

**SCHOOLS OF FAITH:
THE EFFECT OF LIBERAL ARTS,
PROFESSIONAL, AND RELIGIOUS EDUCATION
ON FAITH DEVELOPMENT**

By

Dennis Wayne Hiebert

A Dissertation
Submitted to the Faculty of Graduate Studies
in Partial Fulfilment of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY

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DENNIS WAYNE HIEBERT

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ABSTRACT

James Fowler has conceptualized faith as an individual's general meaning system. His theory of faith development, which focuses on the form or structure of faith in contrast with the contents, has been virtually absent from sociological literature, despite being pertinent to the sociology of religion in particular. This study elucidates the sociology of Fowler's model through an empirical investigation of the effects of liberal arts, professional, and religious post-secondary education on faith development.

Data were collected by means of a mail survey from a sample of 796 freshmen and senior students of three different schools in the Winnipeg area. The survey contained a 48-item self-administered scale developed through eight pre-tested drafts for this and future research. It is presented as a validated alternative to Fowler's ponderous in-person interview schedule for the assessment of faith stage development.

The data showed little variation in stage of faith development in the entire sample, with 64% of the students being scored as Stage 4. As a result, even the differences between groups found to be statistically significant by means of t-tests in four of seven hypotheses were substantively rather insignificant. Nevertheless, liberal arts education showed slightly more developmental effects than professional or religious education. Qualitative data collected from the seniors corroborated and explicated these quantitative findings by indicating that liberal arts education was more

oriented to existential open-mindedness, whereas professional education did not address human meaning-making systematically, and religious education was more oriented to some cognitive closure.

Regression analysis of the effect of various demographic factors other than education on faith development, performed for the purpose of statistical control and elaboration, produced an R^2 of .10, and various measures of the effect of religion on faith development were inconclusive. The unexpectedly high faith stage scores of post-secondary students in general were interpreted as being at least partially a social product of cultural shifts promoted by higher education.

ACKNOWLEDGMENTS

Completing a Ph.D. program of study in general and a doctoral dissertation in particular would appear to require tenacity, opportunity, and ability, in that order. Doing so is not something I expected to accomplish until recently, and most certainly could not have done so alone. Various people and agencies have made it possible.

I would first like to thank the members of my dissertation committee for encouraging me to persevere, for providing requisite academic services, and for imparting knowledge and skills beyond what I could master. In particular, Dr. David Creamer made the resources of the Jesuit Centre for Faith Development and Values available to me, Dr. Lance Roberts asked many probing questions and lent his methodological acumen, and Dr. Daniel Albas introduced me to social psychology and remained my most ardent supporter. Above all, my advisor, Dr. Raymond Currie, ushered me into the sociology of religion, inspired me with his enthusiasm and hard work, and honoured me with his faithfulness despite taking on heavy administrative pressures.

I owe two other people special thanks. I depended heavily on Zachary Zimmer's extraordinary computer and statistical expertise in the analysis of the data. However, my most profound indebtedness is to Dr. Larry Cooley for opening Fowler's theory of faith development to me, and for modelling a spirituality in academia that I aspire to emulate.

Among the agencies that provided the opportunity for this research program, Providence College is foremost. I never would have undertaken the effort were it not for the professional opportunity presented by its study leave policies, and the collegial encouragement of its faculty. Funding from a University of Manitoba Graduate Fellowship, a Social Sciences and Humanities Research Council of Canada Doctoral Fellowship, and a research grant from the Association of Canadian Bible Colleges helped to create the financial opportunity.

Finally, I reserve my warmest gratitude for the support of my personal circle of friends in the Kleefeld Christian Community, who gave me strength to go to work and reason to return from it. But words fail when they come up against the magnitude of Judy's contribution, or the depth of my gratitude for all that she has been for me. She understood, and helped me persevere. Paul and Kyle helped without understanding.

DEDICATED

to those with whom I keep most faith:

Judy

who bears my love

Paul and Kyle

who bear my life

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LIST OF ABBREVIATIONS

ARTS = University of Manitoba Arts

CMBC = Canadian Mennonite Bible College

ENG = University of Manitoba Engineering

PC = Providence College

Frh = Freshmen

Sen = Seniors

CHAPTER ONE

FORMULATION OF THE RESEARCH PROBLEM

I. INTRODUCTION

One of the primary properties that distinguishes human life from non-human life is the fact that the healthy, mature person is a conscious subject. Despite theories such as radical behaviourism, which reduce the individual to an object operated on by his or her environment, most people conceive of themselves as operative agents in a manner utterly unlike animal or plant life. By this conception, humans are said to be self-conscious or self-aware. The exercise of consciousness and conceptualization leads individuals to ask questions about themselves and their environment in an effort to know and, preferably, bring coherence to their experience. But more than merely knowing life, people seek to understand it, to reach conclusions about its meaning. The individual will not rest until conclusions about meaning are reached, one way or another, however tentatively. He or she will then align his or her behaviour in accordance with these judgments of fact. The universal character of human existence is that people experience, understand, judge, and choose. (Lonergan, 1957)

These actions are a description of the process or method of being human, the forms of being, knowing, and doing, as taught by one such form, modern science. The

particular contents of these forms and processes vary widely from individual to individual, from culture to culture. For example, contents may be dichotomized as religious or irreligious, and there are virtually innumerable additional ways of analyzing the contents of human consciousness. However, the forms and processes themselves can become part of the contents of consciousness. We can know knowing. We can know the "method that we are" (Lonergan, 1957) without necessarily knowing who we are, which is to say that we can comprehend and analyze the facticity of the process of being human without concerning ourselves with particular individual conclusions and choices. We can answer the "how" question of form and process, without concerning ourselves with the "what" question of contents.

If we focus on the forms and process of the conscious experience of being human, we are inquiring into the characteristically human enterprise of meaning-making. If it is true that every person routinely, though perhaps unwittingly, constructs a meaning system, at least two questions logically follow. Why do they do so, and how or by what means do they do so? If we then choose to bypass the more philosophical first question and focus on the more scientific second question, two further generic categories of questions present themselves. First, how does the individual structure his or her meaning-making? What are the various dimensions and/or levels, and how are they related? Is it coherent or comprehensive, static or dynamic? Second, what influences bear upon meaning-making? What prompts it to change, if and when it does? These questions of structure and influence can be addressed by employing the constructs of faith and education.

A. Faith Development

Faith has traditionally been associated more with religion than with meaning-making, as theological, historical, comparative, philosophical, and social scientific surveys of the construct all reveal (Lee, 1990). The biblical writer of Ephesians, in 2:8, describes faith as a gift of grace from God, thereby placing it outside human instincts, reactions, or responses. However, Immanuel Kant conceived of faith as a form of practical reasoning, which he distinguished from theoretical reasoning, through which humans had direct experience of and access to God (Stallknecht, 1950). To Kant, faith was more a matter of volition than perception; faith was something one did in response to God. Reasoning from a mystical rather than a moral point of view, William James (1902) regarded faith as a response to the human awareness of a higher, spiritual universe. In this century, theologian Karl Barth and psychologist Emil Brunner, in *Nature and Grace* (1935), debated whether faith was grasped by human mental effort or by immediate awareness as a gift. Barth defended the Ephesian position that faith was entirely under divine control, whereas Brunner advanced the position that has been adopted by contemporary social science. In this conception, faith is "explicitly a conflict, need-based, motivation-driven model in which persons must have God to survive. . . [Brunner's] model firmly sees faith as a necessary process in religion" (Malony, 1990:79). Faith thus conceived is not "above nature," but is a mental process of meaning-making within the context of religion, and therefore accessible to scientific investigation.

In a radical departure from the religious embeddedness of the concept of faith,

one recent social scientific theory equates faith with individual meaning systems in general. This theory has been developed by James Fowler, currently at Emory University in Atlanta, and the rough equation of faith with meaning systems is evident in the title of his most important work, *Stages of Faith: The Psychology of Human Development and the Quest for Meaning* (1981). By this definition of faith, Fowler's theory is therefore intentionally not limited to the conventional religious connotation of faith. Instead, it describes the most generic and most profound process of being human. However, Fowler's work is not focused on a theory of faith per se, but on how individuals structure the meanings of their lives. According to his model, structuring occurs at six levels of sophistication that Fowler identifies as developmental stages which may or may not occur over the duration of an individual's life. The stages are as follows:

Stage 1 Intuitive-Projective Faith

This stage is characterized by an emotional egocentrism, a vivid imagination, and episodic experience that is largely imitative.

Stage 2 Mythic-Literal Faith

This stage is characterized by an unreflective, uncritical cohering of experience into linear narrative, based on cause and effect relations and concrete external structures of good and bad.

Stage 3 Synthetic-Conventional Faith

This stage is characterized by more complexity and abstraction, and is

able to reflect back upon itself, even though it is essentially conformist in its orientation to significant others and groups, and in its unconscious embrace of ideology.

Stage 4 Individuative-Reflective Faith

This stage is characterized by the critical examination or demythologizing of commitments for the purpose of constructing a personal, explicit meaning system that is rationally defensible and exclusive.

Stage 5 Conjunctive Faith

This stage is characterized by a postcritical awakening to the paradoxical nature of truth and the need to unite the seeming opposites of assertion and waiting, logic and mystery. It replaces tribalism and ideological warfare with an epistemological humility, an ironic imagination, and a second or willed naivete that is open to the larger movement of spirit.

Stage 6 Universalizing Faith

This stage is characterized by an extremely rare and radical "decentration from self" along with *kenosis*, or emptying of self, in an identification with the ultimate. This all-consuming commitment to justice and love often leads to the martyrdom of these extraordinary people.

Each stage consists of different levels of what Fowler terms "Aspects," which together provide an operational definition of faith, as well as specific continuities between the stages. The seven Aspects are as follows:

- Aspect A Form of Logic (Piaget)
- Aspect B Social Perspective Taking (Selman)
- Aspect C Form of Moral Judgment (Kohlberg)
- Aspect D Bounds of Social Awareness
- Aspect E Locus of Authority
- Aspect F Form of World Coherence
- Aspect G Role of Symbols

Thus, by measuring each one of these aspects, Fowler's model purports to identify any individual's stage of faith development, which is in effect to describe his or her structure of meaning-making. Table 1-1 outlines the essence of the model.

As a theory of development, Fowler's model can be described in terms of seven major issues addressed by all developmental theories (Hayslip and Panek, 1989). First, Fowler's theory is obviously committed to a stage conception of development, in which the elements of each stage have an organizing principle, and in which each stage is a prerequisite for the next. This conception contrasts with other developmental theories in which elements develop independently. Second, Fowler's theory is qualitative in that it considers change to occur through the acquisition of completely new structures and processes. This contrasts with the quantitative

TABLE 1-1

FAITH STAGES BY ASPECTS

Aspect Stage	A. Form Of Logic (Piaget)	B. Role-Taking (Selman)	C. Form of Moral Judgment (Kohlberg)	D. Bounds of Social Awareness	E. Locus of Authority	F. Form of World Coherence	G. Role of Symbols
0	*	*	*	*	*	*	*
I	Preoperational	Rudimentary Empathy (Egocentric)	Punishment—Reward	Family, primal others	Attachment/dependence relationships. Size, power, visible symbols of authority	Episodic	Magical-Numinous
II	Concrete Operational	Simple Perspective-taking	Instrumental Hedonism (Reciprocal Fairness)	"Those like us" (in familial, ethnic, racial, class and religious terms)	Incumbents of authority roles, salience increased by personal relatedness	Narrative-Dramatic	One-dimensional; literal
III	Early Formal Operations	Mutual Interpersonal	Interpersonal expectations and concordance	Composite of groups in which one has interpersonal relationships	Consensus of valued groups and in personally worthy representatives of belief-value traditions	Tacit system, felt meanings symbolically mediated, globally held	Symbols multidimensional; evocative power inheres in symbol
IV	Formal Operation. (Dichotomizing)	Mutual, with self-selected group or class—(Societal)	Societal Perspective Reflective Relativism or Class-biased Universalism	Ideologically compatible communities with congruence to self-chosen norms and insights	One's own judgment as informed by a self-ratified ideological perspective. Authorities and norms must be congruent with this.	Explicit system, conceptually mediated, clarity about boundaries and inner connections of system	Symbols separated from symbolized. Translated (reduced) to ideations. Evocative power inheres in <i>meaning</i> conveyed by symbols
V	Formal Operations. (Dialectical)	Mutual with groups, classes and traditions "other" than one's own	Prior to Society, Principled Higher Law (Universal and Critical)	Extends beyond class norms and interests. Disciplined ideological vulnerability to "truths" and "claims" of out-groups and other traditions	Dialectical joining of judgment-experience processes with reflective claims of others and of various expressions of cumulative human wisdom.	Multisystemic symbolic and conceptual mediation	Postcritical rejoining of irreducible symbolic power and ideational meaning. Evocative power inherent in the reality in and beyond symbol <i>and</i> in the power of unconscious processes in the self
VI	Formal Operations. (Synthetic)	Mutual, with the Commonwealth of Being	Loyalty to Being	Identification with the species. Transnarcissistic love of being	In a personal judgment informed by the experiences and truths of previous stages, purified of egoic striving, and linked by disciplined intuition to the principle of being	Unitive actuality felt and participated unity of "One beyond the many"	Evocative power of symbols actualized through unification of reality mediated by symbols and the self

conception of change through continuous accumulation of minor modifications. Third, Fowler's conception of the role the individual plays in his or her own development is that it may be either active or passive or both. Fourth, Fowler's theory is decidedly focused upon the forces of nurture as they occur through learning and environmental influences, in contrast with the hereditary forces of nature. Fifth, Fowler's model is holistic in that it requires the observation of more than one piece of evidence and the determination of overall meaning. In contrast, elementaristic models reduce assessment to single, observable, stimulus-response connections. Sixth, Fowler's theory is also decidedly structural-functional in its analysis. This contrasts with antecedent-consequential attempts to explain development on the basis of immediately causal factors that can be identified. Seventh, and finally, Fowler's theory is clearly non-deterministic, in contrast with deterministic theories which hold the individual captive to biology, past experience, or environmental conditions.

B. Education

Turning to the second question, the influences that bear upon the process of constructing meaning, either to cause fixation at a certain stage of development or to cause advancement to a subsequent stage, are myriad. One such influence would presumably be the process of education, the intent of which is usually presumed to be the fostering of development of some kind or another. Education can also be further specified and categorized in terms of several parameters, three of which are form, level, and content orientation.

Informal education, which is often equated with unsupervised learning, can be contrasted with formal education, which has evolved into a full-blown social institution in modern society. Formal education, in turn, has been roughly differentiated into elementary, secondary, and post-secondary levels. And in terms of content orientation, educational programs and institutions can be divided into those which propound religious meaning systems and those which propound non-religious or secular meaning systems. At present, this latter distinction also closely mirrors a public-private dichotomy of education in Canada. A second dichotomy in content orientation at the post-secondary level is the difference between those programs primarily intended to enrich the student's understanding of life, and those intended to equip the student with vocational skills.

Most theories of human development locate the majority of their crucial stages in childhood and adolescence, which suggests that it is the elementary and secondary levels of education that are potentially most implicated in developmental psychology. Adulthood and higher education are generally not associated with constructivist or structural development. When persons in Canada reach the legal age of eighteen years, they are considered to have matured to the extent that society is willing to accept them as responsible citizens, with the implicit assumption that further substantial development is no longer expected or desired. They are no longer required by law to participate in developmental structures such as education, and that which is voluntarily chosen is usually for practical reasons such as vocational preparation. The termination of compulsory universal education prior to adulthood might suggest that its ability to effect further development is questioned. Certainly, with the onset of

adulthood, the individual has normally reached a level of complexity that makes the promotion of stage transitions increasingly problematic. The factors of development have by then become too varied and uncertain.

Yet faith development remains the premise of at least one type of higher education. The content of religious education would appear, superficially, to focus more on the process of meaning-making than does the content of secular education. Of course, how faith development is addressed is at least as crucial to the probability of faith development as the degree to which it is addressed at all. Any type of education could conceivably retard progress through the stages of Fowler's model of faith development as readily as hasten it, depending on the bias of the content of that education. The closest correlate to religious education in secular education is that of the liberal arts, which, though less accepting of the label of faith development, are nevertheless presumably engaged more directly in the process and structuring of meaning-making than professional or vocational education.

Whether any measurable faith development occurs at all because of post-secondary education, either religious or secular, liberal arts or professional, is the question at which we have arrived. By testing for the effect of post-secondary education on faith development, we are examining the outer limits of a relationship between two variables that will reveal much of interest to theoreticians and practitioners in both fields.

II. REVIEW OF LITERATURE

Both religion and education are foundational social institutions, and both the sociology of religion and the sociology of education are acknowledged sub-disciplines within the field of sociology. The relatively recent emergence of faith development as a distinct area of inquiry has contributed much of interest to the study of both religion and education. The leading theory of faith development is the one introduced by Fowler and Keen in 1978, formalized by James Fowler in *Stages of Faith* (1981), and summarized by Fowler in 1986(a). It consists of a "creative, if unorthodox" (Jardine and Viljoen, 1992:79) combination and expansion of Erikson's (1950) psychosocial schema, Piaget's (1972) cognitive schema, Kohlberg's (1976) moral schema, and Selman's (1974) interpersonal schema. Though grounded in developmental psychology, Fowler's faith development model tends to be viewed, despite his protests, as primarily a construct of religious phenomena. Our concern here is the effect of education on faith development, when the latter is understood as descriptive of, but not limited to religion.

Our task will be to identify the points of contact between the sociology of religion and faith development theory, to advance sociological and non-sociological critiques of faith development theory, to delineate the theoretical relationship between faith development and education, and finally to review the research on the effect of education on faith development.

A. Faith Development and the Sociology of Religion

Faith development theory has been virtually absent from sociological literature to date. Until the middle of 1989, it did not produce a single citation when employed as a descriptor in Sociofile, a computer index of all articles published in sociological journals since 1974. It does not appear in *Silverman's Bibliography of Measurement Techniques Used in the Social Scientific Study of Religion* (1983). Silverman classifies measurements in the sociology of religion into nineteen subject categories, five of which include Glock's (1965) now classic dimensions of religiosity -- beliefs, practices, knowledge, experience and consequences -- which were later reformulated as the experiential, the ideological, the ritualistic, the intellectual, and the consequential (Glock, 1973). These, together with values and orientations, perhaps come closest to the concept of faith development, but none do it justice.

This neglect by sociologists may be due to two factors. First, the study of faith development may be deemed to fall outside the purview of mainstream sociology. It may be apprehended as being more individualistic than social, occurring within the psyche of the subject, and as developmental psychology, simply too microscopic for sociology. But sociology consists of two distinct streams. Macrosociology focuses on the relationship between large-scale social structures, institutions, and systems, whereas microsociology focuses on the everyday, face-to-face interactions among individuals. Inasmuch as theoretical perspectives such as symbolic interactionism and phenomenology already swell the stream of microsociology, the individualistic objection to faith development theory is faint and feeble. Second, and more likely, faith

development as a topic of inquiry is in its infancy, and sociologists simply have not turned to studying it yet. If its social scientific formulations can in fact be dated to the late 1970's and early 1980's, it is understandable that scholarly efforts thus far have focused on verification and refinement of the theory, as opposed to applications in various settings by various disciplines. However, the time has come for sociologists to begin working with faith development theory so as to evaluate its veracity and illuminate its utility.

An examination of selected elements of faith development theory reveals that it in fact contains much that is pertinent to the established concerns of sociology in general and the sociology of religion in particular. Four pertinencies will be reviewed here: the nature of religion, the relational nature of faith, the process of religious change, and the measurement of religion.

1. The Nature of Religion

At the core of this emerging dialogue lies the very definition of the phenomenon under scrutiny. One representative sociological definition of religion is "a system of beliefs and practices by which a group of people interprets and responds to what they feel is sacred, and usually, supernatural as well" (Johnstone, 1988:13). This is known by sociologists as a substantive definition, one that defines what religion is. It attempts to establish categories of religious content that qualify as religion (McGuire, 1992). Categories such as the conventionally religious, the nominally religious, the alternatively religious, and the non-religious are derived from it (Glock and Wuthnow,

1979). A second type of definition, known as a functional definition, emphasizes what religion does for an individual and social group. In defining religion by the social function it fulfills, the content of religious belief and practice is less important than the consequences of religion.

The focus of faith development theory comports well with the functional definitions of religion that challenge the sociology of religion to expand its horizons to the non-theistic and non-supernatural. Luckmann (1967), Yinger (1970), and Bellah (1970) are among the strongest contemporary advocates of the position that social science must view any kind of search for ultimate meaning as essentially religious. Tillich (1957), who described religion as that which was one's "ultimate concern", and Niebuhr (1960), who insisted that "to have faith and to have a god is one and the same thing" (1960:118), are twentieth century theologians who hold to the same position. Yinger is convinced that the search for ultimate meaning is universal, but others such as Geertz (1968), have maintained that the assumption of an intrinsic and universal need for meaning is not justified. Roberts (1990) has added the refinement that individual meaning systems are most properly conceived as faith, whereas religion is a social phenomenon, a distinction that is also evident in Fowler. Fowler's basic conception of faith is the individual making, maintenance, and transformation of human meaning. By invoking Becker's (1968) term of *homo poeta* -- man the meaning-maker -- he too thereby claims faith to be a human universal.

Faith, rather than belief or religion, is the most fundamental category of the human quest for relation to transcendence. Faith, it appears, is generic, a universal feature of human living, recognizably similar everywhere despite the remarkable variety of forms and contents of religious practice and belief. (1981:14)

Fowler, whose own graduate study included the sociology of religion, carefully differentiates faith from belief or religion precisely on the basis of patterns or structures of relationship, as opposed to contents of thought. Faith answers the questions of how one understands, judges, and chooses, not what one understands, judges, or chooses. James (1902) was the first to characterize belief as mere intellectual content, in contrast with faith. Allport (1950) noted that, although the term "faith" is often used to refer to things that are less than sure, belief in something nonetheless implies a more perfunctory and less serious relationship than faith in the same thing. "Faith is more complex psychologically than is simple belief" (Allport, 1950:123). In building upon the more recent work of the comparative religionist Wilfred Cantwell Smith in *The Meaning and End of Religion* (1963), Fowler also takes belief to be the "holding of certain ideas. . . (which) may be one of the ways faith expresses itself" (1981:11). Religion, for Fowler, is a particular cumulative tradition of belief.

Faith, in contrast, "involves an alignment of the heart or will, a commitment of loyalty and trust" (Fowler, 1981:11). It is an emotional commitment to a way of life that informs one's identity. When also religious, it constitutes what the social psychologists of religion Batson and Ventis (1982) called "true religion," in that it involves more than the mere belief and practice of religion in traditional, customary ways which they identified as "false religion." Fowler's concept of faith agrees with the ways in which Browning (1968) asserted that faith is qualitatively different from and beyond belief, though it contains elements of belief as a subset. Malony summarized Browning's distinctives of faith as follows:

- 1) faith combines a number of beliefs into a whole worldview, i.e., it is inclusive;
- 2) faith is that act which provides one's basic identity, i.e., it is

focused on the self; and 3) the certainty of conviction that emerges from faith differs radically from the cause-effect assumptions that are used in daily problem-solving, i.e. faith is not dependent on repeated empirical verification of the five senses. (Malony, 1990:84)

Fowler's view of faith as universal meaning-making, in which the transcendent may or may not be viewed as sacred, makes his faith development theory applicable to the religious and non-religious alike. Indeed, faith as such reaches well beyond substantive theories of religion. The Buddhist, Christian, and atheistic materialist all have faith in common, though their beliefs are different. It is even possible, as Fowler himself illustrated (1981:16-18), to have faith in a family, business, university, or nation-state. If faith is much deeper and more personal than belief or religion, as Fowler (1981:9), following Smith (1979:12), asserted, then faith is not far removed from the everyday constructions of general meaning elucidated by symbolic interactionism, or from the focus on the nature of consciousness and social worlds elucidated by phenomenology. Faith then has much to do with the individual's "paramount reality" and "fundamental anxiety" (Schutz, 1962), and with the individual's appropriation of the group's comprehensive meaning system, elucidated as its "symbolic universe" in Berger and Luckmann's sociological classic, *The Social Construction of Reality* (1966). A symbolic universe is nomic or ordering in character, and what Berger and Luckmann described as a "sheltering canopy" functioning to shield the individual from anomic terror, Berger (1967) later readily reinterpreted as a "sacred canopy" replete with plausibility structures. Thus the priority and affinity of faith as meaning-making to religion is evident in general sociological theory itself.

To the extent that faith is a universal -- and not just a religious -- phenomenon, it implicates all of us -- as either Christians, or Jews, or unbelievers, sociologists, socialists, pacifists, or whatever.

Traditionalism, dogmatism, or shallowness are obstacles in "faith development" as much in sociology as in religion, in interpersonal relations as in relating to myself. As it stands today, faith development constitutes a vast program for both empirical research and theoretical formulation. Only further research can fulfil these hopes. (Hegy, 1987:123).

2. The Relational Nature of Faith

A second point of contact between faith development theory and the sociology of religion also pertains to core conceptualizations. As already noted, Browning's (1968) second distinctive of faith is that it is focused on the self and contributes to one's basic identity. Fowler's definition of faith is consistent with this inherently relational or social criterion. Sociologists from Simmel and Durkheim onward have viewed religion as essentially a social phenomenon. Durkheim described the sacred as "all sorts of collective states, common traditions and emotions, feelings which have a relationship to objects of general interest" (quoted in Pickering, 1975:95). Individual impressions, he concluded, could never be anything more than profane. God was society, and society was God. But faith as defined by Fowler is more than merely social. It is interactional in the enduring theoretical tradition of sociology. Fowler eschewed both behaviouristic and maturationistic theories in his model.

The structural-developmental interactional approach calls us to view development as resulting from the interchange between an active, innovative subject and a dynamic, changing environment Development results from efforts to restore balance between subject and environment when some factor of maturation or of environmental change has disturbed a previous equilibrium. (1981:100)

Fowler derived his notion of faith as being interactional from H. Richard

Niebuhr, who, like Fowler, was both a theologian and a social scientist. Niebuhr in turn was profoundly influenced by George Herbert Mead, the progenitor of symbolic interactionism (Garrett, 1987). The macro-sociological strain of Niebuhr's thought examined the life and theology of the church in terms of race and class in *The Social Sources of Denominationalism* (1929), and of culture in *Christ and Culture* (1951). However, the micro-sociological strain of Niebuhr's thought evolved from a vehement animosity toward "bourgeois individualism" in *The Social Sources of Denominationalism* (1929), through an incorporation of Meadian social psychology in *The Meaning of Revelation* (1941), to a sympathetic evaluation of selfhood in the posthumously published *The Responsible Self* (1963). For example, Garrett (1987) demonstrated how Niebuhr's concept of revelation as social interaction was built upon Mead's concept of taking the role of the other, in this case God. Martin Buber's "I-Thou" is another classic example of sociological theology in the Meadian tradition (Pfuetze, 1961).

Fowler's writings consistently demonstrate a preference for the sociological notion of self, in contrast with the psychological notion of personality, or even the anthropological notion of character. By his definition, "to be a self means to be a human being with structuring patterns that shape a distinctive style of being as a person" (Fowler, 1987:55). This self is embodied and reflexive, and is characterized by distinctive patterns of knowing, valuing, and constructing meaning in the context of self-other, self-self, and self-ultimate relations. Fowler readily related his theory of faith development to Kegan's (1982) theory of the "evolving self" (Fowler, 1987). In so doing, it is noteworthy that Fowler's concept of self is based upon the presumption of

some relatively unchanging components of the self, of a "core" self that develops but does not alter its essential substance.

This concept of a core self is anathema to symbolic interactionists of the "Chicago School," who view the self as deriving from each particular situation, constantly in process, and subject to ongoing negotiation by the parties involved (Reynolds, 1990). Becker (1986), for example, attributes personal change in adult life to "situational adjustments", and personal stability to "commitments", rather than to any substance of the self. Goffman's (1959) early dramaturgical presentation of self constitutes an outright denial of a substantive self, as if it were a modern myth that people are forced to enact, though he later acknowledged the influence of personality (1974). Furthermore, structural symbolic interactionists such as Stryker (1980) also lack a concept of a substantive self behind the roles played by the actor. Turner's (1976; 1978) search for the "real" self is a rare exception. It follows then that symbolic interactionists have traditionally rejected theories of universal, invariant sequences of stages of development of a substantive self (Fine, 1986), even though Mead's three developmental phases of self-hood (play stage, game stage, and generalized other stage) agree with Piaget's stages of development on five major points (Denzin, 1975). Only more recently has Weigert's (1986) metatheoretical foundations of identity, and Weigert, Teitge, and Teitge's (1986) more generic and integrative sociological psychology made allowance for the type of substantive, developmental self assumed in Fowler's theory.

Nevertheless, the Meadian influence at work in Fowler's intellectual formation

suggests why his anthropology cannot conceive of the exercise of faith outside of relationship with some other individual or group, for, as Mead (1934) argued, there can be no extant self without society. Faith, according to Fowler, is a dynamic, triadic relationship in which the "self is bound to others by shared trust and loyalty. (These) ties to others are mediated, formed and deepened by shared or common trusts in and loyalties to centres of supraordinate value" (1986a:17). Fowler repeatedly emphasizes that this way of being in relationship is constantly active, just as the concomitant process of meaning-making, or "faithing," is constantly active. As he insists, and as Stokes (1989) takes for his title, *Faith is a Verb*.

Fowler pays particular attention to the social dimension of faith in the "Bounds of Social Awareness" aspect of his developmental model. Symbolic interactionist dimensions of faith are particularly evident in the "Role of Symbols" aspect, and in the "Social Perspective-Taking" aspect, where the concepts of self, others, and "generalized other" are foundational. So faith, like religion, is inherently social and interactional, and therefore within the theoretical scope of microsociology. The sociological flavour of Fowler's particular concept of faith is readily apparent in his formal and comprehensive definition of faith, as evidenced by the concepts of self, social interaction, social conditions, and constructed meanings:

People's evolved and evolving ways of experiencing self, others and world (as they construct them)
 as related to and affected by the ultimate conditions of existence (as they construct them)
 and of shaping their lives' purposes and meanings, trusts and loyalties, in light of the character of being, value and power determining the ultimate conditions of existence (as grasped in their operative images -- conscious and unconscious -- of them)
 (1981:92-93, form and parentheses in original)

Fowler's sociological flavour is never more evident than when he applied his theory to the particularity of Christian faith in *Becoming Adult, Becoming Christian* (1984) and *Faith Development and Pastoral Care* (1987). His emphasis on the notions of community, covenant, and vocation, the latter of which he distances from the classic concept of destiny, or the concept of self-actualization in modern parlance, constantly underscores the relational nature of faith.

3. The Process of Religious Change

A third commonality between faith development theory and the sociology of religion to be reviewed here is their mutual attention to dynamics or change. The themes of evolution and "breakthrough" pervade Weber's seminal *Sociology of Religion* (1963). Religious change understood at the macro sociological level has focused upon what is known as the secularization thesis. In terms of the substantive definition of religion, secularization chronicles the cultural decline of the traditional, organized religions in the face of modernity into mere market entries (Berger, 1967) selling professional services (Bibby, 1987). In terms of the functional definition of religion, secularization chronicles the transformation of traditional religions into forms such as invisible religion (Luckmann, 1967) or civil religion (Bellah, 1967). The status of the secularization thesis is currently tenuous. Lyon (1985) has called for an "intellectual overhaul", but McGuire (1987; 1992) has dropped the concept entirely in the second and third editions of her textbook on the sociology of religion. In a volume notable for its weight and its substantive definition of religion, Stark and Bainbridge (1985) directly contradict the secularization thesis, describing it as "self-limiting." Faith development

theory may provide another alternative explanation for the process often interpreted as secularization.

Religious change understood at the micro sociological level has focused on socialization, conversion, and more recently, apostasy. Religious or non-religious world views are acquired by individuals through the process of socialization, which employs many different agents over the course of time, one of which is formal education. In a sense, a study of the effect of education on faith development is simply a study in socialization. Conversion also connotes religious change, albeit generally more suddenly. It is the "transformation of one's self concurrent with a transformation of one's basic meaning system" (McGuire, 1992:71). In actual experience, conversion is also more of a process than an event, requiring resocialization for completion. However, personal process may continue on and take the form of apostasy, which is the rejection of a personal religious identity once held (Hadaway and Roof, 1988). Bromley (1988) emphasized the processual nature of what he called religious disaffiliation, and suggested that no single term has come to represent it the way conversion has come to represent religious affiliation.

Fowler disputes the inclusion of "transformation of self" in the definition of conversion, and reserves the concept for changes in the contents of faith that can occur suddenly or gradually within the forms of any faith stage.

Conversion is a significant recentering of one's previous conscious or unconscious images of value and power, and the conscious adoption of a new set of master stories in the commitment to reshape one's life in a new community of interpretation and action. (1981:281)

Fowler would also dispute the very possibility of Bromley's (1988) title, *Falling from the*

Faith. If faith is understood as Fowler defines it, apostasy may be religious disaffiliation, but it is not loss of faith, because the latter is not possible according to Fowler's model. Supposedly, conversion and apostasy are therefore only tangential to faith development theory, the focus of which is upon the form of faith, or "transformation of self," as opposed to the content of faith, or "transformation of meaning system."

Much sociological literature concurs with the "change of contents" definition of conversion and apostasy. The symbolic interactionist Travisano (1986), for example, differentiates between conversion and alternation. Conversions here are understood as drastic, proscribed transformations of identity based upon an entirely new "informing aspect", transformations that require a change in the source of authority and a negation of former identity. For a Jew to become a Christian requires a break with the past and a reorganization of life. Alternations are easier, even prescribed transitions. For a Jew to become a Unitarian is understood as an extension of an existing program in a permissible direction. Fowler's faith stage changes are hence more compatible with Travisano's alternations than with conversions.

On the other hand, social psychological theorists such as Batson and Ventis (1982) view the movement to a higher cognitive stage as the epitome of transformative religious experience, or conversion. Among cognitive structural theorists, some, such as Moseley (1978), reserve the concept of conversion for transformations of both form and content. Roberts (1990) suggested a distinction between lateral conversions (same stage - new contents), stage conversions (new stage - same contents), and

diagonal conversions (new stage - different contents). Roberts has also credited theories such as Fowler's for raising many interesting questions about conversion and commitment that need empirical investigation. For example, are lateral conversions more likely to follow an affective motif, and diagonal conversions an intellectual motif? Does cognitive dissonance more readily induce certain types of conversions? Is an individual's developmental stage a predisposing or deterring condition for recruitment to any particular religious tradition? Is the process of conversion and commitment any different at the different stages? Addressing these types of questions could add considerable richness to the predisposing conditions (in contrast to the more secondary situational contingencies) in Lofland's (1977) sociologically more familiar funnel-process model of conversion, and to Kanter's (1972) model of instrumental, affective, and moral commitment.

It is hardly necessary to argue further that faith development theory is focused on religious change. Indeed, this is the very cause of great discomfort for some of the "faithful" who do not distinguish between form and content.

Those persons for whom faith is an unchanging absolute often cannot understand faith development. Developmental faith is an anachronism for them. It is sacrilegious to speak of faith and change in the same breath. (Bruning and Stokes, 1983:48)

Yet it should be equally evident that the inclusion of faith development by the sociology of religion could inform its understanding of secularization, socialization, conversion, and apostasy, among other topics. Fowler states that faith development theory can provide "a valid, normative, trans-religious perspective on religious socialization," while "avoiding blatant or subtle religious imperialism" (1976:189).

4. The Measurement of Religion

The fourth and final commonality shared by faith development theory and the sociology of religion to be addressed here is their mutual efforts directed toward the measurement of religion. With exceptions such as Glock and Stark (1965), or Malony's (1985; 1987) "Religious Status Interview" which only evaluates Christian religion, not religion in general, the scientific measurement of religion has for the most part focused on aspects other than the content of religion, because the study of contents, such as the decline of orthodoxy, is by itself an atheoretical exercise. The measurement of religion in the last half century has evolved from simple typologies, to a more detailed identification of the multiple dimensions of religiosity, to the complexity and sophistication of developmental theories. Each of these approaches can be illustrated in turn, with comment and comparison to Fowler's theory.

Allport's (1950, 1967) early division of religion into extrinsic [E] and intrinsic [I] styles has been the most useful and influential categorization. Batson and Ventis (1982) have added a third category, quest [Q], and have marshalled a substantial range of empirical evidence, though Hood and Morris [1985] dispute aspects of it. The E-I-Q categorization has partial overlap with the LAM scales developed by Hunt (1972), which divide approaches to religion into an uncritical "literal" [L] acceptance, an "anti-literal" [A] rejection of belief, or a "mythical" [M] or symbolic acceptance of belief. The LAM scale, in turn, loosely parallels Wiebe's (1984) more theoretical classification of religion into traditional [literal], modern [disbelief], and critical [symbolic] types.

Some parallels of these typologies with Fowler's theory of faith development have already been drawn. For example, Chirban (1981) has shown that Allport's E and I dimensions correlate significantly with early and later stages of Fowler's theory. And Barnes, Doyle, and Johnson (1989) discuss the similarities of the E-I-Q division with Fowler's Stages 2-5. However, both the LAM scale and Wiebe's theory propose only two major types of belief, along with a type of unbelief, whereas the E-I-Q division provides three types, and Fowler's theory provides four stages common to adults.

Regarding the dimensions of religion, Glock's (1965) classic five dimensions and Silverman's (1983) catalogue have already been mentioned. King and Hunt (1967; 1969; 1975) have demonstrated the multidimensionality of religion in a series of studies. Hilty, Morgan, and Burns (1984) have added a number of specific recommendations for further adjustments in the techniques and forms of measuring religious dimensions. In a recent review of numerous studies of religion, Cornwall, Albrecht, Cunningham, and Pitcher (1986) conclude that there are three primary components of religion: the cognitive, affective, and behavioral. For the most part, these various efforts at identifying and measuring the dimensions of religion do not correspond closely with Fowler's dimensions or aspects of faith. This, however, only reflects and supports his contention, discussed above, that faith and religion are two quite separate entities.

It has proven challenging enough for social science to identify styles and dimensions of religion. To attempt to arrange these elements in a developmental sequence is to go a considerable step further. But developmental theories, and

developmental psychology in general, appear to be a peculiar North American fascination. A glut of theories have appeared in the last quarter century, to the extent that an analysis of the development of development, or a theory of the theories is now possible, even within moral and religious development alone (Rogers, 1980).

The recent theory of Richard Kahoe and Mary Jo Meadow (1981), for example, has drawn some attention and bears a striking resemblance to Fowler's theory. Meadow and Kahoe (1984), postulated that spirituality evolves from the service of ego-centric needs (extrinsic religion), to loyalty to a religious community (observance religion), to commitment to religious ideals for their own sake (intrinsic religion), to a private quest for ultimate truth (autonomous religion). This indeed is the closest parallel of strictly religious development with Fowler's model of faith development, both in terms of its theoretical richness, and its range and substance of explanatory power.

The relative lack of attention to faith development theory in general sociological literature to this point is undoubtedly understandable, and perhaps pardonable. But interest is growing among sociologists of religion, as the textbooks of the sub-discipline reveal. Hargrove (1989) has recently used Fowler's model as the organizing principle for a chapter on the interaction of religion and education. Roberts (1990) included a thorough analysis of Fowler's model in his chapter on the social psychology of conversion and commitment. And social psychology is probably the most appropriate disciplinary location for the theory.

More specifically, in terms of the "three faces" of social psychology outlined by

House (1977), Fowler's theory has several elements in common with psychological social psychology, or what Weigert (1983; 1986) termed sociological psychology. As already discussed, it also has much in common with symbolic interactionism, despite the differing view of the substantive self. On the other hand, Fowler's model has very few elements in common with the third "face" of social psychology, social structure and personality, or what Weigert termed psychological sociology. Whatever its designation, surely a theory of dynamic, social meaning-making has much to offer the social scientific study of religion, assuming it has merit. It is to that question that we turn next.

B. Critiques of Faith Development Theory

In the few short years since it entered the academic community, Fowler's faith development theory has already approached the status of the most credible, substantive, and respected theories it subsumes, namely, the structural-developmental correlates previously elucidated by Erikson (psychosocial), Piaget (cognitive) and Kohlberg (moral). When dealing with social scientific perspectives of faith development, the *Handbook of Faith* (Lee, 1990) devotes almost all of its attention to Fowler's theory, which it describes as "the most comprehensive model available" (Malony, 1990:89). Elsewhere, Butman judges Fowler's theory to be simply "the most useful theoretical model available" (1990:17). It is a classic example of that which is at once both a brilliant explication of the universal and an almost intuitive explication of the particular. As Dykstra and Parks state:

Fowler's theory is more than just one of any number of interesting and potentially useful academic analyses. It is an expression of a wider cultural and intellectual mood. It is a consolidation and crystallization of a whole way of seeing things that is already in some sense "out there." Fowler, we think, tells many of his readers, but in a way that they could not have put it themselves, what they in some sense already "knew" to be the case. (1986:2)

This is not to suggest for a moment that Fowler is without his critics. Dykstra and Parks themselves were writing as editors in an introduction to an anthology of respondents to Fowler's theory. This in itself is witness to the stature of his theory, that it has dominated its field in a manner similar to the theories of his preeminent predecessors.

1. Sociology

A sociological response to faith development theory could be as varied as the diversity of schools of thought and methodologies within the discipline. Robert Wuthnow, the distinguished Princeton sociologist of religion, is one of few sociologists to have addressed Fowler's theory systematically (1983). His critique employs the perspective of "critical theory", which attempts to raise to consciousness the underlying assumptions which shape both action and discourse in social life. As he explains,

The critical perspective is rooted in hermeneutics, from which it recognizes the interpretive quality of "knowledge", and in phenomenology, from which it borrows the assumption that all "facts" are constructed realities influenced by the social and cultural contexts in which they are created (p. 211).

For example, he traces the evolution of the association of religion and faith with the idea of meaning and purpose, and demonstrates its historico-cultural variation. Noting

that Fowler's theory defines faith as the quest for meaning, Wuthnow questions whether it has succeeded in transcending its cultural context to the point of discovering invariant structures of faith. If Fowler's concept of faith does not capture the essence of religious faith, its grandiose claim to universal applicability must be tempered and relativized by sociological criticism. Thus, when Dykstra and Parks state that Fowler's theory "is an expression of a wider cultural and intellectual mood" that is "out there," they are unwittingly disclosing its limitations as much as its merits.

Wuthnow proceeds by identifying the following assumptions that inform the fundamental structure of faith development theory, and which we will utilize to guide our discussion here. We present Wuthnow's six criticisms, and comment on each.

First, the theory is basically concerned with cognitive processes. Piaget's stages of cognitive development constitute one of the seven aspects that determine stage of faith, while Kohlberg's stages of moral development, which are better understood as stages of moral reasoning, constitute another. Other aspects, such as perspective-taking and symbolic function, also require cognitive differentiation. What "develops" is not commitment, experience, or any of the myriad of other attributes traditionally associated with faith, but only the capacity to conceptualize imagery about ultimate values. Gillespie (1988:75), for example, insists that "faith is more than just a cognitive worldview, as Fowler seems to suggest." He maintains that faith is both cognition and experience and that acts of emotion and will, or experiential indicators in general, are strangely minimal, though not minimized, in Fowler's theory. Meissner (1987) and Jardine and Viljoen (1992) are others who have expressed reservations

about the heavily cognitive emphasis in Fowler's theory, and the corresponding neglect of an affective dynamic in faith.

Such criticism seems to overlook or underestimate Fowler's distinction between the logic of rational certainty and the logic of conviction (1981:102; 1986:24), both of which are to be interpreted metaphorically (Moseley, 1991). The logic of conviction is said to be an ecstatic, imaginative, and affective mode of knowing, more typical of the right hemisphere of the brain, that combines rationality and passionality. This logic therefore does not negate the disinterested logic of rational certainty, but rather contextualizes, qualifies, and anchors it. Though the logic of conviction is always operative in faith-knowing because the sense of self is constantly at stake, its impact is evident most in the "second naivete" of Stages 5 and 6, and in the aspect of Symbolic Functioning. Conn (1986) has grasped the significance of the two logics, and while still wary of Fowler's emphasis on cognition, has credited him with

attempting to delineate the developing structures of the whole person's orientation to reality: not just the person as thinking, or as feeling, or as trusting, but the whole person as relating to reality in an integrated, undifferentiated way. (1986:92)

Fowler's noetic distinction notwithstanding, the generally cognitive orientation of his theory certainly makes faith development amenable to educational programs and structures, but does little to ensure or enhance its construct validity.

Second, the theory is essentially humanistic. By this Wuthnow means it "is strictly a property of the human realm, rather than a gift from the supernatural...(it) is the human search for God" (p. 214). This notion of faith is in contrast with that which is supposedly bestowed or assisted by the transcendent, and which, in the Christian

tradition and Fowler's terminology, is referred to as God's grace (1981:302). Wuthnow has here misinterpreted Fowler's intent, because a denial of any role played by the supernatural or transcendent is never even implicit in Fowler's theory. Focusing on the human realm, or "man's part of the bargain with God," which Fowler does, does not make his theory humanistic. The rigor with which he avoids references to the contents of faith so as to focus upon the forms and structures of faith is precisely the empirical task of the social scientist. To have done otherwise would have been an exercise in theology. Not doing theology is not necessarily the same as being humanistic.

Third, the theory is meant to be empirically verifiable.

Wuthnow's point of criticism here is obscure. By submitting that adequate understanding may only be gained by "consulting the wise oracle," he seems to deny that an empirical construct of faith is possible. It is true that the data upon which faith development is built is of the empirical variety fashionable in the modern era of "critical methodos" (Lonergan, 1957). And there are other types of data. But if this contextualizes Fowler's theory, which it does, Wuthnow's criticism is itself contextualized by having employed the very same method and perspective. The empirical nature of faith development theory is a moot and self-evident fact, and if construed as a point of criticism, a fact that undermines Wuthnow's own, rendering him unintelligible here.

By criticizing Fowler's theory for being both humanistic and empirically verifiable, Wuthnow has ventured a convoluted and contradictory foray into the academic debate between the humanistic and scientific study of religion. Dawson has

characterized this debate as one in which "positivists have a method of science and no model of humanity, while humanists have a model of humanity and no adequate method of science" (1988:41). Dawson's much more sophisticated and nuanced discussion of this debate is built on the "argument from rationality" advanced by Hollis (1977), and offers the unorthodox epistemological position of "epistemic naturalism" as a resolution. Fowler's theory may well be closer to these conceptions, in which "nonrational actions are subject to causal analyses, but rational actions are their own explanations" (Dawson, 1988:vii), than it is to the mislabelled humanism and empiricism Wuthnow detects.

Fourth, the theory is reductionistic. Despite its rhetoric about the holistic life-encompassing quality of faith, faith development theory is reduced to essentially three stages in actual, common, adult experience. This is a simplification of reality, although Wuthnow admits that the purpose of all theory is always to provide a parsimonious model of reality. Such is the tension between the virtue of simplicity and the vice of simplification in social scientific theory. It is also the highest price paid for the requisite operationalization of science. However, in Fowler's defence, it must be stated that by incorporating several other development schemes, and by formulating seven different aspects that serve as operationalizations in each of six different stages, faith development theory is vastly more complex and sensitive than any comparable developmental scheme in any other field. Further, it is an oversimplification of the theory itself to assume that individuals are evaluated categorically as being in one stage or another. Wuthnow's own suggestion, that sophisticated computing and statistical techniques could generate better data and models than clinical observations,

seems unappreciative of the richness of the data, and no less likely to be reductionistic, though it is the tack taken in this study.

Fifth, the theory presents a reification of faith. Here again the cultural limitations of faith development theory are evident. Mystical and contemplative religious traditions would recoil at its rational reflection and objectification of faith. How could the theory effectively address a religious tradition which holds that the notion and question of development is inherently desacralizing?

For those who are inclined already to view their faith as a developmental sequence, the objectification of this sequence may prove valuable indeed. But for others whose experience of faith stems from the richness of life itself or from the fullness of God, great damage may be done. (Wuthnow, 1983:217)

Sixth, and finally in Wuthnow's critique, the theory is normative. Faith development, almost by definition, moves beyond the pure description of scientific investigation to a normative dimension that is evaluative. The stages are continually compared as lower and higher, not earlier and later. Hierarchical stage theory assumes that higher stages are "more comprehensive and adequate," and thereby sets an agenda. Fowler himself recognizes this tension and would very much like to avoid its distasteful implications. He insists that faith stages do not "represent educational or therapeutic goals ... education and nurture should aim at the full realization of the potential strength of faith at each stage" (1981:114). Later writings carry the same conviction. "Faith development sponsorship must avoid viewing the stages as constituting an achievement scale or a program by which to rush people to the next stage.... Each stage has a potential wholeness, grace and integrity" (1986a:38). Yet

later in the same paragraph he states that "each stage represents genuine growth toward wider and more accurate response to God... We stand under an imperative toward ongoing growth." Earlier, Fowler had conceded that "Even when they claim to be merely descriptive, theories of adult development (psychosocial and constructivist) have their overt and covert normative commitments to determinate models of adult maturity" (1983:206).

Wuthnow's observation on this point is incisive. "What is being said is not only that faith is an object, but also that this object can be manipulated. Technologies can be devised to further it along" (1983:217). Apparently, the faith of little children is no longer the most admirable. Education is required; faith will take work. It is futile for developmentalists to deny that they have brought obligation or at least expectancy to the life of faith. Certainly the other theories subsumed by faith development theory are unabashedly hierarchical. Randomly reordering the stages of faith and reconceptualizing them as styles of faith, as some such as Barnes, Doyle, and Johnson (1989) are tempted to do, would reduce the theory to a typology that is impotent to explain the relationship between its types.

Wuthnow's general assessment of faith development theory is that it is firmly rooted in the dominant values of American culture, in which "technological reason is itself a faith." The objectification, rationality, empiricism, and progressivism of this cultural "faith" are all manifest in faith development theory. Its result?

In the name of helping out, it promises to further subject religion to the process of secularization No longer is the individual simply responsible to heed the calling of God; his obligations are now neatly set before him in a sequence of rationally ordered developmental tasks.

(Wuthnow, 1983:219)

Further manifestations of current culture in faith development theory include the individualism fostered by classic American philosophical liberalism. There is a lingering suspicion that Fowler's theory may be little more than a celebration and glorification of the resultant pluralism and relativism endemic in North American culture in the second half of this century. Ironically, sociological critics of culture in Canada (Bibby, 1990) and the United States (Bellah, et al., 1985) have blamed utilitarian and expressive individualism for the modern collapse of commitment to the common good. If this is true, the socially dysfunctional cultural baggage in Fowler's theory may yet weigh down what he takes as the uplifting qualities of faith at more advanced stages. On the other hand, Leean (1988) defends the ethical vision of Fowler's theory as providing the necessary corrective for the current cultural malaise identified by Bellah's (1985) study. She claims that current individualism is merely the symptom of a culture mired in Stage 4 Individuative Faith, and that authentic, mature commitment to the common good can be facilitated best by movement to Stage 5 Conjunctive and Stage 6 Universalizing Faith.

Fowler gives his own response to the "hermeneutics of suspicion" which characterizes the critical social theory of the Frankfurt School of social scientists, as employed by Wuthnow regarding faith development theory. His response is not directly to Wuthnow's assessment of faith development, but to James Broughton's essay on "The Political Psychology of Faith Development Theory" (1986). It concurs with Morgan's appraisal of critical theory as that which provides "only the bitter comfort

of an intellectual elite, tortured by painful insights into the world about them, stoically awaiting the night" (1985:229). For Fowler, the real challenge is the ability to make "critical and post critical commitments which make one a more discerning participant in the dialogical unmasking and reconstruction of social ideology and reality" (1986b:284). Moreover, Fowler objects to those with a critical pre-commitment who refuse to take seriously his insistence that structural-developmental perspectives on faith provide at best the less important half of praxis.

It is interesting to note the striking similarities between James Fowler and the sociologist Robert Bellah, who, like Fowler, early in his career formulated a well received sequence of developmental stages (primitive, archaic, historic, early modern, and modern) analyzed according to common aspects (symbol system, religious action, religious organization, and social implications) in an article entitled "Religious Evolution" (1964; 1970). The critical difference in the two schemes is that Bellah was describing cultural development over the course of centuries, yet "the logic is much the same as that involved in conceptualizing stages of the life cycle in personality development" (1964:361). However, later in his career Bellah renounced the "Enlightenment fundamentalism" that led him to assume that religious styles could be ordered along a continuum connoting progress and sophistication (Wuthnow, 1983:221). Should Fowler, perhaps through a recognition of his theory's cultural embeddedness, ever do likewise, the conceptual machinery he has set in motion will be considerably more difficult to dismantle, because more research and applied programs have been driven by it.

It is also interesting to note the surprising congruity of Wuthnow's observations with those of non-sociological critiques of Fowler's faith development theory. These critiques may be categorized as revolving around philosophical, psychoanalytical, and theological failings due to alleged, problematic reductionism within the theory.

2. Philosophy

The philosophical reductionism is evident in Fowler's definition of faith, and has already been noted in the cognitive bias it contains. In attempting to formulate a universal, scientific concept of faith, Fowler has been forced to delimit his data to the forms or structures of faith, and thus ignore the contents of faith. The question is whether a "contentless" or formal definition of faith is meaningful, or even possible. Loder (1982) and McDargh (1983; 1984) have protested that the radical distinction between the active process of faith and the content of faith has rendered Fowler's model inadequate. Kwilecki (1988:312), for another, objects to the assumption that the "steps and ends", or content, of development are independent of culture.

By discussing religious development almost entirely in terms of formal traits abstracted from personal or cultural meanings, Fowler achieves scope but sacrifices precision. While his theory calls attention to characteristics that can be gauged in virtually any personal religion, these, not surprisingly, are seldom the definitive features of particular faiths.

Moran (1983) suspects that by differentiating beliefs from their underlying psychological processes such as trusting, valuing, and committing, Fowler has divorced them entirely. Few critics doubt the relevance of general psychological processes to faith, or specifically Fowler's seven aspects, but few are willing to have these processes define faith instead of merely influence it. Fowler's research has instead been said to

describe "the ego's competence in structuring meaning" (Loder, 1982), "the structured process of assigning meaning to the world" (Russell, 1981), or even "the whole socialization process" including the development of world view, values, and self-image (Nelson, 1983).

The most thorough criticism of Fowler's formalist definition of faith, which McDargh considers "the model's gravest shortcoming" (1984), has been advanced by Fernhout (1986). According to Fernhout, the central problem is whether faith is itself the overall quest for meaning or whether it is only one aspect of it. Furthermore, Fowler is said to have used faith in at least three different senses; as trust and loyalty in a centre of value and power (his intended meaning), as a worldview, and as a way of life. The result is that the total concept of faith is so all-encompassing as to be identical with ego development, and thus have no unique subject matter of its own. This of course resonates with sociological criticisms of the functional definition of religion.

3. Psychoanalysis

Fowler's focus on cognition is also at the core of what has been called his psychoanalytic reduction. It is rather ironic that he is critical of Piaget and Kohlberg for having inadequate concepts of affect, the unconscious, and the self (1981:101-5), because Fowler's critics claim that he has done no better. His seven aspects of faith primarily express functions of human cognition, and his six stages of faith represent phases of development in cognition, as opposed to commitment, experience, or affect.

Ford-Grabowsky charges Fowler with a "quadruple bias toward 1) the ego (which neglects the self); 2) cognition (which neglects affect); 3) consciousness (which neglects unconsciousness); and 4) positivity (which neglects negativity)" (1987:81). For example, she uses Jung's distinction between the ego and the self to show that Fowler's model is largely limited to ego psychology at the expense of holistic depth psychology. McDargh (1983), in making the same point, maintains that contemporary psychoanalytic theory is a more sympathetic partner than cognitive developmental psychology in the enterprise of understanding the dynamic roots of religious faith.

Fowler does not accept this criticism of an incomplete view of the person. He insists that these depth dimensions of the person are incorporated and given expression first through his previously discussed concept of the logic of conviction, which sublates the logic of rational certainty and, second, by the role he gives to imagination in knowing. Nevertheless, Fernhout (1986) is not convinced, and points to the ambiguities between the two logics, and between them and the operationalization of faith as knowing by the seven aspects. McDargh also remains sceptical.

As one finds the language of psychoanalytic theory and discussions of the imagination grafted onto the structural developmental model, one has to wonder whether . . . it is an effort to make serviceable a model that has been theoretically inadequate from the start. (McDargh, 1984:340)

4. Theology

Finally, the theological reduction pertains to what Wuthnow termed the model's humanism. Even Fowler's Western Christian bias has not sheltered his model from

strenuous Christian critique, an important consideration for the intent of this study, part of which is to sample Christian faith development. At the very end of *Stages of Faith*, Fowler places his theory in Christian theological perspective by acknowledging that

the question of whether there will be faith on earth is finally God's business. Faith development theory, focusing resolutely on the human side of the faith relationship, comes up against the fact that the transcendent other with whom we have to do in faith is not confined by the models we build or to the patterns we discern. (1981:302)

Elsewhere Fowler (1986) insists that structural developmental perspectives on faith provide at best the less important half of praxis. The other half, in the biblical tradition, is revelation and grace, both ordinary or natural and extraordinary or unpredictable. The combination of revelatory acts of God with interventions of extraordinary grace make it "difficult to speak simply or solely of faith as a developmental matter" (1981:303). Faith, from the Christian perspective, may grow more by grace than by nature.

Mary Ford-Grabowsky has been Fowler's foremost theological critic from the Christian perspective. Not only does she reject the normativity in Fowler's model, she forthrightly repudiates the very notion of faith being subject to development in the first place (1985). After a scholarly, eight-point delineation of "the common concept of Christian faith", which she summarizes as a relationship with God, she concludes that at least Christian faith is devoid of developmental categories. This of course takes her back to the issue of Fowler's definition of faith, and to the question of what exact phenomenon it is that is "developing" in his model (1986).

She assesses the movement through Fowler's stages as the progression from

ego-centricity to ego-transcendence, but considers the transition between Stage 4 and Stage 5 to be illogical, and not even on the same track. Therefore, she considers Stages 1 through 4 as Track One, which charts the linear growth of the ego, and culminates in ego-consolidation. Track Two is Stages 5 and 6, which charts the circular growth, or "circumambulation about the centre" (centering - decentering - recentering) of the Jungian Self. Track Two is spiritual development, and relates to the ego development of Track One "as its complement, not its consequence", which is to say that they do not occur in succession. Jung certainly would dispute Fowler's contention that religious faith could ever be a function of the ego operative in Stages 1 through 4; Jung would find the potential for religious faith only when the spiritual Self appears in Stages 5 and 6. According to Ford-Grabowsky, Track Three, or Christian formation, is completely absent from Fowler's model.

The moderate, consensus, theological critique of the "half of faith" that Fowler's model purports to describe is that it is biased toward a normative vision of the radical monotheism that Niebuhr (1960) associated with Western culture. Moseley (1991) exposes this bias by noting that the early stages of the model evidence a Piagetian epistemology, in which truth is established on the basis of its correspondence to the data of physical reality. But by later stages, truth is established on the basis of a coherent relation that exists between the parts of a larger system, thereby representing a shift from a correspondence theory of truth, meaning, and value, to a coherence theory of the same.

Moreover, from a Christian perspective, the model is also biased toward

theological liberalism (Meissner, 1987; Moseley, 1991). This is evident in the delineation of the stages and aspects by their normative universalism, and by their disregard for the power of sin and evil to disrupt Christian faith. It is especially evident in the view of religious truth as consisting of dynamic patterns of being in relations, instead of propositionally articulated doctrines, or repositories containing the essence of truth (Fowler, 1981:295). And despite Fowler's notion of the master story, his model loses the transtemporal and unchanging dimensions of faith by concentrating on the temporal and the changing. Malony (1990) is among many who dispute that the openness, uncertainty, and tolerance for lack of final answers characteristic of Fowler's higher stages can be validly equated with maturity, just as Hood and Morris (1985) criticized the conclusion of Batson and Ventis (1982) that "quest" religion was more mature than "intrinsic" religion as being empirically unproven and biased. Malony challenges Fowler to examine his assumptions, transcend his cultural relativism, and "make more room in his theory for maturity WITHIN religious traditions as opposed to ABOVE them" (1990:95, emphasis in original).

The extreme theological critique of faith development theory is that it is not even capable of containing Christian faith. Here it is said that by separating out content from form, the Christian understanding of faith is lost. McDargh argues that the biblical understanding of faith

is extricably involved with definite understandings of a Reality with which we are in historical relationship . . . Convictions about that personal Other so thoroughly affect our perception of self and of world that it is impossible to separate the "how" from the "what" of faith, the experience from its effective symbolization and interpretation. (McDargh, 1984:340)

Godin (1985) clarifies this sentiment by drawing a distinction between "functional religion", not to be confused with the functional definitions of religion discussed earlier, and "Christian faith." By functional religion, Godin means faith that is based on a natural human wish for certainty and security, a meaning similar to the wish-fulfilment in Freud's description of religion as illusion (1964). This, according to Malony (1990), is to what Fowler's concept of faith seems to be referring. By Christian faith, Godin means faith that is based on the desires of God as seen in Jesus Christ, Saul of Tarsus being the exemplar. Both types of faith meet Browning's three criteria, but whereas functional religion is said to emanate from the desire of humans, and is supposedly subject to human development, Christian faith is said to emanate from the desire of God. Godin maintains that many who call themselves Christian are, in actuality, merely functionally religious in the Christian tradition. Yet, as Allport (1950) noted, religion can be started by one motivation but be sustained and maintained by the other in "functionally autonomous" maturity. It can be added that this distinction may also explain why many of "Christian faith" reject the label of being religious because it has for them become a pejorative term, and insist that theirs is a spirituality driven by divine, not human, impetus. *Toxic Faith: Understanding and Overcoming Religious Addiction* (Arterburn and Felton, 1991) is a current Christian example of this sentiment, as is the bumper sticker, "I'm not religious, I just love the Lord."

Ford-Grabowsky is another who maintains that a model of faith which excises the confessional aspect cannot function as an adequate model for Christian faith. "If an intrinsic element of a concept is removed from the concept, meaning is diminished. And if the element deleted is as central as God is to (Christian) faith, then the concept

is not only impoverished but emaciated" (Ford-Grabowsky, 1985:33). She draws on the distinction between the inner and outer self, which she finds in the writings of the apostle Paul and of St. Hildegard of Bingen, to develop a concept of what she calls the Christian self, the Track Three mentioned above. The Christian formation of this Christian self is said to envelope and contextualize what she sees as the dichotomous development of the Jungian ego and self represented in Fowler's model. This is the theological corrective she offers to rescue Fowler's model from structural reductionism of the Christian personality, and from its subsequent "logical collapse". In sum, Ford-Grabowsky's appraisal of Fowler's model is that, because it omits the confessional and mystical nature of faith, along with the role of negativity (evil) as an impediment to faith, it is incapable of apprehending Christian faith.

These points of theological criticism are of more than passing interest for the present study because of methodological concerns. Weber's classic formulation of sociology is that it is "the science concerning itself with the interpretive understanding of social action and thereby with a causal explanation of its course and consequences" (1978:4). His influential method of *Verstehen* seeks to apprehend the subjective meanings actors attach to their own actions that are oriented to others. Much of the faith described in Fowler's model would fit into what Weber called the value rational (wertrational) type of social action, in contrast to the instrumentally rational (zweckrational) type, because it is "determined by a conscious belief in the value for its own sake of some ethical, aesthetic, religious, or other form of behaviour, independently of its prospects of success" (Weber, 1978:25).

This interpretive approach to sociology, together with the method of sympathetic introspection, later became foundational for symbolic interactionism and phenomenology. For example, Weber formulated the notion of the ideal type, an abstracted, one-sided accentuation of the principal features of a phenomenon, the precision of which "is obtained by striving for the highest possible degree of adequacy on the level of meaning" (1978:20). Schutz (1962) extended and modified this methodological tool into the social scientific constructs he termed "homunculi", mindless automatons or puppets capable only of following scientifically imposed recipes. One of his criteria for scientific model constructs of the social world, his homunculi, is the "postulate of adequacy". A

human act performed within the life-world by an individual actor in the way indicated by the typical construct (must) be understandable for the actor himself as well as for his fellow-men in terms of common-sense interpretation of everyday life. (1962:44)

The pertinence of these methodological considerations of interpretive sociology for the theological critique of faith development is that the actor's own conception of his or her own faith must not be violated by scientific constructs. If people of avowed, even religious, faith cannot find adequate expression of their concept of faith in at least one of the stages of Fowler's model, if they cannot agree with the meaning assigned to it, then the adequacy of the model is brought into question. However, adequacy in this case is not categorical, nor consensually conclusive. Fowler, as a Christian theologian, submits that the spectrum of stages in his model of faith development adequately describes the spectrum of Christian faith. Ford-Grabowsky, as another Christian theologian, concludes that Fowler's spectrum does not. Whose concept of Christian faith is to be adopted? Obviously, the nature of the theory itself, if its veracity

is presupposed, both complicates and answers, or explains, the question. A stage theory of these proportions predicts that discrepant versions of the same content will occur, and that "higher" or later stages will be deemed heretical by those in "lower" or earlier stages. Without taking up the Christian theological debate, it should at least be recognized that some conceptions of at least Christian faith do not find adequate expression in Fowler's theory, and that appropriate theological, and therefore scientific, caution should be taken.

5. Methodology

Our critique of faith development theory would not be complete without reference to Fowler's own methodology. The empirical data base for Fowler's theory was a carefully structured four-part interview schedule consisting of open-ended questions that were probed persistently. Therefore Broughton's (1986) charge of Rogerian, non-directive interviewing is unfounded. This format is in the structural development tradition of Piaget and Kohlberg, but unlike them, Fowler's original sample, though not a probability sample representative of any particular population, was at least not exclusively male. However, unlike Kohlberg, Fowler does not have longitudinal data gathered from the same subjects over a couple of decades. Until more longitudinal data, such as that collected by White (1986), is available to augment the predominantly cross-sectional data upon which the theory is built, Fowler's contention that he has identified stages of faith, and not mere styles or types of faith, will remain unconfirmed.

The faith development interviews were introduced to interviewees as pertaining to values, beliefs, and attitudes; the terms "religion" and "faith" were expressly avoided so as to avoid their potential bias. A typical interview lasted two-and-a-half hours and yielded a thirty-five to forty page verbatim transcript. Coding was based upon criteria that later became the two hundred page *Manual for Faith Development Research* (Moseley, Jarvis, and Fowler, 1986). The most unsettling aspect of the research methodology was the fact that, out of 359 non-randomly selected cases initially studied, only one "Stage 6" was found, yet Fowler retains it in his theory by appealing to historical figures such as Gandhi, Martin Luther King Jr., and Mother Theresa. Nelson and Aleshire (1986) give Fowler high marks for his methodology, especially the tentativeness with which he treats his data.

Throughout this critique of faith development theory, the relevance of education has been implicit and recurrent. This relationship bears closer examination.

C. The Theory of Faith Development and Education

Developmental theories perhaps find their closest correlates in life cycle theories. Conceptions of individual change frequently appear to be pseudonyms for the simple process of aging. Life stage theories typically delineate chronological, sequential, and invariant subdivisions of life course by age, each with its own characteristics. Erikson's (1950) eight stages of psychosocial development, already mentioned as foundational for Fowler's theory, serves as one of the oldest, most

familiar examples. Levinson's (1978) research on males has probably become the most frequently cited, if not highly regarded study of the adult life cycle. Havighurst (1972) introduced the concept of developmental tasks to augment life cycle concepts. Among the most salient evaluations offered by Bruning and Stokes (1983) of life cycle theories in general are that they are heuristic devices, that they are deterministic, and that they are biased both toward rationalistic conceptions of growth, and toward liberalism.

Some more recent, lesser known, and less sophisticated theories of faith development fall into the general rubric of life cycle theories. Evelyn and James Whitehead (1979) have provided a valuable synthesis of earlier studies on the relation of human development to religious growth. Groeschel (1984) discusses the psychology of spiritual development in life cycle terms. Gillespie (1988) links growth in faith with developmental progressions in concrete, existential situations over the course of life stages. In contrast, Fowler's model is not necessarily tied to the seasons of life, though development and maturation do tend to run parallel in that both are linear, unidirectional processes. Fowler takes great care to differentiate the category of psychosocial, life cycle perspectives from the category of constructivist, developmental perspectives, under which he places his own theory (1983). Hence there is nothing in Fowler's constructivist theory to tie, by definition, any one stage to any one "ready-or-not" segment of adult life. It is entirely possible to die as a stage two senior citizen. Obviously then there must be factors other than the passage of time itself that are operative in initiating transitions from one stage to the next.

It is precisely this property of Fowler's faith development theory, even more than its cognitive bias, that ushers education onto the scene. Education involves learning, and hence change, but learning and change are by no means exclusive to educational activities and contexts. "Education refers to the transmission of knowledge, skills, and values through formally organized and structured learning processes, (whereas) learning is a process, frequently informal and unorganized, through which a person acquires knowledge" (Gilbert and Gomme, 1987:199). Is education one of the factors operative in faith development? The probability would depend in part on the type of education.

All education is ideological in character, approximating any one of the trilogy of classic ideological types of general social theory elucidated by Kinloch (1981): conservative, liberal, and radical. Giroux (1983) describes conservative education as intent upon the reproduction of dominant ideology, and the development of technical rationality and instrumental literacy. On the other extreme, radical education is said to be intent upon the reconstruction of prevailing ideology, and the development of emancipatory rationality and reconstructive literacy.

Developmental theories are most aligned with the liberal form of education that focuses on the human subject and seeks to maximize individual autonomy. Liberal education is intent upon the production of individual meanings through the "reading" or mediation of ideology by individual agents. It pursues a hermeneutic rationality and an interactional literacy that sees knowledge as a social construction, and takes the question of meaning rather than the issue of mastery as its central problematic.

Giroux (1983) identifies two traditions within liberal education, the romantic and the cognitive-developmental. The romantic approach derives from notables such as Rousseau and Carl Rogers. It insists on the importance of the affective dimension, and has a deep regard for the individual's ability to construct his or her own meaning through a process of renewed self-affirmation. On the other hand, the cognitive-developmental approach is heavily influenced by Dewey and Piaget. Humanistic in tone and social democratic in practise, it extols the problem-solving process functioning in a context where meaning is strongly tied to epistemological concerns. The aforementioned liberal bias of Fowler's theory of faith development is clearly most compatible with both romantic and cognitive-developmental, that is, liberal, forms of education. Education remains unavoidably ideological, and faith development presumably obtains most within liberal ideology.

In terms of educational curricula, liberal ideology is most resonant with the category known as the liberal arts, which consists of the humanities and social science. The latter two have traditionally shared space on the university campus with the natural sciences, although increasingly more room is also being made for the professions. Kauffman (1977) lists four objectives of the humanities: 1) to conserve and cultivate the greatest works of humanity, 2) to teach the possible goals of human existence, our ultimate purpose, 3) to teach vision, and 4) to temper all this with a critical spirit. He adds that "We do not teach so that our students know all the answers, but rather to lead them to examine their own faith, morals, assumptions, as well as the consensuses by which they are surrounded" (Kauffman, 1977:200). Similarly, Westhues (1987) identifies three cardinal principles of humanistic social

science: 1) acceptance of human agency, 2) moral engagement, and 3) practicality.

He adds that "To be a social scientist is to work at learning, preserving, revising, formulating, and communicating general ideas that square with some observable, distinctly human reality" (Westhues, 1987:7).

Such direct reference by the humanities and social science to ultimate purpose, faith, human agency, and moral engagement demonstrate the "elective affinity" between the liberal arts and Fowler's model of faith development. Bloom (1987), in his well known and controversial critique of higher, liberal arts education, describes the relationship more forcefully:

True liberal education requires that the student's whole life be radically changed by it, that what he learns may affect his action, his tastes, his choices, that no previous attachment be immune to examination and hence re-evaluation. Liberal education puts everything at risk and requires students who are able to risk everything. (Bloom, 1987:370)

Even the ethical vision of modern, liberal arts education is congruent with the implicit ethical vision of Fowler's theory of faith development. The opening lines of Bloom's analysis expose the vision of liberal education.

There is one thing a professor can be absolutely certain of: almost every student entering the university believes, or says he believes, that truth is relative. If this belief is put to the test, one can count on the students' reaction: they will be uncomprehending. That anyone should regard the proposition as not self-evident astonishes them, as though he were calling into question $2 + 2 = 4$ Relativism is necessary to openness; and this is the virtue, the only virtue, which all primary education for more than fifty years has dedicated itself to inculcating. Openness is the great insight of our time The point is not to correct the mistakes and really be right; rather it is not to think you are right at all.

The students, of course, cannot defend their opinion. It is something with which they have been indoctrinated The purpose of their education is not to make them scholars but to provide them with a moral virtue -- openness. (Bloom, 1987:25-6)

Bloom's title, *The Closing of the American Mind*, plays on the paradox of modern liberal education. In teaching openmindedness, it may in effect be producing a closed-mindedness incapable of critical reflection and evaluation. When "relativism becomes an assumption rather than a hypothesis," students become incapable of "resuming the search for what is better and best" (Bibby, 1990:132 & 190). In these ways, liberal education and faith development are even subject to the same critique.

The general proposition that education will affect faith development therefore arises from both the structure of Fowler's theory and the nature of liberal, or liberal arts education. If the process of development exists relatively independent of maturation, and if the goal of formal education is to foster development, then an affinity between the two is assured. More than an intuitive hunch, the expectation that effective education will either consolidate the individual at a given stage, or prompt a transformation to a higher stage, is the very premise of liberal education. Both consolidation and change engage meaning-making. Therefore, the expressed purpose of a particular educator or educational institution could conceivably be to ensure that individuals hold to faith characterized by a certain faith stage of preference, or that they continually reformulate and refine their "faithing." Either can be construed as a legitimate educational objective. Either way education, not biological maturation alone, is a crucial agent of faith development.

The effect of education on faith development is implicit in Fowler's notion of sponsorship, by which he means "the way a person or community (or institution) provides affirmation, encouragement, guidance, and models for a person's ongoing

growth and development" (1981:287). Education that practises "good faith" will

create a climate of developmental expectation (It will) take the full development of faith at each stage seriously, (and) provide rites of passage and opportunities for vocational engagement that call forth the gifts and emergent strengths of each stage. (1981:296)

On the other hand, Fowler warns against the coerciveness of the "modal developmental level" of groups, communities, and institutions, which is

the average expectable level of development for adults in a given community. In faith terms, it refers to the conscious or unconscious image of adult faith toward which the educational practices, religious celebrations, and patterns of governance in a community all aim. (1981:294)

The modal level is that to which individuals are nurtured to grow up -- but not beyond. Outsiders are attracted to a community or educational institution because of its modal level of development, or repelled by the community or institution because of it. Fowler would concur with Berger (1967) that "bad faith" is the replacement of choice, or developmental level, with "fictitious necessity". As a form of false consciousness, "bad faith" has been widely maintained and legitimated by means of religion. Hargrove (1989) describes the scenario in more neutral terms:

For many religious organizations Fowler's Stage 3 is a legitimate final goal in the religious training of members. This achieves institutional loyalty and an understanding of the symbolic structure and moral teaching of the church sufficient to produce a life lived in harmony with religious ideals. It also gives the individual a secure sense of identity and an understanding of the purpose of one's life consonant with that of the group. To move to Fowler's later stages of questioning and reintegration can be seen as an invitation to heresy, disloyalty, or personal psychological strain, not to be encouraged by the religious community. (Hargrove, 1989:243)

However, Berger also notes that "bad faith" may be revealed as such by means of religion. Regardless of whether religious groups, communities, or institutions legitimate "bad faith" by their modal development level, or practise "good faith" by exposing it, the

nature and role of education is inexorably implicated.

Kwasnick (1986) summarizes the stage concept of personal development and places it within the context of education. Development is conceived of as a spiralling process from states of dis-equilibrium, caused by internal and/or external experiences that cannot be assimilated into already existing structures, to states of equilibrium within modified or new structures capable of that assimilation. Two general conditions which facilitate developmental change, that is, cause disequilibrium and resultant reorganization, are role-taking experiences and opportunities for intensive reflection and introspection. Both of these conditions exist in the laboratory of the liberal arts college classroom.

The relationship between liberal education and Fowler's faith development theory is so self-suggestive and logical that most theorists have virtually assumed its facticity without ever bothering to test its veracity. Instead they have jumped ahead to questions of application, implementation, and technique. Every chapter in the anthology entitled *Toward Moral and Religious Maturity* (Brusselmans, 1980) concludes with a section on educational implications. These questions are clearly premature, and cannot concern us here until the prior assumption of effect is verified. That such an assumption exists may be due to faith developmentalists hitchhiking on the evidence accumulated by other developmental theories included in Fowler's theory. If cognitive development and moral development are affected by education, it is reasonable to assume that faith development is also. Religious educators in particular, who have generally subscribed to a more traditional concept of faith, have always defined their

function and role in their own, perhaps primitive, faith development terms, long before Fowler's formal theory was articulated. For these educators, faith development theory has merely described certain aspects of their task, not added to it. In light of Fowler's definition of faith as meaning-making, secular educators are no different.

Nevertheless, it is religious educators who understandably have taken most notice of Fowler's theory. Dykstra (1986:253) states that the aims of religious education "all turn in one way or another to the normative vision of maturity found in the faith's tradition and/or community...The aims of education are almost always linked up with the overarching aims of the faith itself". Here again is the issue of faith development's normativity. Fowler, ever sensitive to it,

argues that faith development theory can provide a helpful and illuminating perspective on faith and thus be a useful partner with religious educators in identifying aims. But he does not say that the theory provides those aims The constructive role for faith development theory . . . is to be a conversation partner with a religious community in its own critical inquiry into the norms embedded in its tradition. (Dykstra, 1986:255-6)

Therefore, upon closer examination, the intent of faith development theory is to provide a perspective for, or to be a conversation partner with, religious education. The intent is not to be its object or content. In this relationship, there is again no difference between religious and secular education.

If we conclude that faith development theory is relevant for religious and secular education, then the amount and nature of one's formal education in general would be a factor in faith development. It follows then that higher intelligence, academic achievement, and even socio-economic status would be associated with faith

development. Such associations and their assumptions about the value of critical thinking are clearly problematic. The critical intellect fostered by formal education "can analyze and conceptualize faith commitments but not engender these commitments. Experience in the school of life engenders faith commitments" (Gooden, 1983:107). This is another expression of the tension between cognitive and experiential or affective definitions of faith, in which the cognitive bias of Fowler's model makes it more amenable to influence by formal education.

Fowler's commitment to cognitive structures of faith makes the work of William Perry especially pertinent to a discussion of the effects of formal education. In his book, *Forms of Intellectual and Ethical Development in the College Years: A Scheme* (1968), Perry identifies "nine positions or forms of composing truth through which human beings make their way as natural epistemologists in the context of higher education" (Parks, 1986:41). Using categories such as dualistic absolutism, multiplicity, relativism, and commitment, Perry demonstrates the rather profound effect that four years in a liberal arts college has on what Fowler would term faith development. Wilcox (1983:139) states that "Perry's model gives us more objective terms for describing various styles of interpretation, putting them in the context of faith development and helping to remove the judgmental connotations". She notes that Perry's concepts are particularly helpful in detailing the crucial shift from Stage 3 to Stage 4 of Kohlberg's moral development model that is the transition most characteristic of students in higher education.

Parks is another theorist who builds on Perry's work in exploring further the

interface of education and faith development. In *The Critical Years: The Young Adult Search for a Faith to Live By* (1986), she focuses on higher education, which she describes as

the institution of preference for the formation of young adults in our culture Higher education -- self-consciously or unself-consciously -- serves the young adult as his or her primary community of imagination, within which every professor is potentially a spiritual guide and every syllabus a confession of faith. (p. 133-4)

In elaborating the faith developmental tasks of the typical young adult student of higher education, Parks collapses Perry's nine positions into four forms of cognition: authority-bound dualistic, unqualified relativism, commitment in relativism, and convictional commitment. To forms of cognition, Parks adds forms of dependence and forms of community as aspects that "shape the journey toward mature faith." This reflects her original focus on the importance of locus of authority for the young adult student (1982), a focus developed earlier by Perry, and entrenched as one aspect of Fowler's theory. Parks locates the university student in the critical, problematic transition from Fowler's Synthetic-Conventional Faith (Stage 3) to Individuative-Reflective Faith (Stage 4) in a manner remarkably similar to Wilcox's application of moral staging discussed above. This, together with a simultaneous, equally pivotal transition from Stage 3 to Stage 4 of Kegan's (1982) model of the evolving self customarily experienced by such students, thrusts them into an astonishing vortex of change, so much so that Fowler has credited Parks with the identification of a distinct sub-stage of faith in young adulthood.

Fowler's own Center for Faith Development at Emory University in Atlanta has turned quite naturally to questions concerning the education of the public. He has

proposed a combination of faith development theory and the root metaphor of covenant in the present efforts to reconstruct public philosophy and an ethical foundation for public education. His Center has recently conducted a summer conference on Religion and the Future of Public Education. The papers from that conference, when they become available, will surely illuminate greatly the relationship between education and faith development.

As Pelowski (1983:265) states in her essay on higher education and faith development, "propinquity is fifty percent of the impetus to form a relationship", and these two entities do have an unequivocal affinity in theory. Traces of empirical evidence are also beginning to appear.

D. Research on Faith Development and Education

Much of the treatment of faith development theory in the scientific literature to date has been at the theoretical level. Given the fact that Fowler's *Stages of Faith* was only published in 1981, the paucity of empirical research that has tested and applied his model is certainly understandable. As already mentioned, most of the efforts in the decade since its inception have been directed toward critiquing, refining, and verifying the theory itself.

Nevertheless, some efforts have been directed toward theoretical integrations and applications beyond the theory's internal, inherent coherence. For example, Ellens

(1984) discusses the implications of faith development for the psychodynamics of Christian conversion, Droege (1984) suggests three areas of dialogue between faith development and pastoral counselling, and Fowler (1987) himself explores the applications of faith development theory to pastoral care. On the other hand, some research has actually tested the theory's veracity and utility for various applications. For example, Bradley (1983) and Jardine (1989) have explored the relationship between faith development and Myers-Briggs personality types, Furushima (1985) has tested faith development constructs in cross-cultural settings, Shulik (1988) has demonstrated the adaptability of faith development to gerontological research, and Green and Hoffman (1989) have related faith development to perceptions of similar and dissimilar others. However, empirical research projects pertaining to the effect of higher education on faith development have been few indeed. Pascarella and Terenzini's monumental 900-page synthesis of over 2,600 studies, *How College Affects Students: Findings and Insights from Twenty Years of Research* (1991), discusses Erikson, Piaget, Kohlberg, Perry, and others, but makes no mention of Fowler or faith development.

Such is certainly not the case regarding studies pertaining to the effect of higher education on religiosity, a topic that received considerable attention in the 1970's. Feldman (1969; 1970) did a thorough review of the research and literature from 1930-1970 and concluded that, on the average, college students decrease in general religiosity and in religious orthodoxy during their college years. The separate effects of a student's major field, residence, extra-curricular activities, friends, and background are included in the analysis. Pascarella and Terenzini's (1991) update of

Feldman's review found the same. "The literature published since 1967 fairly consistently reports statistically significant declines in religious attitudes, values, and behaviors during the college years" (1991:280-81). Pascarella and Terenzini also concluded that institutional characteristics probably do play a role in the degree of change, but found the relationship between major academic field and changes in religion to be "not entirely consistent." Madsen and Vernon's (1983) findings in a longitudinal study of a primarily Mormon population noted that peer groups were especially important in influencing decline in orthodoxy during college, a finding that added credence to Becker's (1977) earlier work.

Madsen and Vernon's data also support the conclusions of Hastings and Hoge's (1976) study of male students at Williams College, as well as Wuthnow and Mellinger's (1978) study of male students at Berkeley. Both of the latter indicate that, while religiosity and orthodoxy do decline in college, the period of greatest change and reformulation is now occurring before college. Further evidence of pre-college apostasy is provided by Caplovitz and Sherrow's (1977) monograph on apostasy among college graduates. They summarize the phenomenon with a path analysis of the undermining effect of radicalism, intellectualism, maladjustment, and poor parental relations on the religiosity of college students.

Two studies are particularly noteworthy because of their special bearing on the present study. Like this study, Hunsberger (1978) drew half of his sample from the University of Manitoba and found more limited evidence of religious decline. In another study, Hammond and Hunter (1984) found that students in highly insular

evangelical colleges, such as one of the colleges sampled in the present study, actually had lower levels of orthodoxy than evangelical students at non-insular public universities. The counter-intuitive character of this puzzling finding is addressed addressed below. Meanwhile, Hunter (1987) later theorized that the independent and critical reflection of academic discipline, the progressive beliefs of its professorate, and the social environment of its schools were factors contributing to the ongoing redefinition and reconstruction of evangelicalism.

While studies of this kind provide strong support for the ability of post-secondary education to be associated with change in the realm of religion, they nevertheless may be only tangentially relevant to the focus of this study because of two major limitations. One is that faith and its development as defined by Fowler is not limited to those who describe themselves as religious. The universality of the practice of faith means that people do not have more or less of it, but simply exercise it in different forms, such as religious or non-religious/secular, and at different levels of sophistication. Studies of religious decline merely examine the religiosity of faith and thus are not equipped to tap generic faith.

A second limitation is the real danger that the decline in religiosity or religious orthodoxy fostered by post-secondary education can be confused with faith stage development. As discussed previously, it is not uncommon for faith development to be misconstrued or misinterpreted as decline in religious commitment. And as already mentioned, "religiosity" has become a pejorative term for many of the highly religiously committed, who see it as an immature or unauthentic state of spirituality. It is possible

that studies such as the ones just reviewed may not have been sensitive to the differences. The Hammond and Hunter (1984) study cited above is illustrative of this problem. They contrasted religiously "low or non-insular schools," such as public, secular universities, with "highly insular schools", those which were private and "confessional" in that there was a consensus of the entire school community on an explicit statement of religious faith. Regarding low or non-insular schools they conclude that the

mere recognition of the minority status of one's convictions relative to competing perspectives may (and in our data appear to) foster a "fortress mentality" among those determined to maintain the integrity of their worldview. In different terms, the "ghetto" is highly functional for resisting ideological contamination The evangelical in this context becomes even more evangelical. (p.233)

Regarding highly insular schools, Hammond and Hunter observe a relaxation of cognitive defences.

Precisely in the safety of this institutional setting, "internal secularization," as Luckmann called it, can take place. The threat is not external and visible but internal and, by and large, imperceived. It is a threat that, by most empirical indications, appears to be intrinsic to the educational process. Educational achievement is inversely related to the strength of religious commitment. To the degree that it is not indoctrination, education liberalizes Education, even evangelical education, weakens the tenacity with which evangelicals hold on to their worldview. Evangelical education creates its own contaminating effects. (p.233)

Here is a conclusion of religious decline through education with an added twist, that religious education is more effective! But from the perspective of faith development theory, it is evident that Hammond and Hunter's concepts of ideological contamination, internal secularization, liberalization, indeed their implicit, operative concept of religiosity, can be challenged and perhaps enlightened by the constructs of faith development theory.

Long before faith development became a formal theory, Ronald Goldman (1964) conducted the first and now classic research in what was then an undefined field. Goldman observed the growing religious and symbolic perception of children and adolescents. In utilizing Piaget's stages of cognitive development exclusively, he was the first to be criticized for an excessively cognitive view of spirituality. Godin (1968) suggested that had Goldman sought the origins of the individuals' religious symbols, or focused on the affective domain of experience, his insights would have been more practical. Goldman's rationale for his approach was that the cognitive element of religion lent itself to statistical investigation more so than the affective element.

Goldman's work gained great influence, especially in the religious education of school systems in England, where the adoption of his ideas was intended to help children understand biblical stories as symbols, and avoid the "pitfalls of Fundamentalism." Supposedly, if a gap between a higher level of general thinking and a lower level of religious thinking could be avoided, rejection of religion would be less likely. Many articles in the *Journal for the Scientific Study of Religion* during Goldman's era were in response to his contribution. Hoge and Petrillo (1978), based upon their study of Roman Catholics, Southern Baptists and United Methodists, found that more abstract or sophisticated religious thinking among high school students was associated with more, not less religious rejection. But they also concluded that religious education has considerable impact, and that the Goldman hypothesis must be recast in more specific terms.

Other studies exploring the relationship between structural development and

education include those of King and Kitchener of the University of Minnesota, who developed the Reflective Judgment Interview. They report that "the research completed to date has consistently shown that levels of Reflective Judgment increase with age and level of education" (reported in Schmidt and Davison, 1981). In one of their studies, education appeared to be a more important factor than age or simple maturation. In another of their studies the findings were less conclusive. In still another of their studies, there was no evidence that college major or academic program had a significant effect on level of Reflective Judgment.

Wilcox reported on ongoing, longitudinal research that is relevant. "Results to date are suggesting clear relationships between higher faith development stage and certain areas of study. These areas of study seem to have in common similarities in method rather than in subject matter" (1983:142).

The largest and by far the most impressive piece of research pertinent to faith development and education is a Gallup survey conducted for the Religious Education Association of the United States and Canada by the Princeton Religion Research Center. It is actually only one of two research modules employed by the Faith Development in the Adult Life Cycle Project, which began in 1979 and ultimately involved well over 1200 persons and 23 religious organizations before it was completed in 1986. The organizing Symposium in 1981 resulted in the publication of *Faith Development in the Adult Life Cycle* (Stokes, 1983), and the Project was completed with a report by the same title in 1987. Also, a book by one of the driving forces behind the project (Stokes, 1989) is largely based on the findings of the project.

Module One was a telephone interview of a statistically valid national sample by Gallup in March 1985. Module Two was an in-depth, probing, in-person interview of forty-one representative subjects between 1983 and 1985.

The Project tested seven hypotheses, the seventh of which read: "Faith development is positively related to one's involvement in educational experiences" (1987:24). The findings showed

a positive correlation between the amount of formal education and the reporting of a significant change of faith. The more schooling one has, apparently, the more open s/he is to faith change. However, a similar positive correlation is found between the amount of formal education and the judgment that one has "less" faith now than at the age of 16. (1987:25)

This openness to change juxtaposed with self-judgments of less faith was a recurring paradox throughout the study. The researchers see it as a problem of definition. They suggest that

rethinking and reformulating one's faith - which often leads to a rejection of traditional beliefs and symbols - is seen as "less" faith (because of the factor of rejection). In actuality, the case may be made that although the individual may have "less" faith in terms of childhood beliefs, s/he may well have developed "more faith" in terms of the richness and new meaning s/he has discovered as a mature adult. (1987:25)

In other words, it is questionable whether they were measuring personal structural change. Nevertheless, their conclusion is that "education which enriches and challenges the mind and spirit is, in fact, positively related to one's faith development" (1987:25), a conclusion later corroborated by Barnes, Doyle, and Johnson (1989).

Because Kohlberg's theory of moral development is older than Fowler's theory of faith development, much more research has tested its sensitivity to education. And

because moral development is one aspect of faith development, the results are instructive here. Pascarella and Terenzini's compendium concludes that "college is linked with statistically significant increases in the use of principled reasoning to judge moral issues" (1991:364). However, Kwasnick (1986), in reviewing the same body of research, concludes that

The research in developmental education suggests that the clearest developmental changes have occurred on the elementary and secondary levels, not on the college level. Unfortunately, these curricula and resulting evaluative data do not enable one to be optimistic regarding the effectiveness of curricular interventions with late adolescents. (p. 227)

However, she also dismisses most of the studies as being crippled by inherent design weaknesses such as small sample sizes, no randomization of subject selection, and no control groups. In her own experiment, she administered a sixteen-week Developmental Psychology unit to college freshmen, but her hypothesis that positive personal growth would ensue in the areas of ego, moral, and empathy development, as measured by the research instrument, was not confirmed. Among her explanations of the findings was that the experimental course was only one among many deliberate psychological education experiences received by the students, that one semester was too short a period of time for such profound change, and that the transitional, disequibrated status of college freshmen made measurement of change difficult.

The study that has most directly measured the effect of post-secondary education on faith development as defined by Fowler's model, was conducted by White (1986). In a longitudinal study, faith stage development of Catholic college liberal arts and business seniors was compared with their levels of denominational affiliation as a follow-up of a similar study of the same students during their sophomore year. Mean

faith stage scores of high and low affiliates and interviews from 1984 and 1986 were compared. The group means for both years showed a modest trend toward more advanced faith stage reasoning, although chronological maturity was not controlled.

A very similar study by the Jesuit Centre for Faith Development and Values at St. Paul's College, University of Manitoba is currently in progress. Their Young Adult Faith Study was begun in 1988-89, and is a four-year longitudinal investigation into the faith development of Catholics at a secular university. One hundred and twenty students are being followed from high school graduation through university undergraduate programs by means of "semi-clinical faith interviews" based on Fowler's theory. "As the study concludes in 1992, analytic cross-sectional comparisons will be made between groups across the four years of the study" (Creamer, 1991:51). The general resources of the Jesuit Centre were used in the study being reported here. In particular, the data set of the Young Adult Faith Study was used in the pre-testing phase of the present study.

III. NEED FOR THIS STUDY

From this review of literature, it is evident that the sociology of religion can profit from the incorporation of a scientific conceptualization of faith. Fowler's concept of faith is particularly well suited to established social-psychological concepts such as those of self, others, interaction, and symbolic meaning. His concept of faith can do much to refine functional definitions of religion, and provides another way of measuring religious faith. His theory of faith development can also do much to refine scientific understanding of individual religious change. In the context of general sociological theory, beyond the sociology of religion in particular, promotion of the use of Fowler's theory of faith can contribute much to the study of the conditions and structure of existential meaning that is central to the classic Weberian tradition.

The influence of many different demographic factors on faith development is implicit in Fowler's theory. Various types of education is one such factor. Reviewing the empirical data accumulated to date would suggest that, while the question of whether higher education has an effect on religiosity has been studied quite extensively, the question of whether higher education has an effect on faith development has not been answered satisfactorily. Despite the theoretical affinity between the two variables, the empirical evidence for a relationship is at worst negative, and at best inconclusive. It may be logical that education will facilitate faith development, but it cannot be assumed. Further measurement and testing are required.

The general propositions accruing from a consideration of the effect of post-secondary education on faith development in the terms discussed above, and forming the focus of the research herein proposed, can be outlined as follows:

1. Persons with post-secondary education show higher levels of faith development than persons with no post-secondary education.
2. Persons with liberal arts post-secondary education show higher levels of faith development than persons with professional post-secondary education.
3. Persons with religious post-secondary education show no difference in levels of faith development than persons with secular, post-secondary, liberal arts education.

More specific research hypotheses are presented in Chapter Three, following the description of methods and procedures employed by this research project.

* * * * *

This chapter has formulated the research problem of this study as an investigation of the effect of post-secondary education on faith development. It has introduced Fowler's theory of faith development by demonstrating its pertinence to the

sociology of religion, by critically evaluating its essence, and by overviewing its theoretical and empirical linkages with education. Specification of the steps of empirical investigation taken by this study will show how new data were generated to address the questions posed by this study.

CHAPTER TWO

RESEARCH METHODS AND PROCEDURES

I. DATA ORGANIZATION

This study of the effect of post-secondary education on faith development placed education as the primary independent variable and faith development as the dependent variable. The specification of these variables and their association for the purposes of this study can be outlined as follows.

A. The Independent Variable - Education

Elementary and secondary education in Canada is relatively homogeneous and predictable. Some streaming typically begins in high school, in which students select courses that are focused either upon more "academic" courses that are intended to prepare them for entrance to the "higher education" of university, or courses that are focused upon more practical or applied skills that are intended to prepare them for direct entry into the labour market or other career opportunities upon graduation. But for the most part, a high school graduate is considered to have completed the standard universal education expectation for Canadian citizens. The types of post-secondary

education are considerably more diverse, including not only the university and community college education that are anticipated by high school programs, but military, business, professional, religious and other types of schooling as well.

Despite the range of post-secondary education, the degree-granting university has always been viewed as the definitive institution of higher learning (Parks, 1986). And although the role of the university has increasingly evolved toward the development of professionals in fields such as law, medicine, and especially business (Bookbinder and Newson, 1988), the foundational curriculum of the university has throughout its history been that of the liberal arts, the humanities and social science curriculum leading to the Bachelor of Arts (B.A.) degree. The intent of such education has been to foster increased awareness and knowledge of the self and society, along with development of the generic skills of critical thinking and communication. The objective has been personal enrichment more so than vocational training. It is precisely this type of education that has the most potential relevance for the theory of faith development, and which has therefore served as the primary independent variable in the present study.

Two alternatives to university liberal arts education present themselves as particularly enlightening points of contrast in terms of faith development theory. One is the professional education at universities already mentioned. This type of education, because it occurs at the degree-granting level of higher education, is supposedly roughly equivalent in academic sophistication and rigor to that of university liberal arts. This quality sets it apart from what is commonly termed the vocational post-secondary

education offered by non-degree granting community colleges, technical institutes, and trade schools. These terminal career programmes also tend to be shorter in duration than professional or liberal arts programmes. Therefore, a comparison of liberal arts education with vocational training would be a comparison of two entities already too dissimilar.

On the other hand, two qualities of professional education at universities must also be taken into account in order to obtain a fair comparison with, yet adequate distinction from, undergraduate liberal arts education. One is that some professional education, such as business administration, occurs at the graduate level. This not only again unbalances the sheer number of years of post-secondary study, it also increases the likelihood that liberal arts courses will serve as undergraduate preliminaries to, or prerequisites for professional education. A second quality of professional education is that some, such as the field of education, incorporate substantial levels of liberal arts into their requirements. Both of these qualities blur and distort the contrast of professional education with liberal arts education in terms of faith development.

Therefore, university programs which occur at the undergraduate level and are built upon the natural sciences serve as the most useful contrast with liberal arts. Engineering programs meet both these criteria most satisfactorily. Engineers are interpreters of natural science who apply natural science to material human needs. They are involved in all aspects of material construction and manufacturing directed at harnessing the powers of nature for the benefit of people. Their education is professional in that it prepares them for careers in applying natural science, in contrast

with academic careers in pure research and teaching. Undergraduates work toward the Bachelor of Science (B.Sc.) degree in various departments of specialization, such as mechanical/industrial, civil, geological, agricultural, electrical, chemical, or computer engineering. Engineering programs typically require only the barest minimum of complementary liberal arts courses.

A second alternative to secular university liberal arts education that provides a fair but potentially enlightening contrast in terms of faith development theory is that of private, religious forms of liberal arts education. If Fowler's theory does in fact tap generic faith apart from religion, then education that is equivalent in all respects other than its religious or non-religious orientation should have equal effects on faith development. A high proportion of the first colleges and universities in North America were begun by mainline Protestant denominations and by Catholics. Some of these schools still remain under church jurisdiction. But as many of these institutions secularized and increasingly fell under public jurisdiction, new schools were created in reaction to this process by religious groups wanting to maintain their vision of faith. These schools, which teach curricula that generally fit classic conceptions of liberal arts, have provided a private, religious alternative to public universities. They are certainly relatively small, but nevertheless have had a larger impact than is suggested by the two sentences of analysis offered in Martin and Macdonell's (1982) sociology of Canadian education.

The religion with the most developed system of private post-secondary liberal arts education in Canada is that of Protestantism. Some Protestant schools of higher

education, like schools adhering to the doctrines of other religions, take as their purpose the training of religious professionals, but these schools, known as seminaries, operate at the graduate level as opposed to the undergraduate level. The two primary types of private undergraduate Protestant schools in North America are the "Christian liberal arts" college and the "Bible college." Hiller (1978) described the Christian liberal arts college as historically more of a parallel institution to the university, and the Bible college as an alternative institution. He pointed out further that the former is still more representative of the United States, and the latter still more representative of Canada.

However, Canadian Bible colleges continue to diversify their curricula by including more humanities and social science, and to seek transfer of credit with universities (Doucet, 1990). In fact, it is not uncommon for Canadian Bible colleges to be affiliated and cross-registered with public universities. Doucet observed that

Until recently the distinctions between Christian liberal arts universities and Bible colleges have been clear-cut. Liberal arts institutions have leaned toward expression of the Christian perspective in vocational and academic training, while Bible colleges have leaned toward ministry skills in church-work oriented professions. Now a convergence is taking place. (Doucet, 1990:41)

Bible colleges in general are not necessarily more confessional than Christian liberal arts colleges, but are characterized by having a higher requirement of courses in religion and theology, and by being more devotional and applied. Bible colleges press the religious-secular distinction further than Christian liberal arts colleges, while remaining in the tradition or category of liberal arts education. They therefore provide a better contrast with secular, public liberal arts education.

There is some precedent for selecting engineering and religious education as the two alternatives to be compared with university liberal arts education. Myers-Briggs (1985:111) has reported a preponderance of students preferring abstract cognition in college faculties devoted to both liberal arts and engineering, and Jardine and Viljoen (1992) have speculated that this would be particularly true in theoretical disciplines such as philosophy and theology, where students would presumably be more likely to be categorized in the higher levels of faith (ie. Stages 4 and 5). These categories of education therefore present themselves as good groupings for investigation and contrast, by virtue of their important similarities and differences. Thus university liberal arts, university professional (engineering), and Protestant Bible college curricula served as the three categories of post-secondary education comprising the independent variable, or that which influences faith development, in the organization of this study.

B. The Dependent Variable - Faith Development

The conception of faith development employed here is the model formulated by James Fowler and outlined in the introduction in Chapter One. Whether or not education has an effect on faith development was measured by differences in scores on faith stage progression as indicated by the aspects that comprise the respective stages.

A decided strength of Fowler's model of faith development is that it is not just a

theory for which indicators must be developed independently by the researcher wanting to measure it. Fowler himself developed an instrument to collect the data upon which his theory is built, and the same instrument is available to anyone interested in doing research in faith development. Questions regarding the indicator's validity and reliability in measuring the variable of faith development remain open, but at least subsequent researchers have the original tool with which or from which to work.

Fowler's instrument for measuring faith development as articulated by his theory is a structured open-ended interview schedule that has undergone a 1986 revision of the original form published in 1981. Whereas Piaget and Kohlberg gained access to the structuring operations of their respondents by posing problems and observing how respondents interpret the problems and work toward solutions, Fowler made the respondent's own life experiences, responses to challenges, and constructions of meaning the subject of the interview. The revised questions are divided into five sections: introductory questions about biographical data and "life tapestry," three questions about relationships, seven questions about present values and commitments, seven questions about religion, and three questions about personal crises and peak experiences. Fowler and his associates have published a *Manual for Faith Development Research* (Moseley, Jarvis, and Fowler, 1986) which details procedures for conducting, coding, and scoring interviews, replete with criteria for each aspect at each stage.

Both the concept and the measures of the dependent variable of faith development in this study have adequate precedence in previous research, although

the method of measurement employed by this study was an extensive adaptation of Fowler's interview method.

C. Control Variables

It was the general proposition of this study that specified types of post-secondary education have an effect on the faith development of individuals, as formulated by Fowler. It was also assumed that such education is only one variable among many that influence faith development; it would have been naive to assume that this is a simple bivariate relationship. Even if it were, causality cannot be inferred from bivariate relationships alone. Several intervening variables could potentially modify or interfere with the relationship between the two primary variables tested here, and result in spurious conclusions. For example, the independent variable of education in this case takes three or four years to apply, during which time much could transpire to compromise the data. And of course some potentially intervening variables are not even dependent upon a time frame. The acknowledgment of these factors turned this study into a multivariate analysis.

Potentially intervening variables must be controlled and the effect of education isolated if its direct effects are to be measured adequately. This can be accomplished through the conventional means of statistical control. Multivariate analysis also makes possible the use of an elaboration model, providing that whether or not test variables are antecedent or intervening is known (Babbie, 1992). Assuming the chronological

order of test variables is known, relationships of variables pertinent to faith development can be replicated, explained as spurious, interpreted as the mechanism through which the primary relationship occurs, or specified as to the conditions under which the primary relationship occurs (Babbie, 1992). The potentially intervening variables of concern to this study, as identified by Fowler's theory, subsequent research conducted on the theory, and general logic, were the following.

1. Age

Any developmental scheme is subject to the maturational effects of the accumulation of experience or the simple passage of time. Even constructivist models such as Fowler's faith development theory, as opposed to psychosocial theories more aligned with life-cycle dynamics, must be cognizant of the fact that stage transformations may be due primarily to the effect of aging. To compare the faith stages of post-secondary seniors with that of freshmen may simply be measuring the difference between 18 year-olds and 24 year-olds, and misinterpreting it as the effect of their education.

2. Sex

The profound effect of gender differences can never be under-estimated, and faith development theory is no exception, especially in light of its relatively embryonic state of development. Though Fowler's original sample did not suffer from the sex bias that Kohlberg's did, the case of moral development theory is instructive here. Gilligan

(1982) found that females tend to frame morality in terms of responsible, relational care-giving, whereas males tend to frame it in terms of justice. Bradley (1983) found a statistically significant difference between males and females on faith development, and speculated that there may even be a female-Stage 3 and male-Stage 4 bias in Fowler's theory, a contention supported by Jardine and Viljoen (1992). The Faith Development in the Adult Life Cycle Project, as summarized by Stokes (1989), also found sufficient though subtle differences in faith development by sex, enough to warrant attention to this difference in a study such as this.

3. Other

There are many other variables that could potentially affect faith development in such a way as to suppress or distort the effect of education. According to the Faith Development in the Adult Life Cycle Project, factors such as significant cross-cultural experience, prolonged periods of acute loneliness or emotional distress, gain or loss of a significant other (spouse, parent, child), religious conversion or apostasy, momentous career success or failure, and several others can all affect faith development. Most of these could well occur during the course of post-secondary education. Other, more sociological factors, such as rural or urban residence, or social class, could also complicate the primary relationship. In light of the nature of a study focused on undergraduate students, the following additional factors were judged to have the greatest potential for impact on faith development, and therefore were measured and controlled statistically.

a) Cross-cultural experience

Immersion in a different culture may cause an individual to reflect critically on his or her own enculturation, and thus may create a more informed commitment to or modification of it in a manner that restructures his or her faith. Cross-cultural experience is most likely to affect the "faith as knowing" dimension of Fowler's model.

b) Prolonged emotional distress

Emotional distress such as prolonged periods of acute loneliness may prompt the individual to reevaluate his or her trusts in and loyalties to significant others in a manner that restructures his or her faith. Emotional distress is most likely to affect the "faith as relational" dimension of Fowler's model.

c) Relational stress

Relational stress such as the gain or loss of significant others may also equilibrate or disequilibrate faith. For example, the trauma of the birth of a child may reinforce synthetic-conventional structures of faith, whereas the untimely death of a parent may prod an individual from rational to paradoxical structures of faith.

d) Change in the valuation of religion

Change in the valuation of religion may be associated with an abandonment of mythic literalism, group conformity, or systematic

rationality, which represent the restructuring that is a part of the movements of faith from Stage 2, 3, and 4 respectively.

e) Rural or urban residence

Persons raised and currently living in rural settings may be more inclined toward structures of faith that are oriented toward that of a homogeneous community than persons who have been socialized in more cosmopolitan settings.

f) Social class

The literalism and conformity characteristic of Fowler's lower stages may also be more characteristic of lower social classes, just as the rationality and individualism characteristic of Fowler's higher stages may also be more characteristic of middle to upper social classes.

By dealing with the independent, dependent, and intervening variables in these ways, this study was able to determine what effect, if any, post-secondary education has on faith development, and adequately rule out several other alternative hypotheses in the process.

II. SELECTION OF CASES

The population of concern for this study was Canadian university and Bible college students of 1991-92. The process of sampling cases from among all those potentially available was fairly complex, requiring detailed thought and organization. Cases could not be and were not selected from all university liberal arts students, university professional students, Bible college students, or from the general population. They were selected as follows.

A. University Cases

These cases were drawn exclusively from the University of Manitoba. This was not a random selection of a university, but rather, as the host institution for this study, it was the most convenient sample. It was also the judgment of the researcher that, for the purposes of this study, the University of Manitoba was not unlike other major public universities in Canada, and thus, as a purposive sample, it reflected the average or typical university in Canada. Some tenuous support for this judgment was provided by the nineteenth place ranking given to the University of Manitoba by the *Maclean's* survey of the arts and sciences undergraduate programs in 46 selected Canadian universities (Ranking the Universities, 1991). Out of a possible 1,000 points in the ranking system, and with a range of 145-705 and mean of 379, the University of Manitoba received 383 points. Because the selection of the University of Manitoba

was not random, statistical inferences to all Canadian universities cannot be made, though typicality can be argued.

The actual sampling frames, or the complete lists of sampling units from which cases were selected, consisted of all students registered in a Bachelor of Arts degree program, without regard for major or department, and all students registered in the Faculty of Engineering, also without regard for department. These two frames, generated by the university's Student Records Office, represented university liberal arts and professional education respectively.

Two sublists were derived from each of these two frames, one consisting of "year one" full time freshmen, the other consisting of seniors within one semester of graduation. Freshmen were sampled and measured in October 1991, as early in their university career as possible, while the seniors were sampled and measured in March 1992, as late in their senior year as possible. The timing of these applications was designed to maximize the effect of education and yet minimize the possibility of variables, such as relational stress or change in the valuation of religion, intervening between the effect of the independent variable on the dependent variable, a possibility that would only increase the longer measurement application might have been delayed after graduation. The arts seniors were limited to 3 year General Arts graduates only; 4 year Honours graduates were excluded in order to parallel the Bible college seniors. However, the engineering seniors were all 4 year graduates, that being the only Bachelors degree program offered by the Faculty of Engineering. This introduced a considerable and unfortunate discrepancy in the respective educational programs that

must be taken into account in the findings.

The selection of cases from the lists of arts freshmen and seniors proceeded on the basis of computerized systematic random sampling, so as to ensure the representativeness necessary to estimate from sample statistics to population parameters. The first case was selected at random, with every subsequent K th case also being selected, K being the interval calculated by the ratio of sample size to sampling frame size. The number of cases, or the size of the sample, was set at approximately 125 for both freshmen and seniors so as to ensure adequate numbers (assuming a response rate of at least 50%) for the statistical manipulations to be employed in data analysis. Tabachnick and Fidell (1989) suggest that the assumption of normal distribution requires a minimum sample size of 30 randomly sampled cases in each cell, and a minimum cases-to-independent-variable ratio of 5 to 1. The choice of this sample size was also based on what could reasonably be expected from the Bible colleges. The Student Records Office of the university was unable or unwilling to generate separate male and female lists of arts students, and so, on their recommendation, it was assumed that there were an approximately equal number of both sexes among both freshmen and seniors. Of the 3,758 General Arts students in the previous year (1990-91), 49% had been male and 51% had been female (Institutional Statistics Book, 1992).

However, before selection of cases from the lists of engineering freshmen and seniors occurred, the lists were divided according to sex, because only approximately 10% of engineering students were female. In total, there were 80 female freshmen

and 22 female seniors. To draw a sample of 125 from the freshmen, a systematic random sample of 60 was first drawn from the 80 females, and then added to a systematic random sample of 65 drawn from the males. To draw a sample of 125 from the seniors, all 22 females were taken and added to a systematic random sample of 103 drawn from the males. The study proceeded with the knowledge that a balanced sex ratio was not possible in the sample of engineering seniors.

In summary, non-probability convenience sampling was utilized in selecting the university and in devising the sampling frames, stratified sampling was utilized to maintain sex balance of the engineers, and probability (systematic random) sampling was utilized to select the actual cases from the sampling frames. After deletion of cases for which there were anomalies such as incorrect addresses, the total university sample consisted of the following: 124 Faculty of Arts freshmen, 116 Faculty of Arts seniors, 124 Faculty of Engineering freshmen, and 122 Faculty of Engineering seniors. The total university sample numbered 486. This was intended to produce useful data on at least 50 university liberal arts freshmen, 50 liberal arts seniors, 50 professional freshmen, and 50 professional seniors.

B. Bible College Cases

These cases were drawn exclusively from Providence College (PC) and Canadian Mennonite Bible College (CMBC), both based in the Winnipeg area. These selections were again not random, but were purposive samples chosen because of

both convenience and accessibility, as well as merit. It was important for the purpose of fair comparison with university cases that the Bible colleges be in the same social, cultural, and geographical milieu. It was equally important that the Bible colleges be offering roughly equivalent programs to that of university liberal arts. Both PC and CMBC offer the Bachelor of Arts degree, among others, whereas many other Bible colleges offer only certificates, diplomas, and degrees of different nomenclature. At the same time, it was again equally important for the generalizability of this study to capture the variations among Bible colleges that are probably greater and more significant than the variations among secular universities. Hence the need to sample two Bible colleges instead of one.

While both PC and CMBC are Protestant colleges granting Bachelor of Arts degrees, the differences between them are several and potentially significant. PC is academically autonomous, granting degrees by right of provincial charter, whereas CMBC is affiliated and cross-registered with the University of Manitoba as one of its teaching stations. PC is a member of the Association of Canadian Bible Colleges, CMBC is not. The governance of PC is independent and transdenominational, while CMBC is governed by the General Conference of Mennonites in Canada. PC is conservative and evangelical in theological orientation, whereas CMBC is more liberal. PC is located in a rural setting, and is more residential and communal in its forms of organization; CMBC is located in the city of Winnipeg, and is less residential and communal in its organization.

The student enrolment of the two Bible colleges is roughly equivalent, but is

substantially less than the University of Manitoba. PC and CMBC have each averaged approximately 100 incoming freshmen in recent years, and have graduated approximately 50 students, with the B.A. degree being heavily predominant. The sex ratio of both freshmen and seniors have been generally balanced. Therefore, the entire freshmen and graduating classes of both colleges were measured, instead of treating them as frames from which to draw a sample. The total Bible college sample therefore consisted of 111 PC freshmen and 59 seniors, plus 95 CMBC freshmen and 45 seniors, for a total of 310 cases. The low number of seniors in each college was not considered a problem for statistical analysis because they represented the total population, not a sample.

The selection of the various kinds of the 796 cases for this study by the procedures outlined above produced samples that are characterized by the qualities necessary for sound research. The cases are clearly recognizable, relevant, and researchable. There is considerable control exercised to facilitate internal validity, yet sufficient variation is present to facilitate external validity. And although selection was not random at every level, it was sufficiently representative to allow inferences from the statistics of this study to parameters of the population of this study.

III. PRODUCTION OF DATA

A. Measurement Information

It has already been amply stated that the data produced by this study are the scores of each case on the aspects of faith development as measured by Fowler's faith development model. The action of the researcher that constituted the stimulus to which cases responded, and by which information was elicited, was the presentation of carefully crafted questions. The question and answer technique has been the only method employed thus far in the brief history of scientific faith development research, and was here again deemed to be the only adequate method of measuring such a complex, personal, and subjective variable. Alternative methods are conceivable, such as qualitative participant observation combined with content analysis for the purpose of assessing the faith stage of communities (Hiebert, 1989a), but where individuals are the units of analysis, triangulation of methods is extremely difficult. No combination of new and separate kinds of measures or information was attempted here.

However, the administration of the questions or stimuli did require some processing of the scoring that can be clarified here. Stage of faith development is conceptualized according to Stages 1 through 6, but these stages are a function of the seven different aspects of faith that serve as operationalizations. The questions are directed at these aspects, not at the conceptual definition of faith, and it is the responses to these questions that are scored on a scale of 1 to 6. In order to derive

the faith stage of the case, the mean of all questions directed at each particular aspect is calculated first. Then the mean of the seven aspect means is calculated as the final score for that individual case.

This procedure assumes that the seven aspects are weighted equally, an assumption that is consistent throughout Fowler's theory. Calculating the mean of the aspects also typically produces faith stage scores of individual cases that are not whole numbers reflecting complete location in one particular stage of faith. For example, an individual may be scored as 3.8 in stage of faith development. Though Moseley, Jarvis, and Fowler (1986) detail this methodology, they do not report or work with scores claiming such a level of precision. They prefer to report scores of 2.7 - 3.3 as Stage 3, scores of 3.4 - 3.6 as Stage 3-4 transitional, scores of 3.7 - 4.3 as Stage 4, and so on. This decision is prompted by their desire to remain tentative or general in staging individuals, but the result is that some valid and useful information is lost. If a mean of 3.8 is derived from the averaging of the seven aspects, the stage score indicates that more aspects were scored as Stage 4 than were scored as Stage 3. Reporting the score as Stage 4 sacrifices the fact that not all aspects were scored as Stage 4.

However, the calculation of arithmetic means to obtain faith stage scores is methodologically problematic. Faith stages consist of discrete data at the ordinal level of measurement, for which the logical measure of central tendency is the median, not the mean (Nachmias and Nachmias, 1987). Use of the arithmetic mean is usually reserved for continuous data at the interval or ratio level of measurement, where the

distance between values is exact, equal, and actually known in a way that the distance between Stage 3 and Stage 4 in terms of faith development is not known.

Nevertheless, while not justified in technical, statistical terms, the use of means in ordinal data is common and useful, the key being in its utility (Babbie, 1992).

Furthermore, the fact that Fowler and others (Bradley, 1983) have already done so in faith development research adds weight to the justification of having done so here again.

After the faith stage scores of individual cases were obtained, they were then grouped together with the scores of the other cases in the respective samples, again by calculating the mean. For example, the average for the entire sample of university liberal arts freshmen was 4.08. The production and organization of data in this study yielded eight such primary categories for statistical analysis: freshmen in each of University of Manitoba liberal arts, University of Manitoba engineering, Providence College, and Canadian Mennonite Bible College programs, as well as seniors in each of the same four categories.

B. Measurement Application

In administering the research stimulus, in this case asking questions, two types of options were available. One was to use Fowler's own procedure, an interview schedule, which is detailed in the *Manual for Faith Development Research* (Moseley, Jarvis, and Fowler, 1986), and which has been described as "qualitatively-oriented"

(Butman, 1990). The other option was to employ a more quantitatively-oriented questionnaire derived from Fowler's procedure. The judgment here was that the Fowler interview was simply too ponderous and unwieldy to be utilized for the number of cases required by the structure of this study, given the limited resources of the researcher. The design of this study called for approximately 500 cases to be evaluated, a data base larger than that of Fowler's original research. If this was to be done by means of two-hour in-person open-ended interviews that would then require transcription plus an additional five hours to code, the task of data production would become prohibitive. Therefore, a modified, self-administered, closed-ended, mail questionnaire was developed and utilized to measure faith development.

All the conventional advantages and disadvantages of in-person interviews versus mail questionnaires applied to this choice. But the assumption that a valid and reliable questionnaire could be developed, with its benefits in terms of time, cost, and access to subjects, made this study feasible. The measuring instrument could simply be mailed to each case, and thereby perhaps even be presented in a more neutral, and certainly more consistent, manner. The richness of the data was no doubt reduced because closed-ended questions had to be asked, and there was no opportunity to probe responses, but the interviewer bias and potential religious bias was also reduced. Selected cases may have been more inclined to cooperate and respond because of the greater anonymity and lesser investment of time and effort.

C. Measurement Rationale and Limitations

The rationale for utilizing a question-and-answer survey measurement of faith development as conceived by Fowler's theory is quite self-evident. Because of the cognitive bias of the theory, it is not really amenable to measurement by structured observation or behavioral indicators. Measurement of faith development requires that the individual express him or herself in some manner, so as to expose cognitive structures that may or may not readily manifest themselves in behaviour. Furthermore, faith development is ethically and conceptually beyond the reach of experimental manipulation, and is too individualistic to allow for individual assessment through group observation. There is an intuitive cogency and congruence between Fowler's theory and his basic method of measurement.

Perhaps the primary liability of the blatantly direct question and answer method of measurement is that it is obtrusive, and therefore prone to producing reactive effects. The process of causing the individual to reflect upon the aspects of faith can be a rather unique experience for the individual, and therefore be a profoundly moving experience in that it precipitates movement or alteration of faith structures. In other words, the process of measuring faith may change faith from what it had been previously and would have remained if it had not been measured. This certainly throws the information gleaned during the process into question. Fowler is acutely aware of the fact that his interviews are often interventions into faith. In fact, many of his subjects immediately reported as much following their interviews. But there seems to be no easy solution to the problem. No one to this point has been able to conceive

of a way of reaching deep into an individual's subjective being without arousing it. Perhaps the only consolation is that this obtrusiveness has been consistent in all faith development research, and may in fact be lessened by a questionnaire format.

A second limitation of the question and answer method of measurement is its dependence upon language; it is an exercise in hermeneutics. In nonscheduled interviews, questions can be re-worded and paraphrased when obviously misunderstood, and answers likewise probed when misunderstood or incomplete. In closed-ended, fixed response questionnaires, the answers are less problematic, but the meaning of the questions is particularly vulnerable to misinterpretation. These questions must generally be drafted according to the verbal ability of the lowest common denominator of the population, and even then, or because of this reduction, are subject to discrepant meanings that introduce error into the data. Fortunately, the questionnaire developed for this study could afford to assume a high school graduate level of reading and cognition, because all cases in this study had this as a minimal level of education. This is a higher level than could have been afforded if the study population had been the general population, and allowed the instrument to make assumptions that Fowler's interview could not afford.

A third limitation of the question and answer method of measurement is that it is limited to self-reports. As such it is subject to problems such as the memory-decay, bias, motivation, and ability of the respondents. It does not measure social action directly, or indicate the context of the individual's social life. Questionnaires are particularly weak in this regard. Fowler's interview at least creates a partial

demonstration of the respondent's patterns of cognition, awareness, judgment, and so forth. A questionnaire only enables the respondent to give a brief, fixed report of those patterns. To enable the respondent to give a valid and reliable report of faith development aspects without also suggesting what might be socially more desirable reports is a considerable challenge.

On the other hand, a Fowler questionnaire potentially has at least two specific advantages over the Fowler interview, beyond the general advantages reviewed earlier. First, items can more directly reflect the various criteria of the various aspects of the various stages, as they are explicated in the *Manual for Faith Development Research* (Moseley, Jarvis, and Fowler, 1986). Instead of eliciting discursive answers which must then be interpretively coded by the researcher, the criteria themselves can be paraphrased and become the questionnaire items. Even if the respondent is forced to reflect briefly before responding to this type of question, he or she is nevertheless then responding directly to the criteria set forth by the theory, instead of offering some personal exposition that may or may not be codeable, or may be erroneously interpreted by the researcher. This effectively shifts the largest margin of error into the response of the subject, instead of leaving it located in the coding procedure. Fowler (1981) reported inter-rater reliability of 85-90%, but did not report on validity. The construction of a questionnaire such as done in this study could actually improve measurement validity.

A second potential advantage of a questionnaire is the maintenance of balance between the aspects of faith. The questions on Fowler's interview are not exclusively

focused on particular aspects of faith, and Moseley, Jarvis, and Fowler (1986) have already noted that the aspects of social perspective-taking and world coherence receive more attention than others during the course of an interview. This is only compounded by the uncontrolled number of probes for each question. When each response is scored, the net effect is that any one interview will probably produce many more scores in one aspect than in another. If the interview is then scored by calculating an over-all mean, some aspects carry more weight than others. A questionnaire constructed as done here can ensure that each aspect and stage is represented equally in the items, and is carrying equal weight.

It is recognized that many of the aspects of measurement and data production in this study remained problematic, and that the value of this research, as all research, is determined by the quality of the data. The difficulties originated in measuring the complexity of the dependent variable of faith development, and were compounded by attempting to do so on the larger scale of sociological survey analysis. But the significance of the problem warranted the effort.

D. Measurement Instrument

As stated above, this study has developed a rigorous, self-administered mail questionnaire to measure stage of faith development, instead of using the interview format developed by Fowler. In so doing, it has attempted to do for Fowler's findings what Rest (1979) has done for Kohlberg's. This may be one of the most significant

contributions of this study to scholarship, because no adequate instrument has been developed up to the present, and the lack of such has discouraged further research on the model. Fowler himself at first resisted the idea of developing a questionnaire, thinking that it would not be possible to produce a valid and reliable instrument. However, in recent years he has cooperated with at least one group attempting to do so.

1. Review of Alternative Questionnaires

Several researchers have modified Fowler's original procedure. Among the earliest was Mischey (1976), who developed a careful method of analysis from aural study of his interviews, interviews which Fowler actually incorporated into his original data set. Bradley's (1983) method prompted subjects to give a written self-report in response to eleven open-ended questions with fixed probes modified from Fowler's interview guide, instead of giving a spoken self-report to an interviewer in person. Bradley did not provide data on the validity and reliability of his instrument.

Others, such as McCollough (1983), have taken the next logical step and actually produced a self-administered, closed-ended questionnaire, but these have tended to be limited to particular religious faith contents, intended only for personal, devotional reflection, and lacking in any claim to scientific validity and reliability. Green and Hoffman (1989) have claimed scientific validity for their scale, though they did not provide evidence in support of their claim. Their scale consisted of short summaries of Stages 2 through 5 worded in overtly Christian terms, from which the respondent was

simply asked to select the one that most closely corresponded with his or her own religious faith. They did not seem to be concerned that there were no education or age differences in faith stage of the college students in their study, or that "a significant number of our youthful respondents were categorized as Stage 5" (1989:253).

The most concerted and sophisticated effort to produce a validated questionnaire has been undertaken by the Evangelical Lutheran Church in America, under the directorship of Connie LEEAN and with the cooperation of Fowler. However, as of the beginning of data collection for this study, they were unable to publish or release a product that yielded scores matching scores from interviews to their satisfaction. Moreover, their preliminary drafts had also appeared to be religiously biased.

Of those that have appeared in scientific literature to date, the most focused attempt by social scientists to devise a scale based on Fowler's model has been that of Barnes, Doyle, and Johnson (1989). (Smith [1981:330] defines a scale as "two or more indicators of the phenomenon being studied combined in some fashion to produce a single measure.") Their scale is also limited to measuring Stages 2 through 5 in order to avoid the unnecessary complication of testing for the unthought basic trust of an infant in Stage 1, or the extremely rare and mostly hypothetical faith structure of Stage 6. The scale consists of only nine items, each a set of paired statements between which respondents are asked to state a preference according to a Likert scale. In each item, a statement representing an aspect of one stage is paired with a statement representing an aspect of another stage. Respondents are scored

according to their predominant preferences.

Barnes, Doyle, and Johnson used this questionnaire to collect data from 275 members of the College Theology Society, a largely Catholic group of college teachers of theology or religious studies, and from 304 members of a Catholic parish in Dayton, Ohio who were distributed fairly well as to age, income, and education. As a means of criterion-related validation, the scores on the faith stages were then compared to responses to statements on ten issues of Catholic belief that had been categorized as Literal, Nuanced, or Symbolic. Barnes, Doyle, and Johnson conclude that their results add to the plausibility of Fowler's claims.

Characteristics which he assigned to each stage do cluster together in the responses; each style of faith does correlate fairly well with at least some measure of how literally or symbolically a person interprets religious beliefs. (1989:418)

Unfortunately, when the Barnes, Doyle, and Johnson scale was administered to 133 evangelical Protestants of roughly the same demographic composition (students, faculty, and guests at a conference at Winnipeg Bible College and Theological Seminary), the positive results were not replicated (Hiebert, 1989b). There was inadequate clustering of responses around statements that were said to represent particular faith stages, so much so that a more lenient scoring system than the one used by Barnes, Doyle, and Johnson had to be adopted in order to salvage any kind of readable results. To the extent that some clustering of responses was deciphered, the percentage of frequencies in Stages 2 through 5 were significantly unlike those of the Barnes, Doyle, and Johnson study, despite the fact that both samples consisted of highly educated Christians. Furthermore, demographic predictors derived from

Fowler's theory, such as age, education, and cross-cultural experience, were unable to predict stage of faith development, as revealed by the statistical technique of discriminant analysis.

The Hiebert study concluded that the Barnes, Doyle, and Johnson questionnaire was inadequate for general scientific use because of at least two reasons that may have rendered it impotent on an alternate though similar population. First, the scale is not only overtly biased toward Christian faith, it is more narrowly biased toward Catholic faith. Second, the scale is probably too short and therefore too vulnerable to distortion by one or two weak or faulty items. Shorter scales have lower reliability (Smith, 1981), and it is probably simply too optimistic to ask nine items to yield trustworthy results on seven different aspects spread over four different stages.

2. Development of a New Questionnaire

Having reviewed various attempts to modify Fowler's in-person interview, the necessity of developing a new questionnaire for the purpose of this research project was evident. Miller appraised this as "an activity of last resort" (1983:565), but provided a checklist of evaluative criteria to guide the process. In preparation for such an undertaking, the researcher began the process by scoring 13 Fowler faith development interviews conducted by the Young Adult Faith Study of the Jesuit Centre for Faith Development and Values located at St. Paul's College on the campus of the University of Manitoba. Because these interviews were obtained from university undergraduates, this was an immersion into how students of this type interact with the

aspects of Fowler's theory.

In drafting the basic format of the questionnaire, it was decided that, following the lead of the Barnes, Doyle, and Johnson (1989) scale, the Green and Hoffman (1989) instrument, and the Lutheran questionnaire, only Stages 2, 3, 4, and 5 would be included. The chances of encountering a Stage 1 or 6 individual are remote, and the brevity of the instrument was a concern because of typically low motivation on the part of respondents to complete mail surveys. It was also decided that no items would be devoted exclusively to Aspect A (Form of Logic). Three reasons prompted this decision. First, form of logic informs all the other aspects of Fowler's model of faith. Second, it is virtually impossible to draft simple statements that measure form of logic directly. Third, the brevity of the instrument could again be facilitated by omitting the most difficult to measure aspect, and measuring six of the seven aspects of faith is still a high level of sampling validity (86%). The six aspects would each be measured by two separate items in order to provide a check against the vulnerability of single-item measures, and to make internal split-half measures of reliability possible.

The general format of forced ranking of statements representing different stages on a particular aspect was judged to be superior to the format of rating statements. Several factors lead to this conclusion. First, because the intent of the questionnaire is merely to determine the faith stage of the respondent, the issues of attitude intensity, importance, and certainty are not pressing (Krosnick and Schuman, 1988). Second, because the respondent will never be asked to rank more than four items representing the four stages being tested, the admittedly more complex task of ranking is still

reasonable. Third, because the items are already hierarchically ordered, they should not, according to the theory, be rated equally by any one individual; ranking should be implicit in all responses anyway. Therefore, the direct ranking approach, approximated by Green and Hoffman (1989), was selected because, while it sacrifices some collateral information, it gains clearer, more immediate discrimination between stages.

By basing the statements directly on the specific criteria outlined in the *Manual for Faith Development Research* (Moseley, Jarvis, and Fowler, 1986), the responses were brought as close as possible to the theory. The main question then becomes whether the respondent has adequately understood the item, not whether the researcher has adequately interpreted the response. Coding criteria derived from the Manual are presented in the following Measurement Materials section in chart form to enable the reader, with the aid of the coding sheet also included there, to match the questionnaire statements with the exact criteria from which they in turn were derived. Several of the statements were deliberately double barreled because of the complexity and tension they were intended to reflect. For example, item #1 on the questionnaire is a Stage 4 statement of Social Perspective Taking (Aspect B) based on Criterion 2, which states "Can analyze other's viewpoint but with an eye to defending one's own viewpoint." Questionnaire item #1, which states that "I examine the viewpoints of others carefully, and then usually become more convinced of my own viewpoint," is clearly double barreled, but must be in order to capture both the critical thinking and the systematic, exclusive defensiveness of Stage 4 faith.

Finally, the title of "Values Questionnaire" was employed to avoid the religious

bias that could potentially arise from a title of "Faith Questionnaire." This is consistent with the care taken by Fowler to avoid the terms "faith" or "religion" in the introduction of his interview to interviewees (1986b:277). (Note that these terms were also avoided in the cover letters shown in E. 1. below, in favour of the more generic and commonplace term "values".)

The actual questionnaire format consists of 48 statements arranged in twelve groups of four statements each. The four statements in each group represent one aspect of Stages 2, 3, 4, and 5; the twelve groups result from six aspects being measured twice. The respondent is asked to rank the statements according to which are most and least like him or her. The order of the statements in each group are systematically scrambled so as to avoid order effects and response sets (Sudman and Bradburn, 1983).

The scoring of the questionnaire proceeds by calculating the mean of the twelve responses for each of the four stages represented. Because a ranking value of 1 is assigned by the respondent to those statements that are most like him or her, and a ranking value of 4 to those that are least like him or her, the range of possible means is 1-4. For example, if the respondent ranked the Stage 3 statement in each group as the one "most like me," then his or her mean for Stage 3 will be 1.0. Similarly, if the respondent ranked the Stage 5 statement in each group as the one "least like me," then his or her mean for Stage 5 will be 4.0. More than one stage mean of 1.0 or 4.0 is not possible for an individual respondent because the statements in each group are ranked, not rated. The greater the range of means for a particular

case, the stronger a pattern of responses has been revealed for that case. Put differently, the lower the lowest stage mean for a particular case, the better the questionnaire has performed in identifying a faith stage for that case. If the questionnaire has failed to reveal any pattern in the responses, if there is no clustering of responses around statements representative of a particular faith stage and the responses appear to be perfectly random, then the means for each of the four stages will be 2.50.

The stage with the lowest mean score is the stage at which that particular respondent is scored. If the stage with the lowest mean score is at least .25 lower than the next nearest stage, that respondent is scored as fully within that stage. However, if two stages are tied for the lowest mean, or if the next nearest stage mean is less than .25 from the lowest stage mean, that respondent is scored as being transitional between those two stages, assuming the two stages are adjacent. (The .25 figure is arbitrary, not statistically derived.) For example, if the score on Stage 3 is 1.58 and the score on Stage 4 is 1.67, that respondent will be scored as Stage 3-4 Transitional. If the two lowest stages are less than .25 apart but not adjacent in order, the stage of that respondent cannot be calculated from the questionnaire. The extremely rare cases where there is a three-stage tie for the lowest mean are also deleted as unscorable.

A careful distinction must be made between the arithmetic means that are calculated from the interview and the arithmetic means that are calculated from the questionnaire; they are categorically different. The interview means derived by the

Moseley, Jarvis, and Fowler procedure are substantive stage means in which the numbers represent actual faith stages. In contrast, the questionnaire means are statistical ranking means in which the numbers represent rankings assigned to faith stage statements. Interview means can be directly subjected to further averaging for the purpose of deriving a group mean in terms of faith development, the questionnaire means cannot. A stage score of 3.5 on the interview indicates that the respondent is half way between Stage 3 and Stage 4, or exactly Stage 3-4 Transitional. This score can be averaged with other scores in a group to determine a mean score for the group, such as 3.78.

In contrast, a score of 1.5 for Stage 3 on the questionnaire only indicates that the respondent is at Stage 3 in faith development terms, assuming the means for Stage 2 or 4 are 1.75 or higher. The score of 1.5 is a "statistically significant" indication of stage location, but it is incapable of providing the substantive, decimal place specificity provided by the interview means. Therefore, all respondents scored by the questionnaire can only be scored as wholly within a particular stage, such as Stage 3, or as transitional, such as Stage 3-4. For the purpose of averaging groups, the transitionals can be represented by a .5, such as 3.5, but it must be understood that such an exact, intermediate location has not been calculated as directly as is possible with interview data.

In sum, if the questionnaire works properly, it should behave in certain ways. First, it should tend to yield at least one stage mean that is lower than 2.00 (also an arbitrary standard), because perfectly equal or random responses to all statements will

yield four stage means of 2.50 each, whereas perfectly consistent "most like me" responses to one particular stage will yield a mean of 1.0 for that stage. Having one stage mean of less than 2.00 is the test of whether respondents ranked statements representative of a particular faith stage as "most like me" with any degree of consistency. However, the ability of the questionnaire to produce one such low stage mean is compromised in cases where the respondent is, in actuality, transitional between stages. In these cases, where the two lowest stage means are less than .25 apart, all four stage means tend to be pulled toward the middle (2.50), and the lowest mean is less likely to be below the arbitrary standard of 2.00. Nevertheless, a minimum standard for the lowest mean of less than 2.20 is still necessary, because anything higher is too close to the product of a perfectly random response (2.50), and too likely to be merely the product of measurement error. Therefore, cases with lowest means higher than 2.20 cannot not be assigned a stage score with sufficient confidence.

Second, though less important, the questionnaire should also tend to produce at least one stage mean that is higher than 3.25, which is the midpoint between perfectly consistent "least like me" responses (4.0) and random responses (2.50). This tendency would be due to the fact that for all respondents other than the Stage 3-4 Transitional, there will be one stage represented on the questionnaire that is two stages removed from the one in which the respondent is located. Third, and related, the questionnaire should yield a wide range of means, although this attribute will again be blurred by the respondents who are in actuality transitional. Fourth, the questionnaire should almost never yield two lowest means within .25 of each other that

are in stages not adjacent to each other, namely 2-4, 3-5, or 2-5.

3. Validation Procedure

With the questionnaire and its scoring thus drafted, a validation procedure was begun, with the goal of achieving the arbitrary, self-imposed standards of a 1.75 mean of the lowest means and a 3.25 mean of the highest means (the only significance of these numbers is that they represent the mid-points between 1, 2.50, and 4). The first draft was submitted to one expert in survey research, and four experts in Fowler's theory from the Jesuit Centre for Faith Development and Values located at St. Paul's College on the University of Manitoba campus. From this test, content or face validity was established, although minor revisions were suggested and made. The second draft was administered to a convenience sample of 15 subjects drawn from an evangelical Protestant church. Four of these subjects misunderstood the instructions, rating the items instead of ranking them, so their questionnaires could not be scored. Of those that could, the mean average of the lowest means was 1.95, the mean average of the highest means was 3.04.

The revisions of the third draft were intended to build more of the tension characteristic of the paradoxes of Stage 5 into the Stage 5 statements, and to equalize better the social desirability of all the statements. A statement addressing the problem of social desirability was also included in the instructions. This draft was then administered to a convenience sample of 10 neighbours of the researcher. The mean average of the lowest means was 1.81, the mean average of the highest means was

3.18.

The revisions of the fourth draft were based on an item analysis of the responses provided by individuals whom the researcher knew well. This is a subjective form of concurrent validity analysis. Certain items that were consistently given rankings significantly different than what was expected by the researcher based on his knowledge of the respective respondents were considered for revision. This draft was then administered to a convenience sample of 15 students drawn from a class of students at Winnipeg Theological Seminary. The mean averages of the lowest and highest means were virtually identical with the third draft, 1.81 and 3.18 respectively.

The fifth draft incorporated only minor revisions. It was felt that the reason the revisions of the fourth draft did not produce better clustering around a particular stage and a greater range of means was that the questionnaire had been administered in poor conditions. The respondents had been distracted by the nature of that particular class, were pressured for time, and probably gave the questionnaire less than their full attention. The slightly revised fifth draft was therefore given to 14 residents of the community in which the researcher also resides. However, the scores still did not improve. The mean average of the lowest means was 1.81, the mean average of the highest means was now 3.08.

At this point a careful item-to-total analysis was undertaken, in which items that received a value of 4 in stages that nevertheless resulted in the lowest means were

noted, and items which received a value of 1 in stages that nevertheless resulted in the highest means were also noted. These items were thereby identified as the most problematic in that they were distorting emerging patterns and pulling means back toward the 2.50 midpoint. The sixth draft consisted of a revision of 13 such statements. It was then administered to 12 subjects drawn from an evangelical Protestant church in a different community. The results showed that the mean average of the lowest means was now 1.68, the mean average of the highest means was 3.32. This sample was also the first one in which no respondent misunderstood the instructions, which had also been in a process of clarification and refinement.

Having surpassed the self-imposed standards of a 1.75 mean for the lowest means and a 3.25 mean for the highest means, the questionnaire was nevertheless subjected to another, similar item-to-total analysis in hopes of improving it further. This resulted in another 5 items being revised, this time in consultation with another scholar. In what was intended to be a final check, this seventh draft was then administered by mail to a non-probability, purposive sample consisting of 50 subjects drawn from the data bank of the Young Adult Faith Study conducted by the Jesuit Centre for Faith Development and Values. The reason these subjects were pursued is that all of them had given a Fowler faith development, in-person interview within the past two years, and many of these interviews had already been scored. The subjects selected for the questionnaire, all of which had a Catholic background and were undergraduate students at the university, were the most recent interviewees available, so as to reduce maturation effects as much as possible. Selection was also guided by the desire to maintain a balance between males and females, and to maximize the variation among

the faith stages. Unfortunately, the large majority of the subjects in this data bank whose interviews had been scored were evaluated as Stage 3 by the interview format. In many cases, the failure to calculate arithmetic means in scoring the interviews also resulted in a lack of decimal place sensitivity. Furthermore, there were questions about the lack of scientific rigor during the interview protocols that may have contaminated the results of the interviews.

The results were somewhat disappointing. The return rate of 34 out of 50 questionnaires sent out (68%), prompted by a follow-up mailing, was good, as was the sex balance of 17 males and 17 females. However, the mean average of the lowest means was 1.81, and the mean average of the highest means was 3.20, again falling short of the 1.75 and 3.25 standards. Four of the 34 respondents (12%) misunderstood the instructions and rated the statements instead of ranking them, leaving their questionnaires unscorable. Another 2 respondents had their two lowest means less than .25 apart but not in adjacent stages, leaving their questionnaires also unscorable according to the logic of the theory. (This occurrence was not checked in previous drafts.) A comparison of the remaining 14 respondents for which scores on both the interview and the questionnaire were available is presented in Table 2-1.

TABLE 2-1 INTERVIEW-QUESTIONNAIRE COMPARISON

I.D.#	INTERVIEW	QUESTIONNAIRE	DIFFERENCE
3-331	3 *	2-3 Transitional	lower
2-02	3	2-3	lower
3-226	4	4	same
1-32	3	3	same
1-34	3	3	same
3-200	3.8	4	same
2-39	3	3-4	higher
2-03	3.4	4	higher
1-28	3	4	higher
3-228	3	4-5	higher
1-42	3	4-5	higher
3-326	3.5	5	higher
2-17	3	4-5	higher
1-18	3.6	5	higher

* Interview scores shown without decimal places may in fact have them; they have just not been calculated.

These data show that only 4 respondents scored virtually the same on both the interview and the questionnaire, and that more respondents scored higher on the questionnaire than scored lower. It cannot be known whether the decimal places not calculated on some of the interviews would have increased or decreased the differences. However, it is consistent with the theory that more respondents should score higher on the questionnaire, because of the time lapse and maturation effects

between the interview and the questionnaire. In fact, 5 of the 34 respondents warned, in written comments solicited at the end of the questionnaire, that they had changed significantly since the interview, and that they doubted their scores would match. The same would presumably be true for others who did not mention the likelihood. Any change would, according to Fowler's theory, always be only to higher stages. The fact that 2 respondents showed a decrease in stage in the questionnaire is a discrepancy of the two measurements that is contrary to the theory. Again, decimal point accuracy in the interview scoring, such as 2.78, could perhaps have explained this difference.

In sum, this attempt to establish the criterion-related validity of the questionnaire by using a second, somewhat rough data set was less than completely satisfactory on four counts. One, too high a percentage of respondents still misunderstood the instructions. Two, the standards of the mean average of the lowest and highest means were not met. Three, the correlation of the interview scores and questionnaire scores was not strongly convincing. And four, the scores on the questionnaire were suspiciously high. Therefore it was decided to do another draft.

The revisions for the eighth draft began by adding the ranking scale to the first page of the questionnaire on which the groups appear, as a means of reminding the respondent that the numbers she or he assigns to statements are rankings, not ratings. An item-to-total analysis was done on the seventh draft to reveal the items falling outside the pattern of responses. With these items highlighted, a fresh, careful re-reading of the coding criteria was undertaken to assess again the exact correspondence of the items with their respective criteria. This resulted in 21 items

being revised slightly or substantially. This eighth draft was then administered to 18 volunteer subjects drawn from teachers at the public school in a rural village and parents of the children in one of the Grade 4 classrooms.

The results of the eighth draft showed positive progress. Only one respondent misunderstood the instructions (5%). The mean average of the lowest means was 1.76, virtually attaining the standard sought, while the mean average of the highest means was 3.20. And the scores were more aligned with general expectations in that there were not a suspiciously high number of Stage 5's or 4-5 Transitionals. An item-to-total analysis revealed that item #44, which had been troublesome throughout the preceding drafts, remained the one that most distorted patterns in the responses. Therefore, it was revised again, because the potential positive effect of altering even one item is considerable in a ranking format.

After eight drafts administered to a total of 118 respondents, the validation procedure was terminated, as it had become evident that the clarity of the data produced could not be significantly improved within the structure of the approach taken. The final questionnaire, including the new, untested item #44, was adopted as the measurement instrument for this research project, and is presented in the following section.

E. Measurement Materials

The following materials comprised the instrumentation for the research conducted for this study. Each sampling unit, or case, received a University of Manitoba envelope in the mail containing a cover letter, a questionnaire, and a stamped University of Manitoba envelope addressed back to the University of Manitoba.

1. Cover and Follow-Up Letters

The first contact cover letters were intended to introduce the research project to the subjects, and motivate them to respond. Follow-up letters were sent to encourage those individuals who did not respond to the first contact to do so. The differences between the university and Bible college letters reflect the differences in sampling and mailing procedures, as outlined in F.1. Mail Survey Procedures below.



THE UNIVERSITY OF MANITOBA

DEPARTMENT OF SOCIOLOGY

Winnipeg, Manitoba
Canada R3T 2N2

3 February 1992

Dear Student;

As a Bible college senior, you probably recognize that your education can have many values and benefits, ranging from vocational preparation to personal enrichment. Many Bible college students find that their education is helpful in clarifying and shaping what they consider to be important and meaningful in life. When researchers study the values and perspectives of Bible college students, it enables everyone to understand better how people grow and develop, and what role, if any, education plays in this process.

Your name was one of a relatively few people randomly selected from universities and colleges in the Winnipeg area to be asked for information on these matters. I would greatly appreciate your cooperation and assistance, as the success of this research obviously depends largely on your willingness to respond. It is important that you complete this questionnaire if your classmates are to be represented adequately.

The information gathered will comprise the data for my doctoral dissertation in the Department of Sociology at the University of Manitoba. I can assure you that the responses you give will remain strictly confidential, and that the data will be presented only in a grouped, over-all manner. Your questionnaire has an identification number for mailing purposes only; it enables me to check your name off the mailing list when your questionnaire is returned. Your name will never be placed on your questionnaire. I also promise to send you a summary of the key results of the study, if you request it.

I would be most pleased to answer any questions you might have about this project. You can contact me at 1-377-4421. Please return the completed questionnaire to the Receptionist's Office of your college as soon as possible.

Thank you for your assistance.

Sincerely,

Dennis W. Hiebert
Ph.D. Student

Raymond F. Currie, Ph.D.
Professor of Sociology
and Dissertation Advisor



THE UNIVERSITY OF MANITOBA

DEPARTMENT OF SOCIOLOGY

Winnipeg, Manitoba
Canada R3T 2N2

18 February 1992

Dear Student;

About two weeks ago, you should have received a packet in the mail from the University of Manitoba containing a Values Questionnaire. It informed you that you were among those who had been selected to provide information that will comprise the data for my doctoral dissertation in the Department of Sociology.

Unfortunately, I have not as yet received your completed questionnaire. Could I urge you to complete the questionnaire and return it, before it gets too far removed from your mind, or you lose the form? Social research is always dependent on people like you to cooperate. In this case, my own program of studies depends on you as well. Please try to find time to complete the questionnaire.

Thank you for your consideration.

Sincerely,

Dennis W. Hiebert
Ph.D. Student



THE UNIVERSITY OF MANITOBA

DEPARTMENT OF SOCIOLOGY

Winnipeg, Manitoba
Canada R3T 2N2

15 November 1991

Dear Student;

About three weeks, ago you should have received a packet in the mail from the University of Manitoba containing a Values Questionnaire. It informed you that you were among those who had been selected to provide information that will comprise the data for my doctoral dissertation in the Department of Sociology.

Unfortunately, I have not as yet received your completed questionnaire. I can think of only four possible explanations.

1. I have made an error in record-keeping.
2. You have already completed and returned it to the College Receptionist Office during the time this letter was being written and mailed. If this is the case, I heartily thank you for your time and effort, and suggest you ignore the rest of this letter.
3. You have misplaced it.
4. You have it in your possession, but have not completed it as yet.

My problem is that I have not received sufficient returns to be able to proceed adequately with my research. If you have not completed and returned the questionnaire to the College Receptionist Office, could I urge you to DO SO SOON? It should only take approximately 20 minutes, and respondents in the pre-test found it quite interesting. Moreover, my progress toward graduation will be jeopardized if this research project cannot be completed satisfactorily. If you have misplaced the questionnaire, you can pick up a replacement at the College Receptionist Office.

Thank you again for your further consideration. Could you also please give the questionnaire your prompt attention this time, before the end of the semester and exams make you busier than you already are?

Sincerely,

Dennis Hiebert, Ph.D. Student



THE UNIVERSITY OF MANITOBA

DEPARTMENT OF SOCIOLOGY

Winnipeg, Manitoba
Canada R3T 2N2

14 February 1992

Dear Student;

As a senior university student, you probably recognize that your education can have many values and benefits, ranging from vocational preparation to personal enrichment. Many university students find that their education is helpful in clarifying and shaping what they consider to be important and meaningful in life. When researchers study the values and perspectives of university students, it enables everyone to understand better how people grow and develop, and what role, if any, education plays in this process.

Your name was one of a relatively few people randomly selected from universities and colleges in the Winnipeg area to be asked for information on these matters. I would greatly appreciate your cooperation and assistance, as the success of this research obviously depends largely on your willingness to respond. It is important that you complete this questionnaire if your classmates are to be represented adequately.

The information gathered will comprise the data for my doctoral dissertation in the Department of Sociology at the University of Manitoba. I can assure you that the responses you give will remain anonymous; there is no way of identifying you with your responses. I also promise to send you a summary of the key results of the study, if you request it.

I would be most pleased to answer any questions you might have about this project. You can contact me at 1-377-4421.

Thank you for your assistance.

Sincerely,

Dennis W. Hiebert
Ph.D. Student

Raymond F. Currie, Ph.D.
Professor of Sociology
and Dissertation Advisor



THE UNIVERSITY OF MANITOBA

DEPARTMENT OF SOCIOLOGY

Winnipeg, Manitoba
Canada R3T 2N2

Date

Dear Student;

One of your fellow students at the University of Manitoba is in the process of doing research for his dissertation, which is the final requirement of his Ph.D. program in the Department of Sociology. He has requested permission to use randomly selected students at the University of Manitoba as part of his sample of subjects for a mail survey. However, based on our policy of Disclosure and Security of Student Academic Records, the Student Records Office cannot release names and addresses to researchers.

Nevertheless, the Department of Student Affairs, with the consent of the president of the university, has granted special permission to the Student Records Office to mail this researcher's questionnaire to randomly selected students. Your name was one of a relatively few students selected.

Because the researcher has not been given your name and address, any information you provide in responding to the questionnaire cannot be attached to your name, even by our office; you are therefore assured of anonymity in this regard.

We would encourage you to respond positively to this student's request, so that his research and program of education can proceed. Thank you for your consideration.

Sincerely,

J.B. Salt, Director



THE UNIVERSITY OF MANITOBA

DEPARTMENT OF SOCIOLOGY

Winnipeg, Manitoba
Canada R3T 2N2

6 March 1992

Dear Student;

This packet is similar to the one you should have received in the mail several weeks ago. It contains the same Values Questionnaire I am using to collect data for my doctoral dissertation in the Department of Sociology at the University of Manitoba.

Unfortunately, I have not as yet received a completed questionnaire from you. I can think of only four possible explanations.

1. I have made an error in record-keeping.
2. You have already completed and returned it to the College Receptionist Office during the time this letter was being written and mailed. If this is the case, I heartily thank you for your time and effort, and suggest you ignore the rest of this letter.
3. You have misplaced it.
4. You have it in your possession, but have not completed it as yet.

My problem is that I have not received sufficient returns to be able to proceed adequately with my research. If you have not completed and returned the questionnaire to the College Receptionist Office, could I urge you to **DO SO SOON?** It should only take approximately 25 minutes, and respondents in the pre-test found it quite interesting. Moreover, my own progress toward graduation will be jeopardized if this research project cannot be completed satisfactorily.

Thank you again for your further consideration. Could you also please give the questionnaire your prompt attention this time, before the end of the semester and exams make you busier than you already are?

Sincerely,

Dennis Hiebert, Ph.D. Student

2. Faith Development ("Values") Questionnaire

Identification numbers appeared on the Bible college questionnaires only, because the identity of the university respondents was not known (see F.1. Mail Survey Procedures). Identification consisted of two letters and three numbers, the first letter indicating college (C for Canadian Mennonite Bible College, and P for Providence College), the second letter indicating student status (F for freshman and S for senior). The three digit numbers enumerated the individual respondents in each category. The university students were identified only according to educational program. All questionnaires sent to arts students had a horizontal line underneath the "Values Questionnaire" title, whereas all the questionnaires sent to engineering students had the same horizontal line plus a second horizontal line above the title. Thus, when a questionnaire was returned, it was immediately apparent from the single or double lines whether the respondent was an arts or engineering student.

The main emphasis of the instructions was to try to ensure that the respondent understood that he or she was being asked to rank the statements, not merely rate them. The questionnaire began rather abruptly; there were no "warm up" questions to ease the respondent into thinking in terms of her or his "values." Questions #49-52 were not part of faith stage assessment, and appeared on the seniors' questionnaire only. Their function was to measure the respondent's perspective of the effect of his or her program of education on her or his faith development, and as such were not applicable to freshmen.

3. Biographical Information

In accordance with conventional wisdom in surveying, the demographic section of the questionnaire was placed at the end (Backstrom and Hursh-Cesar, 1981). The specific questions were designed to collect data on the variables that could potentially intervene between the relationship of education and faith development, namely sex (1), age (2), social class according to occupation (3), rural or urban residence (4-5), other dimensions of education (6-7), religious preference and commitment (9-11), cross-cultural experience (12), relational stress (13), and prolonged emotional stress (14). The wording of most of the demographic items was patterned after items in the Winnipeg Area Study. The social class items in question #3 required additional preliminary coding before a four digit code could be entered into the computer. This was done according to the Standard Occupational Classification employed by Statistics Canada (1980). Question #5 explored the respondent's education more specifically than the simple group identity which he or she was given, to enable tests for possible significant, though subtle, differences. The categories of religious preference in question #9 are those employed by Bibby (1987) for Canada. Question #11 ties religious and spiritual values together in order to avoid the growing negative connotation of traditional or institutional religion. The question includes an indication of the change in the importance of religion for the individual, and in this regard, items b) and c) are virtually the same point in time for freshmen.

VALUES QUESTIONNAIRE

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

There are twelve groups of statements with four statements in each group.

1. Work on one group at a time until all twelve groups are completed.
2. Read all four statements in a group before giving any written response to that group.
3. Decide what the order of the statements should be according to how much they are or are not like you.
4. Indicate how you have ranked the statements by using the following scale:

- 1 = most like me
- 2 = more like me
- 3 = less like me
- 4 = least like me

IMPORTANT: All four statements in each group must receive a different number.

Notes:

- a) "Most like me"(1) may not mean that the statement is very much like you, just the most like you compared to the other three statements. "Least like me"(4) may mean that the statement is not like you at all.
- b) The number you select for each statement should honestly indicate who you are at this point in your life, not what you wish you were or what you might think you should be.

Suggestions:

- a) It will probably be easiest for you to rank the statements "most like me"(1) and "least like me"(4) first.
- b) If a statement really does not make much sense to you, it is probably not very much "like you".

Remember: Use each of the following numbers in every group.

- 1 = most like me
- 2 = more like me
- 3 = less like me
- 4 = least like me

This is a ranking scale, NOT a rating scale.

GROUP ONE

- ___ 1. I examine the viewpoints of others carefully, and then usually become more convinced of my own viewpoint.
- ___ 2. When I try to understand what something means to someone else, I do not think about what that thing means to me.
- ___ 3. My understanding of what my parents/guardians usually think and feel has not changed much since I was a young child.
- ___ 4. It is most important to me that I try to meet the expectations others have of me.

GROUP TWO

- ___ 5. I decide if something is basically right or wrong mostly by whether it maintains good relationships between people, like honesty and loyalty do.
- ___ 6. I think it is wrong for me to hurt someone else, because he or she might hurt me back.
- ___ 7. I consider something to be morally good mostly by whether it is useful, and by whether there is an acceptable way of knowing who should benefit from it.
- ___ 8. I consider the actions of individuals to be right or wrong mostly by whether they fit in with the rights and responsibilities of living in our society.

GROUP THREE

- 9. I actively seek contact with people from different cultures, because I am open to changing the basic ways in which I think and live.
- 10. I usually listen to the way someone talks and thinks so that I can figure out what type of a person she or he is, or what kind of group he or she is probably like.
- 11. My opinion is often similar to the majority of the people who are in my group.
- 12. I have always identified with my parents/guardians more than with any other people in my life.

GROUP FOUR

- 13. Whenever I want to know what to do, I always listen to my parents/guardians the most.
- 14. I find it easiest to believe in ideas, leaders, or organizations that have been around for a long time.
- 15. There are particular ideas, ways of living, and/or types of people that are more important in guiding my life than any particular individuals are.
- 16. I prefer answers that still have a lot of tension left in them, because there are many equally legitimate ways of looking at issues that contradict each other.

GROUP FIVE

- 17. I am comfortable with the fact that so much of life does not seem to make sense; the complexity of life fascinates and intrigues me.
- 18. If many others close to me agree that something is true, I usually consider it to be true also.
- 19. I mostly just try to find out how things work; I do not think about what they mean to me.
- 20. It is important to me to understand my way of thinking, including how and why it is different from others.

GROUP SIX

- ___ 21. Symbols, such as a flag or a cross, mean the most to me when they make me think about the ideas or rational concepts they represent.
- ___ 22. When I see my country's flag, I always just think of it as a sign, or when I see a cross, I always just think of it as a way in which people have been killed.
- ___ 23. Symbols mean the most to me when they give me certain feelings or emotions; I prefer not to think about them.
- ___ 24. Symbols often give me both thoughts and feelings that pull me in different directions, and leave me unsure about how that symbol really affects me.

THANK YOU FOR RESPONDING TO THIS SURVEY!
YOU HAVE FINISHED ONE HALF OF THE MAIN SECTION.

GROUP SEVEN

- ___ 25. If I have a disagreement, it is always with other people, not with myself, because I know what I think and want.
- ___ 26. I can see the limitations of my basic values and beliefs, but doing so does not make me want to try to defend them to myself or others.
- ___ 27. I have general guidelines about how I think all people should relate to each other.
- ___ 28. The only way that I can understand another person is by the way he or she reacts to what I need or want.

GROUP EIGHT

- ___ 29. I think someone is good if she or he gives me what I need.
- ___ 30. It is most important to me that I have logical reasons for what I consider to be right or wrong.
- ___ 31. I think something can be right or good for an individual even if it is wrong or bad for society.
- ___ 32. I decide if something is right or wrong mostly by how it makes individual people feel inside.

GROUP NINE

- ___ 33. When I have to relate to a new person, it is important to me to find out if that person sees things or thinks like I do or not.
- ___ 34. I identify with certain people because of the basic principles they represent, even if their perspectives and actual way of life are totally different than mine.
- ___ 35. I know there are several kinds of people that are not like me, but I usually try to avoid them.
- ___ 36. I focus on relationships with people in my group, and on our goals; I am not very interested in other groups.

GROUP TEN

- ___ 37. I tend to trust authorities that are trusted by others, especially others who are close to me.
- ___ 38. I can usually recognize people who have authority by how they look.
- ___ 39. I can support authorities who follow their conscience and have a commitment to the good of everyone, even if I disagree with their decisions.
- ___ 40. I need to be logically convinced about something before I can support or follow it willingly.

GROUP ELEVEN

- ___ 41. I always pay attention to things like my dreams and fantasies because they sometimes reveal parts of me that lie hidden in my unconsciousness.
- ___ 42. I want my way of thinking to be consistent and complete, so that I have some kind of answer for even the most difficult questions.
- ___ 43. Ways of viewing the world that are very different than mine are probably just as legitimate as mine, but I do not think about them very much.
- ___ 44. The only way that I can explain something is to tell the story of how it happened; I do not try to analyse why things happen.

GROUP TWELVE

- ___ 45. Seeing or thinking about a particular symbol, such as a flag or a cross, has never given me any feelings.
- ___ 46. I have learned what particular symbols mean, and how much or little importance they have, from people who know about such things and people who are close to me.
- ___ 47. I think symbols, such as a flag or a cross, are important mostly because of how they affect the way people think; they are not important in themselves.
- ___ 48. I assume that symbols have many different meanings and ways of affecting me, some of which make me feel uneasy, and some of which I do not even know.

Survey I.D.# ____ - ____ (49-53)

49. The 48 statements you have just evaluated represent various perspectives or ways of thinking in life. To what extent has the program of studies for the degree you are currently completing influenced your ways of thinking?

Not at all			Somewhat			Very Much	
1	2	3	4	5	6	7	(54)

50. If your program of studies has had some influence on your ways of thinking, how has it done so?

51. Did any specific course(s) influence your ways of thinking?

Yes 1 (55)
No 2

If yes, which course(s)? _____

52. What is the major area of study for the degree you are currently completing?

Major: _____ (56-57)

BIOGRAPHICAL INFORMATION

Please answer the following questions by checking the appropriate boxes, or by filling in the blanks.

1. What is your sex? Male 1 (6)
Female 2

2. What is your age? ___years (7-8)

3. What kind of work does/did your primary parent/provider do? That is, what is/was his or her job title?

What does/did that job involve? (Describe.)

What kind of place does/did he or she work for?

Industry: _____ (9-12)

4. What was the population of the community in which you spent most of your time when you were growing up, that is, when you were less than 16 years old?

Less than 1,000	<input type="checkbox"/>	1	(13)
1,000 - 9,999	<input type="checkbox"/>	2	
10,000 - 99,999	<input type="checkbox"/>	3	
100,000 - 499,999	<input type="checkbox"/>	4	
More than 500,000	<input type="checkbox"/>	5	

5. What is the population of the community in which you currently spend most of your time?

Less than 1,000	<input type="checkbox"/>	1	(14)
1,000 - 9,999	<input type="checkbox"/>	2	
10,000 - 99,999	<input type="checkbox"/>	3	
100,000 - 499,999	<input type="checkbox"/>	4	
More than 500,000	<input type="checkbox"/>	5	

6. Which of the following levels of education have you achieved?

High School			
Graduate Diploma	<input type="checkbox"/>	1	(15)
Graduate Equivalency Diploma (GED)	<input type="checkbox"/>	2	
Neither	<input type="checkbox"/>	3	

Technical/Vocational			
None	<input type="checkbox"/>	1	(16)
Incomplete	<input type="checkbox"/>	2	
Complete	<input type="checkbox"/>	3	

University/College			
None	<input type="checkbox"/>	1	(17)
Incomplete	<input type="checkbox"/>	2	
Diploma/Certificate	<input type="checkbox"/>	3	
Bachelor's Degree	<input type="checkbox"/>	4	
Major: _____			

7. Have you achieved any other educational qualification or certification beyond high school through adult education, apprenticeship, retraining, correspondence, etc.?

No	<input type="checkbox"/>	1	(18)
Yes	<input type="checkbox"/>	2	

9. What is your religious preference, if any?

- | | | | |
|--------------------------|--------------------------|---|------|
| Roman Catholic | <input type="checkbox"/> | 1 | (19) |
| Anglican | <input type="checkbox"/> | 2 | |
| United Church | <input type="checkbox"/> | 3 | |
| Presbyterian | <input type="checkbox"/> | 4 | |
| Lutheran | <input type="checkbox"/> | 5 | |
| Evangelical/Conservative | <input type="checkbox"/> | 6 | |
| Other _____ | <input type="checkbox"/> | 7 | |
| None | <input type="checkbox"/> | 8 | |

10. How often do you attend services at a church, synagogue, temple, or other place of worship?

- | | | | |
|--------------------------|--------------------------|---|------|
| Never or hardly ever | <input type="checkbox"/> | 1 | (20) |
| 1 to 3 times a year | <input type="checkbox"/> | 2 | |
| 3 to 11 times a year | <input type="checkbox"/> | 3 | |
| 1 to 3 times a month | <input type="checkbox"/> | 4 | |
| 1 to 3 times a week | <input type="checkbox"/> | 5 | |
| More than 3 times a week | <input type="checkbox"/> | 6 | |

11. Thinking about your religious or spiritual values over the course of your lifetime, how much would you agree or disagree with the following statements?

a) Religion was important to me when I was growing up.

- | | | | | | | | | |
|-------------------|---|---|---|---|---|---|----------------|------|
| Strongly Disagree | | | | | | | Strongly Agree | (21) |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |

b) Religion was important to me when I began my current university/college degree program.

- | | | | | | | | | |
|-------------------|---|---|---|---|---|---|----------------|------|
| Strongly Disagree | | | | | | | Strongly Agree | (22) |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |

c) My religion or spirituality is important to me now.

- | | | | | | | | | |
|-------------------|---|---|---|---|---|---|----------------|------|
| Strongly Disagree | | | | | | | Strongly Agree | (23) |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |

4. Coding and Score Sheets

The Code Sheet is presented here only to enable the critic to see the design of the questionnaire, to follow the logic of the statements, and to appraise the quality of the instrument. The Score Sheet is presented as the means by which an individual questionnaire was scored manually. All drafts of the questionnaire were scored manually during the development, validation, and pretesting stages of this study, whereas all the questionnaires in the research sample were scored by the computer program written for this study. Both the Code Sheet and the Score Sheet provide the information that was the basis on which the computer was programmed to analyze the raw data.

CODING

Item Stage Criterion			Item Stage Criterion		
Aspect B: Social Perspective Taking			Group Seven		
Group One					
1.	4	2	25.	3	8
2.	5	2	26.	5	6
3.	2	2	27.	4	3
4.	3	7	28.	2	4
Aspect C: Moral Judgment			Group Eight		
Group Two					
5.	3	1	29.	2	4
6.	2	3	30.	4	3
7.	5	4	31.	5	5
8.	4	1,4	32.	3	3
Aspect D: Social Awareness			Group Nine		
Group Three					
9.	5	2	33.	4	1,4
10.	4	2	34.	5	1,4
11.	3	1	35.	2	4
12.	2	1	36.	3	3
Aspect E: Locus of Authority			Group Ten		
Group Four					
13.	2	3	37.	3	5
14.	3	4	38.	2	4,6
15.	4	4	39.	5	5
16.	5	1	40.	4	6
Aspect F: Form of World Coherence			Group Eleven		
Group Five					
17.	5	1	41.	5	4
18.	3	6,8	42.	4	5,6
19.	2	2,4	43.	3	7,9
20.	4	1,3	44.	2	1,5
Aspect G: Symbolic Function			Group Twelve		
Group Six					
21.	4	1,4	45.	2	4
22.	2	1,2	46.	3	4
23.	3	2,3	47.	4	5
24.	5	1,6	48.	5	2,4

SCORE SHEET

I.D.# = _____

Stage = _____

STAGE

GROUP	TWO	THREE	FOUR	FIVE	
One	3. ____	4. ____	1. ____	2. ____	
Two	6. ____	5. ____	8. ____	7. ____	
Three	12. ____	11. ____	10. ____	9. ____	
Four	13. ____	14. ____	15. ____	16. ____	
Five	19. ____	18. ____	20. ____	17. ____	
Six	22. ____	23. ____	21. ____	24. ____	
Seven	28. ____	25. ____	27. ____	26. ____	
Eight	29. ____	32. ____	30. ____	31. ____	
Nine	35. ____	36. ____	33. ____	34. ____	
Ten	38. ____	37. ____	40. ____	39. ____	
Eleven	44. ____	43. ____	42. ____	41. ____	
Twelve	45. ____	46. ____	47. ____	48. ____	
TOTALS	_____	_____	_____	_____	= 120
MEANS	_____	_____	_____	_____	

5. Coding Criteria

The following charts, developed by the Jesuit Centre for Faith Development and Values at the University of Manitoba, are summaries of the criteria elaborated in the *Manual for Faith Development Research* (Moseley, Jarvis, and Fowler, 1986). They enable the critic of the questionnaire to match each particular item with the theoretical criterion on which it is based, as listed on the Code Sheet.

ASPECT A Form of Logic	ASPECT B Social Perspective Taking	ASPECT C Form of Moral Judgement	ASPECT D Bounds of Social Awareness	ASPECT E Loci of Authority	ASPECT F Form of World Coherence	ASPECT G Symbolic Function
<p>Describe patterns of operations used in thinking about object world.</p> <p>Stages 1-4 follow Piaget.</p> <p>Stage 5 employs dialectical reasoning termed post-formal operational.</p>	<p>Describes construction of self, other, and relationship between them.</p> <p>Concerned with:</p> <ul style="list-style-type: none"> - construction of others interiority such as thoughts - feelings, and others knowledge of internal states. 	<p>Describes patterns of thinking about moral issues including how the person defines what is to be taken as a moral issue, and answers the question, "why be moral?"</p> <p>Answers the question, "What is the nature of the claims that others have on me, and how are these claims to be weighed?"</p> <p>View of moral judgement is broader than Kohlberg's. Judgement involves patterns of reasoning, grounds of moral justification, boundaries of social inclusion and exclusion, and social perspective taking.</p>	<p>Describes the person's group identification and the inclusiveness of the group.</p> <p>Concerned with:</p> <ul style="list-style-type: none"> - how the group is viewed or constructed. - how person relates to the group. - who has moral claim on the person. - how inclusive is the group; who is included and who is alien. - how the person views other groups. - how people are treated in the structure of meaning making. 	<p>Describes the way authorities are selected, how authorities are held in relationship to the individual, and whether authority is external or internal.</p> <p>Answers the questions:</p> <ul style="list-style-type: none"> - is authority external or internal? - who or what guides and approves? - to whom or what is the person responsible? - how does the person identify authority? 	<p>Describes the construction of the object world, including the sense of the ultimate environment.</p> <p>Concerned with:</p> <ul style="list-style-type: none"> - implicit or explicit cosmology. - principles by which world view is constructed. - logical relations between elements of the world. - can include construction of social world, but this is best coded under Aspect D. 	<p>Describes how a person understands, appropriates, and uses symbols and language in the process of meaning-making and locating centers of value and power.</p>

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Preoperations	Concrete Operational	Early Formal Operations	Dichotomizing Formal Operations	Dialectical Formal Operations	Universalizing Formal Operations
1. Statements not con- nected by logical oper- ations, but are epi- sodic and impression- istic, ie. intuitive -- not supported by obser- vation and argument.	1. Uses concrete opera- tions.	1. Performs simple ex- periments. Controls and manipulates single variables.	1. Performs complex ex- periments and controls and manipulates several variables. Thinking is explicit -- direct and reflexive.	1. Aware of polarities and tensions in some phenomena.	1. Reasons syntheti- cally; resolves para- doxes by finding under- lying principles of unity.
2. Statements can be animistic, ie. invest inanimate objects with animate qualities.	2. Constructs group and classes and compares like and unlike.	2. Doesn't construct systems. Doesn't test hypothesis against nec- essary and sufficient conditions.	2. Creates systems -- concerned with boun- daries, definitions, distinctions. Dichotomizing -- either/or.	2. Polarities embraced because of potential to enrich understanding. If valued negatively, an indication of stage 4.	2. Awareness of para- dox, but resolves ten- sions without collap- sing one pole of the dilemma.
3. Statements don't distinguish between fantasy and reality.	3. Describes events in terms of concrete cause and effect.	3. Thinking tacit.	3. One-dimensional -- seeks closure through a selected system.	3. Less concern over system boundaries and less desire to reduce phenomena to criteria of a chosen system.	
4. Statements don't distinguish between reality and the way it is perceived.	4. Comprehends reversi- bility and conserva- tion.	4. Ideas nebulous and undifferentiated.	4. Dichotomies col- lapsed in one direc- tion.	4. More inclusive, less dichotomizing.	
5. Logic is associa- tional -- things that appear together are as- sociated. No construc- tion of logical rela- tions.	5. Understands space and time and orders things in a series.	5. Fantasy and reality blended in social idealism.	5. Lacks explicit his- torical or process orientation.	5. Multi-systemic, multi-dimensional. Uses different modes of an- alysis in solving prob- lems or answering questions.	
6. Conversation is a monologue rather than a dialogue.	6. Separates real from perception of it.	6. Thinking is about extra-mental reality; direct, not reflexive.	6. No concern for the unconscious.	6. Oriented towards process rather than system. Aware of plur- alism and influence of historical process on thought -- not the "easy" pluralism of stage 3.	

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Preoperations	Concrete Operational	Early Formal Operations	Dichotomizing Formal Operations	Dialectical Formal Operations	Universalizing Formal Operations
	7. Knows things can change and appear dif- ferent at different times.	7. Abstract construc- tion of position of other/group without knowing it as a con- struction.		7. Willing to hold di- chotomies and paradoxes in tension.	
	8. Language central to interaction -- other is partner in dialogue.	8. No distinction be- tween self and meaning system.		8. Limits of formal understanding not al- ways embraced, but greater tolerance of ambiguity. May attempt to define rationality in terms broader than formal scientific.	
	9. Reasoning is con- crete -- generalizes from concrete parti- culars.	9. Not rigorously sys- tematic and critical; one sided; stereotypes.		9. Knowledge of and openness to depth di- mension -- the uncon- scious.	

ASPECT A: FORM OF LOGIC (continued)

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Limited Perspective Taking	Simple Perspective Taking	Mutual & Interpersonal Perspective Taking	Systematic Perspective Taking	Multiple Perspective Taking	Concrete Perspective Taking
1. Conversation is par- allel monologue.	1. Knows that other has a different perspec- tive. Can create hypo- thetical other, as in letter writing.	1. Constructs interior- ity of other often in stereotypic way.	1. Systematic - others perceived in terms of their ideas, histories, and world views and evaluated by way of a self-selected world view.	1. Takes perspective of others with less concern to defend own perspective.	1. Understands and identifies with others perspectives in a con- crete way. Probe for concrete examples.
2. Rudimentary empathy exists.	2. Concrete -- not aware of others inter- iority as different from own.	2. Embedded in social relations; generalized other determines "me".	2. Can analyze others viewpoint but with an eye to defending one's own viewpoint.	2. Objective perception of others meaning. Doesn't project own meaning.	2. Expresses a felt sense of solidarity with other (provided it is concrete).
3. Expression of em- pathy is intuitive, reflecting language learning. Can express how they would feel in other's situation, but can't construct others feelings and thoughts.	3. Construction of others perspective not fantasy charged.	3. Significant others determined by social context rather than self.	3. Construction of self and other guided by a theory of how people should relate.	3. Identifies with per- spective different from own without reducing them to one's own per- spective.	3. Absoluteness of the particular applies. Identifies with the perspective because it represents a larger group.
4. Response to other concrete and situation specific.	4. Objectification of other based upon reac- tion to "my" needs, not as a direct effect, but out of need to control social relations.	4. Not critical or sys- tematic; accepts others opinion without deli- beration or comparison.	4. Centers on forms of relationship and insti- tutional values, rather than interpersonal har- mony.	4. Grants autonomy to others perspective and can construct others perception of self.	4. The identification is not a fusion. Sense of individual identity should be present.
5. Separation from par- ents causes anxiety -- self not yet differen- tiated from other.	5. Judgemental re those different from self.	5. Takes others motives and intentions into account.	5. Doesn't construct the full interiority of other as fully auton- omous from self. Percep- tion of other by way of reconstruction of others ideas.	5. Based upon mature formal operations -- conscious, conceptually mediated, critically reflective.	
6. Perception of other based on others effect on self, eg. fear, reward.	6. Not fully mutual -- doesn't see self from imagined perspective of other.	6. Appearance central to assessment of self and other.	6. Perspectives that see other as other and don't rely on concep- tual systems may be stage 5.	6. Self-critical, rather than defensive. Brackets own point of view in order to grasp others.	

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Limited Perspective Taking	Simple Perspective Taking	Mutual & Interpersonal Perspective Taking	Systematic Perspective Taking	Multiple Perspective Taking	Concrete Perspective Taking
7. Perception of other fantasy charged.		7. Desire to meet ex- pectations of a gener- alized other.		7. Constructs and affirms interiority of other, even when dif- ferent from own.	
		8. Conflicts external- ized -- between self and other rather than between internal desires.		8. Emphasizes the par- ticular; the unique value of each indivi- dual.	
		9. Lacks awareness of perspective taking being governed by laws or theories of rela- tionship.			
		10. Perspective is con- structed concretely, "from the others shoes," rather than in terms of abstract sys- tem of relationships.			

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Punishment-Reward	Instrumental Hedonism and Reciprocity	Interpersonal Expecta- tions and Concordance	Law and Order	Prior to society	Loyalty to Being
1. Right and wrong are defined by conse- quences.	1. Judgements based on instrumental reciproc- ity and concrete conse- quences -- back- scratch contingency.	1. Judgements display values which maintain harmonious relation- ships, eg. loyalty, honesty, integrity.	1. Emphasizes laws, rights, justice, re: their role in maintain- ing social order. "What would happen if we all ...?"	1. Prior to society -- principles of justice prior to upholding a given society. Probe to see if action advocated to uphold social order or on basis of principles that underlie it.	1. Judgements are made concretely. Probe for concrete examples of how a universalizing principle has been used.
2. Right and wrong not determined by inten- tion.	2. Aware of other and considers what they might do.	2. Interpersonal conse- quences replace 1 to 1 instrumentality.	2. Judgements reflect conventional position of self-chosen group (not fully "prior to society" perspective).	2. Critical - espouses principles that enables criticism of social order.	2. Several universaliz- able principles can legitimate judgements. Probe to see how inclu- sive is the use of the principles.
3. Concepts of right and wrong not under- stood. Uses good and bad.	3. Concrete and simple reciprocity, eg. wrong to hit, might hit back.	3. Feelings are the basis for judgements of right and wrong.	3. Judgements explicit- ly and rational defended.	3. Multiple perspec- tives on a moral issue.	
4. Physical conse- quences to self deter- mine what is right.	4. Judgements based upon satisfaction of need. What is right is fair exchange.	4. Simple moral rela- tivism based upon feel- ings of interpersonal values.	4. Judgements reflect the values of maintain- ing social order over individual rights.	4. Often utilitarian -- uses a principle of distribution to weigh competing claims to benefits, eg. greatest good for greatest number.	
5. No sense of other and therefore no sense of reciprocity or fair- ness.	5. More complex reason- ing based upon inter- personal concordance may be stage 3.	5. Stages 3 & 4 make law and order state- ments. Stage 3's are based upon maintenance of society. Stage 4's on the rudiments of "prior to society" per- spective (laws repre- sent principles that are the foundation of society).	5. Judgements based on principles upon which a just society could be founded may be stage 5.	5. Often upholds the rights of individuals over rights of society.	

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Punishment-Reward	Instrumental Hedonism and Reciprocity	Interpersonal Expecta- tions and Concordance 6. Notion of society and morals based upon concrete relationships and not on abstract systems of relation- ships that have power apart from the concrete.	Law and Order	Prior to society	Loyalty to Being
		6. Perceives the rela- tivity of cultural values, but upholds them when they don't conflict with prin- ciples.			

ASPECT C: FORM OF MORAL JUDGMENT (continued)

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Family, Primal Others	"Those Like Us"	Composite Groups With Which One Has Personal Relations	Ideologically Compat- ible Communities	Principled Group Iden- tification	Universal Identifica- tion
<p>1. Little awareness of relationships outside family. Such awareness indicates transition to stage 2.</p> <p>2. Recognizes and names others but can't classify them into categories of relationship.</p>	<p>1. Awareness extends to those similar to us re familial, ethnic, racial, class, and religious terms.</p> <p>2. Appearance determines acceptance -- "those like use."</p> <p>3. Often stereotypes others. Little awareness of others with whom one is not familiar.</p> <p>4. Resolves differences by not noticing (projection) or stereotyping. When conflicting perceptions of others "not like us" are dealt with by generalized images, this is a sign of stage 3.</p>	<p>1. Takes the perspective or expresses opinion of own social group.</p> <p>2. Boundaries reach beyond immediate family and conventional social authorities that are uncritically appropriated.</p> <p>3. Values center on group goals and interpersonal concordance within group. Membership group valued to exclusion of others.</p> <p>4. Lacks awareness of discord within own group. Lacks critical reflection on group mores from an independent perspective.</p> <p>5. Construction of social world is one of simple relativism, ie. can respond to expectations of generalized other, but doesn't realize that other groups may be different.</p>	<p>1. Principle of inclusion is ideological compatibility.</p> <p>2. Others seen as part of a system rather than as individuals.</p> <p>3. Can consider wide range of viewpoints, but with a motivation to preserve own.</p> <p>4. Dichotomizes social reality on the basis of ideological compatibility.</p> <p>5. Can embrace pluralism when it is part of an explicit system.</p>	<p>1. Includes others who are different.</p> <p>2. Actively seeks opinions of others who are different, for purposes of comparison.</p> <p>3. Values pluralism and seeks principles that make pluralism workable.</p> <p>4. Identifies with others on the basis of principles they represent.</p> <p>5. Open to differences in contrast to stage 4's need for closure.</p>	<p>1. Social awareness is concrete -- each individual is cherished -- and universal -- no individual or group is rejected.</p> <p>2. Doesn't have to suspend perspective in order to evaluate that of the other. Both are coordinated by loyalty to being itself.</p>

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Family, Primal Others	"Those Like Us"	<p data-bbox="684 423 926 488">Composite Groups With Which One Has Personal Relations</p> <p data-bbox="684 509 926 646">6. Expectations conform to dominant perspectives of own social group. (Social group may be ascertained from Life Tapestry).</p> <p data-bbox="684 667 926 753">7. Can project values and feelings of own group on to other groups.</p>	<p data-bbox="978 423 1220 466">Ideologically Compatible Communities</p> <p data-bbox="978 509 1220 574">6. Criteria of aspects B & C are closely related.</p>	Principled Group Identification	Universal Identification

ASPECT D: BOUNDS OF SOCIAL AWARENESS (continued)

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
<p>Attachment/dependence Relationships. Size, Power, Visible Symbols of Authority</p> <p>1. Orients towards size, power, and other concrete symbols of authority.</p> <p>2. External.</p> <p>3. Based upon dependency on primary caregivers, desire to preserve their relationship, and to avoid punishment.</p> <p>4. Tests authority in concrete ways.</p>	<p>Incumbants of Authority Roles</p> <p>1. Questions authority and asks for reasons.</p> <p>2. Range of authority includes those whom society invests with conventional authority roles.</p> <p>3. Locus of authority external. Immediate family most important locus.</p> <p>4. Conventional symbols of authority are important.</p> <p>5. Relation to authority is concrete. Relatedness increases salience of authority.</p> <p>6. Appearance and orthodoxy are criteria for assessing claims.</p> <p>7. What is proper for a social role also criteria for assessing claims.</p>	<p>Consensus of valued groups and in personally worthy representatives of belief - value traditions</p> <p>1. Trust in socially approved figures, combined with absence of systematic thinking.</p> <p>2. Selects authority on basis of personal charisma.</p> <p>3. Selects authority on basis of feeling, appearance, tacit images.</p> <p>4. Uncritical acceptance of traditional authority.</p> <p>5. Selects authority on basis of group consensus.</p> <p>6. Does not select authority on basis of rational principles.</p> <p>7. Selection on basis of personality. However, individual is not separated from group by critical means.</p>	<p>One's own judgement informed by critically appropriated ideology. Authorities must conform to this.</p> <p>1. Authority takes the forms of a figure, law, tradition, etc.</p> <p>2. Acceptance of authority conceptually mediated on basis of self-selected principles or ideologies.</p> <p>3. Relationship to authority explicit and rational, rather than the tacit fusion of earlier stages.</p> <p>4. Authority located in ideas, systems, and institutions, rather than individuals. If located in an individual he/she is selected for the way she/he represents a system.</p> <p>5. Authority relationships evaluated from perspective of a world view.</p> <p>6. Authority is internal -- self-ratified ideological perspective.</p>	<p>Dialectical joining of judgement-experience with reflective claims of others, and expressions of cumulative human wisdom</p> <p>1. Authority mediated by the tensions involved in multiple perspective taking.</p> <p>2. Authority judged on basis of universal principles, eg. natural rights, social contacts.</p> <p>3. Authority evaluated by a dialectical joining of experience, situation, principles.</p> <p>4. Selection of authority influenced by cumulative human wisdom and tradition.</p> <p>5. Self stands above and prior to social order. Therefore, conscience and social contract are important in legitimizing authority.</p>	<p>Personal judgement informed by experiences and truths of earlier stages, purified of egoistic striving, and linked by disciplined intuition to the principle of being.</p> <p>1. May appeal to a principle (eg. neighbor-love) intuition, scripture, or writings of others, but the response reflects authority as residing in personal judgement based on direct and disciplined intuition of the universal. Displays humility rather than self certitude (stage 4) and therefore "reality tests" intuitions.</p> <p>2. Often challenges conventional authority, but respects its proper use.</p> <p>3. Relationship of self to principle of being is purified of egoic striving. Tension between loyalty to self and principle of being is transcended.</p>

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
<p>Episodic and impres- sionistic</p> <ol style="list-style-type: none"> 1. Statements episodic. 2. Picture of world partial, fragmentary, and impressionistic. 3. Blends, without distinguishing, fantasy and reality. 4. Animistic, with no evidence of higher thought. 5. Storytelling is imaginative and prolific, but episodic and associative; no spatio-temporal framework ties them together. 	<p>Narrative-dramatic. Concrete, linear, ordered</p> <ol style="list-style-type: none"> 1. Narrative ties events together in a spatio-temporal way. 2. Concrete - uses concrete operations to create logical connections between things. 3. Applies causality to physical events. 4. Interest in prediction and control of things. 5. No reflective distance from narrative. Embedded in narrative. 	<p>Tacit system, felt meanings symbolically mediated, globally held</p> <ol style="list-style-type: none"> 1. Synthesis of conventional ideas, rather than critically appropriated system. 2. Legitimizes world view by appeals to feelings and external authority, rather than rational reflection. 3. Beliefs are tacit value orientations, rather than theories of world. 4. Emphasis on interpersonal values in construction of meaning. 5. Values are tacitly rather than critically affirmed. Not aware of having a system and not able to give systemic arguments in support of values. 6. Defers to authorities for defence of world view. 7. Dissonance dealt with by exclusion, rather than hierarchical ordering of views. 8. Consensus primary criterion for truth. 	<p>Explicit system, conceptually mediated, clarity about boundaries and inner connections of the system</p> <ol style="list-style-type: none"> 1. Explicit system, rationally defended. 2. Concern with system boundaries and definition. 3. Dichotomizing - emphasis on differences between systems. 4. Concern with general rules, laws, norms. 5. Stress on closure and comprehensiveness, reductionism. 6. Collapse of tensions in one direction in order to maintain systemic coherence. 	<p>Multi-systemic, symbolic and conceptual mediation</p> <ol style="list-style-type: none"> 1. Aware of ambiguity and complexity and willing to embrace them. Bemoaning complexity and nihilism is characteristic of stage 4 striving for closure. 2. Emphasis on mediation of different perspectives and methods to yield more complete understanding. 3. Seeks understanding rather than explanation, open to experienced complexity. 4. Open to depth dimension in all reality, especially human; much may lay hidden. 5. World view multi-dimension and pluralistic. Feels responsible for holding tensions between pluralities; won't collapse tension to achieve closure. 	<p>Unitive actuality felt and participated unity of "One beyond the many"</p> <ol style="list-style-type: none"> 1. Statements have both universalizing and depth dimension. Express a felt sense of unity beyond diversity. Not the "tacit system" of stage 3 which is one dimensional. Stage 6 has greater depth and multiplicity of meaning. 2. Can be confused with stage 4 system view, because stage 4 systems contain a normative image of goal of life, which is like stage 6. However, stage 6 statements have an experiential basis. 3. Often statements can only be classified when weighed against context or background in life history.

ASPECT F: FORM OF WORLD COHERENCE (continued)

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Episodic and impres- sionistic	Narrative-dramatic. Concrete, linear, ordered	Tacit system, felt meanings symbolically mediated, globally held 9. Simple and uncritical pluralism. 10. Romantic and heroic views of self and world. 11. Little reflection and abstraction.	Explicit system, con- ceptually mediated, clarity about boun- daries and inner con- nections of the system	Multi-systemic, sym- bolic and conceptual mediation	Unitive actuality felt and participated unity of "One beyond the many"

STAGE 1 Intuitive-Projective Faith	STAGE 2 Mythic-Literal Faith	STAGE 3 Synthetic-Conventional Faith	STAGE 4 Individuative-Reflec- tive Faith	STAGE 5 Conjunctive Faith	STAGE 6 Universalizing Faith
Magical-Numinous	One-dimensional Literal	Multi-dimensional; evocative power inheres in symbol	Symbol critically separ- ated from symbolized. Translated (reduced) to ideations. Evocative power inheres in mean- ing conveyed by the symbol	Postcritical rejoining of irreducible symbolic power and ideational meaning. Evocative power inherent in the reality in and beyond symbol and in the power of unconscious pro- cesses in the self.	Evocative power of sym- bols actualized through unification of reality mediated by symbols and the self
<ol style="list-style-type: none"> 1. No distinction between fantasy and reality. 2. No distinction between symbol and what it symbolizes. 3. Symbols of diety anthropomorphic -- use soul and air as symbols of an invisible God who nevertheless acts. 	<ol style="list-style-type: none"> 1. Distinguishes between fantasy and reality, symbol and symbolized. 2. Symbols interpreted literally and in a one-dimensional way. 3. Groups symbols and events to create narrative. 4. Symbols don't have power to evoke feeling, as at stage 3. 	<ol style="list-style-type: none"> 1. Goes beyond one-dimensional literalism to multi-levelled symbolization. 2. Does not critically analyze symbol; does not demythologize or reduce symbols to conceptual meaning, pre-critical openness -- "first naivete" 3. Oriented towards power of symbols to evoke feeling rather than their capacity to represent concepts. 4. Interpretation and appropriation of symbols influenced by trusted authorities and group norms. 5. Interpretations conventional and oriented toward interpersonal qualities. 	<ol style="list-style-type: none"> 1. Symbols translated into concepts. 2. Interpretations and appropriation univocal and reductive (often to the truth of world view -- "reductive hermeneutic"). 3. Symbols placed within a systematic world view. 4. Conscious attempt to de-mythologize the symbol. 5. Symbols and myth viewed functionally re their impact on social systems. 	<ol style="list-style-type: none"> 1. Increased openness to evocative power of symbol; a "second naivete" or post-critical fusion of the symbolic and ideational that gives symbol power to evoke, generate, and sustain meaning. 2. Meaning of symbol not singular but multiple. 3. Employs history of interpretation in discerning the meaning of the symbol. 4. Explicit concepts seen as only one type of meaning of the symbol. 5. De-mythologizes in the sense of treating the symbol as symbol, but process is not reductive -- symbol is simultaneously invested with new meaning, eg. Jung on myth. 	<ol style="list-style-type: none"> 1. Uses symbols authoritatively -- symbol and reality are not separate. Mediation of symbolic reality is conscious and disciplined. There is a mediated simplicity, which is the other side of complexity. It is not the fusion of symbol and reality of stage 1 or literalism of stage 2. 2. Probe to see how interpretations are constructed. Examine images of the transcendent, purpose of life, revelation, and human nature. 3. Because of authoritative use of symbol, interpretation may seem more literal and univocal. This is not a choice of one interpretation among many, but a synthetic interpretation of the multiplicity of meanings the symbol can generate.

<u>STAGE 1</u> Intuitive-Projective Faith	<u>STAGE 2</u> Mythic-Literal Faith	<u>STAGE 3</u> Synthetic-Conventional Faith	<u>STAGE 4</u> Individuative-Reflec- tive Faith	<u>STAGE 5</u> Conjunctive Faith	<u>STAGE 6</u> Universalizing Faith
Magical-Numinous	One-dimensional Literal	Multi-dimensional; evocative power inheres in symbol	Symbol critically sepa- rated from symbolized. Translated (reduced) to ideations. Evocative power inheres in mean- ing conveyed by the symbol	<p>Postcritical rejoining of irreducible symbolic power and ideational meaning. Evocative power inherent in the reality in and beyond symbol and in the power of unconscious pro- cesses in the self.</p> <p>6. Evocative power and ideational content held in tension.</p> <p>7. Time and place rela- tivity of symbols and their interpretation are acknowledged.</p>	Evocative power of sym- bols actualized through unification of reality mediated by symbols and the self

ASPECT G: ROLE OF SYMBOLS (continued)

F. Data Collection

1. Mail Survey Procedures

The details of the procedure for the mail survey were roughly patterned after Dillman's Total Design Method (1978; 1983). This method includes many exact guidelines, ranging from how the cover letter should be worded and constructed, to how the mailing should be packaged, and to how the follow-ups should be conducted. As indicated in Section II. A., freshmen were sampled and measured in October 1991, as early in their university career as possible, while the seniors were sampled and measured in March 1992, as late in their senior year as possible.

The differences between the university and Bible college cover and follow-up letters reflect the differences in sampling and mailing procedures. In keeping with the University of Manitoba's policy regarding the Disclosure and Security of Student Academic Records, the identity of the university cases was not made known to the researcher, and they remained anonymous throughout the process of data collection. Instead, the Student Records Office drew the samples according to the instructions of the researcher, attached the address labels to the questionnaire packets supplied by the researcher, and mailed them directly to the students via the public postal system. An accompanying cover letter from the Director of Student Records explaining these procedures and endorsing the project was included in the first mailing to all university students. In contrast, the Bible college subjects were not sample cases; the entire sampling frames of freshmen and seniors in each of the two colleges were employed.

Furthermore, the names of the Bible college subjects were released to the researcher so that he was able to conduct and supervise all aspects of the mailing personally, and internal (non-postage) mailing systems in the respective institutions were employed.

The only incentive employed was a promise of a summary of results, if requested. Given that the subjects were all students in higher education, that the topic of the survey was salient to education, that the researcher was a fellow university student, and that the project was endorsed by a reputable public institution, a good rate of response was expected without the use of further incentives (Nachmias and Nachmias, 1987; Miller, 1983).

Because names and addresses of the university cases were not known to the researcher, follow-ups could not be targeted to only those who had not responded to the first mailing. Therefore, a second mailing, consisting of a different, more pointed cover letter and a replacement copy of the questionnaire, was sent to all university subjects two to three weeks after the first mailing, again via the Student Records Office. The tone and composition of this second mailing was influenced by the fact that the university only allowed two mailings. In contrast to the university, the names of the Bible college cases were known to the researcher, and only those subjects who did not respond to the first mailing received a second mailing two weeks later, consisting of a letter urging them to do so. If that individual still did not respond in another two weeks, then he or she was sent a third mailing consisting of another letter and a replacement copy of the questionnaire.

2. Response Rates

One objective of all mail survey research is to obtain as high a rate of response as possible, so as to reduce any potential systematic non-response bias. Indeed, the problem of non-returns is usually acknowledged as one of the major disadvantages of mail surveys. Good response rates are necessary in order to maintain the representativeness and generalizability of a random sample.

According to Nachmias and Nachmias (1987), the typical response rate to mail surveys of the general population is between 20-40%. However, Miller (1983) reports a range of 3-71% for various surveys of the general population, and a range of 24-90% for various surveys of high school and college graduates. The mean response rate for his sample of 214 mail surveys that utilized one or more follow-ups was 60%. Still higher rates were reported by Dillman (1978), who reviewed 48 mail surveys that had used his Total Design Method and found that response rates ranged from 50-95%, with a mean of 74%.

Judgments as to what constitutes a good response rate vary only slightly less than the response rates actually derived in various studies, and such judgments are influenced by the many factors of each particular survey. Backstrom and Hursh-Cesar (1981) describe 70% as extraordinary, yet Bailey (1978) maintains that researchers should not be satisfied with less than 75%. Babbie's (1992) general guidelines are that 50% is adequate, 60% is good, and 70% is very good.

The response rates to the mail survey of this study are presented in Table 2-2.

TABLE 2-2 SURVEY RESPONSE RATES

	SENT	RETURNED	SPOILED	USEABLE
FRESHMEN				
CMBC	95	45 (47%)	3	42
Providence	111	59 (53%)	6	53
Arts	124	93 (75%)	17	76
Engineering	124	82 (66%)	10	72
	----	-----	----	----
TOTALS	454	279 (62%)	36 (13%)	243
SENIORS				
CMBC	45	27 (60%)	4	23
Providence	59	47 (80%)	8	39
Arts	116	83 (72%)	17	66
Engineering	122	77 (63%)	9	68
	----	-----	----	----
TOTALS	342	234 (68%)	38 (16%)	196
<hr/>				
GRAND TOTALS	796	513 (64%)	74 (14%)	439

Several dimensions of these response rates can be noted. First, the overall rate of 64%, with a range of 47-80%, can be evaluated as good. The weakest return rates were among the Bible college freshmen. A discrepancy in the follow-up procedures may account for this difference. The Bible college freshmen were unique in that they were not given a replacement questionnaire directly, but were asked to make the small extra effort of picking one up at a convenient location if they needed

one. In retrospect, this was probably a poor procedure that negatively affected return rates. The average return rate with the Bible college freshmen deleted is 69%.

The highest return rate (80%) was derived from Providence College seniors, perhaps influenced by their having known the identity of the researcher through his association with that college. The second and third highest return rates were derived from university arts freshmen (75%) and seniors (72%), a field of study in which the nature of this research is located.

The rate of spoiled questionnaires (14% overall) was disappointing, being even higher than the 12% spoiled in the pretest on the Jesuit Centre for Faith Development and Values sample. In all cases, the spoilage consisted of rating the faith development items instead of ranking them, leaving the questionnaire unscorable. The instructions were improved after the pretest, but perhaps the greater commitment on the part of the Jesuit Centre volunteer subjects to facilitating this research motivated them to pay more attention to the instructions. Including an example of ranking a hypothetical grouping could perhaps improve the effectiveness of the instructions further, but the surest way to reduce misunderstanding would be to avoid self-administration of the questionnaire altogether and have a researcher administer it in person instead. The fact that more seniors (16%) spoiled questionnaires than freshmen (13%) may suggest that one effect of post-secondary education is to make students impatient with instructions, and/or assume that they already know what is being asked. However, the difference is more likely a product of random error.

The number of useable responses was fairly well distributed, with the lowest numbers being among Bible college seniors, due to there being so few cases in their entire populations. Only the CMBC seniors (23) fell below what is generally considered the minimum number of cases required in a sample population (30) in order to assume a normal distribution (Nachmias and Nachmias, 1987), therefore this assumption will still be made for data analysis in this study. The total number of useable cases (439) makes this data set one of the largest ever employed in faith development research, and substantially larger than the data set (359 cases) from which Fowler originally developed his theory (1981).

* * * * *

This chapter has presented the research methods and procedures employed for this study of the effect of post-secondary education on faith development. It has described how the variables were identified, how the cases were selected, how the cases were measured, and finally, how much data was collected. Analysis of the data produced will provide some answers to the questions posed by this study.

CHAPTER THREE

RESEARCH FINDINGS

I. DATA PROCESSING

The data from the useable questionnaires completed and returned by 439 students, as detailed in the previous chapter, were subjected to the requisite processing and scrutiny prior to measuring the effect of post-secondary education on faith development. This was done by the following steps.

A. Coding and Data Entry

Most of the questionnaire was precoded for quantitative analysis, with code numbers appearing beside each response option on the questionnaire, and designated column numbers for that particular code appearing in the right hand margin. This construction enabled the data to be entered manually and directly from the questionnaires into a computer data file. Therefore a codebook is not presented here, because "the data instrument itself serves many of the functions of a codebook" (Chadwick, Bahr, and Albrecht, 1984:347). Moreover, the researcher entered all the data himself. Item #50 following the faith stage items was an open-ended qualitative

question, and therefore was not precoded. The codings for the responses to this item, together with the responses to items #51 and #52, are reported in Section III. B. 2. to follow. The only other item not edge-coded was the social class item (#3) in the biographical section which, as mentioned earlier, was coded according to the Standard Occupational Classification (1980) of Statistics Canada.

Each case was assigned two records or lines of data in the computer file. The first line consisted of the direct entry of the respondent's ranking (coded 1-4) of the 48 faith development items in columns 1-48, followed by a 5 digit identification number in columns 49-53, and, for the seniors only, items #49-52 in columns 54-57. The second data line for each case began with the respondent's identification number in columns 1-5, and was followed by the respondent's biographical data in columns 6-29. A computer program was then written to analyze the data using the Statistical Package for the Social Sciences (SPSS 4.1).

B. Data Cleaning

Data cleaning, or the elimination of errors in the data set, occurred from the time of sampling onward. One of the reasons that the university sample sizes were not identical (see Chapter Two, III. F. 2.) was that some mailing addresses were incorrect and those cases had to be deleted from the sample. Of the 513 questionnaires returned, 74 (14%) were deleted as spoiled because respondents rated the faith development items instead of ranking them. These cases were dropped from

the data set and never even entered into the computer, including their qualitative and biographical data, so as not to contaminate or compromise the data set.

The process of scoring the cases on faith development narrowed the data set further. After scoring the remaining 439 useable cases according to the method of calculating stage of faith outlined in Chapter Two, III. D. 2., another 28 cases (6.4% of 439) were ruled unscorable based on their failure to meet the standards set for lowest stage means, leaving a total of 411 valid cases. The first criterion for acceptance of a case was that the lowest stage ranking mean had to be below 2.20; all lowest means that were higher than 2.20 were ruled inadequate to indicate stage convincingly, because they were too close to the 2.50 mid-point of ranking possibilities that would be produced by perfectly random responses. Imposing this standard on the data built some protection into the scoring system to shield against scores that may have been only a product of measurement error. Twenty-three of the 28 unscorable cases violated this criterion.

The second criterion concerned nonsensical transitionals. Cases where the second lowest stage ranking mean was also below 2.20 and tied with or within .25 of the lowest mean, but not in an adjacent stage, were also deleted as incongruent with the theory. Four of the 28 unscorable cases violated this criterion. One of the 28 cases was unscorable because it had a three-stage tie for the lowest mean. The data from these cases, including the qualitative and biographical data, were retained in the analysis because, by following the instructions correctly, their responses were important for measures of the reliability of the questionnaire.

The entire data set was also scrutinized for more conventional errors beyond matters particular to stage score assignment. For example, missing values due to no response were assigned a code of 9, and those cases were then deleted from the respective analyses of that item. When this occurred in the faith stage items (8 respondents omitted one 4-item group, 2 omitted two groups), the four stage ranking means were simply calculated with one or two less values; when it occurred among the biographical items, the totals for that variable were simply one less. The data set was also scanned manually for impossible or nonsensical data, such as numbers entered for which there was no code. None were found, and the frequency distributions produced later "verified the data" to the extent that no out-of-range responses were entered, and all means and standard deviations were plausible.

Some discrepancies and ambiguities in the data were noted during data entry. For example, many seniors indicated that they had already achieved a Bachelor's Degree [4], and then wrote in the margin that they expected to graduate in a month. The correct response for these cases would have been to indicate Incomplete [2], because the intent of this item (Biographical #6) was to ascertain if they held a previous Bachelor's degree. Regarding religious preference (Biographical #9), many respondents selected "Other" [7] and then wrote in Mennonite, non-denominational, or charismatic, even though these affiliations, especially when expressed by Bible college students, are conventionally included in the Evangelical/Conservative [6] category. In assessing current importance, many respondents differentiated between religion and spirituality (Biographical #11 c). The response options for interpersonal stress (Biographical #13), such as gaining or losing a spouse, were found to be neither

exhaustive nor mutually exclusive. The option of "Both" should have been listed together with "Gained," "Lost," and "Neither." In all of these situations, the data were entered as given with no adjustment.

C. Descriptive Analysis of Faith Stage Calculations

Analysis of the data can begin by examining the frequencies of the rankings given to each of the 48 faith development items. All items received some responses of "most like me" (1) and some responses of "least like me" (4), and all items received responses that were fairly well distributed. The range of responses to particular items based on the 439 useable cases are presented in Table 3-1.

TABLE 3-1 RANGE OF FREQUENCIES OF RANKINGS

RANKING	FREQUENCY	ITEM#	STAGE	ASPECT
1	lowest = 5	29	2	C
1	highest = 266	20	4	F
2	lowest = 34	45	2	G
2	highest = 224	33	4	D
3	lowest = 39	34	5	D
3	highest = 212	36	3	D
4	lowest = 13	5	3	C
4	highest = 301	45	2	G
MEAN	lowest = 1.60	5	3	C
	highest = 3.53	29	2	C
STANDARD DEVIATION				
	lowest = .75	29	2	C
	highest = 1.16	41	5	F

It is notable from Table 3-1 that the faith questionnaire items that received the fewest first place rankings (1 = "most like me") and the most last place rankings (4 = "least like me") are both Stage 2 statements (#29 and #45). This is the first indication that Stage 2 items were least popular in this sample of university and Bible college students, a finding that was expected. Item #29 ("I think someone is good if she or he gives me what I need") also has the most number of extreme scores (it appears three times on Table 3-1), while item #45 is tied for the second most number of extreme scores (it appears on Table 3-1 twice). Not only did item #29 receive the fewest top rankings, but it also had the highest mean and the lowest standard deviation, both

further indications of how much respondents in general wanted to distance themselves from it.

The total rankings given by the 439 useable cases can also be described in terms of their frequencies and distributions within the four 12-item groups representing each respective stage. The calculation of only the number of top rankings (1 = "most like me") within each stage grouping, with a possible range of 0-12, is presented in Table 3-2.

TABLE 3-2 TOP RANKINGS (1's) PER STAGE

STAGE	MEAN *	STANDARD DEVIATION
2	1.04	1.15
3	2.30	1.36
4	5.66	2.13
5	2.97	1.93

* The mean number of #1 ("most like me") rankings on the 12 items for each stage.

The range of means of top rankings per stage shown in Table 3-2 reveals that the twelve Stage 2 items received an average of only 1.04 #1 rankings, whereas the twelve Stage 4 items received an average of 5.66 #1 rankings. Calculations of the means of all the rankings given to each of the 12 individual items within each stage group, with the possible range of 1-4, is presented in Table 3-3.

TABLE 3-3 MEAN RANKINGS PER ITEM BY STAGE

STAGE	MEAN	STANDARD DEVIATION
2	3.14	.35
3	2.58	.33
4	1.86	.36
5	2.43	.45

Both of the above tabulations of rankings for items within the respective stages suggest that, in this sample, the most frequently occurring stage will be Stage 4 and the least frequently occurring stage will be Stage 2.

Calculating the stages for each of the 439 useable cases by identifying the stage with the lowest mean score (as detailed in Chapter Two III. D. 2.) proves this expectation to be true. As already explained in the previous section on data cleaning, 28 of the 439 cases were unscorable, leaving 411 valid cases to form the refined data set for this research project. The frequency distribution of the stages among the 411 valid cases is shown in Table 3-4.

 TABLE 3-4 FREQUENCIES OF STAGES

STAGE	NUMBER	PERCENT	CUMULATIVE PERCENT
2	0	0.0	0.0
2.5	1	0.2	0.2
3	17	4.1	4.4
3.5	19	4.6	9.0
4	264	64.2	73.2
4.5	67	16.3	89.5
5	43	10.5	100.0
	-----	-----	
Total	411	100.0	

Two observations about the distribution of stages can be made immediately. One is that scores were generally higher than what was expected based on the theory. That there were no Stage 2's and only 1 Stage 2-3 Transitional was not surprising based on the sample. However, that there was such a low percentage of Stage 3's and Stage 3-4's (9% combined), and that there was such a high percentage of Stage 4-5's and 5's (27% combined) was contrary to expectations. The second observation is that having 64% of the scores in one category (Stage 4) is clearly problematic for purposes of data analysis. The poor distribution of scores will severely handicap data analysis throughout the remainder of this report; inadequate variation in data limits what it can reveal. However, at this point it must be emphasized that the problem presumably derives from the apparent homogeneity of the sample. The quality of the measuring instrument itself is not necessarily brought into question by this evidence alone. That is a separate question.

D. Instrument Reliability

Measures taken to establish the validity and reliability of the questionnaire during its development and pretesting have already been described in Chapter Two. III. D. 3., but summarizing them here will tie those measures to the subsequent measures described in this section. Regarding validity, the original measures included basing the wording of the items directly on specific stage and aspect criteria given in the *Manual for Faith Development Research* (Moseley, Jarvis, and Fowler, 1986), and then submitting them to a panel of experts in Fowler's theory to establish content or face validity. Measures of concurrent validity through use of known subjects for one of the drafts was also employed. Regarding reliability, successive drafts attempted to lower the mean of the lowest stage means to 1.75 and raise the mean of the highest mean to 3.25 as indications of the consistency with which respondents ranked the respective stage items. The second last draft of the questionnaire was administered by mail to subjects who had already been scored by Fowler's interview method by the Jesuit Centre for Faith Development and Values at the University of Manitoba. Comparison of the questionnaire and interview scores for the same subjects showed adequate similarities, and the revisions of the final draft attempted to upgrade the similarities to make them more satisfactory.

The collection of the primary data set from the 439 post-secondary education students for the research reported here provides various further indications of the questionnaire's reliability. Several general indications can be noted. First, the mean of

all lowest stage means was 1.75, and the mean of all highest stage means was 3.24. By being halfway between perfect randomness or non-preference (2.50) and perfect positive preference (1) or perfect negative preference (4), these scores indicate that the average case expressed a substantial preference for statements representing one particular stage, not just a slight preference. Second, and related, is the finding that the questionnaire produced interpretable or scoreable results in 411 out of 439 cases (94%). This also demonstrates that the rankings respondents gave to questionnaire items did cluster around groupings identified as representative of a particular faith stage. Furthermore, this clustering occurred to a degree beyond a standard imposed to protect against only slight clusterings more likely to be produced by measurement error (ie. only lowest means of less than 2.20 were accepted).

A third general indication of the questionnaire's validity and reliability is the finding that the modal stage is the one expected based on the characteristics of the sample. Fowler's theory suggests that Stage 4 will be the most frequently occurring score among university and college students, and this proved to be true when the questionnaire was used with such a sample.

Fourth, the theory suggests that stages through which a person passes will become progressively more foreign to that person's sense of self-identity as he or she constructs new forms of "faithing." On the other hand, stages not yet experienced will remain nonsensical to that individual. If the questionnaire is reliable, it should be sensitive to such patterns, and in fact the findings did show mean scores of the respective stages for each individual that corroborate this dimension of the theory (see

Appendix A). For example, of the 264 cases in which Stage 4 had the lowest mean, 234 (89%) also had a Stage 2 mean that was higher than the Stage 3 mean. In other words, most individuals scored as Stage 4 indicated that not only was Stage 3 not "most like them," but Stage 2 was even "less like them." Meanwhile, only 43 (16%) of individuals scored as Stage 4 had Stage 5 means that were even higher than their Stage 2 means. This indicates that most Stage 4 persons were more confident that they were not like Stage 2, which they knew by having experienced it in their past, than they were confident that they were not like Stage 5, with which they presumably had no experiential knowledge.

A more demanding and exacting indication of the reliability of the scale based on the order of stage means for each case is obtained by examining those cases scored as Stage 5. Of these 43 cases, 32 (74%) had a perfect progression of stage means, with Stage 2 being the highest mean ("least like me"), Stage 3 being the second highest mean, Stage 4 being the second lowest mean, and Stage 5 being the lowest mean ("most like me"). This ordered progression of stages already experienced is predicted by the theory, whereas stages not yet experienced would not be expected to be ordered to the same degree. True to expectations, the data show that of the only 17 cases in which Stage 3 had the lowest mean, 10 cases (59%) had Stage 4 means lower than Stage 5, 5 cases (29%) had Stage 4 means higher than Stage 5 means, and in 2 cases (12%) the Stage 4 and 5 means were tied.

Turning to more statistically sophisticated assessments of the reliability of the questionnaire, another three measures of the 439 scoreable cases can be taken.

Evaluation of their results will be reserved until after all three have been presented. The first measure is an examination of the correlations of pairs of items intended to measure the same properties. As shown by the Code Sheet in Chapter Two III. E. 4., the questionnaire was constructed in such a way that each aspect of each stage of faith was measured by two separate items, though the two items were based on different criteria in the *Manual for Faith Development Research* (Moseley, Jarvis, and Fowler, 1986). For example, Aspect B Stage 2 was tested according to Criterion 2 in item #3 and according to Criterion 4 in item #28. Therefore, because these pairs of items converge in aspect and stage, a reliable scale should produce a general pattern of significant correlations within these pairs. However, because these pairs of items also diverge in criteria, the correlations within them should not be very high. Table 3-5 shows the correlations of item pairs in the data according to faith aspects, Table 3-6 according to faith stages.

TABLE 3-5 INTERITEM CORRELATIONS BY ASPECT

Aspect B: Social Perspective Taking

Stage 2	Item #3 & 28	Correlation = .11 *
3	4 & 25	.01
4	1 & 27	-.00
5	2 & 26	.12 *
		Mean = .06

Aspect C: Moral Judgment

Stage 2	Item #6 & 29	Correlation =	.01
3	5 & 32		.16 *
4	8 & 30		.11 *
5	7 & 31		.05
			Mean = .08

Aspect D: Social Awareness

Stage 2	Item #12 & 35	Correlation =	-.03
3	11 & 36		.20 *
4	10 & 33		.13 *
5	9 & 34		.31 *
			Mean = .17

Aspect E: Locus of Authority

Stage 2	Item #13 & 38	Correlation =	.10 *
3	14 & 37		.23 *
4	15 & 40		.02
5	16 & 39		.19 *
			Mean = .14

Aspect F: Form of World Coherence

Stage 2	Item #19 & 44	Correlation =	.18 *
3	18 & 43		-.02
4	20 & 42		.25 *
5	17 & 41		.13 *
			Mean = .15

Aspect G: Symbolic Function

Stage 2	Item #22 & 45	Correlation =	.33 *
3	23 & 46		-.02
4	21 & 47		.10 *
5	24 & 48		.26 *
			Mean = .18

Mean of Mean Correlations = .13

* = Significant at .05 Level

Interitem correlations by aspect show that 16 of the 24 item pairs (67%) have statistically significant correlations, that none of the significant correlations are negative, and that the overall mean of .13 is also significant. Aspects B and C show two of four item pairs with statistically significant correlations with low mean correlations, whereas Aspects D, E, F, and G show three of four pairs with significant correlations with higher mean correlations.

TABLE 3-6 INTERITEM CORRELATIONS BY STAGE

Stage 2: Mythic-Literal Faith

Aspect	B	Item #3 & 28	Correlation =	.11 *
	C	6 & 29		.01
	D	12 & 35		-.03
	E	13 & 38		.10 *
	F	19 & 44		.18 *
	G	22 & 45		.33 *
				Mean = .13

Stage 3: Synthetic-Conventional Faith

Aspect	B	Item #4 & 25	Correlation =	.01
	C	5 & 32		.16 *
	D	11 & 36		.20 *
	E	14 & 37		.23 *
	F	18 & 43		-.02
	G	23 & 46		-.02
				Mean = .11

Stage 4: Individuative-Reflective Faith

Aspect	B	Item #1 & 27	Correlation =	-.00
	C	8 & 30		.11 *
	D	10 & 33		.13 *
	E	15 & 40		.02
	F	20 & 42		.25 *
	G	21 & 47		.10 *
				Mean = .10

Stage 5: Conjunctive Faith

Aspect	B	Item #2 & 26	Correlation =	.12 *
	C	7 & 31		.05
	D	9 & 34		.31 *
	E	16 & 39		.19 *
	F	17 & 41		.13 *
	G	24 & 48		.26 *
				Mean = .18

Mean of Mean Correlations = .13

* = Significant at .05 Level

The same interitem correlations arranged by stage rather than by aspect show Stage 3 item pairs as having the fewest number of significant correlations (3 = 50%), whereas Stage 5 has the most (5 = 83%). This suggests a rival explanation for the relatively few cases scored as Stage 3 in the data; the low number of cases scored as Stage 3 may have been due to the lower correlation of Stage 3 items on the questionnaire as much as being due to an actual low number of Stage 3 individuals in the sample. Though suggested by a limited reading of the data, such an explanation is less than convincing given that Stage 3 has only one less significant pair than Stage 4, and the means of Stage 3 (.11) and Stage 4 (.10) are virtually identical. Overall, the interitem

correlations of matched pairs are statistically significant, but hardly substantively so, perhaps reflecting more of the divergence of the criteria than the convergence of the aspects and stages. The correlation coefficients for all items within each stage are presented in Appendix B.

Interitem correlation analysis is actually a more refined and instrument-specific test of one of the most conventional measures of questionnaire reliability, the Guttman split-half approach. By this method, the 12 items for each stage are divided into two groups of 6 items each and calculated as two separate tests. The correlation of scores from the two sub-groups provides an indication of the overall scale's consistency of measurement, which is its reliability. Split-half measures of reliability for the four stages measured by the questionnaire are shown in Table 3-7.

TABLE 3-7 SPLIT-HALF RELIABILITY ANALYSIS

STAGE	SPLIT-HALF
2	.44
3	.39
4	.44
5	.65

The third and final statistical method of reliability analysis to be employed here is Cronbach's (1951) coefficient alpha. This technique was again performed within each stage, because it was only responses to the 12 items representing a particular stage that were expected to cluster together. Each of the 12 items in the four different

stages were also examined to see if the alpha for that stage would be improved if any particular item were deleted, in other words, to see if particular items were contributing to the alpha or detracting from it. Table 3-8 shows the alphas for each stage, as well as identifying those items from among the 12 in each stage that were working against or weakening the stage alphas.

TABLE 3-8 COEFFICIENT ALPHA RELIABILITY ANALYSIS

STAGE	ALPHA	ITEM#	ALPHA IF DELETED
2	.44		
3	.32		
		5	.38
		32	.34
		43	.35
4	.43		
		8	.46
5	.60		
		7	.61

The evidence of these item alphas, combined with the evidence of the interitem correlations by aspect presented in Table 3-5, suggests an intriguing possibility that may be a partial explanation for the pattern of item reliability in the questionnaire. The first two groupings of the questionnaire contain items #1-8, and address Aspects B and C. Four of the first eight items (50%) weakened the stage alphas, compared with only four of the remaining forty items (10%). Similarly, four of the first eight items (50%) did not correlate significantly with their matched pair in the second half of the questionnaire, compared with only four of the remaining sixteen items (25%) in the first

half of the questionnaire. This pattern translated into Aspects B and C having lower mean interitem correlations (.06 and .08 respectively) than the remaining four aspects. What this demonstrates is that responses became considerably more consistent after the first two groupings (items #1-8) of the questionnaire, and suggests a warm-up effect in the data. The task the questionnaire presented to the respondents was challenging, and the evidence shows that they performed more consistently as they proceeded with it. This initial warm-up effect may be partially responsible for lowering overall measures of instrument reliability.

Evaluating the various assessments of the reliability of the faith stage questionnaire is complex, primarily because of the nature and complexity of faith development theory. The general indications of the scale's reliability discussed first, such as the general patterns of the means of the rankings for each stage by each case, suggest a higher reliability than the statistical measures of interitem reliability presented last. Moreover, although the magnitude of the interitem correlations were low by conventional standards, the juxtaposition of convergence and divergence among the measures makes it difficult to ascertain what levels of correlations are in fact desirable. Scale items were constructed in such a way as to converge according to both stage and aspect, but no two items were based on exactly the same criterion of the same aspect of the same stage. At the most refined level, the scale remains a compilation of single item indices in which a certain degree of divergence is expected, if not desirable.

Statistical scale reliability is an analysis to which Fowler's theory of faith

development has not been subjected previously, and given the fact that the items of this questionnaire were derived directly from the theory, inconsistencies may originate as readily in the theory itself as in any measure of it. The levels of reliability demonstrated statistically here, while not on par with scales measuring more objective data or with scales having several measures of exactly the same property, nevertheless represent a new direction in faith development research published to date. Higher measures of split-half reliability or higher alphas are simply much less likely when dealing with subjective, qualitative, attitudinal data such as faith development, because of the vicissitudes of the interpretations involved. For the purpose of this study, it may be concluded that the reliability of the questionnaire is adequate, and in fact represents progress in faith development research. Further progress in future studies may require modification of the theory.

II. DEMOGRAPHICS OF THE SAMPLE

Various demographic data were collected in the second half of the questionnaire, which was devoted to biographical information. These characteristics of the cases were intended to serve as control variables and potential intervening variables in researching the effect of post-secondary education on faith development, as outlined in Chapter Two. I. C. They are presented here in percentages only, with the number of cases missing from the data set of 439 noted. The data are presented according to the four basic program types or the eight basic respondent types of this study, depending on what is appropriate for the respective variable.

A. Sex

TABLE 3-9

SEX

SEX	CMBC	CMBC	PC	PC	ARTS	ARTS	ENG	ENG	TOTAL
	Frh	Sen	Frh	Sen	Frh	Sen	Frh	Sen	
	%	%	%	%	%	%	%	%	%
Male	56	48	51	44	45	49	43	71	51
Female	44	52	49	56	55	51	57	29	49
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100	100	100

1 missing case

The largest difference in sex was in engineering seniors, which was expected, because of fewer females in that sample (see Chapter Two, II. A.)

B. Age

TABLE 3-10

AGE

AGE	CMBC	CMBC	PC	PC	ARTS	ARTS	ENG	ENG	TOTAL
	Frh	Sen	Frh	Sen	Frh	Sen	Frh	Sen	
	%	%	%	%	%	%	%	%	%
17-19	74	4	60		76	1	81		41
20-22	14	78	19	51	17	68	8	59	36
23-25	2	9	8	8	5	20	1	29	11
> 25	10	9	13	41	1	11	10	12	12
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100	100	100

		MEAN	STANDARD DEVIATION
CMBC	Freshmen	20.5	6.46
	Seniors	21.9	3.09
PC	Freshmen	20.7	4.61
	Seniors	25.8	7.01
ARTS	Freshmen	18.9	1.78
	Seniors	22.6	4.03
ENG	Freshmen	19.9	5.32
	Seniors	23.3	3.44
Entire Sample		21.4	4.97

no missing cases

The most notable scores on age are the high scores of the PC seniors, of which 41% are 26 years of age or older. Ages 20-22 is predictably the range in which

there is the most overlap of freshmen and seniors.

C. Occupation

TABLE 3-11

OCCUPATION

OCCUPATION	CMBC %	PC %	ARTS %	ENG %	TOTAL %
Professional	19	25	30	24	25
High Level	20	12	25	18	19
Skilled/Farmer	52	46	32	41	41
Semi & Unskilled	9	17	14	17	15
	-----	-----	-----	-----	-----
	100	100	100	100	100

9 missing cases

The occupations reported by the respondents were those of their primary parent/provider, and were taken as a measure of the respondent's social class. The most notable asymmetry observable in these data is the average of 49% Skilled/Farmer parents among Bible college students compared to the average of 36% Skilled/Farmer parents among university students. This was primarily due to a higher percentage of Bible college students coming from farming families.

D. Rural/Urban

TABLE 3-12 RURAL/URBAN CHILDHOOD

COMMUNITY SIZE	CMBC %	PC %	ARTS %	ENG %	TOTAL %
< 1,000 Population	17	35	9	14	17
1,000-9,999	43	33	21	21	27
10,000-99,999	17	15	17	17	17
100,000-499,999	11	4	8	7	7
> 500,000	12	12	45	42	32
	----- 100	----- 100	----- 100	----- 100	----- 100

3 missing cases

As already suggested by the occupation variable, there is a considerable difference between Bible college students and university students in terms of their rural or urban upbringing. An average of 26% of Bible college students spent the majority of their childhood in towns with populations of less than 1,000, compared to an average of 11% of university students. An average of 38% of Bible college students spent their childhood in towns with populations from 1,000-10,000, compared to an average of 21% of university students. In contrast, an average of 12% of Bible college students were raised in cities with populations over 500,000, compared to an average of 44% of university students.

 TABLE 3-13 RURAL/URBAN RESIDENCE

COMMUNITY SIZE	CMBC %	PC %	ARTS %	ENG %	TOTAL %
< 1,000 Population	6	60	3	2	15
1,000-9,999	9	18	11	6	11
10,000-99,999	3	7	11	6	7
100,000-499,999	25	6	7	12	11
> 500,000	56	10	69	75	57
	-----	-----	-----	-----	-----
	100	100	100	100	100

9 missing cases

Student respondents can be expected to interpret a question as to where they are "currently spending most of their time" as a question of student residence, in contrast to permanent residence. The atypical numbers for Providence College must be understood as being influenced by the fact that it is the only one of the four groups that has a rural campus in a village of less than 1,000 population (the other three are located in the city of Winnipeg), that Providence freshmen are required to live in campus dormitories, and that many upperclassmen choose to remain in these campus residences.

E. Education

TABLE 3-14 HIGH SCHOOL RECORD

	CMBC	PC	ARTS	ENG	TOTAL
	%	%	%	%	%
Graduate Diploma	95	95	99	99	97
Graduate Equivalency	3	3	1		2
Neither	2	2		1	1
	-----	-----	-----	-----	-----
	100	100	100	100	100

11 missing cases

There were an insufficient number of cases who did not have a high school graduate diploma to warrant including this variable in further analysis.

 TABLE 3-15 TECHNICAL/VOCATIONAL EDUCATION

	CMBC %	PC %	ARTS %	ENG %	TOTAL %
None	93	80	89	96	90
Incomplete	3	8	4	1	4
Complete	3	12	7	3	6
	-----	-----	-----	-----	-----
	100	100	100	100	100

116 missing cases

If the Incomplete and Complete categories of technical/vocational education are combined, there is some variation here, with Providence College having a high of 20% of its students with some technical/vocational education, compared with a low of 4% for Engineering.

 TABLE 3-16 UNIVERSITY/COLLEGE EDUCATION

	CMBC %	PC %	ARTS %	ENG %	TOTAL %
None	37	22	18	14	20
Incomplete	52	46	71	71	63
Diploma/Cert.	3	14	1	2	4
Bachelor	8	18	10	14	13
	-----	-----	-----	-----	-----
	100	100	100	100	100

25 missing cases

The data on university/college education were intended to determine if the respondent had received any university/college education other than the program in which he or she was enrolled. For example, a response of Bachelor was meant to indicate that the respondent held a previous Bachelors degree in addition to the one for which he or she was now studying. However, it was noted during data entry that many freshmen indicated "incomplete" and many seniors indicated "Bachelor" with the qualification written in that they were about to receive it in a month or two. This confusion is reflected in the finding that 26% of all seniors said they had a Bachelors degree, whereas only 1% of all freshmen said they did. As a result, these data are quite unreliable.

TABLE 3-17 OTHER EDUCATIONAL QUALIFICATIONS

	CMBC Frh %	CMBC Sen %	PC Frh %	PC Sen %	ARTS Frh %	ARTS Sen %	ENG Frh %	ENG Sen %	TOTAL %
No	85	78	92	63	82	71	84	78	80
Yes	15	22	8	37	18	29	16	22	20
	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100

10 missing cases

It is curious that Providence College freshmen had the lowest rate of other educational qualifications (8%) and yet Providence seniors had the highest rate (37%) of such qualifications. Nevertheless, this correlates with the finding that Providence seniors were considerably older than the other groups (see Table 3-10).

F. Religion

TABLE 3-18 RELIGIOUS PREFERENCE

	CMBC %	PC %	ARTS %	ENG %	TOTAL %
Roman Catholic			30	28	19
Anglican			6	10	5
United Church			9	10	6
Presbyterian		3	1	1	1
Lutheran			2	7	3
Evangelical	5	79	6	4	20
Other	92	18	17	16	28
None	3		29	24	17
	-----	-----	-----	-----	-----
	100	100	100	100	100

3 missing cases

The distribution of religious preference for the university students is considerably different than the 1981 census figures for Manitoba, but this is to be expected from a university population 11 years later. The largest differences are a drop in United Church from 24% to 9%, a rise in Others from 4% to 16%, and a rise in Nones from 8% to 26%. A distribution resembling the general population cannot be expected in Bible colleges. These are confessional schools where student attendance is itself already a statement of the narrowing of religious preference. As mentioned earlier, the category of Other proved to be problematic. Most CMBC students refused

to state their preference as Evangelical/Conservative, selecting Other instead and writing in Mennonite, even though Mennonites are conventionally included under the Evangelical/Conservative umbrella (Bibby, 1987). Charismatics, non-denominationalists and others who would normally be classified as Evangelical/Conservative also tended to reject the labels of traditional groups and include themselves under Other. This occurred in the Providence and university groups as well, and is in keeping with trends away from religious labels toward less partisan spirituality. Had more detailed sub-categories been given, both CMBC and Providence students would very likely have selected the Evangelical/Conservative grouping almost exclusively.

TABLE 3-19 ATTENDANCE AT RELIGIOUS SERVICES

	CMBC Frh %	CMBC Sen %	PC Frh %	PC Sen %	ARTS Frh %	ARTS Sen %	ENG Frh %	ENG Sen %	TOTAL %
Never	2				28	36	23	38	20
1-3 X/Yr	2				22	29	24	22	16
3-11 X/Yr	5	9		3	12	20	19	7	10
1-3 X/Mo	24	26	8	18	17	9	14	12	15
1-3 X/Wk	50	57	62	77	21	6	20	21	33
> 3 X/Wk	17	9	30	3					6
	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100

3 missing cases

The Bible college reports of attendance at religious services indicate that such students are more religiously committed than their university counterparts, but their

high attendance rates are probably inflated by daily chapel services on the respective campuses, which at Providence are compulsory, and therefore include more than "home church" attendance. The lowest attendance rates of Arts seniors, combined with their highest ratio of no religious preference, is the first indication that they may be the most irreligious group.

TABLE 3-20 IMPORTANCE OF RELIGION IN CHILDHOOD

IMPORTANCE	CMBC	CMBC	PC	PC	ARTS	ARTS	ENG	ENG	TOTAL
	Frh	Sen	Frh	Sen	Frh	Sen	Frh	Sen	
	%		%		%		%		%
1. Not Imp.	2			5	15	17	11	16	10
2.			6	8	3	9	10	12	7
3.	7	4	4	3	11	11	11	18	10
4. Average	19	13	14	13	24	24	11	12	17
5.	24	39	25	13	23	23	23	21	23
6.	21	22	23	21	12	9	17	10	16
7. Very Imp.	26	22	29	39	13	8	16	12	18
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100	100	100

	MEAN	STANDARD DEVIATION
CMBC Freshmen	5.31	1.44
Seniors	5.43	1.12
PC Freshmen	5.43	1.43
Seniors	5.36	1.86
ARTS Freshmen	4.27	1.85
Seniors	3.85	1.81
ENG Freshmen	4.39	1.94
Seniors	3.87	1.95
Entire Sample	4.56	1.86

4 missing cases

The data on the importance of religion in childhood show the stronger religious upbringing of Bible college students (mean of Bible college means = 5.38) compared to university students (mean of university means = 4.10). These data must be qualified by accumulated evidence in the literature that individuals tend to "rewrite" their pasts in order to bring them into conformity with their present orientations, hence these scores may be a function of retrospective reporting. The overall freshmen-senior comparison shows a cohort effect in which the younger freshmen consistently report slightly higher levels of religious importance in their childhood (mean of freshmen means = 4.85) than do the older seniors (mean of senior means = 4.63). This difference would appear to run counter to the secularization thesis, but may in fact support the secularization thesis if evidence of rewriting could be found.

TABLE 3-21 IMPORTANCE OF RELIGION BEGINNING PROGRAM

IMPORTANCE	CMBC		PC		ARTS		ENG		TOTAL
	Frh	Sen	Frh	Sen	Frh	Sen	Frh	Sen	
	%		%		%		%		%
1. Not Imp.		4		3	20	23	16	22	13
2.				3	11	20	20	15	11
3.				3	12	9	15	21	9
4. Average	5	4	2	3	15	20	13	16	11
5.	14	17	4	8	12	15	19	10	12
6.	21	39	22	23	16	11	7	7	15
7. Very Imp.	60	35	73	59	15	3	10	9	27
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100	100	100

	MEAN	STANDARD DEVIATION
CMBC Freshmen	6.36	.91
Seniors	5.87	1.36
PC Freshmen	6.65	.66
Seniors	6.15	1.44
ARTS Freshmen	3.95	2.12
Seniors	3.29	1.82
ENG Freshmen	3.60	1.91
Seniors	3.35	1.90
Entire Sample	4.55	2.15

5 missing cases

The high importance of religion for Bible college students (mean of Bible college means = 6.26) at the beginning of their programs of education compared to university students (mean of university means = 3.55) is self-explanatory; if religion were not important to Bible college students they would not have chosen to attend a private religious educational institution.

TABLE 3-22 CURRENT IMPORTANCE OF RELIGION

IMPORTANCE	CMBC		PC		ARTS		ENG		TOTAL
	Frh	Sen	Frh	Sen	Frh	Sen	Frh	Sen	
	%		%		%		%		%
1. Not Imp.				3	15	15	14	16	10
2.					11	11	13	9	7
3.	2				8	14	11	13	8
4. Average	2				17	17	11	15	10
5.	2	4	2	5	13	21	16	16	12
6.	24	35	15	13	11	9	16	18	16
7. Very Imp.	69	61	83	80	25	14	19	13	38
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100	100	100

	MEAN	STANDARD DEVIATION
CMBC Freshmen	6.55	.86
Seniors	6.57	.59
PC Freshmen	6.81	.44
Seniors	6.62	1.07
ARTS Freshmen	4.37	2.14
Seniors	4.00	1.95
ENG Freshmen	4.23	2.09
Seniors	4.12	2.01
Entire Sample	5.07	2.07

4 missing cases

The Bible college students again ranked the current importance of religion much higher (mean of Bible college means = 6.64) than the university students (mean of university means = 4.18), but the difference may have been even greater if the wording of the questions had remained consistent. The questionnaire item on the current importance of religion was worded slightly differently than the items on the importance of religion during childhood and at the beginning of the program of education. In asking about the current importance of religion, the term "spirituality" was included in an attempt to broaden the concept for those respondents who may have come to view conventional, institutionalized religiosity or their own possible previous adherence to it in negative terms, but nevertheless still valued religious faith. Therefore, item #11 a) read "Religion was important to me when I was growing up," whereas #11 c) read "My religion or spirituality is important to me now." Many of the university cases in particular inserted marginal comments noting this addition, and said that they gave a higher score to item #11 c. than what they would have given had it contained only "religion." In retrospect, it would have been better to create a separate item in the questionnaire to measure spirituality.

TABLE 3-23 CHANGE IN IMPORTANCE OF RELIGION
FROM CHILDHOOD TO THE PRESENT

CHANGE	CMBC Frh %	CMBC Sen %	PC Frh %	PC Sen %	ARTS Frh %	ARTS Sen %	ENG Frh %	ENG Sen %	TOTAL %
-2 Much less					20	14	20	7	10
-1 Little less		4		5	11	21	11	19	11
0 No change	38	35	35	44	33	32	41	43	38
+1 Little more	21	17	21	18	19	9	10	13	15
+2 Much more	41	44	44	33	17	24	17	18	27
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100	100	100

	MEAN	STANDARD DEVIATION
CMBC Freshmen	1.02	.90
Seniors	1.00	1.00
PC Freshmen	1.10	.89
Seniors	.79	.98
ARTS Freshmen	.03	1.35
Seniors	.09	1.36
ENG Freshmen	-.07	1.31
Seniors	.15	1.15
Entire Sample	.38	1.26

4 missing cases

One reason for measuring the importance of religion at three different points in time was to be able to show change in the importance of religion over time in a fashion similar to Currie's (1976) method. When an index of change was computed by comparing the importance of religion in childhood with the current importance of religion, the best possible measure of the secularization thesis was obtained, because the two points in time were compared by each individual case. This index of change was computed by calculating to what extent and in which direction each case indicated change in the importance of religion. Based on the seven-point Likert scales in the respective items, changes of plus or minus 2-6 were categorized as +2 "much more important" or -2 "much less important," while changes of plus or minus 1 were categorized as +1 "a little more" or -1 "a little less" important. Not surprisingly, the data show that the importance of religion or spirituality clearly increases for Bible college students (mean of Bible college means = .98). Quite surprisingly, in light of the secularization thesis, the data also show that the importance of religion or spirituality actually increases very slightly for university students (mean of university means = .05). The engineering freshmen were the only group to secularize (-.07). None of the differences between freshmen and seniors within any of the four programs of education were statistically significant at the .05 level.

TABLE 3-24 CHANGE IN IMPORTANCE OF RELIGION
DURING POST-SECONDARY EDUCATION

CHANGE	CMBC	CMBC	PC	PC	ARTS	ARTS	ENG	ENG	TOTAL
	Frh	Sen	Frh	Sen	Frh	Sen	Frh	Sen	
	%	%	%	%	%	%	%	%	%
-2 Much less	2	4		3	25	23	31	16	16
-1 Little less	7		4	10	12	20	19	19	13
0 No change	26	52	33	44	36	44	31	59	40
+1 Little more	27	30	26	23	16	2	11	3	15
+2 Much more	36	13	37	21	11	12	7	3	16
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100	100	100

		MEAN	STANDARD DEVIATION
CMBC	Freshmen	.88	1.06
	Seniors	.48	.90
PC	Freshmen	.96	.94
	Seniors	.49	1.02
ARTS	Freshmen	-.25	1.30
	Seniors	-.39	1.21
ENG	Freshmen	-.56	1.25
	Seniors	-.43	.90
Entire Sample		.007	1.25

4 missing cases

When an index of change is computed by comparing the importance of religion at the beginning of post-secondary education with the current importance of religion, a

measure of the effect of post-secondary education on religiosity is obtained if other variables are controlled. This is a much researched question, as reviewed in Chapter One, II. D. Consistent with the conclusions of the majority of studies, these data clearly show that the importance of religion declines in university (mean of university means = $-.41$), whereas the importance of religion increases during Bible college (mean of Bible college means = $.70$). The increase reported by Bible college students may even have been compressed, because their mean score for importance of religion at the beginning of their program was 6.26 on a 7-point scale, leaving them little room to report an increase.

What is most curious about these data is that in all but university liberal arts, the importance of religion changed more for freshmen than for seniors, although only the Providence College change was statistically significant (2-tailed probability = $.025$). Due to a time span differential of only two months, freshmen scores for the current importance of religion were expected to be virtually the same as their scores for the importance of religion at the beginning of their educational program, and if there was substantial change, it was certainly not expected to surpass the change reported by seniors in the same program. Perhaps the most plausible explanation, at least for the Bible college students, is that freshmen may have been overreacting to the freshness of the religious input and context of their educational program, and overreporting personal religious change because of what they may have perceived as its social, or at least sub-cultural, desirability. Bible college seniors, in contrast, may have already overcome what may have been a honeymoon effect in their education.

The data on the difference between importance of religion at the beginning of the educational program and the current importance of religion were also explored for possible evidence of the effects of the spirituality factor introduced in the item measuring the latter. If the freshmen would have reported no significant difference, the data would have indicated that, substantively, not only did education not have an effect on the importance of religion in two months, but also, methodologically, the addition of the term "spirituality" had not introduced a contaminating variance. However, the mean importance of religion at the beginning of the educational program for all freshmen combined was 4.85. The mean current importance of religion or spirituality for all freshmen combined was 5.24. The difference is statistically significant (2-tailed probability = .000), therefore, both effects remain plausible. We cannot know by this data if education or the wording of the item or both caused the change in importance of religion.

One further elaboration of the findings on religion was computed in an effort to explore the effect of religion on faith development, and the possible subtleties hidden in the religion-spirituality nexus. A new variable manifesting the differences between religious behaviour and religious valuation was created. The first three response options of the attendance at religious services variable (Never - 3-11 times per year) were recoded as low attendance, and the last three response options (1-3 times per month - more than 3 times per week) were recoded as high attendance. Then the first four response options of the current importance of religion variable (1-4) were recoded as low importance, and the last three response options (5-7) were recoded as high importance. Finally, four new categories were created by combining the recoded

variables: a Secular group of low attendance/low importance, a Behaviour group of high attendance/low importance, a Religious group of high attendance/high importance, and a Value group of low attendance/high importance. The findings on this religious behaviour/valuation difference are presented in Table 3-25.

TABLE 3-25 BEHAVIOUR/VALUATION DIFFERENCE

GROUP	NUMBER	PERCENT	MEAN STAGE	STD. DEV.
Secular	136	31%	4.15	.44
Behaviour	13	3%	4.23	.56
Religious	219	51%	4.05	.39
Value	66	15%	4.24	.50

5 missing cases

That the Secular and Religious groups are the two largest groups is not surprising, but the finding that the difference between their stage means is statistically significant (2-tailed probability = .022) sheds some interesting and important light on Fowler's theory. According to these data, religion is indeed a factor in faith development, and inasmuch as the Secular group had a statistically significant higher stage mean, religion appears to retard faith development as Fowler defines it.

In attempting to track the spirituality factor, it was anticipated that respondents most likely to be affected by the additional spirituality dimension in the questionnaire item measuring current importance of religion or spirituality would also most likely be those who reported low attendance at religious services and no religious preference.

These latter two indicators, it was reasoned, would represent their rejection of traditional institutionalized religiosity while nevertheless rating the importance of their religion or spirituality very highly. This possibility was enhanced by the suggestions in Fowler's theory that the higher faith stages tend to transcend religious particularity, and the finding that the mean stage of the Value group (4.24) was statistically significantly higher (2-tailed probability = .015) than the mean of the rest of the sample (4.09). However, a cross-tabulation of religious preference by behaviour/valuation difference produced the findings presented in Table 3-26.

TABLE 3-26 BEHAVIOUR/VALUATION DIFFERENCE
BY RELIGIOUS PREFERENCE

	RC %	ANG %	UNTD %	PRES %	LUTH %	EVAN %	OTHR %	NONE %	TOTAL %
Secular	28	48	70	33	50	2	10	82	31
Behaviour	11	4	4			2			3
Religious	43	17	4	50	8	91	79		51
Value	19	30	22	17	42	5	12	18	15
	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100	----- 100

5 missing cases

The data on behavior/valuation difference show the Value group to be fairly well distributed over all religious preferences, and not concentrated in the None category. As a result, more exact effects of the spirituality factor or the exact location of those whom it may have affected cannot be identified. These data should not be interpreted

as a fair comparison of religious belonging and commitment among various religious preferences (Currie, 1976) because the sample contains a special population of Evangelical/Conservatives.

G. Cross-Cultural Experience

TABLE 3-27 CROSS-CULTURAL EXPERIENCE

	CMBC %	PC %	ARTS %	ENG %	TOTAL %
None	52	53	48	49	50
Some	34	29	35	31	32
Much	14	19	17	20	18
	---	---	---	---	---
	100	100	100	100	100

4 missing cases

The scores on cross-cultural experience are perhaps surprisingly well and evenly distributed for a relatively young population.

H. Interpersonal Stress

TABLE 3-28 GAIN OR LOSS OF SPOUSE

	CMBC %	PC %	ARTS %	ENG %	Frh %	Sen %	TOTAL %
Gained	6	12	7	7	4	13	8
Lost			1	1	1	1	1
Neither	94	88	92	91	95	87	91
	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100

3 missing cases

TABLE 3-29 GAIN OR LOSS OF CHILD

	CMBC %	PC %	ARTS %	ENG %	Frh %	Sen %	TOTAL %
Gained	2	6	4	4	3	5	4
Lost	5	1	2	1	2	3	2
Neither	94	93	94	95	95	92	94
	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100

3 missing cases

TABLE 3-30 GAIN OR LOSS OF PARENT/GUARDIAN

	CMBC %	PC %	ARTS %	ENG %	Frh %	Sen %	TOTAL %
Gained	6	6	6	1	5	3	4
Lost	3	5	6	4	4	6	5
Neither	91	90	88	94	91	91	91
	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100

5 missing cases

TABLE 3-31 GAIN OR LOSS OF CLOSE FRIEND

	CMBC %	PC %	ARTS %	ENG %	Frh %	Sen %	TOTAL %
Gained	51	42	43	38	44	41	42
Lost	14	9	21	17	16	16	16
Neither	35	49	36	45	40	43	42
	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100

3 missing cases

All four of the Gain or Loss items were intended to measure interpersonal stress, with either gain or loss constituting the experience of (positive or negative) stress, and neither constituting no stress. The poor variation in the spouse, child, and parent data requires that the gains and losses be combined just to achieve a minimal

9:1 ratio for analysis. The friend data could be taken as it is.

I. Emotional Distress

TABLE 3-32 EMOTIONAL DISTRESS

	CMBC	PC	ARTS	ENG	Frh	Sen	TOTAL
	%	%	%	%	%	%	%
Yes	15	23	25	25	25	21	23
No	85	77	75	75	75	79	77
	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100

2 missing cases

CMBC students reported slightly less experience of emotional distress than the virtually identical one-quarter rates reported by the other three groups.

III. DATA ANALYSIS

The analysis of quantitative data that follows is based upon the 411 valid cases in the data set generated by this study. Chapter Two III. F. 2. reported that 439 useable questionnaires were received from the mail survey, but Section I. B. above reported how 28 of these cases were ruled unscorable in terms of stage of faith development, leaving 411 valid cases. The effect of this data cleaning on the size of the sample in each of the eight respondent type groups is presented in Table 3-33.

TABLE 3-33 VALID CASES BY RESPONDENT TYPE

	USEABLE	UNSCOREABLE	VALID	PERCENT OF SAMPLE
CMBC Freshmen	42	4	38	9%
Seniors	23	2	21	5%
PC Freshmen	53	2	51	12%
Seniors	39	1	38	9%
ARTS Freshmen	76	8	68	17%
Seniors	66	1	65	16%
ENG Freshmen	72	8	64	16%
Seniors	68	2	66	16%
Totals	439	28	411	100%

Section I. C. above noted that there was low variation of faith development stages among the 411 valid cases. This makes it less likely that substantial differences between groups will appear when the cases are categorized according to the eight basic respondent types, the four program types, or the two year types. This probability proved to be true in the findings, as presented in Tables 3-34, 3-35, and 3-36.

TABLE 3-34 STAGES BY RESPONDENT TYPE

STAGE	CMBC	CMBC	PC	PC	ARTS	ARTS	ENG	ENG	TOTAL
	Frh	Sen	Frh	Sen	Frh	Sen	Frh	Sen	
	%	%	%	%	%	%	%	%	%
2-3					2				1
3			8	3	10	3	5		4
3-4		14	8	5	3	3	2	8	5
4	79	71	77	79	56	46	53	73	64
4-5	8	5	8	11	15	31	22	17	16
5	13	10		3	15	17	19	3	11
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	100	100	100	100	100	100	100	100	100

Chi-Square

Value = 74.33 DF = 35 Significance = .0001

	MEAN	STANDARD DEVIATION
CMBC Freshmen	4.17	.35
Seniors	4.05	.38
PC Freshmen	3.92	.34
Seniors	4.03	.31
ARTS Freshmen	4.08	.57
Seniors	4.28	.46
ENG Freshmen	4.24	.49
Seniors	4.08	.29
Entire Sample	4.12	.44

TABLE 3-35

STAGES BY PROGRAM

STAGE	CMBC PC		ARTS	ENG
	%	%	%	%
2-3			1	
3		6	7	2
3-4	5	7	3	4
4	76	78	51	63
4-5	7	9	23	19
5	12	1	16	11
	-----	-----	-----	-----
	100	100	100	100

Chi-Square

Value = 38.51 DF = 15 Significance = .0008

	MEAN	STANDARD DEVIATION
CMBC	4.13	.37
PC	3.97	.33
ARTS	4.18	.53
ENG	4.16	.41

TABLE 3-36

STAGES BY YEAR

STAGE	FRESHMEN %	SENIORS %
2-3	1	
3	6	2
3-4	3	6
4	64	65
4-5	14	19
5	12	8
	-----	-----
	100	100

Chi-Square

Value = 11.58 DF = 5 Significance = .0411

	MEAN	STANDARD DEVIATION
Freshmen	4.11	.48
Seniors	4.13	.38

A. Specific Hypotheses

Based upon the discussion of the theory of faith development and the nature of post-secondary education contained in Chapter One, and in accordance with the procedures specified in Chapter Two, the following statements indicate the patterns of outcomes that were anticipated in the findings. They thereby guided the principal data analysis by serving as the primary, specific hypotheses of this research project.

1. University freshmen are not significantly different in levels of faith development from Bible college freshmen.
2. University liberal arts seniors show significantly more advanced levels of faith development than university liberal arts freshmen.
3. University professional (engineering) seniors are not significantly different in levels of faith development from university professional (engineering) freshman.
4. University professional (engineering) seniors show significantly lower levels of faith development than university liberal arts seniors.
5. Bible college seniors show significantly more advanced levels of faith development than Bible college freshmen.
6. Bible college seniors are not significantly different in levels of faith development from university liberal arts seniors.
7. Canadian Mennonite Bible College seniors are not significantly different in levels of faith development from Providence College seniors.

B. Faith Development and Education

1. Quantitative Data Analysis

The specific hypotheses of this study can be tested by use of the parametric t-test, also known as the difference between the means, which is the conventional method of calculating whether or not the difference between two groups is statistically significant, and which has already been used in elaborating several of the demographic variables of the sample. Each hypothesis will be presented in the form of a dummy table, followed by brief reasons for the direction of the hypothesis, the t-test results, and speculation about possible explanations for alternative findings.

HYPOTHESIS #1

	<u>Freshmen</u>	
	University	Bible College
Mean Stage	EQUAL	EQUAL

This hypothesis compares the two university groups (liberal arts and professional) and the two Bible college groups (CMBC and Providence College) to determine if students who choose to enter secular educational institutions are any different in terms of faith development from those who choose to enter religious educational institutions. As such, it is a measure of the composition of the two general groups of students prior to any possible effect of secular or religious post-secondary

education. According to Fowler's theory, and primarily because of equal age and level of high school education, it was anticipated that these two groups would have statistically equivalent mean stage scores. In other words, it was anticipated that the relative religiosity of individuals would have no bearing on their level of faith development upon entry into post-secondary education.

TABLE 3-37

FRESHMEN T SCORES

UNVRSTY	MEAN	COLLEGE	MEAN	2-TAILED PROBABILITY
ARTS Frh	4.08	CMBC Frh	4.17	.379
ARTS Frh	4.08	PC Frh	3.92	.079
ENG Frh	4.24	CMBC Frh	4.17	.435
ENG Frh	4.24	PC Frh	3.92	.000 *
SAME TYPE COMPARISON				
ARTS Frh	4.08	ENG Frh	4.24	.084
CMBC Frh	4.17	PC Frh	3.92	.001 *

* = Significant at .05 Level

The data in Table 3-37 show the means of the various freshmen groups to be similar, although the highest is a secular university group and the lowest is a religious college group. However, the placings of the two types of groups overlap, with secular groups being highest (ENG) and second lowest (ARTS), religious groups being second highest (CMBC) and lowest (PC). Furthermore, only when the highest and lowest are compared directly is a statistically significant difference found between a secular and religious group, the importance of which is neutralized by the finding that a significant

difference can also be found between the two religious groups as well. This would suggest that level of religiosity alone is not a factor in faith development, or in the selection of the type of education a student desires. Although Providence freshmen would appear by the t-tests to be different in some way from the other three groups, examination of the means themselves suggests that it is actually engineering freshmen that are most substantively dissimilar. On balance, these data indicate that there is no significant difference between university freshmen and Bible college freshmen in levels of faith development; hypothesis #1 is accepted.

The effect of religiosity on faith development remains of special interest to this study because of the relevances of faith development theory to the sociology of religion, as manifest by the review of literature in Chapter One, II. A. Although it was assumed that Bible college freshmen would show much higher levels of religious commitment than university freshmen, choice of schools is certainly not by itself an adequate measure of an individual's religious commitment. Nevertheless, if the Bible college freshmen would have scored significantly higher or lower in levels of faith development, the data here would have provided additional evidence in the same direction to that already presented in the discussion of the religion variable in the demographics of the sample (see II. F. above), that religiosity is a significant factor in faith development. However, the finding of no significant difference here offsets the prior finding to some degree. A third, perhaps more decisive finding on religion will emerge from the regression analysis in Section III. C., Faith Development and Other Variables.

HYPOTHESIS #2

	<u>Liberal Arts</u>	
	Freshmen	Seniors
Mean Stage	LOWER	HIGHER

This hypothesis compares liberal arts freshmen with liberal arts seniors to determine if students at the end of such education are any different in terms of level of faith development from those who are just beginning. As such, it is an initial measure of any possible effect of secular post-secondary education on faith development stage change. According to Fowler's theory, and primarily because the nature of liberal arts education is to address questions of meaning in a manner that challenges conceptions of it, it was anticipated that these two groups would have statistically different mean stage scores. Furthermore, it was anticipated that liberal arts seniors would show higher levels of faith development than freshmen, a finding that would be necessary if such education is indeed a stimulus to faith stage change.

	MEAN		MEAN	1-TAILED PROBABILITY
Freshmen	4.08	Seniors	4.28	.016 *

* = Significant at .05 Level

The data in Table 3-38 show that the mean of liberal arts seniors is significantly different from the mean of liberal arts freshmen, and in the direction hypothesized.

This allows for the possibility, and even suggests, that secular liberal arts education does have an independent effect on faith development stage change to higher levels, although that conclusion cannot be reached until the effect of other variables is controlled. Nevertheless, statistically equal scores would have eliminated the possibility of finding such an effect. But because seniors scored significantly higher than freshmen, hypothesis #2 is accepted.

HYPOTHESIS #3

	<u>Professional</u>	
	Freshmen	Seniors
Mean Stage	EQUAL	EQUAL

This hypothesis tests for the notion that it is only certain types of education that function as a change agent regarding faith development. More specifically, it tests for the notion that education such as engineering, which does not focus on the human condition in terms of its existential meaning, does not effect change in the patterns and structures of faith. If engineering freshmen and seniors are statistically equivalent, that notion will be supported by the data. Like liberal arts, and again subject to further controls, a higher score for engineering seniors would indicate that professional education is also developmental in terms of faith development.

TABLE 3-39

PROFESSIONAL T SCORE

	MEAN		MEAN	2-TAILED PROBABILITY
Freshmen	4.24	Seniors	4.08	.020 *

* = Significant at .05 Level

The data in Table 3-39 represent a major anomaly in the research findings. Not only do they show a statistically significant difference between engineering freshmen and seniors, contrary to the hypothesis, but the seniors scored significantly lower in levels of faith development than freshmen. This is clearly problematic because, although Fowler's theory describes development through the faith stages as a spiral instead of linear process, it does not allow for reversals or regressions in the stages.

There are at least three possible explanations for this finding, all of which are methodological, that should be considered before the theory or the measuring instrument are questioned on the grounds of these data. Two can be tested by inspecting the survey data more closely, while a third derives from the nature of the data itself. First, the finding may be a measurement artifact. A certain amount of rounding off occurs in calculating the stage score for each case, in that the lowest mean of the four groups of rankings for each case may vary anywhere from 1.0 to 2.2 and still determine the final stage score for that case. For example, a case in which a lowest mean of 1.25 occurs in the group of stage 4 items will be assigned the overall

score of Stage 4. Another case in which the lowest mean score also occurs in the group of Stage 4 items, but is 1.80, will nevertheless also be assigned the overall score of Stage 4. Yet it is possible to call the first case a "purer" Stage 4 individual, or at least one in whose score more confidence can be placed. These finer differences are lost when the two cases are simply taken as Stage 4 cases in data analysis. This rounding off in the scoring of the cases in any particular group may disguise real differences between it and another group.

In the context of the unexpected finding that engineering seniors scored lower than engineering freshmen, comparing the mean of their lowest stage means instead of only considering their mean stage scores could conceivably reveal that one group's mean stage score is significantly "purer" than the other's, and that less confidence can be placed in the difference. If the engineering freshmen had a mean of the lowest mean of 1.30 and the engineering seniors had a mean of the lowest mean of 1.95, it could be interpreted that, because the senior scores are not as pure, the rounding off process may have created a difference that is less "real." However, examination of the actual data on the modal stage of both groups (Stage 4) reveals that engineering freshmen had a mean of the lowest mean of 1.73, while the engineering seniors had a mean of the lowest mean of 1.64, a difference of .09. Furthermore, the mean difference in the other three school groups was also .09, and seniors had the lowest mean of the lowest mean in all four groups. In other words, no significant differences have been hidden by the stage scores; the difference between the groups does not appear to be a measurement artifact.

A second possible explanation for the unusual finding is that there may be some other exigency in the demographics of the sample that may explain the finding. Of the factors measured, the one in which engineering seniors were most unusual is sex. When the male-female ratios are calculated separately, the engineering seniors were 71% male and 29% female, whereas the rest of the sample was 47% male and 53% female. It has been suggested (Jardine and Viljoen, 1992; Stokes, 1989; Bradley, 1983) that Fowler's theory may contain a sex bias which associates typically male perspectives with Stage 4 faith, and perhaps the disproportionate number of males in the engineering senior sample pulled that mean down past the freshmen toward 4, and distorted the findings in the process.

However, examination of the survey data reveals that the sex differences are not significant. The mean faith stage score for all engineering seniors was 4.08. Broken down by sex, the mean faith stage score for male engineering seniors was 4.05, whereas the mean for female engineering seniors was 4.13, a difference of .08, which according to a t-test was not statistically significant (2-tailed probability = .374). Furthermore, the mean sex difference of the other seven respondent types was .12, with males being the sex with the higher mean in 4 of the 7 groups. The regression analysis performed as control for this study and discussed in III. C. above also failed to show sex to be a significant variable. Therefore sex must also be ruled out as an alternative explanation for the unexpected difference between the faith stage scores of engineering freshmen and seniors.

A final possible explanation for the unexpected finding is simply that the data

are cross-sectional, not longitudinal. Two different groups of subjects were measured at roughly the same point in time, instead of measuring one group of subjects when they were freshmen, and then measuring the same group when they were seniors. Had scores on the same subjects been shown to decline or reverse, the contradiction would have been considerably more alarming. As it is, the finding may be due to some cohort effect in the sampling. Testing for this possibility is beyond the capacity of the cross-sectional data of this study.

Whatever the reasons for the surprising finding that engineering freshmen scored significantly higher than engineering seniors, hypothesis #3 must clearly be rejected.

HYPOTHESIS #4

	<u>University Seniors</u>	
	Professional	Liberal Arts
Mean Stage	LOWER	HIGHER

This hypothesis was intended to serve as an elaboration of hypothesis #3. Professional education was not expected to produce significantly higher levels of faith stage development, but even if it did, this hypothesis suggests that the developmental effect of professional education would be significantly less than the effect of liberal arts education. This expectation was due to the differing amounts of focus on human existential meaning contained in these two types of education. If hypothesis #1, that there was no difference in freshmen, could be supported, then measuring engineering

and liberal arts seniors would be a fair comparison of not only their respective average level of faith development achieved, but also the amount of faith stage change stimulated.

TABLE 3-40

UNIVERSITY SENIORS T SCORE

	MEAN		MEAN	1-TAILED PROBABILITY
Engineer	4.08	Arts	4.28	.002 *

* = Significant at .05 Level

The data in Table 3-40 show that the mean of engineering seniors is significantly different than the mean of liberal arts seniors, and in the direction hypothesized. If these two groups would have been equal, the implication would have been that the content of education is not a factor in the amount of effect on faith development. It was theoretically conceivable that professional education would actually score higher if the nature of the content of liberal arts education was such that it suppressed faith development. The finding of this data, that liberal arts seniors were significantly higher than engineering seniors, was no doubt facilitated by the seemingly anomalous low mean stage of the engineering seniors. Nevertheless, the evidence is such that hypothesis #4 is accepted.

HYPOTHESIS #5

	<u>Bible College</u>	
	Freshmen	Seniors
Mean Stage	LOWER	HIGHER

This hypothesis is a parallel to hypothesis #2 in that Bible college education was expected to facilitate faith stage change. Like liberal arts education, the nature of Bible college education is to address questions of meaning in an intentionally developmental manner. Unlike secular liberal arts education, this address occurs in an explicitly religious and confessional context. According to Fowler's theory, the religiosity of the context and content is irrelevant to the essence of faith stage development, which has to do with the patterns and structures of how any content is held. Therefore, the processing of questions of meaning in Bible college curricula was expected, like liberal arts education, to produce two groups that would have statistically different mean stage scores. More specifically, it was anticipated that Bible college seniors would show higher levels of faith development than Bible college freshmen.

TABLE 3-41 BIBLE COLLEGE T SCORES

Freshmen	MEAN	Seniors	MEAN	1-TAILED PROBABILITY
CMBC	4.17	CMBC	4.05	.110
PC	3.92	PC	4.03	.068

* = Significant at .05 Level

Unlike the data on liberal arts freshmen and seniors, the data in Table 3-41

show that the mean faith stage of Bible college freshmen is not significantly different than the mean of Bible college seniors in the respective colleges. The evidence of this study points to the curious proposition that Bible college education does not promote faith development, as defined by Fowler, whereas secular liberal arts education does.

One possible explanation, already put forth regarding liberal arts education in hypothesis #2 but even more plausible here, is that the intent and effect of Bible college education may not be the sponsorship of faith stage transition, but rather the sponsorship of faith stage "equilibration." In other words, particular, institutional, religious visions of faith may be more likely to consider "middle" stages as the most desirable, and to focus the education they provide on maintaining those stages. In this way, their education may have the intended effect of discouraging faith stage transitions. In contrast, secular visions of faith may be more likely, like Fowler, to consider the later stages to be the "highest" or most desirable, and to focus the education they provide on encouraging transitions. Supposedly, education can serve any vision of faith and either intention effectively. Because this study is not designed to identify respective, institutional visions of what constitutes desirable faith maturity, interpretations of the effectiveness of education could be confounded by differing institutional goals. The statistically equivalent scores obtained from Bible college freshmen and seniors are merely a measure of the effect of Bible college education on faith development, the evaluation of which must be held subject to their undetermined intent. This qualification notwithstanding, hypothesis #5 must still be rejected.

HYPOTHESIS #6

	<u>Seniors</u>	
	Bible College	Liberal Arts
Mean Stage	EQUAL	EQUAL

This hypothesis is a parallel to hypothesis #1 in that, like the freshmen, no significant difference in level of faith development was expected between Bible college and liberal arts seniors. This was another test for the effect of religiosity on faith development, this time not just personal religiosity brought to the context of education, but the religiosity of the content of education. Again, according to Fowler's theory, there is no developmental difference between secular faith and religious faith. Therefore, assuming that secular liberal arts and Bible college programs are equivalent in terms of content and level and different only in religious orientation, and assuming that there is no difference between the freshmen in Hypothesis #1, the seniors in the two types of education should not be significantly different in faith development.

TABLE 3-42

SENIORS T SCORES

	MEAN		MEAN	2-TAILED PROBABILITY
CMBC	4.05	ARTS	4.28	.042 *
PC	4.03	ARTS	4.28	.003 *

* = Significant at .05 Level

The data in Table 3-42 show that there is a significant difference in the mean stage of faith development between both Bible colleges and liberal arts education, and

that the latter is more progressive. This represents a complete reversal of more conventional, religious conceptions of faith, in which Bible college seniors would be expected to score higher in faith development. Fowler's theory posits that there would be no difference, but the evidence indicates that secular liberal arts education is more oriented toward the higher stages of Fowler's model than is Bible college education. Again, whether this is intentional or not is beyond the scope of this study. But by this data, hypothesis #6 must be rejected.

HYPOTHESIS #7

	<u>Bible College Seniors</u>	
	Canadian Mennonite	Providence
Mean Stage	EQUAL	EQUAL

These two Bible colleges were selected for this study because they represent much of the variation among Bible colleges in Canada that provide university level education. This hypothesis tests the assumption that they are nevertheless statistically equivalent in terms of their effect on faith development. The findings here were intended to provide information on potential institutional differences within the orbit of Bible colleges, differences that would then need to be taken into account or combined by averaging if the category of Bible colleges is to be compared with other categories.

TABLE 3-43 BIBLE COLLEGE SENIORS T SCORES

	MEAN		MEAN	2-TAILED PROBABILITY
CMBC	4.05	PC	4.03	.816

* = Significant at .05 Level

As hypothesized, the data in Table 3-43 show no significant difference in the mean level of faith stage between seniors from Canadian Mennonite Bible College and Providence College. This suggests that either one of these schools could have served as an adequate sample, had they contained adequate numbers of students, just as the University of Manitoba served as a single university in the sampling, and engineering as a single profession. Significant differences here would have called for a more refined comparison of the different types of Bible colleges with liberal arts and professional education. It would also have raised more pressing questions about potentially discrepant intent and/or effectiveness of the respective Bible colleges, although, as already implied, those questions could be asked of all the different categories of education in this study. However, the data defuses such questions somewhat, because hypothesis #7 is accepted.

Several observations can be made in summarizing the findings derived from the t-tests employed to test the seven specific hypotheses of this study. First, it must be borne in mind that the data set for the comparison of groups suffered from two limitations even prior to analysis. The lack of adequate variation in faith stage scores

(64% of all cases were scored as Stage 4, and the range of group means was 3.92 - 4.28) meant that strong patterns based on type of education were not likely to emerge, that differences were likely to be slight. Also, the presence of only 21 valid cases in the group of CMBC seniors placed some of the assumptions of parametric tests of significance into question, such as the assumption of normal distribution already questionable because of poor variation.

Ranking the respondent types by mean stage score from highest to lowest, as in Table 3-44, reveals how undifferentiated, unordered and inconclusive the data set was.

TABLE 3-44 RANKING OF RESPONDENT TYPE STAGE MEANS

	MEAN	STANDARD DEVIATION
ARTS Seniors	4.28	.46
ENG Freshmen	4.24	.49
CMBC Freshmen	4.17	.35
ARTS Freshmen	4.08	.57
ENG Seniors	4.08	.29
CMBC Seniors	4.05	.38
PC Seniors	4.03	.31
PC Freshmen	3.92	.34
Entire Sample	4.12	.44

It is noteworthy that three of the top four groups are freshmen, and conversely, that three of the bottom four groups are seniors. Two of the four program types (ENG and

CMBC) had freshmen with higher mean scores than seniors. Four of the top five groups are university groups, the bottom three are Bible college groups. Given these results, it is perhaps surprising that even four of the seven hypotheses were accepted. Then again, two of the four accepted hypotheses were null hypotheses that are likely to be confirmed by inadequate data variation alone. Furthermore, acceptance was based on statistical significance, or the probability that differences or similarities in the data were "real" or merely due to the chance of sampling error. This cannot be confused with substantive significance, or that which is important from a practical or theoretical point of view (Chadwick, Bahr, and Albrecht, 1984).

In total, the t-tests granted little substantive significance to the effect of education on faith development if effect is understood only as the ability and tendency to induce faith stage change. Liberal arts seniors were shown to have higher faith stages than liberal arts freshmen and professional seniors, but the differences were slight. However, substantive significance in this study is often derived from the finding of no statistically significant difference between groups. For example, the finding of no significant difference between university and Bible college freshmen, and between Bible college freshmen and Bible college seniors, is substantively significant in terms of the secondary interest of this study, the effect of religion on faith development. Conversely, the finding that Bible college seniors are significantly different than liberal arts seniors, which led to the rejection of the null in hypothesis #6, is also substantively significant for the effect of religion, even though the difference is slight. Even in the case of hypothesis #3, where, contrary to the hypothesis of no difference, engineering seniors were found to have significantly lower faith stages than engineering freshmen,

the substantive significance of the finding is greater than the slight difference in scores.

The reason substantive significance can be found in no statistically significant differences between groups is that one potential effect of education may be to reinforce or "equilibrate" a certain faith stage, thereby having effect by preventing, or at least discouraging change. T-tests alone cannot measure this effect adequately, so qualitative data were collected in an effort to measure it. As is shown in the following section, senior students gave more weight to the effect of their education on their faith development in their qualitative responses to the questionnaire than was calculated from their quantitative responses. In the final analysis, the substantive significance of the findings lies in the absence or direction of differences between groups, not in the magnitude.

2. Qualitative Data Analysis

The 48 item scale for measuring stage of faith development was supplemented by four additional items in the questionnaire mailed to seniors. These items inquired about the respondent's own perception of the effect of his or her education on his or her faith development. However, the terms used in these items must be noted because they did not address faith development directly. Following Fowler, the terms "faith" and especially "religion" were again carefully avoided because of their potential bias, as they had been throughout the scale. The title of the questionnaire referred to values, and these additional self-report items described the first 48 items as "perspectives or ways of thinking in life." One potential effect of this tactic in wording

may have been to further the cognitive bias in the concept of faith being measured; respondents reported on their "ways of thinking" in the context of the 48 items, and unknown to them, their responses were interpreted in terms of their level of faith development. Whether "ways of thinking" adequately taps faith development is a question reverting back to the nature of Fowler's theory.

The first of the additional items (#49) remained quantitative in nature, and asked the respondent to rate the extent to which his or her program of studies had influenced his or her "ways of thinking." The findings are presented in Table 3-45.

TABLE 3-45 EXTENT OF INFLUENCE BY EDUCATION
ON "WAYS OF THINKING"

INFLUENCE	CMBC Sen	PC Sen	ARTS Sen	ENG Sen	TOTAL
	%	%	%	%	%
1. Not at All			2	3	2
2.			2	7	3
3.	4	3	5	9	6
4. Somewhat	9	16	14	15	14
5.	22	24	28	31	27
6.	44	42	31	25	33
7. Very Much	22	16	20	10	16
	-----	-----	-----	-----	-----
	100	100	100	100	100
			MEAN	STANDARD DEVIATION	
	CMBC Seniors		5.70	1.06	
	PC Seniors		5.53	1.03	
	ARTS Seniors		5.37	1.31	
	ENG Seniors		4.79	1.51	
	Entire Sample		5.24	1.35	

The data on the extent of influence by education on "ways of thinking" provide evidence in support of the general directions of the hypotheses of this study. The mean of the entire sample, 5.24 on a 7-point Likert scale, indicates that seniors in general felt their education did have a considerable influence. Moreover, both Bible college groups of seniors reported their education as being more influential, and did so

with less variation, than both the university groups reported. Perhaps most notably, the engineering seniors reported considerably less influence (mean = 4.79) by their education than the other three groups reported (mean of CMBC, PC, and ARTS means = 5.53). Differences between engineering seniors and the other three groups were also the only differences that were statistically significant (2-tailed probabilities: ENG-CMBC = .010; ENG-PC = .009; ARTS-ENG = .021). Anticipation of this finding had prompted hypotheses (#4 and #6) that professional education would show significantly less effect on faith development than liberal arts or Bible college education.

The second additional item for seniors (#50) was the only opportunity on the questionnaire for open-ended, truly qualitative response. It read, "If your program of studies has had some influence on your ways of thinking, how has it done so?" By their responses, the students in essence identified the properties of their education to which they attributed cause for the influence or effect of their education. The data generated by this item were subjected to a content analysis in which the primary categories of response, or attributions, were identified and their frequency counted. Item #51 then asked if any specific course(s) had influenced their ways of thinking, and requested a listing of those that had. The findings of these two items are presented here in combination according to the four types of seniors in the sample. Only attributions appearing more than once and courses appearing more than twice are listed, and the frequencies of their appearances are given in raw scores as well as in a percentage of the seniors in each particular program.

LIBERAL ARTS

TABLE 3-46 ATTRIBUTIONS OF LIBERAL ARTS SENIORS

ATTRIBUTIONS	NUMBER	PERCENT
Exposure to different ways of thinking	17	26%
Critical thinking	16	25%
Open-mindedness/broadening	13	20%
Affirmation of thinking/commitment	7	11%
Learning about people/world	3	5%
Increase in confidence/autonomy	3	5%
Learning to live with uncertainty	2	3%
INFLUENTIAL COURSES		
Psychology	23	49%
Sociology	17	26%
Philosophy	9	14%
Social Psychology	8	12%
Political Science	7	11%
History	7	11%
Literature	5	8%
Anthropology	5	8%
Geography	5	8%
Women's Studies	4	6%
Native Studies	3	5%

Percent of Liberal Arts Seniors

who identified specific courses as influential = 74%

The written responses of the liberal arts seniors to the question of how their education had influenced their "ways of thinking" generally indicated that they were quite comfortable discussing the question. There was a total of 61 attributions from 65 respondents, for a rate of .94 attributions per respondent (some gave more than one, some gave none). Many of them wrote a fair amount and in a manner suggesting that they had already given the question some thought.

The rates of the top three attributions cluster together in a logical manner that is predictable from their conceptual and theoretical connectedness. Exposure to different people and other ways of thinking is the foremost (26%), and probably the first effect of liberal arts education, and is associated with Aspect D of Fowler's faith development theory, Bounds of Social Awareness. Aspect B, Social Perspective-taking, would also be implicated here because in order for the student-observer to be able to think according to the logic or see from the perspective of different others, exposure to those ways must penetrate his or her cognition to the point where it enables him or her to grasp mentally those different "ways of thinking." Nevertheless, to the extent that exposure and penetration alone do not necessarily imply an acceptance of or a willingness to include different others, the attribution of open-mindedness (20%) and its theoretical approximate, Aspect F: Form of World Coherence, are still distinct from mere exposure. As one 23 year-old male put it,

I have learned to consider both sides of an issue before determining a position, and after reaching that position still appreciating and understanding those who argue in support of the other side of the issue.

A 20 year-old female put it more succinctly.

I used to be very opinionated but I am now more open-minded and tolerant of differences in other people.

The third main attribution, critical thinking (25%), is strongly connected conceptually with Aspects C and E of Fowler's theory, Form of Moral Judgment and Locus of Authority. Critical thinking subjects all ideas, theories, information, values, and beliefs to rigorous, sceptical examination for the purpose of ascertaining their merit. Another 20 year-old female described how liberal arts education had made her thinking more critical.

It has taught me to evaluate and understand information and ideas in ways which I had not done before. It has encouraged me to consider situations with which I have had no contact. My studies have encouraged me to look beyond myself and my needs and to question ideas and beliefs that I hold.

The interrelatedness of exposure, open-mindedness, and critical thinking is best exemplified by the following comments from a 22 year-old, female senior.

[Liberal arts education] has opened my mind to various alternative ways of thinking, behaving, etc. I no longer see something as the way it appears. I am not as narrow-minded as I used to be. I don't accept things as readily as I used to; I look beyond the facts that are presented to me. It has made me realize that there are many things in life outside the tiny world I live in. It has done all this by exposing me to a wide variety of disciplines, theories, viewpoints, etc. I believe that this exposure has allowed me to step outside my small personal world and live life in a more global perspective.

The liberal arts data show a gap between the rate of attributions of influence to critical thinking and open-mindedness and the rate of attributions to affirmation and commitment (11%). By this evidence, the effect of liberal arts education is more often to acquaint the student with different ways of thinking and provide a critique of the different approaches, than it is to produce commitment to any one. Of those who did identify an effect by liberal arts on their commitments, most maintained that the effect was an affirmation of commitments they already held. For example, a 35 year-old

female insisted that "My studies have provided further evidence for beliefs I held prior to entering Arts." Similarly, a 23 year-old female observed that

It has given me a new perspective on which to evaluate my experiences. Mostly it has validated what I have always thought.

The 21 year-old male who testified that liberal arts had actually produced his personal religious convictions was clearly the exception.

The philosophy courses I have taken, specifically Philosophy of Religion, have helped me discover a truth (the truth) deep within myself that I profoundly believe to be universal. This truth, if one can adhere to it, is the solution to any problem.

Of the less frequently mentioned attributions, personal confidence and autonomy is relevant to several aspects of Fowler's faith development theory, as the following statement by a 21 year-old female arts senior illustrates.

My studies have given me a wider scope of vision in terms of my own self-importance, how I relate to others, as well as the world. For example, I no longer try to please my parents because of their status. Instead, I base my decisions on my own needs and wants as long as they do not harm others. I try to think independently, without disregarding the views of others.

Somewhat amusingly, one 22 year-old male seemed to be well beyond confidence in the merits of his English major.

My liberal arts education has resulted in a certain degree of disdain for those who I perceive to be of lesser intelligence, sensitivity, etc. than myself. I admit this not unashamedly. However, I also have started to question myself and expect a great deal more from myself. I am more confident. I am less afraid to admit when I'm wrong. I know that change inside oneself is part of being a student. I know that what I am doing is important, and I'm working on the ultimate way of showing those dunderheads in Engineering, Management, and Science that it is.

Little can be learned from the courses identified by liberal arts students as most

influential in shaping their "ways of thinking." The differing rates parallel and probably reflect the percentages of the sample majoring in the respective fields of study.

ENGINEERING

TABLE 3-47 ATTRIBUTIONS OF ENGINEERING SENIORS

ATTRIBUTIONS	NUMBER	PERCENT
Logical problem-solving	24	36%
Importance of ethical responsibility	6	9%
Exposure to different ways of thinking	5	8%
Affirmation of thinking/commitment	2	3%
INFLUENTIAL COURSES		
Technology in Society	7	11%
Psychology	4	6%
Sociology	3	5%
Anthropology	3	5%
Philosophy	3	5%
Engineering Law	2	3%
Calculus	2	3%

Percent of Engineering Seniors

who identified specific courses as influential = 37%

The most striking characteristic of the engineering student attributions of the effect of their education on their "ways of thinking," the most readily observed distinctive of the group, is the relative paucity of attributions. Many simply left items

#50 and #51 blank. There was a total of only 39 attributions from 66 respondents, for a rate of .59 attributions per respondent, compared to an average of 1.23 attributions per student for the other three groups. Only 37% of engineering seniors identified a specific course as having influence, compared to an average of 83% for the other three groups. Many of the attributions were curt, one-sentence statements. The engineering seniors were apparently unaccustomed to such self-reflective analysis, and one 23 year-old male expressed his discomfort with it.

I found after answering this questionnaire that I found myself thinking about things I normally do not like to think about. Interesting enough -- I was unaware that I did not like to think about them until I thought about it.

Examination of the attributions of engineering students reveals that the overwhelming majority refer to an alternate form of thinking from that produced in liberal arts seniors. Engineering seniors did not speak about critical thinking in the sense of appraising conceptual merit. Instead, they were very focused on problem-solving, and tended to use adjectives such as logical, systematic, methodical, and analytical. As a 22 year-old male put it,

[Engineering] taught me to analyze a problem and to find a solution. It taught me to be alert and to pay attention to details. It has allowed me to use logic and deduction to solve problems, and let me visualize solutions to problems.

What sets problem-solving apart from critical thinking as a "way of thinking" is that the former assumes closure is possible, and therefore pursues it with a confidence that the latter lacks. Engineering students expressed little uncertainty, as reflected in the observation of a 26 year-old male that "all problems can be subdivided and addressed as a group of little problems." A 22 year-old female also captured some of the

difference when she observed that "My life has gotten less mystical and more technical." Yet this problem-solving mentality was usually understood as being most applicable to the material world, and several engineering seniors were sensitive to the perplexities of applying it to the issues addressed by the faith development questionnaire. Another 22 year-old male noted that

Engineering taught me to think through problems or situations in a logical and open-minded way. However, it has had little effect on changing what I believe to be right or wrong, or how I treat other people.

Some engineers expressed some frustration with these parameters of their education.

A 21 year-old female noted that

The right/wrong black/white nature of my courses has made me become more interested in more philosophical and social issues in my non-school life.

It can also be noted here that while there was some exposure to different people and other ways of thinking in engineering, open-mindedness was not reported to be a common outcome of this exposure.

An attribution of effect that was unique to the engineering seniors was a call to high ethical standards of responsibility. Education in engineering apparently invests students with a greater sense of the effect their choices will have on others. A 21 year-old male is representative in this regard.

As a future engineer, I realize that my moral decisions will have much greater implications on society, therefore I try even harder to make the morally correct decision.

Two qualifications of this attribution need to be made in the context of this study. One is that the obligation of ethical responsibility did not derive solely from engineering courses. In fact, one 21 year-old female drew liberal arts courses into her attribution of

effect.

Engineering profs are constantly reminding their classes of the responsibility associated with design and the supervision of construction. Engineering studies are designed to make you think logically and ethically. When presented with a problem, I think about the legal implications and the impacts on society and employees. I attribute this to not only my engineering training but also to electives that I have taken such as sociology and administrative theory.

The second qualification is that the obligation of ethical responsibility was limited to the professional world, and did not include the personal world. A 24 year-old male explained that

Philosophically and morally [engineering] has not influenced my way of life. However, logically and ethically (in a professional setting) my degree has opened up a new view of my life.

Regarding the personal realm, a different 24 year-old male even complained that

Engineering produces socially deprived students. We don't learn good social values in our courses, and are deprived from experiencing life (society) because of the amount of work.

Looking at the few specific courses engineering seniors identified as having had an effect on their "ways of thinking" is most revealing. The most frequently mentioned course is Technology and Society, a course which presumably attempted to locate technology in its social context and link the profession of engineering with the wider concerns of society, and which also presumably contributed largely to the call for ethical responsibility. The liberal arts courses taken by engineering students for their electives account for 13 of the remaining 17 courses listed (76%). Granted, other engineering courses mentioned only once do not appear in Table 3-47, but it remains rather inexplicable how these other courses like Calculus, Geotechnical Materials, or Physics of the Atom could have influenced ways of thinking in terms of Fowler's model

of faith development.

CANADIAN MENNONITE BIBLE COLLEGE

TABLE 3-48 ATTRIBUTIONS OF CMBC SENIORS

ATTRIBUTIONS	NUMBER	PERCENT
Critical thinking	7	33%
Affirmation of thinking/commitment	6	29%
Exposure to different ways of thinking	5	24%
Open-mindedness/broadening	3	14%
Identity/heritage	3	14%
College community life/people	2	10%
INFLUENTIAL COURSES		
Peace Studies	9	43%
Ethics	8	38%
Social Issues	7	33%
Systematic Theology	5	24%
Bible	4	19%
Contemporary Issues: Women and Men	4	19%
Religion and Modern Thought	3	14%
Counseling	3	14%
Native Studies	3	14%
Development Issues	2	10%

Percent of CMBC Seniors

who identified specific courses as influential = 96%

CMBC seniors gave a total of 27 attributions from 21 respondents, for a rate of 1.29 attributions per respondent. Their attributions of how their "ways of thinking" had been affected by their education were more similar to the liberal arts seniors than to the engineering seniors, in that the four most frequent attributions were exactly the same as the four most frequent liberal arts attributions, though not in the same order. The largest difference among the top four attributions was in affirmation of thinking and commitment, which ranked fourth among liberal arts seniors at 11%, but second among CMBC Seniors at 29%. In general, critical thinking and affirmation/commitment rated slightly higher among CMBC seniors than among liberal arts seniors, suggesting that CMBC education is less satisfied with exposure and open-mindedness alone. A 22 year-old male's report that "[CMBC] has made me examine the basic assumptions of my world view," and a 21 year-old female's report that "My program of study has given me evidence in support of my beliefs, thus strengthening them" together represent the dominant tone of the attributions from CMBC seniors. But the report of a 21 year-old male is the best combination of the primary attributions given by these students.

My Bible college courses have primarily served to strengthen, deepen and broaden the faith commitment and outlook I had before coming to CMBC. I have become more conscious of the assumptions that I and others make as we articulate our positions. I have become more open to other perspectives and ways of thinking, although I certainly see myself committed to a certain position and orientation.

The religiosity of the attributions from CMBC seniors is predictably much greater than that of the liberal arts seniors. For example, a 23 year-old male credits increased knowledge of God as having the greatest effect on his "ways of thinking."

Theology has influenced how I think of God, others, and myself in the

context of biblical Christian faith. My view of myself and others has changed because of new knowledge of who God is. That makes all the difference.

However, the religiosity expressed by CMBC seniors was a very open, inclusive faith, as exemplified by the words of another 23 year-old male.

[CMBC] has taught me that God's grace is not limited to Christianity, and that many other cultures and religions also reflect what is true. I perceive truth to be eternal and unchanging, but validly interpreted through various cultural perspectives.

The less frequent attributions appearing in Table 3-48, identity, heritage, and college community life, are characteristic dynamics of a strongly intentional Mennonite community. As mentioned in Section II, many CMBC seniors consider the Mennonite ethos to be their religious preference, not just their ethnicity. It is hardly surprising then that embracing Mennonite identity and values was said by some to affect their "ways of thinking."

The particular courses singled out by CMBC seniors as being especially effectual in shaping their ways of thinking also contain a distinctively Mennonite flavour, especially with Peace Studies being top ranked. Ethics and Social Issues have also been characteristic of Mennonite concern, followed by theology. In other words, the list of courses might well render a better indication of the content of CMBC education than the structure of the thinking it facilitates. There is a notable absence of the major, established humanities and social science courses to which both university liberal arts and engineering seniors attributed effect.

PROVIDENCE COLLEGE

TABLE 3-49 ATTRIBUTIONS OF PROVIDENCE SENIORS

ATTRIBUTIONS	NUMBER	PERCENT
Critical thinking	19	50%
Affirmation of thinking/commitment	14	37%
Open-mindedness/broadening	10	26%
Exposure to different ways of thinking	5	13%
Biblical worldview	4	11%
Learning to live with uncertainty	2	5%
INFLUENTIAL COURSES		
Systematic Theology	12	32%
Philosophy	11	29%
Bible	10	26%
Missions	9	24%
Anthropology	5	13%
World Religions	5	13%
Counseling	4	11%
Psychology	4	11%
Sociology	3	8%
History	3	8%

Percent of Providence Seniors who
identified specific courses as influential = 79%

Providence seniors gave the highest rate of attributions as to how their education had affected their "ways of thinking," a total of 55 attributions from 38 respondents, for a rate of 1.45 attributions per respondent. Even compared with the

liberal arts seniors, Providence seniors seemed almost eager to talk about their education. Significantly, the four most frequent attributions were again the same ones cited by liberal arts seniors and CMBC seniors, and like the CMBC seniors, critical thinking and affirmation of commitments were the first and second most frequent attributions respectively. The rates of these two attributions distinguish the liberal arts seniors from the Bible college seniors the most, and this distinction is most pronounced between liberal arts and Providence seniors, as shown by Table 3-50.

TABLE 3-50 FREQUENCY OF PRIMARY ATTRIBUTIONS

ATTRIBUTION	ARTS	CMBC	PC
Critical thinking	25%	33%	50%
Affirmation of thinking/commitment	11%	29%	37%

Fully one half of Providence seniors attributed the effect of their education to the development of critical thinking, and in so doing echoed liberal arts and CMBC seniors. The assessment of a 29 year-old male Providence senior resonated with what was said by members of the other two groups.

[Providence College] helped me to think and analyze in a far more logical fashion. [It] has also broadened my thinking in certain areas such as understanding other cultures. I am also more critical of new concepts and ideas, and perhaps am more sceptical about accepting them without sufficient backing or evidence. So I'm more discerning.

But a 21 year-old female Providence senior wrote that "I've learned that Christianity is intellectual, but also passionate," and undergirding the attributions of many Providence seniors is this certain sense of passion. The critical thinking Providence seniors reported acquiring seemed to be energized by more than intellectual curiosity and

honesty. Sometimes the passion was rooted in the development of an autonomous self, as exemplified by the 23 year-old female who observed that

I have been brought up with the beliefs and values of my parents. My courses have challenged me to think through my faith, ethical questions, and values and decide what I believe for myself. In many cases I believe what I did before, but now I have reasons more than just because this is what my parents believe.

Sometimes the passion was rooted in a desire for self understanding. More than one Providence senior spoke of the importance of knowing the why behind the what of belief. The words of a 20 year-old female are representative in this regard.

The program I am in has not so much influenced my actual beliefs as it has helped me dig deeper into many of my beliefs to see why I believe these things. I've been challenged and even discouraged in many of my beliefs, but rather than making me back down, these challenges have forced me to understand and be better able to explain why I believe what I do.

Herein also lies what may have been the most pervasive source of passion among Providence seniors, the connection of critical thinking with affirmation and commitment. Critical thinking was typically presented as being very much in the service of the search for truth. Like the relentless problem-solving of the engineering students, there was a greater general confidence among Providence seniors that some closure in the non-material world was not only desirable, but possible, and even necessary. A 22 year-old female voiced these convictions.

My education has not restricted me or forced me to reform, but rather has challenged me to analyze and to search for truth. I have become much more open-minded in some areas and very grounded and confident of my position in others.

The attributions mentioned less frequently by Providence seniors can also be interpreted as stemming from the same general ethos. The appearance of attributions

to a Biblical worldview suggests a relatively tighter, more systematic way of thinking. Even when a 28 year-old male expressed his struggle with uncertainty, he seemed to assume that there were definitive, though perhaps complex, answers to his questions. His only real doubt was whether he could "work through" or comprehend them.

I have learned to live with uncertainty in my life. I don't have to have all the answers. Most issues are very complex and don't have easy or simple answers to them. I don't need to necessarily have the answers, although I want to work through the issues.

Two properties of the courses identified by Providence seniors as most effectual in shaping their "ways of thinking" differentiate them from those identified by the seniors in their sister Bible college, CMBC. One is that more of the major, established humanities and social sciences appear on the list. Another is that Missions Studies distinguish, and even epitomize Providence College in much the same way that Peace Studies distinguish and epitomize CMBC. These courses also reflect the respective conservative and liberal theological leanings of the two schools. Inasmuch as Mission Studies also presuppose some cognitive closure and personal passion, the profile of Providence seniors drawn here is accentuated further.

In summarizing the qualitative data, several findings are recurrent, most of which largely support the hypotheses of this study addressed by these data. First, all four groups of seniors reported that their education did affect their "ways of thinking" in the context of the aspects of faith development to a more than moderate extent (Hypotheses #2 and #5), although engineering seniors reported markedly less effect (Hypothesis #3). Second, seniors in all four groups reported that their education had not influenced what they thought, believed, or valued, as much as it had influenced

how or why they did so. Put in Fowler's faith development terms, their education had affected the structure of their religious or irreligious meaning-making, more than the content.

Finally, the peculiar character of the four different programs of education had different implications for the faith stage development of students in them. Liberal arts seniors were pulled more toward a Stage 5 faith by the open-mindedness of their education, whereas engineering seniors were pointed more toward a Stage 4 faith by the systematic, problem-solving orientation of their education (Hypothesis #4). On the other hand, both CMBC and Providence seniors, while reporting an education that was as reflective as liberal arts, nevertheless held more strongly to affirmations in a manner indicative of Stage 4 faith (contrary to Hypothesis #6). Seniors from both Bible colleges reported that their education had affected their ways of thinking to a greater extent than the university seniors reported, and also gave a higher rate of attributions per student. It appears that this extra amount may be due to the affirmations produced by their critical thinking (Hypothesis #7). Yet the more inclusive religiosity of CMBC seniors inclined them toward a Stage 5 faith in a manner that the theological closure of Providence seniors did not.

C. Faith Development and Other Variables

The focus of this study is to research the effect of various types of post-secondary education on faith development, but it would be erroneous to assume that

these variables are in a simple bivariate relationship. Thorough analysis requires that the primary relationship be examined for potentially intervening effects by other variables that could render conclusions spurious. The purpose of collecting biographical data from each case was to make these statistical techniques of control and elaboration possible, without which the capacity to infer causality of the dependent variable by the independent variable would be severely reduced. (Some philosophers of social science, such as Dawson (1988), maintain that the entire language of causality especially evident in quantitative analyses has introduced an inappropriate epistemological and methodological skewing into the social sciences. They contend that these regrettable effects on disciplinary self-conceptions could be largely avoided by substituting the language of correlation.) Though this study is most interested in the effect of one particular independent variable, education, it was anticipated that there would be other variables affecting the dependent variable, some of which would be correlated with each other.

The most appropriate statistical technique for the analysis of the effect of several independent variables on one dependent variable is multiple regression. However, correlation coefficients and regression analysis assume an interval level of measurement and continuous variables, an assumption that has already been described as problematic in the basically ordinal data of faith development theory. Lack of variation in the dependent variable, such as in the data of this study, also affects regression analysis negatively. Nevertheless, as Babbie (1992) concluded, it is justifiable to bend such rules for the sake of understanding data, as long as any inferences are held more tentatively. The regression analysis that follows should be

understood as presented in this light. Where these other demographic independent variables were not interval, such as the nominal variable of sex, they were recoded as dummy variables for the purpose of the analysis.

Selection of the variables to be placed into a multiple regression analysis was guided first by theory and previous research. The biographical section of the questionnaire was constructed according to variables that Fowler's theory suggests affect faith development, and according to the findings of previous research on faith development, as outlined in Chapter Two, I. C. 3. Some of these items, such as high school graduation or gain or loss of a child, did not yield data with sufficient variation (ratios of less than 8:1 for dichotomous variables) to warrant being included in further analysis. Some of the variables, such as importance of religion at the beginning of university/college and current importance of religion, produced such high correlations that their multicollinearity would have confounded a regression analysis. Other variables, such as religious preference, had too many response options, and therefore only the options receiving the most frequent response (in this example, Roman Catholics, Evangelical/Conservatives, and Nones) were selected.

As an exploratory, initial procedure, two runs of stepwise regression were performed with two different combinations of selected variables. Having the computer select the order in which the variables will enter the regression equation is the standard procedure for identifying the variables with the greatest explanatory power, and thereby reducing the number of independent variables in a model. When these stepwise regressions were performed, none of the variables stood out as explaining a

substantial amount of the variance in stages of faith development. The final R^2 for the respective runs were .06 and .08. However, the purpose of the regression was not to construct a causal model of variables that explained as much of the variation in faith stage development as possible. The purpose was to rule out alternative explanations for the variation in faith stage development, that is, to use these demographic variables to exercise statistical control and potential elaboration of the relationship between education and faith development. Therefore it was concluded that all the salient variables should be included in a standard multiple regression analysis to ascertain if any contributed substantially to the R^2 . The findings of the regression analysis are presented in Tables 3-51, 3-52, and 3-53.

 TABLE 3-51 VARIABLES IN REGRESSION ANALYSIS

ABBREVIATION	VARIABLE
Sex	Sex (Dummy)
Age	Age
Occup	Occupation of Primary Parent/Provider
R/U-Chd	Rural/Urban Childhood
R/U-Res	Rural/Urban Residence
Educ	University/College Educational Status (Dummy)
RC	Roman Catholic Religious Preference (Dummy)
E/C	Evangelical/Conservative Religious Preference (Dummy)
None	No Religious Preference (Dummy)
Attend	Attendance at Religious Services
Rel-Chg	Change in the Importance of Religion from Childhood (Dummy)
X-Cult	Cross-Cultural Experience
GainFr	Gained a Close Friend (Dummy)
LoseFr	Lost a Close Friend (Dummy)
Distress	Experience of Emotional Distress (Dummy)

371 cases

TABLE 3-52 CORRELATIONS OF MORE THAN +/- .20

VARIABLE #1	VARIABLE #2	CORRELATION
Age	Educ	.37
R/U-Chd	R/U-Res	.44
R/U-Chd	Attend	-.27
R/U-Chd	E/C	-.28
R/U-Res	Attend	-.37
R/U-Res	E/C	-.50
RC	E/C	-.24
RC	None	-.22
E/C	None	-.24
Attend	Rel-Chg	.34
Attend	E/C	.45
Attend	None	-.59
GainFr	LoseFr	-.39

TABLE 3-53 REGRESSION ANALYSIS

Multiple R	.31
R ²	.10
Adjusted R ²	.06
Standard Error	.40

F = 2.530

Significant F = .001

VARIABLES	Sig T
Sex	.13
Age	.58
Occup	.32
R/U-Chd	.95
R/U-Res	.65
Educ	.62
RC	.02 *
E/C	.35
None	.45
Attend	.12
Rel-Chg	.97
X-Cult	.57
GainFr	.80
LoseFr	.90
Distress	.01 *

* = Significant at .05 level

The regression analysis shows that very little of the variation in stage of faith development was explained by this combination of independent variables ($R^2 = .10$). Moreover, the chance of this finding occurring by randomness alone in a population where there is no relationship between stage of faith development and these independent variables is so minute that these findings are statistically significant (Significant $F = .001$). Finally, the standardization of the parameter estimates reveals that only Roman Catholic religious preference (Significant $T = .02$) and emotional distress (Significant $T = .01$) made a statistically significant contribution to the regression equation at the .05 level. Both of these two variables had also been among the first three selected in the second stepwise regression analysis. The significance of Roman Catholic religious preference is interesting in that all Roman Catholics in the sample were also university students (see Table 3-18). Their mean faith stage of 4.23 was significantly higher than the mean of the rest of the sample (4.09; 2-tailed probability = .008) but not significantly higher than the mean of the rest of the university students (4.14; 2-tailed probability = .121). This is an indication that even basic religious preference, free from the effects of post-secondary religious education, is a factor in faith development. The significance of emotional distress is less theoretically explicable or applicable.

In sum, it can be concluded that none of the other variables measured by this study intervened substantially in the relationship between education and faith development as measured by this study, at least to the extent that would render its conclusions spurious. Although this finding frees analysis of this data from further complication, it is also somewhat surprising, because according to Fowler's theory and

previous research, at least age would have been expected to show more effect. But like the findings in the rest of this study, the lack of variation in the faith development dependent variable probably diminished the data's ability to show these effects.

* * * * *

This chapter has presented the findings of this empirical study of the effect of post-secondary education on faith development. It has described how the data was processed, profiled the characteristics of the cases in the sample, and tested the various relationships of education and faith development by various measures. Condensing and highlighting selected dimensions of this study will bring the most important answers to the questions posed into sharper focus.

CHAPTER FOUR

SUMMARY AND CONCLUSIONS

A. Limitations of the Study

This study of the effect of education on faith development is best understood as having taken place within the boundaries of certain parameters. At the most general level, education was limited to selected types of post-secondary education. Formal elementary, secondary, and vocational education were not included because their substantial differences in nature and level would have made comparisons unjustifiable. University liberal arts was singled out as the foundational type of education for this study because of its classic status in higher education, and because it addresses human meaning-making most directly. Whereas the entire scope of liberal arts education was sampled, only one type of professional education was sampled. Engineering was selected because of its contrast with liberal arts, but it may be that other professions such as education and medicine would not show the same patterns of faith development, and thus the generalizability of the findings to all professional education is less than that to all liberal arts. The representativeness of the religious education samples, the two Bible colleges, is strong for evangelical Protestantism in Canada, but may not adequately represent the formal education of other religions in Canada or elsewhere. These selected types of education were intended to be both convergent for the sake of fair comparison and divergent for the sake of showing

similarities where types are assumed to be radically different. Not all factors of convergence and divergence were optimal, such as the fact that engineering degrees required four-year programs whereas the liberal arts and Bible college degrees required three-year programs.

The conception of faith development in this study was limited to that of Fowler's theory. While its status in the academic community is unsurpassed, Fowler's model has received due criticism, and other conceptions of faith development remain viable alternatives. Furthermore, while the findings of this study pertain to faith development only as defined by Fowler, faith development was not measured according to Fowler's method. The significance of the contributions of this study rest on the ability of the self-administered questionnaire to substitute for Fowler's interview schedule. Measures of the validity and reliability of the questionnaire have been presented, but its adequacy relative to the interview remains a matter of judgment.

Time is another factor that limited this study. The measures of faith development were taken in 1991-92, and inasmuch as the perspectives built into Fowler's developmental scheme may be subject to cultural shifts and influences, the findings need to be interpreted in this light, as they will be in Section C. to follow. Time is also a limiting factor in that this was a cross-sectional study in which a cohort of freshmen was compared with a different cohort of seniors. A longitudinal study in which the same cases were measured first as freshmen and then again as seniors would probably have produced better data, but such a design was not possible within the constraints of the project.

All of the above were delimitations of this study, factors known, accepted, and even chosen prior to the research being undertaken. The single largest limitation of this study, the weakness that emerged during the process of and as a product of the research itself, was the lack of variation in stage of faith development among the entire sample. With 64% of the cases scored as Stage 4, the probability of finding significantly different patterns in different groups was severely reduced right from the beginning of data analysis. This affected the ability of the data to demonstrate clearer or more dramatic relationships among variables in everything from measures of the reliability of the instrument, to tests of the hypotheses and analysis of the potentially intervening effects of other variables. The lack of variation may well have depicted accurately the homogeneity of the sample, and as such is valuable information, but it constantly curtailed the usefulness of the data in detecting more detailed information; the high degree of convergence in the sample did not readily disclose finer differences. The evidence suggests that substantial differences can only be found in more general, heterogeneous populations. Based on the evidence of the data generated by this study, the statement that can be made with most confidence is that students of higher education are more alike than unlike regarding faith development, whether by self-selection or by the influence of their education.

More generally, and perhaps more significantly, the lack of variation in the data even cast some doubt on the homogeneity of the sample, because alternative explanations for the lack of variation are equally plausible. The data of this study cannot ascertain whether the lack of variation was indeed due to the homogeneity of the sample, if it was due to an inadequacy or bias in the measurement instrument, or

even if it was due to inadequacies in Fowler's theory of faith development itself. Further testing would be required before any one of these three explanations could be confirmed or ruled out.

B. Summary of the Findings

With the limitations of the study in mind, the findings of this research project can be summarized as follows.

1. Methodological Findings

Research on Fowler's theory of faith development has laboured under the constraints of his ponderous interview method of measuring the stage of faith development in individuals. Although a structured interview schedule consisting of open-ended questions about an individual's own life is respectful of the richness of faith development data, the amount of time it takes to score one person by this method has proven prohibitive to researchers. Moreover, despite the availability of a detailed *Manual for Faith Development Research* (Moseley, Jarvis and Fowler, 1986), interpretation of the qualitative responses given by subjects is complex, and subject to the judgment of coders. Hence the need for an alternative method of ascertaining the faith stage of individuals was evident.

Various attempts to develop a self-administered questionnaire that could

replace Fowler's interview schedule have been made prior to this study. However, none of these were evaluated as adequate for the purposes of this empirical study of the effect of education on faith development, so a new instrument was developed. This new questionnaire measured subject responses to 48 statements derived directly from the criteria for Aspects B - G of Stages 2 - 5. The respondent was asked to rank 12 groups of four statements as to which was most or least like him or her. The rankings assigned to statements representing each stage were averaged, and the stage with the lowest mean was the stage at which that respondent is scored. The two main advantages of this method of measuring an individual's stage of faith development were that subjects responded directly to the components of Fowler's theory without interpretive intervention by a coder, and that scores were tabulated quantitatively and quickly by computer. The main disadvantage was that subjects were faced with the difficult challenge of understanding the statements and applying them to their lives accurately.

The questionnaire was pre-tested extensively prior to being used to gather the data for this study. It was revised eight times, with each draft being tested on a small population, in an effort to improve its validity and reliability. One of these populations had already been scored by Fowler's interview, and a comparison of the interview scores and questionnaire scores for the same subjects added to the credibility of the questionnaire. When pre-testing was terminated, the questionnaire became the primary measurement instrument of the mail survey which constituted the sole means of data collection for this investigation of the effect of education on faith development. The survey, mailed to a sample of students drawn from liberal arts, professional, and

religious education, was carried out fairly routinely, with the only complications being an intermediary role played by the University of Manitoba Student Records Office in the mailing, and special efforts to achieve a sex balance in the engineering sample. A good overall response rate of 64% was achieved through follow-up mailings, however, 14% of the respondents spoiled their questionnaires by rating the items instead of ranking them.

Once the survey data were in hand, the faith development questionnaire was subjected to further tests of reliability. It was found to have produced a full range of rankings on each item, indicating that every item was useful in discriminating among respondents. The mean of the lowest stage mean was 1.75, demonstrating that rankings given by individual cases as to which items were most like them clustered around items representing specific stages to a substantial extent. Stages less like the one achieving the lowest mean were also largely ordered according to what is most logical for progression through Fowler's stages. A more statistically sophisticated assessment of the questionnaire's reliability revealed that the majority of item pairs intended to measure the same aspect in the same stage, though by a different criterion, had statistically significant but not high correlations. A split-half analysis produced scores with a mean of .48 for the four stages measured by the questionnaire. Coefficient alphas of the four stages had a mean of .45, with only 10% of the items weakening the alphas. The patterns in the statistical measures of scale reliability even suggested that there may have been a warm-up effect in responses that lowered reliability at the beginning of the scale, and without which over-all scores on reliability would have been higher.

When the complexity of the task was taken into consideration, it was concluded that the reliability of the questionnaire was adequate, and that its development represented progress in faith development research. Inconsistencies could conceivably have originated in Fowler's theory, not just in the questionnaire's attempt to measure it. In fact, statistical measurement and analysis of this kind may even uncover ways in which Fowler's theory could be modified and improved in the future.

2. Substantive Findings

The substantive findings of this study include those gleaned from the review of literature on faith development. Despite the fact that sociological literature has been virtually oblivious to faith development as a theoretical and empirical construct, an examination of Fowler's theory reveals that it contains much that is pertinent to sociological theory in general and the sociology of religion in particular. Its focus on the structure of meaning-making comports well with symbolic interactionism and phenomenology, and with functional definitions of religion. Its focus on the relationships of the self are built indirectly on George Herbert Mead's sociological social psychology. Its focus on the change of self elaborates and explicates traditional conceptions of religious socialization, conversion, and apostasy. And its focus on the nature of developmental structures provides another measurement of what it means to be human, either religiously or irreligious. On the other hand, sociological criticism of Fowler's theory, in concert with that of other disciplines, was shown to reveal some telling foibles, the two most important of which are that it is biased toward the cognitive dimensions of faith at the expense of experiential factors, and that it moves beyond the

pure description of scientific investigation to a normative dimension that contains an ethical vision. A sociology of knowledge approach to Fowler's theory, or a cultural interpretation of it, also revealed that faith development theory is at least partially a product of its social location.

The review of literature on faith development and education disclosed the affinity of faith development with the romanticism and cognitive-developmentalism inherent in ideologically liberal education. More specifically, faith development was shown to be logically aligned with the content and objectives of the humanities and social sciences that comprise the post-secondary liberal arts curriculum. Religious educators are another group perhaps more readily recognized as sponsoring faith development, either through "good faith" or "bad faith." Theoretical assessments of the relationship of education and faith development have been anchored by the early work of Perry (1968) on the forms of intellectual and ethical development in college years and the more recent work of Parks (1986) on the young adult search through university for a faith by which to live. Actual research on the effect of education on faith development was found to be scarce, and must be separated from the large body of literature on the effect of post-secondary education on religiosity and religious orthodoxy. The typical portrayal of a decline in religiosity during university years may in fact be reinterpreted as a change in stage of faith development. Goldman's (1964) early research in this area was most influential before the formulation of Fowler's theory, while the massive Faith Development in the Adult Life Cycle Project (1987) is the most exhaustive research that has employed Fowler's model to date. It concluded that "education which enriches and challenges the mind and spirit is positively related

to one's faith development" (1987:25).

The survey data for the present study of the effect of education on faith development was collected from a sample of liberal arts, professional (engineering), and Bible college students. Along with a scale to measure stage of faith development, the mail questionnaire included a section on biographical information in which respondents provided various demographics for the purpose of control and potential elaboration of the primary relationship between education and faith development. Good distributions and balance were found on most variables; there was little unusual or unexpected about these findings. For example, the sex ratio of the entire sample was 51% male and 49% female, the Bible college students tended to have more rural upbringings, and gain or loss of a close friend was the most common form of interpersonal stress.

The variable that received the closest scrutiny was religion, on which there was a great disparity between the university students and the Bible college students, especially in attendance at religious services. Two notable and related trends were observed in the data on religion. First, there was a great reluctance on the part of respondents to identify themselves with traditional religious labels. Second, there was an emphasis on the continuing importance of spirituality, such that the secularization thesis was contradicted, even though university students were again found to decline slightly in their religiosity during their education. In regard to faith development, religiosity was here found to be associated with significantly, though not substantially, lower stage scores.

When all the demographic variables were placed into a regression analysis to determine their combined effect on faith development, an R^2 of only .10 was obtained, with only two variables (Roman Catholicism and emotional distress) having a statistically significant contribution to the explanation of the variance. This indicated that none of the variables secondary to this study had intervened to the extent that conclusions about the effect of education on faith development would be spurious.

Turning to the relationship of primary concern to this study, several hypotheses regarding the effect of the different types of post-secondary education on faith development were tested by quantitative statistics. Hypothesis #1, that university freshmen were at the same level as Bible college freshmen in terms of faith development, was accepted. Inasmuch as these two groups represent a difference in religiosity, this finding indicated that religiosity was not a factor in faith development, thereby contradicting the findings of both the t-test comparison of the Religious and Secular groups in the demographics of the sample and the regression analysis of variables other than education. Hypothesis #2, that liberal arts seniors had higher faith stage scores than liberal arts freshmen, was accepted, and constituted the first hard evidence in this study that education had an effect on faith development. Hypothesis #3, that professional (engineering) seniors were no different in faith stage development than professional freshmen, was rejected because engineering seniors actually scored significantly lower than engineering freshmen. This anomaly could not be explained by tests for measurement artifacts or for the potential effects of the sex imbalance in the engineering seniors, therefore it was concluded that the finding may have been due to some cohort effect in the sample. Hypothesis #4, that liberal arts seniors were more

advanced in stage of faith development than engineering seniors, was accepted, the implication being that the content of education is a factor in its effect on faith development. Hypothesis #5, that Bible college seniors had higher faith stage scores than Bible college freshmen, was rejected. The most plausible explanation for the finding of no significant difference was that the intent of religious education may not be the sponsorship of faith stage transition, but rather the sponsorship of faith stage "equilibration." Lack of developmental change may still constitute the effective accomplishment of such institutional goals. Hypothesis #6, that Bible college seniors were at the same level of faith development as liberal arts seniors, was rejected. The finding that liberal arts seniors scored significantly higher corroborates the findings that, although liberal arts and Bible college freshmen began their education at equivalent levels of faith development (Hypothesis #1), liberal arts education fostered faith development (Hypothesis #2) whereas Bible college education did not (Hypothesis #5). This finding of a negative effect by religious education on faith development is a complete reversal of conventional expectations based on traditional, religious conceptions of faith, a reversal made possible by Fowler's unique definition and developmental theory of faith. Hypothesis #7, that there was no significant difference between the faith development scores of Canadian Mennonite Bible College seniors and Providence College seniors, was accepted.

The survey questionnaire employed by this study also generated qualitative data that added considerable richness and insight to the statistical calculations of the effect of education on faith development. The stage means of some of the student groups had been found to be significantly different statistically, but they were not

substantially different; there was very little variation in the quantitative data, and differences between the groups were small (range of group stage means was 3.92 - 4.28). Overall, seniors attributed more effect to their education in their qualitative responses than the quantitative comparison of their faith stage scores suggested, although engineering seniors again reported less effect. The qualitative data revealed that the additional amount of effect reported by the seniors was due to the extent to which their education reinforced a particular stage of faith development, not just the extent to which their education fostered faith stage change.

The attributions seniors made as to how their education had affected their ways of thinking were very similar for liberal arts seniors and the seniors from the two Bible colleges. Consonant with Fowler's distinction between structure and content, many reported that their education had substantial influence on how they thought or believed, whether it was religious or irreligious, not on what they thought or believed. Moreover, the four most frequently occurring attributions in these three groups were identical, though not in the same order of frequency, and were tied conceptually to Aspects B, C, D, E, and F of Fowler's theory of faith development. All rated critical thinking highly, although liberal arts seniors associated such thinking with open-mindedness, whereas Bible college seniors, especially Providence seniors, linked critical thinking with affirmations and commitments. The attributions of engineering seniors were markedly different, most notably in their substitution of systematic problem-solving for critical thinking, and in their being imbued with a professional ethic of responsibility. Their education was not found to be oriented to faith development concerns, and most of what effect there was in this regard was attributed to liberal arts electives.

When the combined findings of this study are reduced to their essence, they lead to general conclusions that can be outlined as follows:

1. Liberal arts education fosters faith stage transition according to Fowler's theory of faith development because it is focused on what it means to be human, and does so in a critical manner that remains open.
2. Professional education does not foster faith stage transition because it is focused on technical problem-solving and not on issues of what it means to be human.
3. Religious education does not foster faith stage transition beyond Stage 4 of Fowler's theory because, while it is focused on what it means to be human, it does so in a critical manner that seeks closure.

C. Significance of the Study

The general implications and significance of the research reported here can be summarized in four areas.

First, this study has contributed to general sociological theory primarily within the sub-discipline of the sociology of religion, although the concept of faith it has employed is embedded in the general social psychological concept of the self. The

study has brought to the sociology of religion a full-blown concept of faith that is distinct from religion, but that can be used to great advantage in understanding religious faith. Furthermore, this theory of faith carried with it a means of measurement that can equip the sociology of religion to explore the differences and relationships between faith, religion, and other demographic variables. This study has also encouraged the sociology of religion to add to its various concepts of religious change the concept and factor of individual developmental change. Tangential to the focus of the study, the research findings have provided some further evidence to counter the secularization thesis, although these findings were interfaced with serendipitous findings on the differences between religiosity and spirituality.

Second, the methodological significance of this study is also considerable. The development of a self-administered faith development questionnaire with some concrete measures of validity and reliability is a notable achievement that should enable research in faith development to flourish in ways that it could not while stifled by Fowler's ponderous interview method of staging individuals. Other efforts to produce a Fowler scale have been characterized by religious bias and lack of scientific rigor. The scale produced by this effort taps the more generic faith of which Fowler speaks, enables subjects to respond directly to the criteria of the aspects in his theory, is thorough enough to capture the complexity of the theory, and is amenable to statistical analysis. Granted, the cognitive challenge it presents to respondents is such that it should not be used on populations with less than completed high school education, and, to avoid undue spoilage that occurs when respondents rate instead of rank the items, an administrator should be present or the instructions clarified and

emphasized when self-administered as in this study. But to develop a validated scale of any social psychological property that is useful in many different research settings is no small contribution to future research.

Third, this study has significance for the growing body of research pertaining to the substantive theory of faith development as formulated by Fowler. The congruence of this theory with other constructs has, for the most part, been sufficiently explored and verified, but little work has yet been done on testing the theory's assumed relationship with various, particular, demographic variables. Some of these relationships were tested by this study, with the relationship of faith development and education being the primary focus, and religious differences being the secondary interest. The gist of Fowler's theory suggests that education may be second only to age and maturation as an influence on faith development, and that religion may serve to facilitate or equilibrate faith development.

The finding of little substantive influence on the part of various demographic variables measured by this study, including age, combined with the finding of statistically significant influence on the part of just two disjointed variables (Roman Catholicism and emotional distress) casts some doubt on Fowler's theory. If stage of faith development cannot be predicted with any accuracy by knowledge of other variables, then the theory of faith development has not explained the relationship between the stages adequately. Again, this finding may have been due to the homogeneity and resultant lack of variation in faith stage scores in the sample, or to the failure to identify and test the most effectual variables, but other studies have also

been unable to find consistent patterns of differences along variables that the theory suggests should tend to produce them. This is especially true of studies using any measures other than Fowler's interview method, implying that interviews may be prone to a self-fulfilling prophecy bias. Even the differences along education found by the primary focus of this study are relatively small and less than conclusive and convincing. Indeed, the findings of this study parallel those of Green and Hoffman (1989), who found no age or education differences in faith stage of the college students in their study, and a significant number of youthful respondents categorized as Stage 5.

Perhaps the major implication of the unexpectedly high faith stage scores in these findings is that Fowler's stages may be more subject to intra-cultural shifts than he would like to admit. Just as Fowler's theory is itself "an expression of a wider cultural and intellectual mood" (Dykstra and Parks, 1986:2), the faith stage location of individuals may be as much a function of social forces as a function of psychological forces. The joint findings of this and other studies certainly make a cultural interpretation plausible. Such a micro sociological - macro sociological link can be constructed and elaborated as follows.

The grounds for reading cultural influences into patterns of faith development are provided by the fact that Parks (1986) and others have described the faith stage location of young adults in university to be in flux between Stage 3 to Stage 4, but the findings of this study and others such as Green and Hoffman (1989) have more recently shown the flux to be between Stage 4 and Stage 5. It must be borne in mind

that Stage 3 Synthetic-Conventional faith is constructed according to conformity to group norms and significant others, Stage 4 Individuative-Reflective faith is constructed according to critical thinking and exclusive meaning systems, and Stage 5 Conjunctive faith is constructed according to the paradox of both the logical and mysterious nature of truth. While admittedly an oversimplification, it can be argued that the cultural script in North American society prior to and including the 1950's called for a Stage 3 faith, the cultural script of the 1970's called for a Stage 4 faith, whereas the cultural script of the 1990's is now calling for a Stage 5 faith.

Even when freed from Fowler's terminology, a description of the pattern of North American culture in the last half of the 20th century retains a striking parallel with faith development theory. The general ethical vision of modal adult faith prior to 1960, two decades before Fowler formulated his theory, can be described as the apprehension of and loyalty to the reasoning and expectations of society. This emphasis on conformity was challenged and ultimately over-turned by the counter-cultural movement of the 1960's. Emergence into mature adulthood became defined by students of higher education in particular as the process of "thinking for themselves" and developing a personal, rationally defensible system of meaning, which is the Stage 3 to Stage 4 shift described by Parks. However, exclusive rationality and its inherent antagonisms have more recently come to be viewed as humanly indefensible in the current era of pluralism and relativism. The ethical vision of mature adult faith has now come to be remaining "open" to all that is known and knowable, unknown and unknowable. Therefore, becoming a fully mature, cultured adult in the last decade of this century is measured by making the Stage 4 to Stage 5 faith stage transition.

These shifts in the cultural script are apparently not lost on the perceptive students of higher education. As Bloom (1987:25) has observed, "almost every student entering the university believes, or says he believes, that truth is relative," and parroting this cultural script is likely to get him or her scored as Stage 5 in faith development. However, if merely superficial, these assertions are actually acts of sub-cultural conformity more representative of Stage 3 faith. This may explain why freshmen in particular scored higher than expected in this study. Despite the exhortation in the questionnaire instructions not to do so, it is easy for respondents to identify with socially desirable sentiments and give reports that align themselves with the beliefs they perceive to be dominant in the educational sub-culture they are entering. And freshmen have customarily been considered followers. But whether they actually think and live according to those beliefs cannot be determined with any confidence from their own responses to fixed items on a questionnaire, or even from their open-ended responses in an in-person interview. Authentic stage of faith is perhaps best ascertained by an in-depth assessment of an individual's life and work, such as Conn's (1986) assessment of the contemporary Catholic monk Thomas Merton.

A second, alternative cultural explanation for the unexpectedly high scores of freshmen is that their self-reports are accurate, and that a cohort effect has already closed the gap with the older senior students in the sample. However, this explanation requires that numerous students be accepted as practising the same Stage 5 level of faith at which Conn located Thomas Merton, an acceptance that remains rather difficult to grant. But whether freshmen are simply conforming to such beliefs when they enter

university or are actually convinced of and living by them, they will probably become more convinced of them through studies in the liberal arts.

Relativism is necessary to openness; and this is the virtue, the only virtue, which all [liberal arts education] has dedicated itself to inculcating. Openness is the great insight of our time The point is not to correct the mistakes and really be right; rather it is not to think you are right at all. (Bloom, 1987:25-26)

As a point of caution for the interpretation being drawn here, the fact should not be lost that, whatever the ambiguity between Stage 3 and Stage 5 forces and appraisals, the mean stage of the sample in this study was still closer to Stage 4 than either Stage 3 or 5.

Interpreting current levels of faith development as being influenced by current culture mirrors the reasoning and interpretation posited by Leean (1988). She submitted that a shift from a culture in which Stage 4 was predominant to a culture in which Stage 5 was predominant would correct the excessive North American individualism identified by Bellah (1985) by replacing it with a greater commitment to the common good. Cultural interpretations of faith development are also given credence by the trends toward deconstructionism and postmodernism that have emerged in many academic disciplines. At the core of deconstructionism is a crisis of authority, including the authority of rationality. Deconstructionism

casts a long shadow of doubt on the validity of the use of transcendental categories of truth and pushes to the front the political implications involved in the use of such categories. (Liechty, 1990:ix)

Game (1991) is representative of deconstructive sociology, just as Lasch (1990) is representative of postmodern sociology. Postmodernism has been described as a

rejection of the unity of knowledge and the myth of emancipation . . . a kind of anti-theory that eschews the quest for systematic explanation . . .

[and is built on] the widespread disillusion of intellectuals with enlightenment and progress." (Manning, 1991:5-6)

Together, deconstructionism and postmodernism constitute a reversal of what Weber took to be the inexorable process of rationalization that brought the modern world into being, a re-enchantment of all that has succumbed to the dispassionate cult of modernity.

These cultural and academic orientations have clearly passed from a Stage 4 faith into a Stage 5 faith. For example, both deconstructionism and postmodernism have much to do with semiotics and symbolization, and an overview of the coding criteria for Aspect G Role of Symbols in Fowler's theory (see Coding Criteria, Chapter Two, III. E. 5.) reveals the likeness of Stage 4 with modernity, and Stage 5 with postmodernity.

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|---------|--|
| Stage 3 | Does not critically analyze symbol; does not demythologize or reduce symbols to conceptual meanings; precritical openness -- "first naive"; oriented towards power of symbols to evoke feeling rather than their capacity to represent concepts. |
| Stage 4 | Symbol critically separated from symbolized, demythologized, translated to ideations; evocative power inheres in meaning conveyed by the symbol; interpretations and appropriations are univocal and reductive, often to the truth of world view -- "reductive hermeneutic." |

Stage 5 Postcritical rejoining of irreducible symbolic power and ideational meaning; evocative power inherent in the reality in and beyond symbol, and in the power of unconscious processes in the self; increased openness to evocative power of symbol; a "second naivete."

One of the oversimplifications of the notion of a cultural faith development script is that it is singular. In *Culture Wars: The Struggle to Define America* (1991), Hunter identifies two "polarizing impulses" in North America. One is the impulse toward orthodoxy, which is "the commitment on the part of adherents to an external, definable, and transcendent authority." The other is the impulse toward progressivism, which is "the tendency to resymbolize historic faiths according to the prevailing assumptions of contemporary life" (1991:44). Once again, the parallels between Hunter's analysis of cultural vectors and Fowler's faith development theory are several. Although Hunter, like Fowler, maintains that the contemporary cultural divide is not merely a religious - irreligious split, he nevertheless traces the nub of the conflict back to the fundamental matter of moral authority. Not coincidentally, Moral Judgment constitutes Aspect C in Fowler's theory, whereas Locus of Authority constitutes Aspect E. The "crisis of authority" in deconstructionism and postmodernism is the Stage 5 progressivist assumption of contemporary, especially intellectual, life that wars against the moral and rational authority of Stage 4 orthodoxy. Indeed, movement through the stages of the Locus of Authority, or the Form of Moral Judgment for that matter, could be shown to describe the recent march of North American cognitive culture, just as the Role of Symbols was shown to do so above. In essence, what Fowler conceptualizes as the

structural incompatibility between Stage 4 and Stage 5 levels of faith development at the individual level, Hunter calls all-out cultural war at the societal level.

To summarize, the unexpectedly high scores in stage of faith development in the data of this research can be interpreted as having been influenced by the push and pull of culture from modernity to postmodernity, especially as it is prompted by higher education. This interpretation places education as an intervening variable between the antecedent independent variable of culture and the dependent variable of faith development (Babbie, 1992). Put differently, culture explains the relationship between education and faith development, because education is a carrier of culture. Unfortunately for science, culture cannot be operationally defined and placed into a regression analysis. Nevertheless, the implication and significance for Fowler's theory is that his stages of faith are not invulnerable to forces outside the individual, but may in fact be in part a social product.

The fourth and final area in which this study is significant is the very practical implications and evaluations it holds for professional educators involved in the types of education sampled. Liberal arts and religious educators will likely be most interested in the findings, because at least the implicit intent of the education they provide pertains to faith development. Indeed, evaluation of effectiveness can only occur if educators clarify their goals and intentions in terms of faith development. Liberal arts educators appear to sponsor education with what Fowler termed a "modal developmental level" of Stage 5. What is more, that appears to be their intent. It may be somewhat novel for them to envisage their programs as exercises in faith

development, but it can add a further understanding to their task. Engineering educators are presumably unconcerned about faith development, and will not be disturbed to learn that the education they provide was found to have no effect on it.

Religious educators are usually presumed to be most concerned about faith development and most committed to its nurturance. However, this presumption is based on traditionally religious notions of faith, to which Fowler's theory is not limited. In order to assess the implications and significance of these findings for their endeavors, religious educators must first articulate their theological vision vis-a-vis Fowler's stages. Only then will they be able to evaluate the effectiveness of their education in nurturing the structures of faith they desire. What the evidence of this study indicates they are effecting is a modal faith stage closer to Stage 4 than that of liberal arts education. The finding of differences in mean stage of faith development between religious education and secular education does not contradict Fowler's theory, because either could theoretically sponsor education with a particular "modal developmental level" as its goal.

These then are the major ways in which the findings of the program of research detailed in this report have resulted in a significant contribution to social scientific knowledge.

D. Recommendations for Further Study

Many questions have been raised during the course of this research project and report that have not been fully answered, or even addressed. Some have been central to this study's primary focus on the effect of education on faith development, and its methods of measuring that effect. Some, such as the differences between religiosity and spirituality, have emerged on the periphery. Many could be tested empirically, some perhaps not. All add to the significance of the study in that they suggest programs for future research. The recommendations for further study that follow are organized according to the summary and significances of this study as reviewed above.

Methodologically, much could be done to validate further the new faith development questionnaire developed for this study, and possibly improve it through revision. The best measures of validity and reliability could be obtained if scores derived from Fowler's interview schedule were compared with scores derived from the questionnaire by the same subjects at the same time. This comparative method of validation was included as part of the pre-testing of the questionnaire, but was severely handicapped by the small size, religiosity, and homogeneous faith stage of the sample, by the purpose and scoring of the interviews, and by the considerable time lapse between the interview and questionnaire measurements. If large numbers of subjects randomly selected from the general population were administered both the interview and the questionnaire within the same week, and with one method of measurement alternately preceding the other, the strongest possible measures of the questionnaire's

validity and reliability would be secured.

Another type of test from which measures of the questionnaire's reliability could benefit would be applications to populations other than post-secondary students. Because 64% of the cases in this study were scored as Stage 4, the findings of even this research could be strengthened by empirical evidence that the questionnaire was not itself biased toward Stage 4 faith. It is certainly not unreasonable or even unlikely that this stage should be so predominant in this population, but greater confidence could be placed in the findings if there were external evidence that they reflected the properties of the subjects and not just the properties of the measurement instrument. Demonstrating the questionnaire's ability to identify other stages as modal in other populations would answer this question. Given the problematic factors of the relative cognitive complexity of the task of completing the questionnaire and the possible social desirability of some of the higher stage items, it is probably most important that the questionnaire be shown to be able to identify a Stage 2 or 3 mode in some populations. The selection of such populations naturally implies that the modal stage is already known by interview measures, or anticipated by other demographic variables. This is a return to the comparative recommendation above, and an anticipation of theoretical recommendations to follow.

Theoretically, much could be done to explore and elaborate Fowler's model of faith development. As an extension of the methodological considerations, a more quantitative approach to measurement of the various stages, aspects, and criteria in Fowler's theory make statistical scale reliability measures possible. Such measures

would test how coherently these various dimensions of the theory are actually held by individuals, in contrast to the coherence of Fowler's logic in assembling them. Measures such as correlations between and coefficient alphas of criteria may even suggest refinements to the theory.

Fowler's theory could also benefit from more research on the effects of various influences on faith development, such as the effect of post-secondary education researched by this study. Until more evidence of various predictors has been gathered, faith development will remain an abstracted theoretical pursuit with limited useful practical application. Future investigations of the effect of education on faith development could select other forms of education, such as informal mediums, or they could draw their samples from the general population instead of from one form and level of education, so as to avoid the lack of variation in the data that hindered this study. As always, longitudinal studies of the effect of education on faith development would also generate findings more convincing than those of cross-sectional studies such as this one.

Religion is another variable whose effect on faith development requires clarification. The findings on religion in this study were a perfectly inconclusive mix of negative, positive, and no significant difference. Findings from the demographics of the sample indicated that persons reporting high attendance at religious services and high current importance of religion or spirituality had significantly lower faith stage scores than persons reporting low attendance and low current importance of religion or spirituality. On the other hand, the regression analysis showed persons reporting a

preference for Roman Catholicism had significantly higher faith stage scores than the rest of the sample. Yet the t-tests of the education groups revealed that persons entering Bible college had faith stage scores that were not significantly different than those entering university. Thus the need to sort the effects of religious variables on faith development is unequivocal. Obviously this would best be done on a sample drawn from the general population instead of one that is biased by a large Bible college student component.

The most comprehensive approach to investigating effects on faith development would be to sample the general population and test for a plethora of variables in a manner similar to the Faith Development in the Adult Life Cycle Project (1987). If this were done more quantitatively, so as to be able to take advantage of sophisticated statistical techniques, it may even be possible to achieve a path analysis of various effects. Path analysis makes use of the multiple regression decomposition of zero-order correlation coefficients. Its main benefit is the identification and ordering of indirect effects, as well as the usual direct effects, of independent variables on a single dependent variable, made possible through the use of the standardized partials that serve as path coefficients. Path analysis represents a much more compelling and complete explanation of causality, bearing in mind the limits of the language of causality, and if achievable, would be a contribution unseen and unparalleled in faith development literature to date.

Sociologically, much could be done to bring Fowler's theory of faith development into the mainstream of sociological theory, particularly the sociology of

religion. Future studies of religious socialization, conversion, or apostasy, whether theoretical or empirical, would do well to take cognizance of both the concept and developmental scheme of faith formulated by Fowler. More generally, faith development theory is implicated in all symbolic interactionist or phenomenological analysis of meaning-making in the context of self and other-consciousness, and can serve as a heuristic perspective. In this way, sociology can be enriched by interdisciplinary accommodation.

In return, sociology can offer perspectives on Fowler's theory of faith development that may illuminate its social location, and guide its understanding and use. As intimated by the interpretation of the findings of this study, future research into socio-cultural influences on individual faith development could hold promise for charting longer term trends in such personal development. Sociology also contains the perspectives and tools to apply the concept of faith stage development to all sizes and forms of people groups, and could transpose the theory into a form of analysis for formal organizations, social institutions, and cultures. These are the broadest contours of the opportunity, task, and potential contribution of sociology. If this study prompts any such dialogue between Fowler's theory of faith development and sociology, it will by this alone have made a valuable contribution to social scientific scholarship.

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APPENDIX A**Stage Ranking Means of the 439 Cases**

ID1	= Identification Number of Case
STAGE	= Stage at which Case was Scored
ST2MEAN	= Mean of Stage 2 Rankings
ST3MEAN	= Mean of Stage 3 Rankings
ST4MEAN	= Mean of Stage 4 Rankings
ST5MEAN	= Mean of Stage 5 Rankings

ID1	STAGE	ST2MEAN	ST3MEAN	ST4MEAN	ST5MEAN
11015	.00	2.67	2.25	2.25	2.83
11020	.00	3.00	2.25	2.42	2.33
11036	.00	2.50	2.42	2.50	2.58
11050	.00	2.42	2.92	2.33	2.33
12013	.00	3.33	2.08	2.67	1.92
12036	.00	2.64	2.27	2.45	2.64
21010	.00	2.92	2.42	2.25	2.42
21043	.00	2.50	2.67	2.25	2.58
22040	.00	2.75	2.50	2.25	2.50
31010	.00	2.33	2.33	2.58	2.75
31017	.00	2.58	2.33	2.33	2.75
31026	.00	2.50	2.33	2.25	2.92
31027	.00	2.25	2.50	2.67	2.58
31030	.00	2.83	2.25	2.67	2.25
31034	.00	3.33	2.17	2.33	2.17
31036	.00	2.33	2.25	2.25	3.17
31041	.00	2.58	2.75	2.25	2.42
32030	.00	2.75	2.58	2.25	2.42
41011	.00	2.25	2.25	2.42	3.08
41012	.00	2.42	2.50	2.42	2.67
41026	.00	2.42	2.42	2.50	2.67
41050	.00	3.00	2.25	2.25	2.50
41054	.00	3.50	2.17	2.17	2.17
41055	.00	3.42	2.17	2.42	2.00
41060	.00	2.08	2.33	1.92	3.67
41068	.00	2.75	2.25	2.50	2.50
42007	.00	3.00	2.25	2.42	2.33
42033	.00	2.67	2.75	2.25	2.33
31054	2.50	2.08	1.92	2.67	3.25
21017	3.00	2.75	1.83	2.33	3.08
21055	3.00	2.42	1.67	2.67	3.25
21067	3.00	2.58	2.00	2.25	3.17
21094	3.00	3.08	1.92	2.50	2.50
22058	3.00	3.00	2.17	2.25	2.58
31002	3.00	2.67	2.17	2.75	2.42
31008	3.00	2.75	1.67	2.33	3.25
31009	3.00	2.83	2.17	2.33	2.67
31061	3.00	2.67	2.08	2.75	2.50
31068	3.00	2.58	1.67	2.58	3.17
31070	3.00	2.67	2.17	2.58	2.58
31074	3.00	2.25	2.08	2.58	3.08
32032	3.00	2.83	2.08	2.33	2.75
32056	3.00	2.75	2.00	2.92	2.33
41007	3.00	2.92	2.08	2.58	2.42
41048	3.00	3.42	1.92	2.42	2.25
41049	3.00	2.92	2.00	2.25	2.83
12027	3.50	3.25	2.17	2.17	2.42
12040	3.50	3.08	1.92	1.75	3.25
12043	3.50	2.83	1.92	2.08	3.17
21022	3.50	2.75	1.83	2.08	3.33
21070	3.50	3.25	1.92	1.83	3.00

ID1	STAGE	ST2MEAN	ST3MEAN	ST4MEAN	ST5MEAN
21095	3.50	3.08	1.92	2.17	2.83
21100	3.50	2.92	2.00	2.08	3.00
22016	3.50	3.08	2.00	1.75	3.17
22023	3.50	3.25	1.92	1.67	3.17
31016	3.50	2.83	2.08	2.08	3.00
31051	3.50	3.00	1.92	1.67	3.42
32004	3.50	3.25	1.83	2.08	2.83
32048	3.50	3.17	2.17	1.92	2.75
41062	3.50	3.33	2.17	2.17	2.33
42009	3.50	3.08	2.17	2.08	2.67
42012	3.50	3.50	1.83	2.00	2.67
42021	3.50	3.42	2.00	1.75	2.83
42044	3.50	3.08	1.92	1.83	3.17
42054	3.50	3.33	2.00	2.00	2.67
11001	4.00	3.58	2.83	1.58	2.00
11009	4.00	3.00	2.67	1.58	2.75
11011	4.00	2.83	2.67	2.08	2.42
11012	4.00	2.83	2.83	2.00	2.33
11014	4.00	3.08	2.50	1.67	2.75
11016	4.00	3.25	3.00	1.67	2.08
11022	4.00	3.17	2.58	1.50	2.75
11023	4.00	3.33	2.25	1.75	2.67
11025	4.00	3.17	2.75	1.58	2.50
11032	4.00	2.33	2.58	2.00	3.08
11037	4.00	3.45	2.64	1.64	2.27
11040	4.00	2.67	2.42	1.58	3.33
11041	4.00	2.58	2.83	2.17	2.42
11044	4.00	3.25	2.42	1.75	2.58
11053	4.00	3.58	2.50	1.42	2.50
11056	4.00	3.08	2.92	1.75	2.25
11057	4.00	3.33	2.67	1.67	2.33
11059	4.00	3.33	2.42	1.67	2.58
11060	4.00	3.17	2.33	1.83	2.67
11067	4.00	3.58	2.92	1.25	2.25
11077	4.00	3.25	2.50	1.75	2.50
11078	4.00	3.58	2.42	1.50	2.50
11080	4.00	2.75	2.75	1.58	2.92
11081	4.00	3.67	2.50	1.50	2.33
11084	4.00	3.25	2.50	1.75	2.50
11085	4.00	3.08	2.25	1.75	2.92
11088	4.00	3.00	2.50	2.17	2.33
11090	4.00	3.17	2.75	1.67	2.42
11093	4.00	2.92	2.58	1.58	2.92
11095	4.00	2.83	2.83	1.50	2.83
12003	4.00	3.17	2.25	2.00	2.58
12006	4.00	3.17	3.00	1.42	2.42
12009	4.00	3.00	2.58	1.58	2.83
12011	4.00	2.92	2.50	1.42	3.17
12012	4.00	3.17	2.58	1.58	2.67
12020	4.00	3.50	2.25	1.58	2.67
12022	4.00	3.58	2.17	1.25	3.00

ID1	STAGE	ST2MEAN	ST3MEAN	ST4MEAN	ST5MEAN
12023	4.00	3.42	2.42	1.50	2.67
12025	4.00	2.83	2.42	2.08	2.67
12026	4.00	3.25	2.42	1.50	2.83
12030	4.00	3.75	2.50	1.33	2.42
12035	4.00	2.83	2.42	1.33	3.42
12037	4.00	2.92	2.83	1.67	2.58
12039	4.00	3.25	2.33	1.67	2.75
12045	4.00	3.67	2.42	1.33	2.58
21002	4.00	3.42	2.83	1.67	2.08
21004	4.00	3.00	2.33	2.00	2.67
21007	4.00	3.33	2.67	1.50	2.50
21008	4.00	2.92	2.50	1.83	2.75
21012	4.00	2.92	3.08	1.50	2.50
21016	4.00	3.50	3.08	1.25	2.17
21020	4.00	3.17	2.67	1.33	2.83
21021	4.00	2.92	2.50	1.42	3.17
21027	4.00	3.25	2.17	1.42	3.17
21029	4.00	2.33	3.08	1.33	3.25
21032	4.00	3.17	2.33	1.83	2.67
21034	4.00	3.08	2.83	1.25	2.83
21035	4.00	2.92	2.58	1.25	3.25
21040	4.00	3.17	2.75	1.58	2.50
21042	4.00	2.67	3.08	1.67	2.58
21044	4.00	2.67	2.50	2.08	2.75
21045	4.00	3.33	2.83	1.17	2.67
21046	4.00	2.58	2.75	2.00	2.67
21050	4.00	3.00	2.42	1.67	2.92
21056	4.00	3.33	2.25	1.75	2.67
21060	4.00	3.08	2.25	2.00	2.67
21062	4.00	3.25	2.25	2.08	2.42
21063	4.00	2.75	2.83	1.50	2.92
21069	4.00	3.50	2.67	1.50	2.33
21074	4.00	3.17	2.92	1.67	2.25
21075	4.00	2.83	2.42	1.92	2.83
21082	4.00	2.75	2.33	2.08	2.83
21083	4.00	3.25	2.92	1.50	2.33
21087	4.00	3.08	2.25	1.92	2.75
21090	4.00	2.58	2.58	2.08	2.75
21091	4.00	3.18	2.64	1.82	2.36
21096	4.00	2.58	2.50	1.92	3.00
21097	4.00	2.92	3.00	1.75	2.33
21099	4.00	3.25	2.58	1.75	2.42
21101	4.00	3.67	2.25	1.33	2.75
21102	4.00	3.17	2.17	1.83	2.83
21104	4.00	2.67	2.67	2.08	2.58
21107	4.00	3.08	2.58	1.50	2.83
21111	4.00	2.67	2.25	1.58	3.50
22003	4.00	3.08	2.75	1.75	2.42
22006	4.00	3.08	2.58	1.83	2.50
22007	4.00	2.58	3.08	1.50	2.83
22010	4.00	3.00	2.25	1.67	3.08

ID1	STAGE	ST2MEAN	ST3MEAN	ST4MEAN	ST5MEAN
22011	4.00	3.42	2.50	1.50	2.58
22012	4.00	3.58	2.92	1.33	2.17
22014	4.00	3.00	2.25	1.92	2.83
22017	4.00	2.92	2.92	1.58	2.58
22018	4.00	3.25	2.83	1.17	2.75
22019	4.00	3.25	2.75	1.75	2.25
22024	4.00	3.33	2.17	1.33	3.17
22027	4.00	3.00	3.36	1.27	2.36
22033	4.00	3.42	2.58	1.83	2.17
22034	4.00	2.83	2.58	2.17	2.42
22036	4.00	3.25	2.00	1.58	3.17
22037	4.00	3.17	3.00	1.42	2.42
22038	4.00	2.82	2.45	1.64	3.09
22041	4.00	3.58	2.42	1.50	2.50
22044	4.00	3.25	2.17	1.67	2.92
22046	4.00	3.33	2.58	1.33	2.75
22048	4.00	3.50	2.92	1.42	2.17
22049	4.00	3.25	2.67	1.25	2.83
22050	4.00	2.75	2.58	1.67	3.00
22053	4.00	3.50	2.17	1.83	2.50
22054	4.00	3.42	2.58	1.83	2.17
22055	4.00	3.08	3.17	1.33	2.42
22056	4.00	3.33	2.67	1.75	2.25
22057	4.00	3.25	2.75	1.75	2.25
22059	4.00	3.33	2.92	1.58	2.17
22060	4.00	2.50	2.83	1.83	2.83
31001	4.00	3.67	3.08	1.25	2.00
31003	4.00	3.00	2.25	1.83	2.92
31004	4.00	2.75	2.58	1.58	3.08
31007	4.00	2.58	2.58	2.08	2.75
31012	4.00	3.08	2.75	1.83	2.33
31013	4.00	3.25	2.17	1.42	3.17
31014	4.00	3.58	2.92	1.42	2.08
31015	4.00	3.33	2.83	1.33	2.50
31019	4.00	3.17	2.17	1.67	3.00
31020	4.00	2.92	2.67	2.17	2.25
31022	4.00	3.67	2.50	1.67	2.17
31024	4.00	3.00	2.17	1.83	3.00
31025	4.00	3.42	2.58	1.67	2.33
31029	4.00	2.58	3.00	1.92	2.50
31032	4.00	3.00	3.00	1.83	2.17
31033	4.00	3.33	2.75	1.25	2.67
31035	4.00	3.25	2.42	1.58	2.75
31037	4.00	2.56	2.78	2.11	2.56
31038	4.00	3.00	2.42	1.33	3.25
31039	4.00	2.67	2.83	2.00	2.50
31043	4.00	3.00	3.00	1.50	2.50
31044	4.00	3.42	2.50	1.67	2.42
31045	4.00	3.33	2.08	1.67	2.92
31046	4.00	2.75	2.67	2.17	2.42
31047	4.00	3.33	2.75	1.67	2.25

ID1	STAGE	ST2MEAN	ST3MEAN	ST4MEAN	ST5MEAN
31048	4.00	3.58	2.58	1.67	2.17
31050	4.00	3.17	2.42	1.67	2.75
31052	4.00	2.92	2.58	1.83	2.67
31055	4.00	2.42	2.58	2.17	2.83
31057	4.00	3.08	2.25	1.75	2.92
31058	4.00	3.50	2.83	1.42	2.25
31059	4.00	2.83	2.33	1.75	3.08
31062	4.00	3.50	2.67	1.58	2.25
31063	4.00	2.83	2.42	1.92	2.83
31067	4.00	2.75	2.58	1.83	2.83
31072	4.00	3.42	2.17	1.75	2.67
31073	4.00	3.33	2.83	1.67	2.17
31076	4.00	3.50	2.42	1.58	2.50
32001	4.00	3.00	2.58	1.92	2.50
32002	4.00	3.08	2.33	1.92	2.67
32003	4.00	2.58	2.25	1.67	3.50
32007	4.00	2.58	2.50	1.83	3.08
32008	4.00	3.25	2.75	1.75	2.25
32009	4.00	3.67	2.58	1.58	2.17
32011	4.00	2.92	2.67	1.92	2.50
32013	4.00	3.58	2.83	1.42	2.17
32015	4.00	3.08	3.08	1.75	2.08
32017	4.00	3.25	2.92	1.08	2.75
32019	4.00	3.75	2.83	1.33	2.08
32020	4.00	3.42	2.58	1.50	2.50
32021	4.00	3.25	3.08	1.25	2.42
32022	4.00	3.17	2.58	1.75	2.50
32029	4.00	3.58	2.75	1.67	2.00
32034	4.00	2.83	2.25	1.75	3.17
32035	4.00	2.92	2.83	1.92	2.33
32037	4.00	3.58	2.42	1.67	2.33
32038	4.00	3.17	2.08	1.50	3.25
32041	4.00	3.08	2.42	2.00	2.50
32043	4.00	3.58	2.75	1.42	2.25
32047	4.00	3.42	2.92	1.58	2.08
32051	4.00	3.17	2.67	1.58	2.58
32052	4.00	3.50	2.33	1.75	2.42
32053	4.00	3.42	2.42	1.33	2.83
32054	4.00	3.25	2.92	1.58	2.25
32055	4.00	3.17	3.33	1.42	2.08
32057	4.00	3.67	3.00	1.50	1.83
32058	4.00	3.08	2.33	2.17	2.42
32065	4.00	2.75	2.75	2.08	2.42
41005	4.00	2.92	2.42	2.17	2.50
41009	4.00	2.67	3.00	1.58	2.75
41010	4.00	3.33	3.25	1.17	2.25
41014	4.00	3.50	2.17	1.42	2.92
41016	4.00	3.00	2.83	1.67	2.50
41017	4.00	3.33	2.75	1.58	2.33
41020	4.00	2.67	3.00	1.75	2.58
41021	4.00	3.17	2.58	1.67	2.58

ID1	STAGE	ST2MEAN	ST3MEAN	ST4MEAN	ST5MEAN
41024	4.00	3.58	2.58	1.58	2.25
41025	4.00	2.92	2.83	1.00	3.25
41027	4.00	2.33	2.42	1.92	3.33
41029	4.00	2.92	2.25	1.83	3.00
41030	4.00	3.83	2.50	1.42	2.25
41033	4.00	3.67	2.67	1.56	2.11
41034	4.00	2.92	3.00	1.67	2.42
41035	4.00	3.25	2.25	1.83	2.67
41037	4.00	2.75	2.25	2.17	2.83
41039	4.00	3.50	2.42	1.75	2.33
41040	4.00	3.50	3.17	1.25	2.08
41042	4.00	2.75	2.75	1.92	2.58
41045	4.00	2.92	3.33	1.42	2.33
41046	4.00	2.83	2.67	2.08	2.42
41047	4.00	3.67	2.50	1.67	2.17
41051	4.00	3.08	2.67	1.92	2.33
41052	4.00	3.33	3.00	1.42	2.25
41053	4.00	2.83	2.50	2.17	2.50
41057	4.00	3.08	2.25	2.00	2.67
41059	4.00	2.67	2.33	2.17	2.83
41063	4.00	2.83	2.58	2.08	2.50
41064	4.00	2.83	2.75	1.92	2.50
41066	4.00	3.08	2.58	2.00	2.33
41067	4.00	2.92	2.42	1.92	2.75
41070	4.00	2.92	2.08	1.67	3.33
41072	4.00	3.17	2.75	1.67	2.42
42002	4.00	3.58	3.08	1.42	1.92
42003	4.00	3.25	2.92	1.50	2.33
42004	4.00	3.33	2.17	1.50	3.00
42005	4.00	2.50	3.33	1.33	2.83
42006	4.00	2.67	2.75	2.08	2.50
42008	4.00	3.50	2.42	1.67	2.42
42010	4.00	3.50	3.17	1.50	1.83
42011	4.00	3.33	2.92	1.58	2.17
42013	4.00	2.92	2.75	1.50	2.83
42014	4.00	2.58	2.58	2.00	2.83
42015	4.00	3.42	3.08	1.50	2.00
42017	4.00	2.42	2.58	1.92	3.08
42018	4.00	3.42	2.50	1.83	2.25
42019	4.00	2.92	2.08	1.75	3.25
42020	4.00	3.42	2.92	1.50	2.17
42022	4.00	3.33	2.25	1.58	2.83
42023	4.00	3.25	2.75	1.75	2.25
42024	4.00	2.83	2.67	1.75	2.75
42025	4.00	3.33	2.67	1.33	2.67
42026	4.00	2.83	2.92	1.75	2.50
42027	4.00	3.08	2.50	1.58	2.83
42028	4.00	2.55	2.91	1.91	2.64
42029	4.00	3.00	2.17	1.67	3.17
42030	4.00	3.45	2.36	1.55	2.64
42031	4.00	3.50	2.83	1.42	2.25

ID1	STAGE	ST2MEAN	ST3MEAN	ST4MEAN	ST5MEAN
42034	4.00	3.42	2.08	1.67	2.83
42035	4.00	3.58	2.58	1.67	2.17
42036	4.00	3.50	2.42	1.17	2.92
42037	4.00	2.58	3.08	1.50	2.83
42039	4.00	3.00	2.67	1.50	2.83
42040	4.00	3.08	2.42	1.67	2.83
42042	4.00	3.25	2.42	1.92	2.42
42043	4.00	3.83	2.50	1.67	2.00
42045	4.00	2.67	2.75	2.17	2.42
42046	4.00	3.08	2.67	1.58	2.67
42050	4.00	3.00	2.33	1.83	2.83
42051	4.00	3.58	2.58	1.75	2.08
42052	4.00	3.17	2.58	1.50	2.75
42053	4.00	3.00	2.67	1.92	2.42
42056	4.00	3.00	3.00	1.83	2.17
42059	4.00	3.33	3.42	1.42	1.83
42060	4.00	3.67	2.67	1.67	2.00
42061	4.00	3.33	2.75	1.58	2.33
42062	4.00	3.33	2.67	1.42	2.58
42064	4.00	3.42	2.50	1.42	2.67
42065	4.00	3.33	2.33	1.33	3.00
42066	4.00	2.58	3.17	2.00	2.25
42068	4.00	3.67	2.83	1.50	2.00
11049	4.50	3.67	2.75	1.67	1.92
11091	4.50	3.58	2.75	1.83	1.83
11094	4.50	3.33	2.50	2.00	2.17
12008	4.50	2.92	3.08	2.08	1.92
21064	4.50	3.67	2.42	1.92	2.00
21066	4.50	3.42	2.67	2.00	1.92
21084	4.50	3.25	2.75	2.00	2.00
21093	4.50	3.25	2.92	2.00	1.92
22004	4.50	3.50	2.58	1.83	2.08
22013	4.50	3.67	2.67	1.83	1.83
22031	4.50	2.67	3.17	2.00	2.17
22047	4.50	3.50	2.75	1.92	1.83
31005	4.50	3.08	3.08	2.00	1.83
31023	4.50	3.58	2.42	2.00	2.00
31028	4.50	3.42	2.50	2.00	2.08
31042	4.50	3.33	2.75	2.08	1.83
31053	4.50	3.08	2.83	2.00	2.08
31060	4.50	3.33	2.75	1.92	2.00
31065	4.50	3.33	2.42	2.08	2.17
31069	4.50	3.25	2.75	2.00	2.00
31071	4.50	3.00	2.83	2.08	2.08
31075	4.50	3.42	2.50	2.08	2.00
32005	4.50	3.17	3.00	1.92	1.92
32006	4.50	3.50	2.33	2.17	2.00
32012	4.50	3.50	2.92	1.83	1.75
32016	4.50	3.33	2.58	2.00	2.08
32024	4.50	3.50	2.50	1.92	2.08
32026	4.50	3.25	2.83	2.00	1.92

ID1	STAGE	ST2MEAN	ST3MEAN	ST4MEAN	ST5MEAN
32027	4.50	3.33	3.00	1.75	1.92
32028	4.50	3.00	2.92	2.08	2.00
32031	4.50	3.17	3.08	1.92	1.83
32033	4.50	3.33	2.67	1.92	2.08
32036	4.50	3.00	3.00	1.92	2.08
32039	4.50	3.42	2.67	2.00	1.92
32040	4.50	3.58	2.75	1.75	1.92
32045	4.50	3.58	2.92	1.67	1.83
32049	4.50	3.08	2.92	2.08	1.92
32050	4.50	3.17	3.00	1.92	1.92
32061	4.50	3.42	3.17	1.83	1.58
32062	4.50	3.58	2.50	1.83	2.08
32063	4.50	2.83	3.25	1.83	2.08
32066	4.50	3.67	2.92	1.83	1.58
41001	4.50	3.50	2.42	2.00	2.08
41002	4.50	3.17	3.08	2.00	1.75
41003	4.50	3.50	2.58	2.08	1.83
41019	4.50	3.17	3.08	1.75	2.00
41022	4.50	3.25	2.75	2.00	2.00
41023	4.50	3.67	2.50	1.83	2.00
41028	4.50	3.58	2.67	1.83	1.92
41031	4.50	3.33	2.50	2.00	2.17
41038	4.50	3.42	2.33	2.08	2.17
41058	4.50	3.50	2.92	1.75	1.83
41061	4.50	3.50	2.42	2.17	1.92
41065	4.50	3.50	2.42	2.17	1.92
41069	4.50	3.33	2.92	1.75	2.00
41071	4.50	3.33	2.67	2.00	2.00
42016	4.50	3.42	2.50	1.92	2.17
42032	4.50	3.25	2.67	2.17	1.92
42038	4.50	2.92	2.92	2.00	2.17
42041	4.50	3.25	3.25	1.75	1.75
42047	4.50	3.17	3.00	1.92	1.92
42048	4.50	3.42	2.58	1.92	2.08
42049	4.50	3.50	2.67	2.00	1.83
42055	4.50	3.33	2.58	1.92	2.17
42057	4.50	3.25	2.67	2.08	2.00
42058	4.50	3.25	2.67	2.00	2.08
42063	4.50	3.00	3.00	2.00	2.00
11006	5.00	3.75	2.33	2.25	1.67
11029	5.00	3.67	2.67	2.00	1.67
11043	5.00	3.50	2.92	2.25	1.33
11066	5.00	3.58	2.33	2.25	1.83
11069	5.00	3.25	2.83	2.50	1.42
12007	5.00	3.33	2.75	2.25	1.67
12038	5.00	3.17	2.83	2.17	1.83
22045	5.00	2.92	2.67	2.25	2.17
31006	5.00	3.36	2.82	2.09	1.73
31011	5.00	3.67	3.08	1.83	1.42
31018	5.00	3.33	2.75	2.25	1.67
31021	5.00	3.17	2.33	2.67	1.83

ID1	STAGE	ST2MEAN	ST3MEAN	ST4MEAN	ST5MEAN
31031	5.00	3.25	2.58	2.33	1.83
31040	5.00	2.50	2.75	2.67	2.08
31049	5.00	3.50	2.75	2.08	1.67
31056	5.00	3.08	2.33	2.67	1.92
31064	5.00	3.08	2.50	2.42	2.00
31066	5.00	3.50	2.42	2.50	1.58
32010	5.00	3.08	2.25	2.83	1.83
32014	5.00	3.42	2.58	2.25	1.75
32018	5.00	3.33	2.67	2.25	1.75
32023	5.00	3.58	2.75	2.00	1.67
32025	5.00	3.58	3.08	2.08	1.25
32042	5.00	3.58	2.92	1.92	1.58
32044	5.00	3.75	2.67	2.00	1.58
32046	5.00	2.75	2.75	2.42	2.08
32059	5.00	3.25	2.25	2.42	2.08
32060	5.00	2.92	3.08	2.17	1.83
32064	5.00	3.42	2.25	2.42	1.92
41004	5.00	3.25	2.92	2.08	1.75
41006	5.00	3.08	2.92	2.42	1.58
41008	5.00	2.75	2.92	2.25	2.08
41013	5.00	3.50	2.42	2.25	1.83
41015	5.00	2.50	3.25	2.50	1.75
41018	5.00	3.00	2.50	2.42	2.08
41032	5.00	3.33	2.25	2.25	2.17
41036	5.00	3.67	2.83	1.92	1.58
41041	5.00	3.17	3.17	2.00	1.67
41043	5.00	3.25	2.67	2.33	1.75
41044	5.00	3.25	2.67	2.58	1.50
41056	5.00	3.17	2.33	2.33	2.17
42001	5.00	3.25	2.50	2.83	1.42
42067	5.00	3.42	2.58	2.17	1.83

Number of cases read: 439 Number of cases listed: 439

APPENDIX B

Interitem Correlations by Stage

- - Correlation Coefficients - -

	VAR03	VAR06	VAR12	VAR13	VAR19	VAR22
VAR03	1.0000	.0170	.0448	.0572	-.0341	-.0238
VAR06	.0170	1.0000	.0038	.0873	.0358	.0693
VAR12	.0448	.0038	1.0000	.3943**	.0811	-.0527
VAR13	.0572	.0873	.3943**	1.0000	-.0373	-.0449
VAR19	-.0341	.0358	.0811	-.0373	1.0000	.0242
VAR22	-.0238	.0693	-.0527	-.0449	.0242	1.0000
VAR28	.1098*	.0713	-.0583	-.0488	.1048*	.0133
VAR29	.0210	.0062	.0792	.0713	.0700	.0020
VAR35	-.0372	-.0226	-.0283	-.0042	.0583	-.0263
VAR38	.1088*	.1054*	.0809	.1030*	.0812	.0664
VAR44	.0470	.0925	.0490	.1464**	.1798**	.1026*
VAR45	.0668	.0506	-.0260	.0314	.1771**	.3272**

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

" . " is printed if a coefficient cannot be computed

	VAR28	VAR29	VAR35	VAR38	VAR44	VAR45
VAR03	.1098*	.0210	-.0372	.1088*	.0470	.0668
VAR06	.0713	.0062	-.0226	.1054*	.0925	.0506
VAR12	-.0583	.0792	-.0283	.0809	.0490	-.0260
VAR13	-.0488	.0713	-.0042	.1030*	.1464**	-.0314
VAR19	.1048*	.0700	.0583	.0812	.1798**	.1771**
VAR22	.0133	.0020	-.0263	.0664	.1026*	.3272**
VAR28	1.0000	-.0139	.0455	.1117*	.0558	-.0371
VAR29	-.0139	1.0000	.1849**	.0832	.1315**	.0667
VAR35	.0455	.1849**	1.0000	.1783**	.0154	-.0123
VAR38	.1117*	.0832	.1783**	1.0000	.1196*	.1232*
VAR44	.0558	.1315**	.0154	.1196*	1.0000	.2251**
VAR45	-.0371	.0667	-.0123	.1232*	.2251**	1.0000

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	VAR04	VAR05	VAR11	VAR14	VAR18	VAR23
VAR04	1.0000	-.0626	.0646	.1037*	.1298**	.0867
VAR05	-.0626	1.0000	-.2105**	-.0488	-.0594	-.0332
VAR11	.0646	-.2105**	1.0000	.0992*	.2172**	.0896
VAR14	.1037*	-.0488	.0992*	1.0000	.2436**	.0314
VAR18	.1298**	-.0594	.2172**	.2436**	1.0000	.0321
VAR23	.0867	-.0332	.0896	.0314	.0321	1.0000
VAR25	.0059	.0184	.0317	.0689	.0084	.0677
VAR32	-.0505	.1582**	-.0105	-.0146	.0811	-.0222
VAR36	-.0240	-.1337**	.1959**	.0588	.0259	.0357
VAR37	.0961*	-.0338	.1238**	.2332**	.3316**	.0237
VAR43	.0584	-.0969*	.0697	-.0184	-.0174	.0642
VAR46	.0206	-.0063	.0724	.0643	.0745	-.0236

* - Signif. LE .05 ** - Signif. LE .01 [2-tailed]

" . " is printed if a coefficient cannot be computed

	VAR25	VAR32	VAR36	VAR37	VAR43	VAR46
VAR04	.0059	-.0505	-.0240	.0961*	.0584	.0206
VAR05	.0184	.1582**	-.1337**	-.0338	-.0969*	-.0063
VAR11	.0317	-.0105	.1959**	.1238**	.0697	.0724
VAR14	.0689	-.0146	.0588	.2332**	-.0184	.0643
VAR18	.0084	.0811	.0259	.3316**	-.0174	.0745
VAR23	.0677	-.0222	.0357	.0237	.0642	-.0236
VAR25	1.0000	-.0972*	.0793	.0355	-.0035	.0196
VAR32	-.0972*	1.0000	.0067	-.0048	.0006	-.0417
VAR36	.0793	.0067	1.0000	.0011	.0017	-.0428
VAR37	.0355	-.0048	.0011	1.0000	-.0592	.2080**
VAR43	-.0035	.0006	.0017	-.0592	1.0000	-.0876
VAR46	.0196	-.0417	-.0428	.2080**	-.0876	1.0000

* - Signif. LE .05 ** - Signif. LE .01 [2-tailed]

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	VAR01	VAR08	VAR10	VAR15	VAR20	VAR21
VAR01	1.0000	-.0533	.0696	.0446	.1484**	.0534
VAR08	-.0533	1.0000	-.0486	.0104	-.1185*	.0897
VAR10	.0696	-.0486	1.0000	.1277**	.0837	-.0807
VAR15	.0446	.0104	.1277**	1.0000	.0864	.0116
VAR20	.1484**	-.1185*	.0837	.0864	1.0000	.0730
VAR21	.0534	.0897	-.0807	.0116	.0730	1.0000
VAR27	-.0013	-.0097	.0167	.0764	.0953*	.1394**
VAR30	.0317	.1074*	-.0298	.0199	.0151	.1596**
VAR33	.0874	-.1044*	.1288**	.1012*	.1389**	-.0751
VAR40	.0477	.0157	.0209	.0197	.0027	.0591
VAR42	.1224*	.0677	.0827	-.0086	.2519**	.1188*
VAR47	.0856	.0330	.0482	.1093*	.0423	.1039*

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

" . " is printed if a coefficient cannot be computed

	VAR27	VAR30	VAR33	VAR40	VAR42	VAR47
VAR01	-.0013	-.0317	.0874	.0477	.1224*	.0856
VAR08	-.0097	.1074*	-.1044*	.0157	.0677	.0330
VAR10	.0167	-.0298	.1288**	.0209	.0827	.0482
VAR15	.0764	.0199	.1012*	.0197	-.0086	.1093*
VAR20	.0953*	.0151	.1389**	.0027	.2519**	.0423
VAR21	.1394**	.1596**	-.0751	.0591	.1188*	.1039*
VAR27	1.0000	.0991*	.0616	.0272	.1542**	.0605
VAR30	.0991*	1.0000	.1173*	.1378**	.1924**	.1051*
VAR33	.0616	.1173*	1.0000	-.0295	.0954*	.0254
VAR40	.0272	.1378**	-.0295	1.0000	.1020*	.1066*
VAR42	.1542**	.1924**	.0954*	.1020*	1.0000	.0884
VAR47	.0605	.1051*	.0254	.1066*	.0884	1.0000

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	VAR02	VAR07	VAR09	VAR16	VAR17	VAR24
VAR02	1.0000	.0354	.1277**	.1343**	.0970*	.0292
VAR07	.0354	1.0000	.0218	.0574	.0252	.0537
VAR09	.1277**	.0218	1.0000	.1908**	.1547**	.0537
VAR16	.1343**	.0574	.1908**	1.0000	.2513**	.0125
VAR17	.0970*	.0252	.1547**	.2513**	1.0000	.1014*
VAR24	.0292	.0275	.0537	.0125	.1014*	1.0000
VAR26	.1236**	.0064	.1448**	.1112*	.1046*	.0751
VAR31	.0841	.0484	.1139*	.2811**	.1688**	.1392**
VAR34	.1141*	.0319	.3086**	.1844**	.2561**	.0136
VAR39	.1605**	.0712	.1682**	.1853**	.1489**	.1142*
VAR41	.0402	.0238	.2025**	.0738	.1317**	.1098*
VAR48	.0598	.0268	.1048*	.0273	.0929	.2578**

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

" . " is printed if a coefficient cannot be computed

	VAR26	VAR31	VAR34	VAR39	VAR41	VAR48
VAR02	.1236**	.0841	.1141*	.1605**	.0402	.0598
VAR07	.0064	.0484	.0319	.0712	.0238	.0268
VAR09	.1448**	.1139*	.3086**	.1682**	.2025**	.1048*
VAR16	.1112*	.2811**	.1844**	.1853**	.0738	.0273
VAR17	.1046*	.1688**	.2561**	.1489**	.1317**	.0929
VAR24	.0751	.1392**	.0136	.1142*	.1098*	.2578**
VAR26	1.0000	.1515**	.0972*	.1443**	.0038	.1116*
VAR31	.1515**	1.0000	.1177*	.1397**	.1104*	.0504
VAR34	.0972*	.1177*	1.0000	.1913**	.0900	.1044*
VAR39	.1443**	.1397**	.1913**	1.0000	.0458	.0901
VAR41	.0038	.1104*	.0900	.0458	1.0000	.1701**
VAR48	.1116*	.0504	.1044*	.0901	.1701**	1.0000

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

" . " is printed if a coefficient cannot be computed