B. C. Journal of Special Education 2(2) 1978, 159-66.

Barrow, R. The Canadian Curriculum. London, Ontario: University of Western Ontario Press 1978.

Barrow, R. Giving Teaching Back to Teachers: A Critical Introduction to Curriculum Theory. London, Ontario: Althouse, University of Western Ontario 1984.

Barton, L. and S. Tomlinson (Eds.). Special Education and Social Interests. London: Croom Helm 1984.

Besner, D. "Deep Dyslexia and the Right Hemisphere Hypothesis: Evidence from the U.S.A. and the U.S.S.R.", Canadian Journal of Psychology 37(4) 1983, 565-91.

Blair, F.X. "Where Are We Going in Learning Disabilities?", Special Education in Canada 43(2) 1969, 15-21.

Blank, S., J. Fox, and G. Nelson. "Facilitating Creative Thinking of Gifted Elementary School Pupils," Special Education in Canada 52(3) 1978, 10-15.

Blank, S.S. and D.C. Thomas. "Enhancing Creative Thinking with Gifted Children in the Early Intermediate Grades", B.C. Journal of Special Education 7(2) 1983, 171-80.

Blank, S.S. and J.L. Ellis. "Challenge Classes for Gifted Secondary Students: A Feasible and Potent Method of Programming for the Gifted," B.C. Journal of Special Education 11(4) 1987, 327-32.

Blatz, W.E. and Bott, H.M. Parents and the Pre-School Child. Toronto: Dent 1928.

Blatz, W.E. and Bott, H.M. The Management of Young Children. Toronto: McClelland and Stewart 1930.

Blatz, W.E. Understanding the Young Child. New York: William Morrow 1944.

Blatz, W.E. Human Security: Some Reflections. Toronto: University of Toronto Press 1966.

Block, N.J. and G. Dworkin. The IQ Controversy: Critical Readings. New York: Pantheon 1976.

Bloom, B. and K. Coulter. "Study Strategies for the Learning Disabled Adolescent in the Mainstream", Special Education in Canada 56(3) 1982, 24-5.

Blowers, E.A. "Grade One Test Scores of Pupils Later Classified as Educable Mentally Retarded, Learning Disabled and Normal," Special Education in Canada 55(2) 1981, 13-15.

Blowers, E.A. "The C's - A Case History of a 'Learning Disabled' Family", Special Education in Canada 56(2) 1982, 15-18.

Boakes, R. From Darwin to Behaviourism: Psychology and the Minds of Animals. Cambridge: Cambridge University Press 1984.

Boersma, F.J. and J.W. Chapman. "Academic Self-Concept, Achievement Expectations, and Locus of Control in Elementary Learning Disabled Children", Canadian Journal of Behavioural Science 13(4) 1981, 349-58.

Bourque, J. and A.K.F. Li, "Perceived Competence, Social Adjustment and Peer Relations of Intellectually Gifted Children in Segregated Versus Regular-Classroom Settings", Canadian Journal of Special Education 23(1) 1988, 191-200.

Bowers, P.G., R.A. Steffy and L.B. Swanson. "Naming Speed, Memory, and Visual Processing in Reading Disability", Canadian Journal of Behavioural Science 18(3) 1986, 209-23.

Brebner, J.B. Scholarship for Canada: The Function of Graduate Studies. Ottawa: Canadian Social Science Research Council 1945.

Brooker, B. The Development of Selective Attention in Normal and Learning Disabled Boys: An Evoked Potential and Behavioural Analysis. Unpublished Ph.D., Queen's University 1980.

Bruner, J.S., J.J. Goodnow and G.A. Austin. A Study of Thinking. London: Wiley 1956.

Caldwell, W. Pragmatism and Idealism. London: Adam and Charles Block 1913.

Callahan, R.E. Education and the Cult of Efficiency: A Study of the Social Forces That Have Shaped the Administration of the Public Schools. Chicago: University of Chicago Press 1962.

Canadian Association for Children with Learning Disabilities, Definition of Learning Disabilities. Ottawa: CACLD 1981.

Canadian Medical Association, The Canadian National Committee for Mental Hygiene: Report of a Survey Made of the Organization in 1932. Ottawa: Metropolitan Life Insurance Company 1932.

Canadian National Committee for Mental Hygiene, "The First Year of the Canadian National Committee for Mental Hygiene", Canadian Journal of Mental Hygiene 1(1) 1919, 70-6.

Cannon, N. "Special Education for the Gifted", Education Canada 29(3) 1989, 26-9.

Caplan, P.J. and L. Dinardo. "Is There a Relationship Between Child Abuse and Learning Disability?", Canadian Journal of Behavioural Science 18(4) 1986, 367-80.

Carr, W. and S. Kemmis. Becoming Critical: Education, Knowledge and Action Research. London and Philadelphia: Falmer 1986.

Cassivi, D. "Special Programs for the Gifted: A Critique of Some Arguments," McGill Journal of Education 14(2) 1979, 189-98.

Chapman, J. Affective Characteristics of Learning Disabled and Normally Achieving Elementary School Children: A Comparative Study. Unpublished Ph.D., University of Alberta 1979.

Charlesworth, M. Science, Non-Science, and Pseudo-Science: Bacon, Popper, Lakatos, Kuhn, and Feyerabend on Defining Science. Victoria, Australia: Deakin University Press 1982.

Cherneskey, M. A Touch of Laycock: A Study of S.R. Laycock Educator and Apostle of Mental Health. Unpublished M.Ed., University of Saskatchewan 1978.

Cho, S. Cognitive Strategies, Metacognition, and Knowledge Base of Gifted, Average, and Learning Disabled Children. Unpublished Ph.D., University of Alberta 1986.

Clarke, B.R. and D.C. Kendall. "Learning Disabled or Hearing Impaired: A Folly of Forced Categories", B. C. Journal of Special Education 4(1) 1980, 13-27.

Clarke, C.K. "The Story of the Toronto General Hospital Psychiatric Clinic", Canadian Journal of Mental Hygiene 1(1) 1919, 30-7.

Coles, G. The Learning Mystique: A Critical Look at 'Learning Disabilities'. New York: Pantheon 1987.

Cook, R. The Regenerators: Social Criticism in Late Victorian English Canada. Toronto: University of Toronto Press 1985.

Cooper, D. Psychiatry and Anti-Psychiatry. New York: Ballantine 1967.

Cooper, D. The Death of the Family. New York: Vintage 1970.

Coughlin, N. Young John Dewey: An Essay in American Intellectual History. London: University of Chicago Press 1975.

Cude, W. The Ph.D. Trap. West Bay, Nova Scotia: Medicine Label 1987.

Cummins, J. and J.P. Das. "Cognitive Processing and Reading Difficulties: A Framework for Research", Alberta Journal of Education Research 23(4) 1977, 245-56.

Daly, J. Identification of Subtypes of Learning Disabled Children with Discalculia at Three Age Levels: A Neuropsychological, Multivariate Approach. Unpublished Ph.D., University of Windsor 1983.

Daniels, P.R. Teaching the Gifted/Learning Disabled Child. London: Aspen 1983.

Danziger, K. "The Positivist Repudiation of Wundt", Journal of the History of the Behavioural Sciences 15(3) 1979, 205-30.

Davey, K.I. Social Skills Training with Gifted Children. Unpublished Ph.D., University of Toronto 1988.

Davis, M.K. "The Problem Reader in the Classroom", Canadian Psychologist 9(2) 1968, 162-73.

Dawson, B. "Preparing Teachers for Children with Learning Disabilities", Special Education in Canada 42(3) 1968, 31.

Day, H.I. "The Importance of Arousal as a Motivational Factor in Learning to Read", Canadian Psychologist 9(2) 1968, 154-61.

DeLuca, J. Identification of Subtypes of Learning Disabled Children with Arithmetic Disorders: A Neuropsychological Multivariate Analysis. Unpublished Ph.D., University of Windsor 1986.

Dewey, J. "The Reflex Arc Concept in Psychology", The Psychological Review 3(4) 1896, 357-70.

Dewey, J. "Psychology and Social Practice", Psychological Review 7(2) 1900, 105-24.

Dewey, J. "The Need for Social Psychology", Psychological Review 24(4) 1917, 266-77.

Dickinson, H.D. The Two Psychiatries: The Transformation of Psychiatric Work in Saskatchewan, 1905-1984. Regina: Canadian Plains Research Center, University of Regina 1989.

Dudley-Marling, C. "Assessing the Reading and Writing Development of Learning Disabled Students: A Holistic Perspective", Canadian Journal of Special Education 2(1) 1986, 33-43.

Dumont, F. and C. Lecomte. "Distortions in Educational Research: A Lattice of Constraints in the 1980's", McGill Journal of Education, 19(3) 1984, 215-27.

Dykhuizen, G. The Life and Mind of John Dewey. London: Feffer & Simons 1973.

Eaton, M. "Parents as Tutors: Help or Hinderance for the Learning Disabled", B. C. Journal of Special Education 2(4) 1978, 279-84.

Eisner, E.W. The Educational Imagination: On the Design and Evaluation of School Programs. 2nd Ed. London: Collier-Macmillan 1985.

Eisner, E.W. and E. Vallance. (Eds.) Conflicting Conceptions of Curriculum. Berkeley: McCutchan 1974.

Ellis, J.L. "Creatively Gifted Children in Regular School Programs: Their Problems and a Proposed Solution", B.C. Journal of Special Education 9(1) 1985, 69-86.

Endler, N.S. and H.A. Minden. "Anxiety, Conformity, and Self-Concept as Related to Learning Disabilities", Special Education in Canada 47(1) 1972, 35-9.

Faux, D.K. The Relationship of Spatial Memory Factors to Reading and Arithmetic Disabilities in Children. Unpublished Ph.D., University of Windsor 1985.

Fay, B. Critical Social Science: Liberation and its Limits. Ithaca, New York: Cornell University Press 1987.

Fedoruk, G. and C. Yewchuk. "The Gifted Learning Disabled: Identification and Instruction", Education Canada 26(4) 1986, 25-9.

Fenichel, A. and D. Mandel. The Academic Corporation: Justice, Freedom, and the University. Montreal: Black Rose Books 1987.

Ferguson, G.A. "Psychology at McGill"; In Mary J. Wright & C. Roger Myers (eds.), History of Academic Psychology in Canada. Toronto: Hogrefe 1982.

Ferguson, R. Errorless Discrimination Learning with Neurologically Impaired Children. Unpublished Ph.D., University of Alberta 1972.

Fishburne, G.J. "Stimulant Drug Therapy and Children with Attention Deficit Disorder: An Ethical Issue", McGill Journal of Education 24(1) 1989, 55-68.

Fisk, J. Identification of Subtypes of Learning Disabled Children: Neuropsychological, Multivariate Approach. Unpublished Ph.D., University of Windsor 1979.

Fisk, R.A. and H.L. Janzen. "Identifying Learning Disabled Students With a Selected Psychoeducational Test Battery", Alberta Journal of Education Research 27(3) 1981, 252-63.

Flew, A. A Dictionary of Philosophy. 2nd edition. New York: St. Martin's 1979.

Franklin, B.M. "Curriculum Thought and Social Meaning: Edward L. Thorndike and the Curriculum Field", Educational Theory 26(3) 1976, 298-309.

Franklin, B.M. Building the American Community: The School Curriculum and the Search for Social Control. London: Falmer Press 1986.

Freeman, E. Depression and Learning Disabilities. Unpublished Ph.D., Dalhousie University 1986.

Freire, P. Pedagogy of the Oppressed. New York: Continuum 1970.

Freire, P. "Cultural Action and Conscientization", Harvard Educational Review 40(3) 1970, 452-77.

Freire, P. Education for Critical Consciousness. New York: Continuum 1973.

Freire, P. The Politics of Education: Culture, Power, and Liberation. South Hadley, Massachusetts: Bergin & Garvey 1985.

Freire, P. A Pedagogy for Liberation: Dialogues on Transforming Education. South Hadley, Massachusettes: Bergin & Garvey 1987.

Fritzsche, U. "Learning Disabilities in British Columbia: Parental Perspective", B. C. Journal of Special Education 2(1) 1978, 73-6.

Fromm, E. Escape from Freedom. New York: Avon 1941.

Frost, R. The Arithmetic Achievement of Learning Disabled Students. Unpublished Ph.D., University of Calgary 1982.

Frye, N. The Modern Century. Toronto: Oxford University Press 1967.

Fullon, M. The Meaning of Educational Change. Toronto: O.I.S.E. Press 1982.

Gagné, F. "Perceptions of Programs for Gifted Children: Agreement on Principles, but Disagreement Over Modalities," B.C. Journal of Special Education 7(2) 1983, 113-27.

Gagné, F. "Gifted Programs in Quebec: Slow but Steady Progress", Special Education in Canada 58(4) 1984, 147-48.

Galton, F. Hereditary Genius: An Inquiry into Its Laws and Consequences. London: Macmillan 1869.

Gardner, H. Frames of Mind: The Theory of Multiple Intelligences. New York: Basic 1983.

Gardner, H. The Mind's New Science: A History of the Cognitive Revolution. New York: Basic 1985.

Giroux, H., D. Shumway, P. Smith, and J. Sosnoski. "The Need for Cultural Studies: Resisting Intellectuals and Oppositional Public Spheres", Dalhousie Review 64(2) 1984, 472-86.

Goetzmann, W.H. (Ed.) The American Hegalians: An Intellectual Episode in the History of Western America. New York: Knopf 1973.

Goodlad, J.I. A Place Called School: Prospects for the Future. London: McGraw-Hill 1984.

Gould, S.J. Mismeasure of Man. London: Norton 1981.

Gould, S.J. An Urchin in the Storm: Essays About Books and Ideas. London: Norton 1987.

Grant, E. "Review of Psychology Misdirected", Canada's Mental Health June 1983, 23-4.

Gregory, R.L. The Oxford Companion to the Mind. London: Oxford University Press 1987.

Grenier, M.E. Patterns of Sibling Deidentification and Parent Identification in Families with Gifted Children. Unpublished Ph.D., McGill University 1987.

Griffin, J.D.M., S.R. Laycock and W. Line. Mental Hygiene: A Manual for Teachers. New York: American 1940.

Guilford, J.P. Intelligence, Creativity, and their Educational Implications. San Diego, California: Knapp 1968.

Hackhofer, W. "Brain Insult as a Predictor of Specific Learning Disabilities in School-Age Children: Reproductive Causality Revisited", Canadian Journal of School Psychology 3(2) 1988, 1-7.

Hardy, M.I. "Disabled Readers: What Happens to Them After Elementary School", Canadian Education and Research Digest 8(1) 1968, 338-46.

Harris, R. "The Acceleration of Gifted and Talented Youth in Educational Programming: A Critical Examination of the Fact, Opinion and Myth", B. C. Journal of Special Education 5(2) 1981, 134-47.

Hattie, W.H. "The Physicians Part in Preventing Mental Disorder", Canadian Journal of Mental Hygiene 1(2), 1919, 118-22.

Hebb, D.O. The Organization of Behaviour. New York: Wiley 1949.

Hengen, T.J. "Education of the Gifted -- the Saskatcewan Scene," Special Education in Canada 58(4) 1984, 144.

Hern, A. Neurological Signs in Learning Disabled Children: Persistence Over Time, and Incidence in Adulthood Compared to Normal Learners. Unpublished Ph.D., University of Victoria 1984.

Hincks, C.M. "The Scope and Aims of the Mental Health Hygiene Movement in Canada", Canadian Journal of Mental Hygiene, 1(1) 1919, 20-9.

Hofstadter, R. Social Darwinism in American Thought. Rev. Ed. Boston: Beacon 1955.

Hofstadter, R. Anti-Intellectualism in American Life. New York: Knopf 1963.

Hofstadter, R. The Progressive Movement, 1900-1915. Englewood Cliffs, New Jersey: Prentice-Hall 1963.

Hooker, V. and A. Foster. "A Survey of Services to Learning Disabled Students in the Vancouver School District", B. C. Journal of Special Education 10(1) 1986, 59-64.

Horney, K. The Neurotic Personality of Our Time. New York: Norton 1937.

Horsman, E. and B. Heydorn. "Learning Disabilities Conquered? (A report on the Bannatyne system of language arts)", Special Education in Canada 55(3) 1981, 17-18.

Houde, L. "Combined Treatment for Children with Learning Disorders", Canadian Psychologist 9(2) 1968, 174-86.

Humphries, T.W. and A.K. Wilson. "An Instructional Based Model for Assessing Learning Disabilities", Canadian Journal of Special Education 2(1) 1986, 55-66.

Hutchison, A. "The Relationship Between Word-Finding Ability and Reading with an Emphasis on the Language-Learning-Disabled Child", Special Education in Canada 57(3) 1983, 27-32.

Illerbrun, D. and P. Greenough. "Classroom/Clinical Diagnosis of Young Language Learning Disabled Children: An Integrated Approach", Special Education in Canada 57(2) 1983, 23-7.

Jacques, C. "The neurology of learning disability", Special Education in Canada 42(3) 1968, 32-4.

James, W. The Principles of Psychology (Vol. 1-3). Cambridge, Mass.: Harvard University Press 1981.

James, W. Pragmatism a New Name for Some Old Ways of Thinking: Together With Four Related Essays Selected from the Meaning of Truth. Toronto: Longman's-Green 1946.

Jeffress, L.A. (ed.) Cerebral Mechanisms in Behavior: The Hixon Symposium. London: Chapman and Hall 1951.

Jonich, G.M. Psychology and the Science of Education: Selected Writings of Edward L. Thorndike. New York: Teacher's College, Columbia University 1962.

Karier, C.J. Scientists of the Mind: Intellectual Founders of Modern Psychology. Urbana and Chicago: University of Illinois Press 1986.

Kendall, D. "Sheep or Goats? Learning Disabilities and Educational Services for Children with Special Needs: A Canadian Perspective", B. C. Journal of Special Education 1(1) 1977, 57-72.

Kershner, J.R., R.L. Cummings, K.A. Clarke, A.J. Hadfield and B.A. Kershner. "Evaluation of the Tomatis Listening Training Program for Learning Disabled Children", Canadian Journal of Special Education 2(1) 1986, 1-32.

King, C. Hyperactivity, Introversion-extroversion and the Strength of the Nervous System in Learning Disabled Children. Unpublished Ph.D., University of Alberta 1978.

Kirkbride, A. The Development of Classification and Memory Ability in Achieving and Learning Disabled Children: Piagetian and Levels of Processing Approaches. Unpublished Ph.D., University of Alberta 1981.

Klein, G. The Diagnostic Use of Geometric Form Copying Tests: An Investigation of Normal Kindergarten and Learning Disabled Children's Error Production. Unpublished Ph.D., University of Western Ontario 1982.

Knowles, D.W. "Myth of the Greenhouse Child: Hazards of Viewing Giftedness as the Plant that Survives", B. C. Journal of Special Education 7(2) 1983, 99-111.

Kravitz, M. "Learning Disability - A Changing Perspective", Special Education in Canada 55(1) 1980, 16-19.

Kravitz, M. "The Inconsistently Learning Disabled Child: Identification and Management of Inattention and Some Forms of Hyperactivity", Special Education in Canada 56(4) 1982, 26-32.

Kravitz, M. "Improving Classroom Attentional Behaviour of Learning Disabled Students", Special Education in Canada 57(4) 1983, 32-3.

Kravitz, M. "Assisting 'Learning Different' Students in the Regular Classroom: A Practical Guide for the Classroom Teacher", Special Education in Canada 58(2) 1984, 68-81.

Kritzsche, U. "Learning Disabilities in British Columbia: Parental Perspective", B.C. Journal of Special Education 2(1) 1978, 73-6.

Kronick, D. "The Concept of Secondary Gain in the Child with Minimal Brain Damage and His Family", Special Education in Canada 43(4) 1969, 12-16.

Kuehn, M. Scottish Common Sense in Germany, 1768-1800: A Contribution to the History of Critical Philosophy. Kingston & Montreal: McGill-Queen's University Press 1987.

Kuhn, T.S. The Structure of Scientific Revolutions 2nd Ed., Chicago: University of Chicago Press 1970.

Laine, C.J. "The Implementation of Gifted Education in British Columbia: A Sketch of One Province's Experiences", B. C. Journal of Special Education 7(2) 1983, 153-61.

Laine, C.J. Relationships Between the Structure of Intellect and Characteristics of Students Identified as Gifted and Selected for Special Programming. Unpublished Ed.D., University of British Columbia 1987.

Laine, C.J. "Discrimination of Aptitude in the Gifted: A Differential Approach with the Structure of Intellect", Canadian Journal of Special Education 5(1) 1989, 41-54.

Laine, C., S.S. Bank and B.R. Clarke, "Guilford's Structure of Intellect: An Indicator of Learning Styles of Gifted Learners", Canadian Journal of Special Education 1(2) 1985, 157-70.

Laing, R.D. The Divided Self. London: Penguin 1960.

Laing, R.D. The Politics of Experience. London: Penguin 1978.

Laing, R.D. and A. Esterson, Sanity, Madness and the Family. New York: Ballantine 1967.

Lashley, K.S. "The Problems of Serial Order in Behavior"; In L.A. Jeffress (ed.) Cerebral Mechanisms in Behavior: The Hixon Symposium. London: Chapman and Hall 1951.

Lawler, J.M. IQ, Heritability and Racism. New York: International 1978.

Laycock, S.R. Adaptability to New Situations. Baltimore: Warwick and York 1929.

Laycock, S.R. Gifted Children: A Handbook for the Classroom Teacher. Toronto: Copp-Clark 1957.

Laycock, S.R. Special Education in Canada. Toronto: Gage 1963.

Leitch, D. Special Education: A Search of a Critical Theory -- A Canadian Perspective on Theory and Practice in Special Education. Unpublished Ph.D., Dalhousie University 1986.

Leitch, D. and S. S. Sodhi. Problematic Nature and Role of Theory and Practice in Special Education. Halifax: Monograph No. 1, Atlantic Centre of Support for Disabled Students, 1985.

Leitch, D. and S.S. Sodhi. "Specialness of Special Education", B. C. Journal of Special Education 10(4) 1986, 349-58.

Leitch, D. and S.S. Sodhi. Politics in Special Education: A Canadian Perspective. 2nd edition. Halifax: Dalhousie University. 1987.

Linn, J.L. "Should Learning Assistance Teachers Provide Programs for the Gifted, Talented and/or Creative Pupil in the Elementary School?", B. C. Journal of Special Education 4(3) 1980, 227-40.

Linn, R.J., B. Algozzine, L. Mann, and S.E. Schwartz. "Communication Skills of Learning Disabled Adolescents", B. C. Journal of Special Education 11(4) 1987, 301-12.

Lipp, M. An Analysis of Affective Factors in an Affective Judgement Task Performed by Intellectually Gifted Adolescents. Unpublished Ph.D., University of Regina 1986.

Lipp, M., L. Schmunk, A. Waldie, and M. Wallace. "Scholastica Institute: An Innovative Learning Disability Program for Teachers and Middle Years Students", Canadian Journal for Exceptional Children 2(4) 1986, 133-5.

Lippman, W. "The Reliability of Intelligence Tests"; In N.J. Block and Gerald Dworkin, The IQ Controversy: Critical Readings. New York: Pantheon Books 1976.

Lippman, W. "A Future for the Tests"; In N.J. Block and Gerald Dworkin, The IQ Controversy: Critical Readings. New York: Pantheon Books 1976.

Lippman, W. "The Abuse of Tests"; In N.J. Block and Gerald Dworkin, The IQ Controversy: Critical Readings. New York: Pantheon Books 1976.

Lissak, D. "Reading Difficulty - A Psycho-Educational Analysis of a Cognitive Dysfunction", Canadian Psychologist 9(2) 1968, 121-32.

Little, D.M. "Learning Disabilities and the Severely Learning Disabled - Status Quo in B.C.", B. C. Journal of Special Education 4(2) 1980, 155-63.

Long, E. "Personal Adjustment Training for Young Adolescents with Learning Disabilities", Special Education in Canada 43(3) 1969, 13-14.

Long, E. "Programming for Adolescents with Learning Disabilities", Special Education in Canada 43(3) 1969, 14-15.

MacDonald, G.W. "Clinical Neuropsychology: Its Role and Relevance for Children with Learning Disabilities", Canadian Journal for Exceptional Children 2(4) 1986, 118-22.

MacKenzie, J. Some Characteristics of Two Learning Disabled Subgroups Identified from WISC/WISC-R Factor Score Patterns. Unpublished Ph.D., McGill University 1981.

MacMurray, G.A. "Psychology at Saskatchewan", In Mary J. Wright & C. Roger Myers, History of Academic Psychology in Canada. Toronto: Hogrefe 1982.

Maier, N.E. A Reconceptualization of the Education of the Gifted Through the Preparation of Teachers Instructional Design. Unpublished Ph.D., University of Toronto 1988.

Marini, A. Verbal Encoding Process in Learning Disabled Adolescence. Unpublished Ph.D., University of Toronto 1985.

Marks, R. "Lewis M. Terman: Individual Differences and the Construction of Social Reality", Education Theory 24(4) 1974, 336-55.

Marland, S.P. "Education of the Gifted and Talented", Report to the Congress of the United States by the Commissioner of Education. Washington, D.C.: U.S. Office of Education 1972; In Cox, J., N. Daniel, and B.O. Boston, Educating Able Learners, Programs and Promising Practices: A National Study Conducted by the Sid W. Richardson Foundation. Austin: University of Texas Press 1985.

Mattau, L.S. Role Analysis of Resource Room Teachers of Children with Learning Disabilities. Unpublished Ph.D., University of Alberta 1985.

McBridge, S.R. "Service Delivery Systems for L.D. Students: Problems and Promises", B. C. Journal of Special Education 10(1) 1986, 49-58.

McCloud, J. "Overview of Learning Disabilities: Retrospect and Prospect", Special Education in Canada 54(1) 1979, 8-11.

McKenzie, S. Attention and Distraction in Children with Learning Disabilities. Unpublished Ph.D., McGill University 1979.

McKerlich, "The Education of the Cognitively Gifted and Talented", Education Canada 28(3) 1988, 14-17.

McKillop, A.B. A Disciplined Intelligence: Critical Inquiry and Canadian Thought in the Victorian Era. Montreal and Kingston: McGill-Queen's University Press 1979.

McKillop, A.B. Contours of Canadian Thought. Toronto: University of Toronto Press 1987.

McMillan, E. and G. Loveland. "Counselling for the Gifted," Special Education in Canada 58(4) 1984, 125-6.

McMurray, J.G. "Learning Disabled Adolescents: Perspectives from Canadian Principals", Special Education in Canada 55(1) 1980, 10-14.

McNeil, L. "Defensive Teaching and Classroom Control", In Michael W. Apple & Lois Weiss (eds.), Ideology and Practice in Schooling Apple and Weis (eds.). Philadelphia: Temple University Press 1983.

Meeker, M.N. The Structure of Intellect: Its Interpretation and Uses. Columbus, Ohio: Merrill 1969.

Meyer, M.E. A Psychoeducational Evaluation of Precursors to Learning Disabilities in the Very Low Birthweight Population at 5 1/2 Years. Unpublished Ph.D., University of Alberta 1988.

Midgely, M. Wisdom, Information, and Wonder: What is Knowledge For? London: Routledge 1989.

Millar, G. "Myths that Plague the Development and Implementation of Programs for the Gifted: A Visual Study," Special Education in Canada 56(1) 1981, 12-14.

Millar, G.W. Blatz' Security Theory: A Conceptual and Empirical Study. Unpublished Ph.D., University of Alberta 1975.

Miller, L. "Applying Psycholinguistic Research to Reading Disabilities", Special Education in Canada 53(4) 1979, 15-17.

Millon, T. Modern Psychopathology: A Biosocial Approach to Maladaptive Learning and Functioning. London: Saunders 1969.

Morton, L.L. and L.S. Siegel. "Summer Vacation Effects on Aspects of Written Language in the Learning Disabled", Canadian Journal of School Psychology 3(2) 1988, 9-18.

Mulcahy, R., L. Wilgosh, B. Crawford, and B. Watters. "Gifted Education for Inuit Youngsters: Problems and Issues," Special Education in Canada 58(4) 1984, 127-9.

Munns, E. The Development of a Teachers Observation Scale for the Identification of Children with Learning Disabilities. Unpublished Ph.D., York University 1971.

Murray, D.J. A History of Western Psychology. Englewood Cliffs, N.J.: Prentice-Hall 1983.

Myers, C.R. "Psychology at Toronto"; In Mary J. Wright and C. Roger Myers, History of Academic Psychology in Canada. Toronto: C.J. Hogrefe 1982.

Neufeld, J.S. and E. Cozac. "A Study of the Self-Concept of Intellectually Superior Children," Alberta Journal of Educational Research 26(3) 1980, 149-58.

Nodrick, W.S. Learning Disability Subtypes: Social Deficits and Validity for Social Skill Training. Unpublished Ph.D., University of Calgary 1987.

Northway, M. "The Research", In Staff of the Institute of Child Study, Twenty-Five Years of Child Study: The Development of the Programme and Review of the Research. Toronto: University of Toronto Press 1951.

Novak, J.D. and D.B. Gowin. Learning How to Learn. Cambridge: Cambridge University Press 1984.

Nyberg, D. and K. Egan. The Erosion of Education: Socialization and the Schools. New York: Teacher's College, Columbia University 1981.

O'Conner, A. "Early Screening - Some Problems and Practices", B. C. Journal of Special Education 4(3) 1980, 271-82.

O'Neil, M. An Evaluation of a Method for Developing Learning Strategies in Kindergarten Children with Potential Learning Disabilities. Unpublished Ph.D., University of Toronto 1975.

Ornstein, R. and P. Ehrlich. New World New Mind: Moving Toward Conscious Evolution. London: Doubleday 1989.

Orton, S.T. "Word-Blindness in School Children", Archives of Neurology and Psychiatry 14(5) 1925, 581-615.

Orton, S.T. "The Responsibility of a Psychiatric Hospital in Establishing Clinical Facilities and Developing an Education Program for the Community", Proceedings of the National Conference of Social Work, 52, 1925, 400-4.

Orton, S.T. "Some Studies in the Language Function", Association for Research in Nervous and Mental Disease: A Series of Research Publications, 13, 1934, 614-33.

Orton, S.T. Reading, Writing and Speech Problems in Children: A Presentation of Certain Types of Disorders in the Development of the Language Faculty. New York: Norton 1937.

Pal, H.I. Childrearing Practices and Locus of Control in Gifted Adolescents. Unpublished Ph.D., University of Toronto 1977.

Parker, M. "What Can Be Learned from Brilliance in Children", Special Education in Canada 52(1) 1977, 19-21.

Pearson, K. National Life from the Standpoint of Science. 2nd Ed., London: Adam & Charles Black 1905.

Perkins, S.A. "Learning Disabilities: Some of the Issues," Education Canada 16(1) 1976, 38-43.

Perks, B.A. An Investigation into the Identification of Gifted Kindergarten Children. Unpublished Ed.D., University of British Columbia 1984.

Pihl, R.O. "Recent Evidence of Physical Abnormality in Children with Learning Disabilities", McGill Journal of Education 14(3) 1979, 353-65.

Pinar, W. (Ed.) Curriculum Theorizing: The Reconceptualists. Berkeley: McCutchan 1975.

Plaisance, S. "Negative Attitudes Toward Gifted Education," McGill Journal of Education 23(1) 1988, 50-7.

Polatajko, H. Vestibular Function and Academic Learning: A Study of Normal Children and Children Identified as Learning Disabled. Unpublished Ph.D., University of Toronto 1982.

Porath, M. Cognitive Development of Gifted Children: A Neo-Piagetian Perspective. Unpublished Ph.D., University of Toronto 1988.

Prock, L.M. "Emotions: The Wasted Landscape of Learning Disabilities", B. C. Journal of Special Education 4(2) 1980, 201-7.

Prock, L.M. "Coping with Learning Disabilities: A University Experience", B. C. Journal of Special Education 10(1) 1986, 65-73.

Rabinovitch, M.S. and R. Strassberg. "Syntax and Retention in Good and Poor Readers", Canadian Psychologist 9(2) 1968, 142-53.

Rawlyk, G. and K. Quinn. The Redeemed of the Lord Say So: A History of Queen's Theological College 1912-1972. Kingston, Ontario: Queen's Theological College 1980.

Regehr, S.M. "The Genetic Aspects of Developmental Dyslexia", Canadian Journal of Behavioural Science 19(3) 1987, 239-53.

Reis, S.M. and A.A. O'Shea. "An Innovative Enrichment Program: The Enrichment Triad/Revolving Door Model", Special Education in Canada 58(4) 1984, 135-38.

Rejskind, G.B. Sex Differences and Specialization in the Divergent-Thinking Styles of Gifted Children. Unpublished Ph.D., Concordia University 1987.

Renaud, M. "On the Structural Constraints to State Intervention in Health"; In J. Ehrenreich (ed.), The Cultural Crisis of Modern Medicine. London: Monthly Review Press 1978.

Richards, R.J. Darwin and the Emergence of Evolutionary Theories of Mind and Behaviour. London: University of Chicago Press 1987.

Ritchie, H. "Special Service for Children with Learning Disabilities," Education Canada 9(1) 1969, 52-3.

Robens, A.M. "A Psychological Evaluation of Learning Disabilities in British Columbia", B. C. Journal of Special Education 2(1) 1978, 41-6.

Roode, C.D. "The Relevance of Audio-Visual Feedback Mechanisms in the Acquisition of Reading Skills", Canadian Psychologist 9(2) 1968, 133-41.

Ross, L. and B.M. Shore. "The McGill-PSBGM Gifted Summer School," Special Education in Canada 58(4) 1984, 133-34.

Rourke, B.P. "Issues in the Neuropsychological Assessment of Children with Learning Disabilities", Canadian Psychological Review: Psychologie Canadienne 17(2) 1976, 89-102.

Runions, T. "Mentorship programming for the gifted high school student," Special Education in Canada 57(4) 1983, 28-30.

Russell, B. A History of Western Philosophy: And Its Connections with Political and Social Circumstances from the Earliest Times to the Present Day. New York: Simon & Schuster 1945.

Ryckman, D.B. "Reading Achievement, I.Q., and Simultaneous-Successive Processing Among Normal and Learning-Disabled Children", Alberta Journal of Educational Research 27(1) 1982, 74-83.

Saklofske, D.H. and R.A. Yackulic. "Identifying Learning Disabled Children: An Analysis of Some Measurement Problems", Canadian Journal of School Psychology 3(1) 1987, 11-19.

Salter, K.M. A Process Approach to the Evaluation of Visual-Motor Skills in Children with Learning Disabilities: A Study Using the Rey Complex Figure Test. Unpublished Ph.D., University of Victoria 1988.

Sandiford, P. "Heredity and Education", School 2(8) 1914, 491-4.

Sandiford, P. The Mental and Physical Life of School Children. London: Longmans-Green 1915.

Sandiford, P. "Exceptional School Children", School 4(10) 1916, 833-39.

Sandiford, P. (Ed.). Comparative Education: Studies of the Educational Systems of Six Modern Nations. Toronto: Dent 1918.

Sandiford, P. Educational Psychology: An Objective Study. Toronto: Longmans-Green 1928.

Sangster, C.H. and G. Adamson. "Nurturing Gifted Children," Education Canada 17(4) 1977, 26-9.

Sarason, S.B. Psychology Misdirected. London: Collier Macmillan 1981.

Schurman, G. Teaching Learning Disabled Students Analytical Perception and Metacognition Strategies: Relationships to Reading and Spelling. Unpublished Ed.D., University of Toronto 1986.

Scruton, R. A Dictionary of Political Thought. London: Pan 1982.

Scull, J. and G. McNie. "Residential Treatment for Children with Severe Learning Disabilities", Special Education in Canada 55(1) 1980, 25-9.

Shamsie, J.S. "Reading Difficulties as a Cause of Behaviour Problems in Adolescence, Canadian Psychologist 9(2) 1968, 196-200.

Shea, C.M. The Ideology of Mental Health and the Emergence of the Therapeutic Liberal State: The American Mental Hygiene Movement, 1900-1930. Unpublished Ph.D., University of Illinois at Urbana-Champaign 1980.

Shiner, S.M. Curriculum Implications of the Profiles of Gifted High School Students. Unpublished Ph.D., University of Toronto 1979.

Shivrattan, M.P. The Effect of Framework Based Conferencing on the Writing of Gifted Students. Unpublished Ed.D., University of Toronto 1987.

Shor, I. and P. Freire. A Pedagogy for Liberation: Dialogues on Transforming Education, Bergin and Garvey, 1987.

Shore, B.M. "Teacher Training for the Gifted and Major Issues in Gifted Child Education," Canadian Journal of Education 4(3) 1979, 75-88.

Shore, B.M. "What Principals and Commissioners Can Do for Free for the Gifted," Special Education in Canada 55(4) 4 1980, 4-5.

Shore, M. The Science of Social Redemption: McGill, the Chicago School, and the Origins of Social Research in Canada. Toronto: University of Toronto Press 1987.

Siegel, L.S. "A System for the Early Detection of Learning Disabilities", Canadian Journal of Special Education 4(2) 1988, 115-22.

Siegel, L.S. "Agatha Christie's Learning Disability", Canadian Psychology/Psychologie Canadienne 29(2) 1988, 213-16.

Sigler, J.M. "Introducing Economics into an Elementary School Gifted Program," Special Education in Canada 57(4) 1983, 23-6.

Sigler, J.M. "An evaluation of Trade Offs as a program for the gifted," Special Education in Canada 58(2) 1983, 59-62.

Simpson, D.J. "Half a Loaf Can Be Worse than None!", Special Education in Canada 58(4) 1984, 120-1.

Smith, F. Insult to Intelligence: The Bureaucratic Invasion of Our Classrooms. New York: Arbor House 1986.

Smucker, J. Industrialization in Canada. Scarborough, Ontario: Prentice-Hall Canada 1980.

Smyth, E. "Educating Ontario's Ablest: An Overview of Historic and Emerging Trends," Special Education in Canada 58(4) 1984, 145-147.

Smythe, P.C. and R.G. Stennett. "Elementary Education for Gifted Students: A Review of Research and Current Trends", Special Education in Canada 47(2) 1973, 17-24.

Sodhi, S.S. Myths in Special Education. Detroit: Harlo Press 1974.

Spencer, H. First Principles, 5th Ed.. New York: Burt 1890.

Spina, D.J. and C.M. Crealock. "Identification of and Programming for the Gifted Student and the Gifted Under-achiever: A Survey of the Current Situation in Ontario's Schools", Canadian Journal for Exceptional Children 2(1) 1985, 8-13.

Spring, J. "Psychologists and the War: The Meaning of Intelligence in the Alpha and Beta Tests", History of Education Quarterly 12(1) 1972, 3-15.

Stelmaschuk, M.A. Identified and Unidentified Gifted: A Comparative Analysis. Unpublished Ph.D., University of Alberta 1986.

Sternberg, R.J. Intelligence, Information Processing, and Analogical Reasoning: The Componential Analysis of Human Abilities. London: Lawrence Erlbaum 1977.

Sternberg, R.J. "Intelligence Research and the Interface Between Differential and Cognitive Psychology"; In R.J. Sternberg and D.K. Detterman (eds.), Human Intelligence: Perspectives on Its Theory and Measurement. Norwood, New Jersey: Ablex 1979.

Sternberg, R.J. and D.K. Detterman. Human Intelligence: Perspectives on Its Theory and Measurement. Norwood, New Jersey: Ablex 1979.

Sternberg, R.J. Beyond IQ: A Triarchic Theory of Human Intelligence. Cambridge: Cambridge University Press 1985.

Sternberg, R.J. and D.K. Detterman. What is Intelligence?: Contemporary Viewpoints on Its Nature and Definition. Norwood, New Jersey: Ablex 1986.

Sternberg, R.J. The Triarchic Mind: A New Theory of Human Intelligence. London: Penguin 1988.

Sternberg, R.J. Metaphors of Mind: Conceptions of the Nature of Intelligence. Cambridge: Cambridge University Press 1990.

Stevenson, L.L. Scholarly Means to Evangelical Ends: The New Haven Scholars and the Transformation of Higher Learning in America 1830-1890. Baltimore and London: Johns Hopkins University Press 1986.

Stewin, L.L. "A Comparison of Programs and Services for Learning Disabled Children in the USSR and North America", Special Education in Canada 58(3) 1984, 77-81.

Strang, J. Personality Dimensions of Learning Disabled Children: Age and Subtype Differences. Unpublished Ph.D., University of Windsor 1981.

Taylor, M. Effects of Instruction in Note Taking on Academically Gifted Children. Unpublished Ed.D., University of Toronto 1982.

Terman, L.M. Intelligence Tests and School Reorganization. New York: World Book 1923.

Terman, L.M. Genius and Stupidity. New York: Arno 1975.

Thayer, H.S. Meaning and Action: A Critical History of Pragmatism. New York: Bobbs-Merrill 1968.

Thayer, H.S. (Ed.) Pragmatism: The Classic Writings. Toronto: New American Library 1970.

Thomas, A. "Problem Solving Among Pairs of Achieving and Learning Disabled Students", Alberta Journal of Educational Research 35(1) 1989, 80-95.

Thorndike, E.L. "Ideo-Motor Action", Psychological Review 20(2) 1913, 91-106.

Tischer, S. "Psycho-Motor Re-Education for Children with Reading Difficulties", Canadian Psychologist 9(2) 1968, 187-96.

Titchener, E.B. "Functional Psychology and the Psychology of Act: I", American Journal of Psychology 32(4) 1921, 519-42.

Tomkins, G.S. A Common Countenance: Stability and Change in the Canadian Curriculum. Scarborough, Ontario: Prentice-Hall Canada 1986.

Torrance, E.P. "Mental Health Problems of Highly Creative Children"; In E. Paul Torrance, Education and the Creative Potential. Minneapolis: University of Minnesota Press 1963.

Tyack, D.B. The One Best System: A History of American Urban Education. Cambridge, Mass.: Harvard University Press 1974.

Tyack, D. and E. Hansot. Managers of Virtue: Public School Leadership in America, 1820-1980. New York: Basic 1982.

Van Hesteren, D. Life in Classrooms for Gifted Children. Unpublished Ph.D., University of Alberta 1985.

Van Hesteren, F.N. Foundations of the Guidance Movement in Canada. Unpublished Ph.D., University of Alberta 1971.

Vernon, P.E. "Programs for Gifted Children", Special Education in Canada 53(4) 1979, 29-32.

Violato, C. and S.S. Blank. "An Evaluation of a Programme for the Gifted", B. C. Journal of Special Education 6(4), 1982, 323-41.

Visher, S.S. Scientists Starred 1903-1943 in "American Men of Science": A Study of Collegiate and Doctoral Training, Birthplace, Distribution, Backgrounds, and Developmental Influences. Baltimore: Johns Hopkins Press 1947.

Waldorf, D. "Enrichment as a Part of Gifted Education", Special Education in Canada 58(4) 1984, 139-40.

Wallace, W.S. (ed.). The Macmillan Dictionary of Canadian Biography. 3rd Ed., Toronto: Macmillan 1963.

Walsh, J. "The Diagnostic Utility of Kaufman's Profile Analysis Procedures with Learning Disabled Children", B. C. Journal of Special Education 10(2) 1986, 121-9.

Warren, J. Placement of Learning Disabled Students. Unpublished Ph.D., University of Calgary 1980.

Watson, J. "The Critical Philosophy and Idealism", Philosophical Review 1(1) 1892, 9-23.

Watson, J. "The Middle Ages and the Reformation", Queen's Quarterly 1(1) 1893.

Watson, J.B. "Psychology as the Behaviourist Views It", Psychological Review 20(2) 1913, 158-77.

Watts, W.J. and M.B. Cashion. "A Comparative Psycho-Educational Analysis of Learning Disabled and Normal Adolescents," Canadian Journal of Education 8(2) 1983, 188-202.

Weber, M. The Protestant Ethic and the Spirit of Capitalism: The Relationships Between Religion and the Economic and Social Life in Modern Culture. New York: Charles Scribners Sons 1958.

Welton, M.R. "Social Reconstruction and Curriculum Reform", Unpublished paper, University of British Columbia 1980.

Werker, J.F. and R.C. Tees. "Speech Perception in Severely Disabled and Average Reading Children", Canadian Journal of Psychology 47(1) 1987, 48-61.

Whyte, L. "Diagnosis and Remediation of Arithmetic Difficulties in Learning Disabled Children", Special Education in Canada 55(1) 1980, 5-8.

Whyte, L.A. "Characteristics of Learning Disabilities Persisting into Adolescence", Alberta Journal of Educational Research 30(1) 1984, 14-25.

Wiens, E. "Secondary Special Education: A Practical Tutorial Approach for High School Students with Learning Disabilities", Special Education in Canada 54(2) 1980, 9-11.

Wilchesky, M. Recognition of Peer Facial Expressions by Learning Disabled and Normal Children. Unpublished Ph.D., York University 1980.

Wilgosh, L. and R. Mulcahy,. "Feasible Enrichment Programs for the Gifted in Remote and Isolated Canadian Areas", Special Education in Canada 58(4) 1984, 130-2.

Williams, N. Arousal and Information Processing in Learning Disabled Children. Unpublished Ph.D., University of Alberta 1976.

Willings, D. "The Gifted in the Maritime Provinces", Special Education in Canada 58(4) 1984, 148-9.

Wilson, R.F. Assessment of the Cerebral Dominance Theory of Dyslexia as Measured by a Visual-Auditory Integration Table. Unpublished Ph.D., University of Victoria 1971.

Winzer, M., Rogow, S. and David, S. Exceptional Children in Canada. Scarborough, Ontario: Prentice-Hall Canada 1987.

Wise, A.E. "Why Educational Policies Often Fail: The Hyperrationalization Hypothesis", Curriculum Studies 9(1) 1977, 43-57.

Wise, A.E. Legislated Learning: Bureaucratization of the American Classroom. Berkeley: University of California Press 1979.

Wiss, C.A. "A Comparison of the Performance of Learning Disabled and Educable Mentally Handicapped Children on a Concept Utilization Task", Canadian Journal for Exceptional Children 2(3) 1986, 84-9.

Wiss, C.A. and D.G. Bachor. "Issues in Assessment and Programming for Children with Learning Disabilities", Canadian Journal for Exceptional Children 2(4) 1986, 115-17.

Wiss, C.A. and W. Burnett. "The Application of the Boder Test of Reading-Spelling Patterns to the Assessment of Learning Disabilities in French Immersion Poor Readers", Canadian Journal of School Psychology 4(1) 1988, 61-70.

Wong, B. "Teaching and Improving Comprehension Skills Among Learning Disabled-Disabled Adolescents", B. C. Journal of Special Education 1(1) 1977, 73-8.

Wong, B. "The Role of Measurement in Remediation", B. C. Journal of Special Education 2(3) 1978, 253-64.

Wong, B., W. Jones, and R. Wong. "Differentiating between Normally-Achieving and Learning-Disabled Adolescents on an Experimental Test Battery", B. C. Journal of Special Education 7(3) 1983, 261-71.

Wong, B.Y.C. "Instructional Strategies for Enhancing Learning Disabled Students' Reading Comprehension and Comprehension Test Performance", Canadian Journal for Exceptional Children 2(4) 1986, 128-32.

Wood, B.A. "Hegalian Resolutions in the New Education Movement: The Putman-Weir Report", Dalhousie Review 62(2) 1982, 254-77.

Wood, B.A. Idealism Transformed: The Making of a Progressive Educator. Kingston and Montreal: McGill-Queen's University Press 1985.

Wood, B.A. "The Significance of Calvinism in the Educational Vision of Thomas McCulloch", Vitae Scholasticae 4(1 & 2) 1985, 15-30.

Wood, B.A. "The Function of Morality and Art: The Educational Policies of Alexander Forrester", Paper International Society of Educational Biography, Montreal, Quebec, May 2, 1987.

Wood, E. "Gifted and Talented: Another Role for the Resource Teacher?", Special Education in Canada 57(4) 1983, 20-1.

Wright, M.J. and C.R. Myers. History of Academic Psychology in Canada. Toronto: C.J. Hogrefe 1982.

Yerkes, R.M. "Psychology in Relation to the War", Psychological Review, 25(2), 1918, 85-115.

Yewchuk, C. "Changing Views of Gifted Education," Education Canada 24(4) 1984, 10-13.

Yewchuk, C. "Gifted Preschoolers: Educational Implications of Early Identification", Special Education in Canada 58(4) 1984, 122-4.

Yewchuk, C. "Gifted Education in Alberta: Current Developments", Special Education in Canada 58(4) 1984, 142-3.

Yewchuk, C. "Learning Disabilities Among Gifted Children", Special Education in Canada, 58(3) 1984, 95-6.

Yewchuk, C. "Issues in Identification of Gifted/Learning Disabled Children", B.C. Journal of Special Education, 10(3) 1986, 201-9.

Yewchuk, C. and L. Wilgosh. "The Sixth World Conference on Gifted and Talented Children: The Continuing Worldwide Challenge of Educating the Gifted", Canadian Journal for Exceptional Children 3(1) 1986, 13-14.

Ysseldyke, J.E. and B. Algozzine. Critical Issues in Special and Remedial Education. Boston: Houghton Mifflin 1982.

of Special Education 7(2) 1983, 113-27; Donald W. Knowles, "Myth of the Greenhouse Child: Hazards of Viewing Giftedness as the Plant that Survives", B.C. Journal of Special Education 7(2) 1983, 99-111; Colin J. Laine, "The Implementation of Gifted Education in British Columbia: A Sketch of One Province's Experience", B.C. Journal of Special Education 7(2) 1983, 153-61; Ted Runions, "Mentorship Programming for the Gifted High School Student", Special Education in Canada 57(4) 1983, 28-30; Joan M. Sigler, "Introducing Economics Into An Elementary School Gifted Program", Special Education in Canada 57(4) 1983, 23-6; Joan M. Sigler, "An Evaluation of Trade Offs as a Program for the Gifted", Special Education in Canada 58(2) 1983, 59-62; Eloise Wood, "Gifted and Talented: Another Role for the Resource Teacher?", Special Education in Canada 57(4) 1983, 20-1; Francoys Gagne, "Gifted Programs in Quebec: Slow but Steady Progress", Special Education in Canada 58(4) 1984, 147-48; T.J. Hengen, "Education of the Gifted - The Saskatchewan Scene", Special Education in Canada 58(4) 1984, 144; Edna McMillan, "Counselling for the Gifted", Special Education in Canada 58(4) 1984, 125-26; R. Mulcahy, L. Wilgosh, B. Crawford, and B. Watters, "Gifted Education for Inuit Youngsters: Problems and Issues", Special Education in Canada 58(4) 1984, 127-29; Sally M. Reis and A.A. O'Shea, "An Innovative Enrichment Program: The Enrichment Triad/Revolving Door Model", Special Education in Canada 58(4) 1984, 135-38; Linda Ross and Bruce M. Shore, "The McGill-PSBGM Gifted Summer School", Special Education in Canada 58(4) 1984, 133-34; Don J. Simpson, "Half a Loaf Can Be Worse Than None!", Special Education in Canada 58(4) 1984, 120-21; Elizabeth Smyth, "Educating Ontario's Ablest: An Overview of Historic and Emerging Trends", Special Education in Canada 58(4) 1984, 145-47; Dale Waldorf, "Enrichment as a Part of Gifted Education", Special Education in Canada 58(4) 1984, 139-40; L. Wilgosh and R. Mulcahy, "Feasible Enrichment Programs for the Gifted in Remote and Isolated Canadian Areas", Special Education in Canada 58(4) 1984, 130-32; David Willings, "The Gifted in the Maritime Provinces", Special Education in Canada 58(4) 1984, 148-49; Carolyn Yewchuk, "Changing Views of Gifted Education", Education Canada 24(4) 1984, 10-13; Carolyn Yewchuk, "Gifted Preschoolers: Educational Implications of Early Identification", Special Education in Canada 58(4) 1984, 122-24; Carolyn Yewchuk, "Gifted Education in Alberta: Current Developments", Special Education in Canada 58(4) 1984, 142-43; Julia L. Ellis, "Creatively Gifted Children in Regular School Programs: Their Problems and a Proposed Solution", B.C. Journal of Special Education 9(1) 1985, 69-87; Colin Laine, Stanley S. Blank & B.R. Clarke, "Guilford's Structure of Intellect: An Indicator of Learning Styles of Gifted Learners", Canadian Journal of Special Education 1(2) 1985, 157-70; Debbie Spina and Carol M. Crealock, "Identification of and

Programming for the Gifted Student and the Gifted Underachiever: A Survey of the Current Situation in Ontario's Schools", Canadian Journal for Exceptional Children 2(1) 1985, 8-13; L. Wilgosh, R. Mulcahy & B. Watters, "Identifying Gifted Canadian Inuit Children Using Conventional IQ Measures and Nonverbal (Performance) Indicators", Canadian Journal of Special Education 2(1) 1986, 67-73; C. Yewchuk and L. Wilgosh, "The Sixth World Conference on Gifted and Talented Children: The Continuing Worldwide Challenge of Educating the Gifted", Canadian Journal for Exceptional Children 3(1) 1986, 13-14; Stanley S. Blank and Julia L. Ellis, "Challenge Classes for Gifted Secondary Students: A Feasible and Potent Method of Programming for the Gifted", B.C. Journal of Special Education 11(4) 1987, 327-33; Joanne Bourque & Anita K.F. Li, "Perceived Competence, Social Adjustment and Peer Relations of Intellectually Gifted Children In Segregated Versus Regular-Classroom Settings", Canadian Journal of Special Education 3(2) 1987, 191-200; William McKerlich, "The Education of the Cognitively Gifted and Talented", Education Canada 28(3) 1988, 14-17; Susan Plaisance, "Negative Attitudes Toward Gifted Education", McGill Journal of Education 23(1) 1988, 50-7; Nancy Cannon, "Special Education for the Gifted", Education Canada 29(3) 1989, 26-9; Colin J. Laine, "Discrimination of Aptitude in the Gifted: A Differential Approach with the Structure of Intellect", Canadian Journal of Special Education 5(1) 1989, 41-54.

4. Marianne K. Davis, "The Problem Reader in the Classroom", Canadian Psychologist 9(2) 1968, 162-73; Barbara Dawson, "Preparing Teachers for Children with Learning Disabilities", Special Education in Canada 42(3) 1968, 31; H.I. Day, "The Importance of Arousal as a Motivational Factor in Learning to Read", Canadian Psychologist 9(2) 1968, 154-61; Madeline I. Hardy, "Disabled Readers: What Happens to Them After Elementary School?", Canada Education and Research Digest 8(1) 1968, 338-46; Laurent Houde, "Combined Treatment for Children with Learning Disorders", Canadian Psychologist 9(2) 1968, 174-86; Caroline Jacques, "The Neurology of Learning Disability", Special Education in Canada 42(3) 1968, 32-4; David Lissak, "Reading Difficulty - A Psycho-Educational Analysis of a Cognitive Dysfunction", Canadian Psychologist 9(2) 1968, 121-32; M. Sam Rabinovitch and Rhoma Strassberg, "Syntax and Retention in Good and Poor Readers", Canadian Psychologist 9(2) 1968, 142-53; C.D. Roode, "The Relevance of Audio-Visual Feedback Mechanisms in the Acquisition of Reading Skills", Canadian Psychologist 9(2) 1968, 133-41; J.S. Shamsie, "Reading Difficulties as a Cause of Behaviour Problems in Adolescence, Canadian Psychologist 9(2) 1968, 196-200; Selma Tischer, "Psycho-Motor Re-Education for Children with Reading Difficulties", Canadian Psychologist 9(2) 1968, 187-96; Francis X. Blair, "Where Are We

Going in Learning Disabilities?", Special Education in Canada 43(2) 1969, 15-21; Doreen Kronick, "The Concept of Secondary Gain in the Child with Minimal Brain Damage and His Family", Special Education in Canada 43(4) 1969, 12-16; Eleanor Long, "Personal Adjustment Training for Young Adolescents with Learning Disabilities", Special Education in Canada 43(3) 1969, 13-14; Eleanor Long, "Programming for Adolescents with Learning Disabilities", Special Education in Canada 43(3) 1969, 14-15; Hugh Ritchie, "Special Service for Children with Learning Disabilities", Education Canada 9(1) 1969, 52-3; Norman S. Endler and Harold A. Minden, "Anxiety, Conformity, and Self-Concept as Related to Learning Disabilities", Special Education in Canada 47(1) 1972, 35-9; Stanley A. Perkins, "Learning Disabilities Some of the Issues", Education Canada 16(1) 1976, 38-43; Byron P. Rourke, "Issue in the Neuropsychological Assessment of Children with Learning Disabilities", Canadian Psychological Review/ Psychologie Canadienne 17(2) 1976, 89-102; James Cummins and J.P. Das, "Cognitive Processing and Reading Difficulties: A Framework for Research", Alberta Journal of Educational Research 23(4) 1977, 245-56; David Kendall, "Sheep or Goats? Learning Disabilities and Educational Services for Children with Special Needs: A Canadian Perspective", B.C. Journal of Special Education 1(1) 1977, 57-72; Bernice Wong, "Teaching and Improving Comprehensive Skills Among Learning-Disabled Adolescents", B.C. Journal of Special Education 1(1) 1977, 73-8; Doreen Armitage, "Can Handicapping Conditions Be Prevented? A Focus on Primary Intervention", B.C. Journal of Special Education 2(2) 1978, 147-58; Hildy Goberman Barnett, "The Learning Disability 'Label' - Beneficial or Detrimental?", B.C. Journal of Special Education 2(2) 1978, 159-66; Marie Eaton, "Parents as Tutors: Help or Hindrance for the Learning Disabled?", B.C. Journal of Special Education 2(4) 1978, 279-84; Ursula Kritzsche, "Learning Disabilities in British Columbia: Parental Perspective", B.C. Journal of Special Education 2(1) 1978, 73-6; Anneliese M. Robens, "A Psychological Evaluation of Learning Disabilities in British Columbia", B.C. Journal of Special Education 2(1) 1978, 41-6; Bernice Wong, "The Role of Measurement in Remediation", B.C. Journal of Special Education 2(3) 1978, 253-64; John McLeod, "Overview of Learning Disabilities: Retrospect and Prospect", Special Education in Canada 54(1) 1979, 8-11; Larry Miller, "Applying Psycholinguistic Research to Reading Disabilities", Special Education in Canada 53(4) 1979, 15-17; R.O. Pihl, "Recent Evidence of Physical Abnormality in Children with Learning Disabilities", McGill Journal of Education 14(3) 1979, 353-65; B.R. Clarke and D.C. Kendall, "Learning Disabled or Hearing Impaired: A Folly of Forced Categories", B.C. Journal of Special Education 4(1) 1980, 13-27; Martin Kravitz, "Learning Disability - A Changing Perspective", Special Education in Canada 55(1) 1980, 16-19; Donald M. Little, "Learning Disabilities and the Severely Learning Disabled -

Status Quo in B.C.", B.C. Journal of Special Education 4(2) 1980, 155-63; J. Grant McMurray, "Learning Disabled Adolescents: Perspective from Canadian Principals", Special Education in Canada 55(1) 1980, 10-14; Anne O'Conner, "Early Screening - Some Problems and Practices", B.C. Journal of Special Education 4(3) 1980, 271-82; Leone M. Prock, "Emotions: The Wasted Landscape of Learning Disabilities", B.C. Journal of Special Education 4(2) 1980, 201-7; John Scull and Glen McNie, "Residential Treatment for Chiidren with Severe Learning Disabilities", Special Education in Canada 55(1) 1980, 25-9; Lillian Whyte, "Diagnosis and Remediation of Arithmetic Difficulties in Learning Disabled Children", Special Education in Canada 55(1) 1980, 5-8; Ed Wiens, "Secondary Special Education: A Practical Tutorial Approach for High School Students with Learning Disabilities", Special Education in Canada 54(2) 1980, 9-11; Elizabeth A. Blowers, "Grade One Test Scores of Pupils Later Classified as Educable Mentally Retarded, Learning Disabled and Normal", Special Education in Canada 55(2) 1981, 13-15; Frederic J. Boersma and James W. Chapman, "Academic Self-Concept, Achievement Expectations, and Locus of Control in Elementary Learning Disabled Children", Canadian Journal of Behavioural Science 13(4) 1981, 349-58; Robert A. Fisk and Henry L. Janzen, "Identifying Learning Disabled Students with a Selected Psychoeducational Test Battery", Alberta Journal of Educational Research 27(3) 1981, 252-63; Ellen Horsman and Bernard Heydorn, "Learning Disabilities Conquered? (A Report on the Bannatyne System of Language Arts)," Special Education in Canada 55(3) 1981, 17-18; David B. Ryckman, "Reading Achievement, IQ, and Simultaneous-Successive Processing Among Normal and Learning-Disabled Children", Alberta Journal of Educational Research 27(1) 1982, 74-83; Barbara Bloom and Karen Coulter, "Study Strategies for the Learning Disabled Adolescent in the Mainstream", Special Education in Canada 56(3) 1982, 24-5; E.A. Blowers, "The C's - A Case History of a 'Learning Disabled' Family", Special Education in Canada 56(2) 1982, 15-18; Martin Kravitz, "The Inconsistently Learning Disabled Child: Identification and Management of Inattention and Some Forms of Hyperactivity", Special Education in Canada 56(4) 1982, 26-32; Derek Besner, "Deep Dyslexia and the Right Hemisphere Hypothesis: Evidence from the U.S.A. and the U.S.S.R.", Canadian Journal of Psychology 37(4) 1983, 565-71; Ann Hutchison, "The Relationship Between Word-Finding Ability and Reading with an Emphasis on the Language-Learning-Disabled Child", Special Education in Canada 57(3) 1983, 27-32; David Illerbrun and Pauline Greenough, "Classroom/Clinical Diagnosis of Young Language Learning Disabled Children: An Integrated Approach", Special Education in Canada 57(2) 1983, 23-7; Martin Kravitz, "Improving Classroom Attentional Behaviour of Learning Disabled Students", Special Education in Canada 57(4) 1983, 32-3; Walter J. Watts

and Marie B. Cashion, "A Comparative Psycho-Educational Analysis of Learning Disabled and Normal Adolescents", Canadian Journal of Education 8(2) 1983, 188-202; Bernice Y.L. Wong, Wayne Jones, and Roderick Wong, "Differentiating Between Normally-Achieving and Learning-Disabled Adolescents on an Experimental Test Battery", B.C. Journal of Special Education 7(3) 1983, 261-71; Martin Kravitz, "Assisting 'Learning Different' Students in the Regular Classroom: A Practical Guide for the Classroom Teacher", Special Education in Canada 58(2) 1984, 68-81; L.L. Stewin, "A Comparison of Programs and Services for Learning Disabled Children in the USSR and North America", Special Education in Canada 58(3) 1984, 77-81; Lilliam A. Whyte, "Characteristics of Learning Disabilities Persisting into Adolescence", Alberta Journal of Educational Research 30(1) 1984, 14-25; Janet Southern Adams, "A Summer Day Camp for Elementary School Children with Learning Disabilities", Canadian Journal for Exceptional Children 2(4) 1986, 136-38; Patricia G. Bowers, Richard A. Steffy and Lynn B. Swanson, "Naming Speed, Memory, and Visual Processing in Reading Disability", Canadian Journal of Behavioural Science 18(3) 1986, 209-23; Paula J. Caplan and Linda Dinardo, "Is There a Relationship Between Child Abuse and Learning Disability?", Canadian Journal of Behavioural Science 18(4) 1986, 367-80; Curt Dudley-Marling, "Assessing the Reading and Writing Development of Learning Disabled Students: A Holistic Perspective", Canadian Journal of Special Education 2(1) 1986, 33-43; Veronica Hooker and Ann Foster, "A Survey of Services to Learning Disabled Students in the Vancouver School District", B.C. Journal of Special Education 10(1) 1986, 59-64; Thomas W. Humphries & Anne Keeton Wilson, "An Instructional Based Model for Assessing Learning Disabilities", Canadian Journal of Special Education 2(1) 1986, 55-66; John R. Kershner, Richard L. Cummings, Kenneth A. Clarke, Audrey J. Hadfield & Barbara A. Kershner, "Evaluation of the Tomatis Listening Training Program with Learning Disabled Children", Canadian Journal of Special Education 2(1) 1986, 1-32; David Leitch & S.S. Sodhi, "'Specialness' of Special Education", B.C. Journal of Special Education 10(4) 1986, 349-58; M. Lipp, L. Schmunk, A. Waldie and M. Wallace, "Scholastica Institute: An Innovative Learning Disability Program for Teachers and Middle Years Students", Canadian Journal for Exceptional Children 2(4) 1986, 133-35; G.W. MacDonald, "Clinical Neuropsychology: Its Role and Relevance for Children with Learning Disabilities", Canadian Journal for Exceptional Children 2(4) 1986, 118-22; Shirley R. McBride, "Service Delivery Systems for L.D. Students: Problems and Promises", B.C. Journal of Special Education 10(1) 1986, 49-58; Leone Mary Prock, "Coping with Learning Disabilities: A University Experience", B.C. Journal of Special Education 10(1) 1986, 65-73; John Walsh, "The Diagnostic Utility of Kaufman's Profile Analysis Procedures with Learning Disabled Children", B.C. Journal of

Special Education 10(2) 1986, 121-29; Corinne A. Wiss, "A Comparison of the Performance of Learning Disabled and Educable Mentally Handicapped Children on a Concept Utilization Task", Canadian Journal for Exceptional Children 2(3) 1986, 84-9; Corrinne A. Wiss and Dan G. Bachor, "Issues in Assessment and Programming for Children with Learning Disabilities", Canadian Journal for Exceptional Children 2(4) 1986, 115-17; Bernice Y.C. Wong, "Instructional Strategies for Enhancing Learning Disabled Students' Reading Comprehension Test Performance", Canadian Journal for Exceptional Children 2(4) 1986, 128-32; Reid J. Linn, Bob Algozzine, Lester Mann, & Stuart E. Schwartz, "Communication Skills of Learning Disabled Adolescents", B.C. Journal of Special Education 11(4) 1987, 301-12; Sonya M. Regehr, "The Genetic Aspects of Developmental Dyslexia", Canadian Journal of Behavioural Science 19(3) 1987, 239-53; D.H. Saklofske and R.A. Yackulic, "Identifying Learning Disabled Children: An Analysis of Some Measurement Problems", Canadian Journal of School Psychology 3(1) 1987, 11-19; Janet F. Werker and Richard C. Tees, "Speech Perception in Severely Disabled and Average Reading Children", Canadian Journal of Psychology 41(1) 1987, 48-61; Jac Andrews and Henry Janzen, "Objectifying the Kinetic School Drawing (KSD): A Comparison of LD. vs. Non LD. Grade 5 Students", Canadian Journal of School Psychology 3(2) 1988, 27-51; Wolfgang Hackhofer, "Brain Insult as a Predictor of Specific Learning Disabilities in School-Age Children: Reproductive Causality Revisited", Canadian Journal of School Psychology 3(2) 1988, 1-7; Larry L. Morton and Linda S. Siegel, "Summer Vacation Effects on Aspects of Written Language in the Learning Disabled", Canadian Journal of School Psychology 3(2) 1988, 9-18; Linda S. Siegel, "A System for the Early Detection of Learning Disabilities", Canadian Journal of Special Education 4(2) 1988, 115-22; Linda S. Siegel, "Agatha Christie's Learning Disability", Canadian Psychology/ Psychologie Canadienne 29(2) 1988, 213-16; Corrinne A. Wiss and Wendy Burnett, "The Application of the Boder Test of Reading-Spelling Patterns to the Assessment of Learning Disabilities in French Immersion Poor Readers", Canadian Journal of School Psychology 4(1), 1988, 61-70; Graham J. Fishburne, "Stimulant Drug Therapy and Children with Attention Deficit Disorder: An Ethical Issue", McGill Journal of Education 24(1) 1989, 55-68; Adele Thomas, "Problem Solving Among Pairs of Achieving and Learning Disabled Students, Alberta Journal of Educational Research 35(1) 1989, 80-95.

5. Hilda I. Pal, Childrearing Practices and Locus of Control in Gifted Adolescents. Unpublished Ph.D., University of Toronto 1977; Sandra M. Shiner, Curriculum Implications of the Profiles of Gifted High School Students. Unpublished Ph.D., University of Toronto 1979, Margaret Taylor,

Effects of Instruction in Note Taking on Academically Gifted Children. Unpublished Ph.D., University of Toronto 1982; B.A. Perks, An Investigation into the Identification of Gifted Kindergarten Children. Unpublished Ed.D., University of British Columbia 1984; Dianne Van Hesteren, Life in Classrooms for Gifted Children. Unpublished Ph.D., University of Alberta 1985; C. Antliffe-Froom, Information Processing Strategies Used by Intellectually Gifted, Retarded, and Normal Children. Unpublished Ed.D., University of Toronto 1986; Seokee Cho, Cognitive Strategies, Metacognition, and Knowledge Base of Gifted, Average, and Learning Disabled Children. Unpublished Ph.D., University of Alberta 1986; Margaret Lipp, An Analysis of Affective Factors in an Affective Judgement Task Performed by Intellectually Gifted Adolescents. Unpublished Ph.D., University of Regina 1986; Marian A. Stelmaschuk, Identified and Unidentified Gifted: A Comparitive Analysis. Unpublished Ph.D., University of Alberta 1986; Marcella E. Grenier, Patterns of Sibling Deidentification and Parent Identification in Families with Gifted Children. Unpublished Ph.D., McGill University 1987; Colin J. Laine, Relationships Between the Structure of Intellect and Characteristics of Students Identified as Gifted and Selected for Special Programming. Unpublished Ed.D., University of British Columbia 1987; Gillian B. Rejskind, Sex Differences and Specialization in the Divergent-Thinking Styles of Gifted Children. Unpublished Ph.D., Concordia University 1987; Martha P. Shivrattan, The Effect of Framework Based Conferencing on the Writing of Gifted Students. Unpublished Ed.D., University of Toronto 1987; Kathleen I. Davey, Social Skills Training with Gifted Children. Unpublished Ph.D., University of Toronto 1988; Norah E. Maier, A Reconceptualization of the Education of the Gifted Through the Preparation of Teachers Instructional Design. Unpublished Ph.D., University of Toronto 1988; Marion Porath, Cognitive Development of Gifted Children: A Neo-Piagetian Perspective. Unpublished Ph.D., University of Toronto 1988.

6. Evangeline Munns, The Development of a Teachers Observation Scale for the Identification of Children with Learning Disabilities. Unpublished Ph.D., York University 1971; Robert F. Wilson, Assessment of the Cerebral Dominance Theory of Dyslexia as Measured by a Visual-Auditory Integration Table. Unpublished Ph.D., University of Victoria 1971; Roy Ferguson, Errorless Discrimination Learning with Neurologically Impaired Children. Unpublished Ph.D., University of Alberta 1972; Marie O'Neil, An Evaluation of a Method for Developing Learning Strategies in Kindergarten Children with Potential Learning Disabilities. Unpublished Ph.D., University of Toronto 1975; Noel Williams, Arousal and Information Processing in Learning Disabled Children. Unpublished Ph.D., University of Alberta 1976; Clement King, Hyperactivity, Introversion-extroversion and the Strength of

the Nervous System in Learning Disabled Children. Unpublished Ph.D., University of Alberta 1978; James Chapman, Affective Characteristics of Learning Disabled and Normally Achieving Elementary School Children: A Comparative Study. Unpublished Ph.D., University of Alberta 1979; John Fisk, Identification of Subtypes of Learning Disabled Children: Neuropsychological, Multivariate Approach. Unpublished Ph.D., University of Windsor 1979; Susan McKenzie, Attention and Distraction in Children with Learning Disabilities. Unpublished Ph.D., McGill University 1979; Barry Brooker, The Development of Selective Attention in Normal and Learning Disabled Boys: An Evoked Potential and Behavioural Analysis. Unpublished Ph.D., Queen's University 1980; John Warren, Placement of Learning Disabled Students. Unpublished Ph.D., University of Calgary 1980; Marc Wilchesky, Recognition of Peer Facial Expressions by Learning Disabled and Normal Children. Unpublished Ph.D., York University 1980; Anna Kirkbride, The Development of Classification and Memory Ability in Achieving and Learning Disabled Children: Piagetian and Levels of Processing Approaches. Unpublished Ph.D., University of Alberta 1981; Joan MacKenzie, Some Characteristics of Two Learning Disabled Subgroups Identified From WISC/WISC-R Factor Score Patterns. Unpublished Ph.D., McGill University 1981; John Strang, Personality Dimensions of Learning Disabled Children: Age and Subtype Differences. Unpublished Ph.D., University of Windsor 1981; Ruth Frost, The Arithmetic Achievement of Learning Disabled Students. Unpublished Ph.D., University of Calgary 1982; Gerard Klein, The Diagnostic Use of Geometric Form Copying Tests: An Investigation of Normal Kindergarten and Learning Disabled Children's Error Production. Unpublished Ph.D., University of Western Ontario 1982; Helene Polatajko, Vestibular Function and Academic Learning: A Study of Normal Children and Children Identified as Learning Disabled. Unpublished Ph.D., University of Toronto 1982; Joan Daly, Identification of Subtypes of Learning Disabled Children with Discalculia at Three Age Levels: A Neurpsychological, Multivariate Approach. Unpublished Ph.D., University of Windsor 1983; Adele Hern, Neurological Signs in Learning Disabled Children: Persistence Over Time, and Incidence in Adulthood Compared to Normal Learners. Unpublished Ph.D., University of Victoria 1984; D.K. Faux, The Relationship of Spatial Memory Factors to Reading and Arithmetic Disabilities in Children. Unpublished Ph.D., University of Windsor 1985; Anthony Marini, Verbal Encoding Process in Learning Disabled Adolescence. Unpublished Ph.D., University of Toronto 1985; Lal S. Mattau, Role Analysis of Resource Room Teachers of Children with Learning Disabilities in Alberta. Unpublished Ph.D., University of Alberta 1985; D.W. Alexander, Learning Disabled Adolescents and Their Families: Reciprocal Relationships Between Self-Concept and Family Functioning. Unpublished Ph.D., University of Calgary 1986; Seokee Cho,

Cognitive Strategies, Metacognition, and Knowledge Base of Gifted, Average, and Learning Disabled Children. Unpublished Ph.D., University of Alberta 1986; John DeLuca, Identification of Subtypes of Learning Disabled Children with Arithmetic Disorders: A Neuropsychological, Multivariate Analysis. Unpublished Ph.D., University of Windsor 1986; Emily Freeman, Depression and Learning Disabilities. Unpublished Ph.D., Dalhousie University 1986; David Leitch, Special Education: A Search for a Critical Theory -- A Canadian Perspective on Theory and Practice in Special Education. Unpublished Ph.D., Dalhousie University 1986; G. Schurman, Teaching Learning Disabled Students Analytical Perception and Metacognition Strategies: Relationships to Reading and Spelling. Unpublished Ed.D., University of Toronto 1986; William S. Nodrick, Learning Disability Subtypes: Social Deficits and Validity for Social Skill Training. Unpublished Ph.D., University of Calgary 1987; Marliss E. Meyer, A Psychoeducational Evaluation of Precursors to Learning Disabilities in the Very Low Birthweight Population at 5 1/2 Years. Unpublished Ph.D., University of Alberta 1988; Karen M. Salter, A Process Approach to the Evaluation of Visual-Motor Skills in Children with Learning Disabilities: A Study Using the Rey Complex Figure Test. Unpublished Ph.D., University of Victoria 1988.

7. Peter Sandiford (ed.), Comparative Education: Studies of the Educational Systems of Six Modern Nations. Toronto: Dent 1918, 432; Peter Sandiford, Educational Psychology: An Objective Study. Toronto: Longmans- Green 1928, 164, 180-1; J.D.M. Griffin, S.R. Laycock & W. Line, Mental Hygiene: A Manual for Teachers. New York: American 1940, 96, 138, 144, 146, 149; W.E. Blatz, Understanding the Young Child. New York: William Morrow 1944, 50, 52, 57; Samuel R. Laycock, Gifted Children: A Handbook for the Classroom Teacher. Toronto: Copp-Clark 1957, 9, 11, 29.

8. Sandiford, "Comparitive Education", 363-6, 431-2; William E. Blatz & Helen M. Bott, Parents and the Pre-School Child. Toronto: Dent 1928, 82, 88, 211, 225-6; William E. Blatz & Helen M. Bott, The Management of Young Children. Toronto: McClelland and Stewart 1930, 42, 56; Griffin, Laycock & Line, "Mental Hygiene", 226; Samuel R. Laycock, Special Education in Canada. Toronto: W.J. Gage 1963, 32, 37-38, 40-1, 53, 149.

9. Walter Lippman, "The Reliability of Intelligence Tests", "A Future for the Tests", "The Abuse of Tests", In N.J. Block & Gerald Dworkin, The I.Q. Controversy: Critical Readings. New York: Pantheon 1976, 20, 25, 28 (Originally published in New Republic 1922-3); James M. Lawler, IQ, Heritability and Racism. New York: International 1978, 39, 51-2; Stephen Jay Gould, The Mismeasure of Man. London: W.W. Norton 1981, 21, 147, 156, 176, 198, 238-9; Stephen Jay Gould, An Urchin in the Storm: Essays About Books and Ideas. London: W.W. Norton 1987, 107-54.

10. E. Paul Torrance, Education and the Creative Potential. Minneapolis: University of Minnesota Press 1967; J.P. Guilford, Intelligence, Creativity, and their Educational Implications. San Diego, California: Knapp 1968; Mary Nacol Meeker, The Structure of Intellect: Its Interpretation and Uses. Columbus, Ohio: Merrill 1969; Robert J. Sternberg, Intelligence, Information Processing, and Analogical Reasoning: The Componential Analysis of Human Abilities. London: Lawrence Erlbaum 1977; Robert J. Sternberg & Douglas K. Detterman, Human Intelligence: Perspectives on Its Theory and Measurement. Norwood, New Jersey: Ablex 1979; Howard Gardner, Frames of Mind: The Theory of Multiple Intelligences. Basic 1983; Robert J. Sternberg, Beyond IQ: A Triarchic Theory of Human Intelligence. Cambridge: Cambridge University Press 1985; Robert J. Sternberg & Douglas K. Detterman, What is Intelligence?: Contemporary Viewpoints on Its Nature and Definition. Norwood, New Jersey: Ablex 1986; Robert J. Sternberg, The Triarchic Mind: A New Theory of Human Intelligence. London: Penguin 1988; Robert J. Sternberg, Metaphors of Mind: Conceptions of the Nature of Intelligence. Cambridge: Cambridge University Press 1990.

11. S.S. Sodhi, Myths in Special Education. Detroit: Harlo 1974; James E. Ysseldyke & Bob Algozzine, Critical Issues in Special and Remedial Education. Boston: Houghton Mifflin 1982; David Leitch & S.S. Sodhi, Problematic Nature and Role of Theory and Practice in Special Education. Halifax: Atlantic Centre of Support for Disabled Students 1985.

12. John Dewey, "Psychology and Social Practice", Psychological Review 7(2) 1900 116; John Dewey, "The Need for Social Psychology", Psychological Review 24(4) 1917, 272-3; David P. Ausubel, Educational Psychology: A Cognitive View. Toronto: Holt, Rinehart, & Winston 1968; Elliot W. Eisner & Elisabeth Vallance (eds.), Conflicting Conceptions of Curriculum. Berkeley: McCutchan 1974; William Pinar (ed.), Curriculum Theorizing: The Reconceptualists. Berkeley: McCutchan 1975; David P. Ausubel, Joseph D. Novak & Helen Hanesian, Educational Psychology: A Cognitive View. 2nd.Ed., Toronto: Holt, Rinehart & Winston 1978; Joseph D. Novak & D. Bob Gowin, Learning How to Learn. Cambridge: Cambridge University Press 1984; Elliot W. Eisner, The Educational Imagination: On the Design and Evaluation of School Programs. 2nd Ed., London: Collier-MacMillan 1985; Frank Smith, Insult to Intelligence: The Bureaucratic Invasion of Our Classrooms. New York: Arbor House 1986.

13. Karen Horney, The Neurotic Personality of Our Time. New York: W.W. Norton 1937, viii, 18, 22-3, 286, 290; Erich Fromm, Escape From Freedom. New York: Avon 1941, 272-3, 280, 284, 313; Gerald Coles, The Learning Mystique: A Critical Look at 'Learning Disabilities'. New York: Pantheon 1987.

14. Smythe & Stennett, "Elementary Education for Gifted", 17; Parker, "What Can Be Learned", 19; Sangster & Adamson, "Nurturing Gifted Children", 28; Arkell, "Educating Gifted Students", 5; Blank, Fox, & Nelson, "Facilitating Creative Thinking", 10; Banks, "How Would You Like It", 12-13; Shore, "Teacher Training", 81-2; Vernon, "Programs for Gifted", 29; Linn, "Should Learning Assistance Teachers", 229; Neufeld & Cozac, "Study of the Self-Concept", 151; Harris, "Acceleration of Gifted", 140; Violato & Blank, "Evaluation of a Programme", 327; Blank & Thomas, "Enhancing Creative Thinking", 171, 175; Laine, "Implementation of Gifted Education", 153, 158; Runions, "Mentorship Programming", 28-9; Sigler, "Evaluation of Trade Offs", 59; Wood, "Gifted and Talented", 20; McMillan, "Conselling for the Gifted", 125; Reis & O'Shea, "Innovative Enrichment", 135-6; Simpson, "Half a Loaf", 120; Smyth, "Educating Ontario's Ablest", 145; Wilgosh & Mulcahy, "Feasible Enrichment", 130; Yewchuk, "Changing Views of Gifted", 11-13; Yewchuk, "Gifted Preschoolers", 122; Spina & Crealock, "Identification of and Programming for the Gifted Underachiever", 8; Blank & Ellis, "Challenge Classes", 327; Plaisance, "Negative Attitudes", 50.

15. Smythe & Stennett, "Elementary Education for Gifted", 17; Arkell, "Educating Gifted Students", 5; Blank, Fox, & Nelson, "Facilitating Creative Thinking", 10; Linn, "Should Learning Assistance Teachers", 229; Blank & Thomas, "Enhancing Creative Thinking", 171, 175; Wilgosh & Mulcahy, "Feasible Enrichment", 130; Ellis, "Creatively Gifted Children", 75, 79, 83.

16. Sangster & Adamson, "Nurturing Gifted Children", 28; Arkell, "Educating Gifted Students", 5; Harris, "Acceleration of Gifted", 140; Blank & Thomas, "Enhancing Creative Thinking", 171; Knowles, "Myth of the Greenhouse", 99-101; Wilgosh & Mulcahy, "Feasible Enrichment", 130; Yewchuk, "Changing Views of Gifted", 11-13; Ellis, "Creatively Gifted Children", 75, 79, 83, 84; Blank & Ellis, "Challenge Classes", 330-1.

17. Smythe & Stennett, "Elementary Education for Gifted", 17; Arkell, "Educating Gifted Students", 5; Shore, "Teacher Training", 81-2; Vernon, "Programs for Gifted", 29; Yewchuk, "Changing Views of Gifted", 11-13.

18. Sangster & Adamson, "Nurturing Gifted Children", 28; Linn, "Should Learning Assistance Teachers", 229; Blank, "Enhancing Creative Thinking", 171; Ellis, "Creatively Gifted Children", 75, 79, 84.

19. Harris, "Acceleration of Gifted", 140; Yewchuk, "Changing Views of Gifted", 11-13.

20. Shore, "Teacher Training", 81-2; Ellis, "Creatively Gifted Children", 75, 79, 83.

21. Sangster & Adamson, "Nurturing Gifted Children", 28; Arkell, "Educating Gifted Students", 5; Banks, "How Would You Like It", 12-13; Shore, "Teacher Training", 81-2; Neufeld & Cozac, "Study of the Self-Concept", 157; Shore, "What Principals and Commissioners Can Do", 5; Harris, "Acceleration of Gifted", 140; Violato & Blank, "Evaluation of a Programme", 327; Blank & Thomas, "Enhancing Creative Thinking", 175; Runions, "Mentorship Programming", 28-9; Reis & O'Shea, "Innovative Enrichment", 135-6; Smyth, "Educating Ontario's Ablest", 145; Waldorf, "Enrichment as a Part of Gifted", 139; Wilgosh & Mulcahy, "Feasible Enrichment", 130; Yewchuk, "Changing Views of Gifted", 11-13; Yewchuk, "Gifted Preschoolers", 122; Yewchuk, "Gifted Education in Alberta", 142; Ellis, "Creatively Gifted Children", 75, 83; Spina & Crealock, "Identification of and Programming for the Gifted Underachiever", 8; Blank & Ellis, "Challenge Classes", 328.

22. Sangster & Adamson, "Nurturing Gifted Children", 28; Shore, "Teacher Training", 81-2; Shore, "What Principals and Commissioners Can Do", 5; Violato & Blank, "Evaluation of a Programme", 327; Knowles, "Myth of the Greenhouse Child", 99-101; Runions, "Mentorship Programming", 28-9; Wood, "Gifted and Talented", 20; Mulcahy, Wilgosh, Crawford, & Watters, "Gifted Education", 127; Reis & O'Shea, "Innovative Enrichment", 135-6; Simpson, "Half a Loaf", 120; Smyth, "Educating Ontario's Ablest", 145; Willings, "Gifted in the Maritime Provinces", 148; Yewchuk, "Changing Views of Gifted", 11-13; Yewchuk, "Gifted Preschoolers", 122; Spina & Crealock, "Identification of and Programming for the Gifted Underachiever", 8.

23. Sangster & Adamson, "Nurturing Gifted Children", 28; Shore, "Teacher Training", 81-2; Simpson, "Half a Loaf", 120; Smyth, "Educating Ontario's Ablest", 145; Yewchuk, "Changing Views of Gifted", 11-13; Yewchuk, "Gifted Preschoolers", 122.

24. Pal, "Childrearing Practices", 62, 68; Shiner, "Curriculum Implications", 12; Taylor, "Effects of Instruction", 37; Perks, "An Investigation into the Identification", 9; Van Hesteren, "Life in Classrooms", 18; Antliffe-Froom, "Information Processing Strategies", 36; Cho, "Cognitive Strategies", 14-19; Lipp, "An Analysis of Affective Factors", 16-17; Grenier, "Patterns of Sibling Deidentification", 95; Laine, "Relationships Between the Structure of Intellect", 9, 108-9; Rejskind, "Sex Differences an Specialization", 2, 43; Davey, "Social Skills Training", 2, 23; Maier, "A Reconceptualization of the Education", 181; Porath, "Cognitive Development of Gifted", 16-20.

25. Shiner, "Curriculum Implications", 12; Van Hesteren, "Life in Classrooms", 18; Davey, "Social Skills Training", 2, 23.

26. Shiner, "Curriculum Implications", 12; Van Hesteren, "Life in Classrooms", 2.

27. Van Hesteren, "Life in Classrooms", 18; Davey, "Social Skills Training", 2, 23.

28. Shiner, "Curriculum Implications", 12; Van Hesteren, "Life in Classrooms", 18.

29. Stelmaschuk, "Identified and Unidentified Gifted", 46.

30. Pal, "Childrearing Practices", 62, 68; Shiner, "Curriculum Implications", 12; Taylor, "Effects of Instruction", 37; Perks, "An Investigation into the Identification", 9; Van Hesteren, "Life in Classrooms", 18; Antliffe-Froom, "Information Processing Strategies", 36; Lipp, "An Analysis of Affective Factors", 16-17; Grenier, "Patterns of Sibling Deidentification", 95; Rejskind, "Sex Differences and Specialization", 2, 43; Shivrattan, "Effect of Framework Based Conferencing"; Davey, "Social Skills Training", 2, 23.

31. Taylor, "Effects of Instruction", 37; Lipp, "An Analysis of Affective Factors", 16-17; Grenier, "Patterns of Sibling Deidentification", 95; Rejskind, "Sex Differences and Specialization", 2, 43.

32. Taylor, "Effects of Instruction", 37; Rejskind, "Sex Differences and Specialization", 2, 43.

33. Linn, "Should Learning Assistance Teachers", 228; Cassivi, "Special Programs for the Gifted", 191, 193-4, 197.

34. Parker, "What Can Be Learned", 20; Knowles, "Myth of the Greenhouse Child", 107.

35. Knowles, "Myth of the Greenhouse Child", 101, 104-5, 107.

36. Parker, "What Can Be Learned", 19-21; Cassivi, "Special Programs for the Gifted", 193, 196; Banks, "How Would You Like It", 12-14; Blank, Fox & Nelson, "Facilitating Creative Thinking", 10; Blank & Thomas, "Enhancing Creative Thinking", 172-3; Ellis, "Creatively Gifted Children", 69-71; Vernon "Programs for Gifted", 31-2; Knowles, "Myth of the Greenhouse Child", 110.

37. Stelmaschuk, "Identified and Unidentified Gifted", 3, 29-32.

38. Laine, "Relationships Between the Structure of Intellect", 2, 6, 10-11; Rejskind, "Sex Differences in Specialization", 6-7, 21.

39. Laine, "Relationships Between the Structure of Intellect", 8-9, 96, 109; Maier, "A Reconceptualization of the Education", 84.

40. Stelmaschuk, "Identified and Unidentified Gifted", 63, 372; Laine, "Relationships Between the Structure of Intellect", 7, 95-6.

41. Van Hesteren, "Life in Classrooms", 296.

42. Van Hesteren, "Life in Classrooms", 296-312; Laine, "Relationships Between the Structure of Intellect", 7.

43. Dawson, "Preparing Teachers", 31; Jacques, "Neurology of Learning Disability", 33; Roode, "Relevance of Audio-Visual", 133; Tisher, "Psycho-Motor Re-Education", 190-1; Blair, "Where Are We Going", 15-17; Kronick, "Concept of Secondary Gain", 12; Long, "Programming for Adolescents", 14; Perkins, "Learning Disabilities Some of the Issues", 38-40; Rourke, "Issues in the Neuropsychological", 90, 100; Kendall, "Sheep or Goats", 63; Armitage, "Can Handicapping Conditions Be Prevented", 147-58; Fritzsche, "Learning Disabilities in British Columbia", 73-4; Robens, "Psychological Evaluation", 41-6; McCleod, "Overview of Learning Disabilities", 8, 10; Pihl, "Recent Evidence", 353, 358, 363; Kravitz, "Learning Disability - A Changing Perspective", 16; Scull, "Residential Treatment", 25; Kravitz, "Inconsistently Learning Disabled", 26-7, 32; Besner, "Deep Dyslexia", 365-6; Hutchison, "Relationship Between Word-Finding", 27-8; Caplan & Dinardo, "Is There A Relationship", 320; McDonald, "Clinical Neuro-Psychology", 118; Wiss, "Comparison of the Performance", 85; Regehr, "Genetic Aspects", 249; Hackhofer, "Brain Insult", 1.

44. Hardy, "Disabled Readers", 339-40, 345; Rabinovitch & Strassberg, "Syntax and Retention", 142, 151; Ritchie, "Special Service", 52; Cummins & Das, "Cognitive Processing", 246-247, 250, 252; Wong, "Teaching and Improving", 74; Clarke & Kendall, "Learning Disabled or Hearing Impaired", 15, 25; Whyte, "Diagnosis and Remediation", 5; Horsman & Heydorn, "Learning Disabilities Conquered", 17; Ryckman, "Reading Achievement", 75, 82-3; Bloom & Coulter, "Study Strategies", 24; Blowers, "The C's", 15, 17; Whyte, "Characteristics of Learning Disabilities", 14, 16, 23; Adams, "Summer Day Camp", 136-7; Bowers, Steffy, & Swanson, "Naming Speed", 209-12; Hooker & Foster, "Survey of Services", 60; Wiss & Bachor, "Issues in Assessment", 116; Linn, Algozzine, Mann, & Schwartz, "Communication Skills", 304; Werker & Tees, "Speech Perception", 48, 59; Wiss & Burnett, "Application of the Boder", 61.

45. Davis, "Problem Reader", 162; Lissak, "Reading Difficulty", 128-9; Barnett, "Learning Disability Label", 159-66; Eaton, "Parents as Tutors", 279; Wong, "Role of Measurement", 253; McMurray, "Learning Disabled Adolescents", 11; Prock, "Emotions", 204; Wiens, "Secondary Special Education", 10-11; Blowers, "Grade One Test", 13; Boersma & Chapman, "Academic Self-Concept", 351; Fisk & Janzen, "Identifying Learning Disabled", 253-4; Illerbrun & Greenough, "Classroom/Clinical Diagnosis", 23, 24, 26; Watts & Cashion, "Comparitive Psycho-Educational Assessment", 189, 198; Wong, Jones, & Wong, "Differntiating Between", 263; Stewin, "Comparison of Programs", 77; Lipp, Schmunk, Waldie, & Wallace, "Scholastica Institute", 134; McBride, "Service Delivery Systems", 54; Prock, "Coping with Learning Disabilities", 71; Walsh, "Diagnostic Utility", 121; Wong, "Instructional Strategies", 128; Sakiofske & Yackulic, "Identifying Learning Disabled", 15; Morton & Siegel, "Summer Vacation", 10-11; Thomas, "Problem Solving", 84.

46. Day, "Importance of Arousal", 154, 159; Houde, "Combined Treatment", 174, 176; Long, "Personal Adjustment", 13; Endler & Minden, "Anxiety", 35; Kravitz, "Improving Classroom", 32; Kravitz, "Assisting Learning Different Students", 68; Andrews & Janzen, "Objectifying the Kinetic School Drawing", 35.

47. Miller, "Applying Psycholiguistic Research", 15-17; Little, "Learning Disabilities and the Severly Learning Disabled", 158-9; O'Conner, "Early Screening", 273-80; Fishburne, "Stimulant Drug Therapy", 56, 58, 60.

48. Wilson, "Assessment of the Cerebral Dominance Theory", 2; Ferguson, "Errorless Discrimination", 23; Fisk, "Identification of Subtypes", 8; Brooker, "Development of Selective Attention", 13; Kirkbride, "Development of Classification", 42-3; Polatajko, "Vestibular Function", 2, 20; Daly, "Identification of Subtypes", 9; Hern, "Neurological Signs", 49; Deluca, "Identification of Subtypes", 91.

49. Munns, "Development of a Teachers Observation", 106; Warren, "Placement of Learning Disabled", 5, 19, 25; Wilchesky, "Recognition of Peer", 7; Faux, "Relationship of Spatial Memory", 1, 294; Cho, "Cognitive Strategies", 14; Nodrick, "Learning Disability Subtypes", 47-8; Salter, "Process Approach", ii, 3.

50. O'Neil, "Evaluation of a Method", 1-2; Chapman, "Affective Characteristics", 1-2; McKenzie, "Some Characteristics", 1-3; Strang, "Personality Dimensions", 38, 61-2; Frost, "Arithmetic Achievement", 4-5, 355; Klein, "Diagnostic Use", 66; Marini, "Verbal Encoding", 31-2; Mattu, "Role Analysis", 6, 22; Freeman, "Depression and Learning Disabilities", 13, 48, Schurman, "Teaching Learning Disabled Students", 2.

51. Williams, "Arousal and Information", 1-2, 145, 156-7; King, "Hyperactivity", 9; McKenzie, "Attention and Distraction"; Meyer, "Psychoeducational Evaluation", 44.

52. Leitch, "Special Education", 128.

53. Little, "Learning Disabilities and the Severly Learning Disabled", 158-9; O'Conner, "Early Screening", 273-80; Fishburne, "Stimulant Drug Therapy", 56, 58, 60.

54. Miller, "Applying Psycholingustic Research", 15-17.

55. Leitch, "Special Education", vii, 5, 84-7, 128.

# CHAPTER FIVE

## CULTURE, SCIENCE, AND THE EMERGENCE OF NEW PARADIGMS

> As it is presently constituted, the Ph.D. program is truly rigorous and demanding: but that, sadly, might be undermining excellence in scholarly research. The values most inculcated are endurance, obedience, and caution, and the professional skills most exercised are memory, diplomacy, and conformity to the intellectual status quo. While these developments are observable in all disciplines, they have reached crisis proportions in the humanities and social sciences, which are now being shunned by the best graduate students.
>
> Wilfred Cude
> The Ph.D. Trap, 1987[1]

In the preceding chapters we attempted to determine why orthodox definitions of giftedness and learning disability remain entrenched in the theoretical foundations of special education in spite of a growing literature which questions their scientific validity. This attempt was embodied in an analysis of the cultural and intellectual mileau in which the theoretical foundations of special education were formulated and a study whose intent was to establish whether or not definitions in current use were congruent with these early formulations.

The findings presented in Chapters Two, Three, and Four of this study indicated that definitions of giftedness and learning disability are the product of an on-going alliance between culture and science evident in i) a union of ascetic Protestantism and positivist social science which culminated in the 'scientific'

theories and principles of a functional psychology which reaffirmed Calvinist assumptions regarding correct human behaviour; ii) an attempt to vindicate these quasi-religious theories and principles through the practice of a normal science by functional psychologists working within the paradigms of social eugenics and mental hygienics; and iii) the use of functionalist constructs of giftedness and learning disability which were the result of this practice in the design of special education research in Canada between 1968 and 1989.

This chapter will discuss the state of reciprocity which exists between culture and social science. In this discussion the findings described above will be analyzed in light of the constructs of cultural overdetermination, astructural perception, and normal science formulated by Paulo Freire and Thomas Kuhn.[2]

Freire found that one's world view distorts, or overdetermines, their conception of a society's legitimate institutional arrangements including the interpersonal relations within institutions -- it biases their theoretical construction of social reality.[3] He claims the construction of social reality on the basis of the predominant world view of a culture has serious pejorative effects on the evolution of knowledge. First, according to Freire, one's way of conceptualizing the range of legitimate human thought and action is constrained by the world view to which one subscribes. Second, as a result of this constraint, one's own thoughts and actions become habituated, evoking a suppressed awareness of the human complicity in the formulation of this world view and the social

arrangements and relations it inspires.[4] Freire calls this latter effect an astructural perception in the proponents of the world view -- a failure to perceive how this view disposes them to interpret reality in ways consistent with its theoretical assumptions.[5]

Freire's construct of astructural perception is compatible with Kuhn's description of the scientific perception of individuals involved in the practice of a normal science as discussed in Chapter Three. Normal science, in Kuhn's view is characterized by the elaboration of orthodox theories and principles and the neglect of unorthodox theories and principles.[6] By combining Freire's constructs of cultural overdetermination and astructural perception with Kuhn's construct of normal science we can explain the entrenchment of functionalist definitions of giftedness and learning disability in the theoretical foundations of special education. This entrenchment was the product of a two-stage process of enculturation in which a Calvinist interpretation of social reality, inherent in an ascetic Protestant world view, was perpetuated through the practice of a normal science by individuals convinced of the ultimate legitimacy of the assumptions regarding human behaviour embedded in this interpretation.

**The Effect of Cultural Overdetermination and Astructural Perception on the Positivist Philosophy of Social Science, Early Theories of Human Behaviour, and Functional Psychology**

The analysis contained in Chapter Two indicated that over the course of the nineteenth century a reconstruction of the philosophy of science known as positivism was profoundly influenced, or overdetermined, by the world view of the ascetic Protestant. In addition, the astructural perception this world view aroused in early psychologists such as Spencer and James led to the formulation of theoretical premises congruent with Calvinist doctrine regarding correct human behaviour and the neglect of other premises because of their incongruence with this doctrine --the mandate of an ascetic Protestant world view set the stage for the practice of a normal science.

An analysis of the writings of nineteenth century moral philosophers and social scientists indicated that ascetic Protestants and positivists shared a common belief that empirical knowledge was a prerequisite to social progress. The atheistic tendency of Comte's positivist philosophy, however, was unacceptable to the proponents of a Protestant world view.[7] This situation was rectified in a philosophical restructuring of positivism by Spencer and James who, unlike Comte, proposed that science and religion formed a symbiotic relationship conducive to the socio-moral reformation of society. This proposal exemplifies the workings of the cultural perspective of ascetic Protestantism on the theoretical formulations of early social scientists.[8]

But ascetic Protestantism did more than instruct the reconceptualization of social science as a whole, it also overdetermined the conception of the rudimentary theories and principles in the various disciplines of social science. Acting in ways consistent with Freire's postulate of astructural perception and Kuhn's description of normal scientific practice, Spencer and James formulated theories and principles of psychology which were congruent with the Calvinist doctrine of ascetic Protestantism while ignoring legitimate challenges to these principles offered by psychologists such as Wilhelm Wundt.[9]

True to Calvinist assumptions regarding human behaviour, the central postulate of Spencerian psychology --the Spencer-Bain principle -- proposed that moral actions --one's duty -- would be perpetuated in intelligent persons because of positive reinforcement. According to the axioms of Calvinism, these actions yielded material reward which offered proof of both their correctness and one's blessed status. Conversely, immoral, or incorrect, actions yielded no such reward and were therefore proof that such actions were damnable leading to their eradication in right thinking individuals.[10] This assumption led Spencer to formulate a model to be used in directing the reformation of society which called for: i) the placement of the most moral and intelligent -- those whose accumulation of material rewards proved they were acting dutifully and were blessed or predestined for salvation -- in positions of social leadership; and ii) the ostracism of the immoral and unintelligent -- those whose failure to obtain

material rewards, or blessings, was proof they were not acting dutifully and were, therefore, predestined for damnation -- in the best interest of society.[11]

Similarly, Jamesian psychology called for the division of society into leaders, identified by him as the children of wealth, and less fortunate followers. Both of these groups, according to James, were to be trained to dutifully perform the functional habits associated with their station in life. The principle of habit which stood at the centre of his psychology was, like the Spencer-Bain principle, a metaphor for the Calvinist doctrine of duty. In the Jamesian view, it was the performance of duties associated with one's station in life, as determined by material rewards or blessings, that maintained the bounds of ordinance necessary for the evolution of a moral society.[12]

The analysis contained in Chapter Two provided evidence in support of the hypothesis that the world view of ascetic Protestantism overdetermined the scientific perception of early psychologists leading to the practice of a normal science. The effect of Protestant culture on social science is evident in: i) the enlistment of the positivist method of social science in the service of an ascetic Protestantism manifest in Herbert Spencer's synthetic philosophy and William James' philosophy of pragmatism; ii) the objectification of Calvinist doctrines for correct human behaviour in Spencer and James' conception of intelligence, learning, and the socio-moral evolution of society in what came to be known as a functional psychology; and iii) the intolerance of functionalists for the cognitivist

interpretation of human psychology as evidenced by the repudiation of the work of Wilhelm Wundt.

The union of the sacred and the secular in the theoretical foundations of Canadian social science and education at the turn of the century, as described by Ramsay Cook and Anne Wood, further exemplifies the effect of cultural overdetermination and astructural perception on scientific practice.[13] In this transformation of moral philosophy into the various disciplines of social science, Calvinist doctrines were reincarnated in a functional psychology whose theories and principles guided the practice of a normal science by the largely Protestant membership of these disciplines.[14] It was the two key functionalist paradigms of the twentieth century, social eugenics and mental hygienics, which led to the emergence of the constructs of giftedness and learning disability in educational psychology and special education.

**The Effect of Cultural Overdetermination and Astructural Perception on Early Canadian Research and Practice in Educational Psychology and Special Education**

The findings presented in Chapter Three indicated that early Canadian psychologists, educational psychologists, and special educators, working within the paradigms of social eugenics and mental hygienics, elaborated on the quasi-religious theories and principles embodied in the functional psychology of Herbert Spencer and William James. In their elaboration of Calvinist assumptions

regarding correct human behaviour, and neglect of evidence which challenged these assumptions, the actions of Canadian functionalists illustrates the continuing tendency of a world view -- ascetic Protestantism -- to overdetermine the perception of its adherents. This perception disposed them to the practice of a normal science which sought to vindicate Protestant interpretations of a desired social reality at the expense of other possible interpretations.

In the early twentieth century social eugenicists such as Peter Sandiford of the University of Toronto hoped to implement Spencer's model for the reformation of society. He proposed that educational psychology could contribute to social reform by assuring that those predestined to lead the reformative process assumed roles of authority and by segregating the socially, or morally, incompetent -- the feebleminded and disabled.[15] As a result of the efforts of eugenicists like Sandiford, intelligence came to be equated with social conformity; and feeblemindedness, or a lack of intelligence, with social non-conformity.

Sandiford, one of Canada's first educational psychologists, introduced the eugenicist strategy in the organization of the school by proposing: i) genetically transmitted mental abilities could be measured by intelligence tests; ii) these measurements would enable educators to identify the appropriate educational track, and functional habits, required by each student; iii) a superior measured intelligence, and a high degree of conformity with the intellectual and behavioural