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# A Repertory Grid Investigation of Academic Performance and Selected Environmental Constructs Among Indonesian Seminarians in the Archdioces of Ujung Pandang

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A REPERTORY GRID INVESTIGATION OF

ACADEMIC PERFORMANCE AND SELECTED ENVIRONMENTAL CONSTRUCTS

AMONG INDONESIAN SEMINARIANS

IN THE ARCHDIOCESE OF UJUNG PANDANG

A THESIS SUBMITTED TO

THE FACULTY OF THE GRADUATE SCHOOL

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MASTER OF ARTS

DEPARTMENT OF

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BY

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# ABSTRACT

This repertory grid study was designed to describe the relationships between the academic performance levels (GPA) and constructs related to selected environmental support systems (the family, the seminary, the ideals) across a population of seminarians. The study was also designed to describe the interrelationships among the GPA levels, the individual difference characteristics of the respondents, and selected environmental constructs.

The 36 subjects were seminarians at the seminary of the Archdiocese of Ujung Pandang, Indonesia. The study was theoretically and methodologically anchored to George A. Kelly's Personal Constructs Theory. The data set was collected using a 17 X 25 repertory grid technique. A cluster analysis was used to examine the data sets.

The results indicated that there is a positive relationship between the GPA levels and the family ratings, between the GPA levels and the seminary ratings, and between the GPA levels and the ideal ratings. There was a negative relationship between the GPA levels and the age of the respondents, and between the GPA levels and the length of stay within the seminary. There was a positive relationship between

the GPA levels and the birth of order position of the respondents. However, for the most part many similarities were found in the ratings among most of the respondents across most of the clusters created in the study.

# TABLE OF CONTENTS

vii

## LIST OF TABLES

# CHAPTER I

## INTRODUCTION

### The Context of the Study

This study was set in Yogyakarta, Indonesia, where the seminary of the Archdiocese of Ujung Pandang is located. Geographically, the Republic of Indonesia has 27 provinces. The Archdiocese of Ujung Pandang includes two provinces (South Sulawesi and Southeast Sulawesi). Both of them consist of a 114,804 sq. km. area (South Sulawesi consists of 82,768 sq. km. area, and Southeast Sulawesi consists of 32,036 sq. km. area). Indonesia has a total population of 185 million. Catholics constitute about 2.50% of the total population. The overall population in the two provinces is about 9 million. The Catholics population in the Archdiocese of Ujung Pandang is 147,054 (1.63% of the total population). This number has risen from only about 1000 in the 1930s. That is to say that the Catholic population has multiplied 147 times in about 60 years (Ada', 1993).

Ethnographically, both provinces comprise several original ethnic groups (e,g., at the South Sulawesi: the Torajans; and at the Southeast Sulawesi: the Munanese). In addition to these groups, there are several ethnic groups from the other 25 provinces of Indonesia (e.g., the Javanese, the Balinese, the Florinese, and the Chinese).

Religiously, Moslems form the overwhelming majority of the population. However, among the Torajans the vast majority are Christians, both Protestants and Catholics (Ada', 1993).

Historically, the local church of Ujung Pandang was established as the Prefecture Apostolic of Ujung Pandang in 1937. It became a Vicariate Apostolic in 1948 (The Catholic Church in Indonesia, 1989) which in 1961 became the Archdiocese of Ujung Pandang (Vade Mecum, 1993).

At present, there is no major Catholic seminary in the area of the Archdiocese of Ujung Pandang. Seminarians pursue their studies in the department of "Wedabhakti" Theology. Wedabhakti is the theology department of "Sanata Dharma", a Catholic (Jesuit) University located in Yogyakarta (Central Java).

In the seminary's early stages (1956), the Archdiocese of Ujung Pandang sent its seminarians to North Sulawesi. In 1961, seminarians began to study at St. Paul, the major seminary of the Archdiocese of Semarang in Yogyakarta. The seminarians lived and studied with other seminarians from various dioceses. In 1967, St. Paul major seminary and Jesuit theologate joined to form the Institute of Philosophy and Theology. In 1972, the institute was affiliated with Sanata Dharma as the department of theology. Later (1984) it was named Wedabhakti when it became the department of Pontifical Theology (Sanata Dharma University, 1993).

In 1978, the seminarians of the Archdiocese of Ujung

Pandang moved to their own site, due to increasing numbers of seminarians that could no longer be accommodated at St. Paul major seminary. The new site was called "Seminarium Anging Mammiri" (Ada', 1993). From the early 1960s, the seminarians had been known for their good academic performance.

Defining the Problem

In the section about major seminaries' programs, the Second Vatican Council classified types of programs as being spiritual, intellectual, and/or disciplinary (Abbott, 1966). If the intellectual program is considered to be the seminary education, then the education process is one among several major basic elements in seminary life. The seminary committee in the Indonesian Bishops' Conference affirmed that the needs to be systematically processed in the seminary life consist of attitudes, intellectual knowledge, skills, and spirituality ("Ratio Fundamentalis Nationalis" Pendidikan Imam di Indonesia, 1986; The Catholic Church in Indonesia, 1989). These needs are consistent with the needs that the staff members of the seminary of Ujung Pandang have been focusing upon (personality, spirituality, social life, intellect).

It has been reported (Daia, 1994) that the learning process of the seminarians of the Archdiocese of Ujung Pandang has been declining for the past 10-15 years. Their performance on examinations and their overall GPAs continues to decline. The declining levels of performance among the seminarians has become a serious concern for the Archdiocese. The staff

members of the seminary have been carefully attending to this issue. Accordingly, an effort has been made to address the source of the problem. A few observations that have been done include the seminary, the former school, the family background, and the individual difference characteristics of the seminarians (Daia, 1994).

In April 1991, the staff members of the seminary adopted a new policy:

> "A seminarian can continue to pursue his priesthood if he achieves at least a GPA of 3.00 for philosophy and at least a GPA of 2.50 for theology. A seminarian who cannot effect such a GPA could be allowed to continue pursuing his priesthood if he really shows an outstanding personality, spirituality, and social concern." (Daia, 1994).

This policy statement was approved by the Archdiocese office on November 1992.

It should be noted that it is not enough for a priest to have a good personality, spirituality, and social life. Although all three characteristics are considered very important, a priest is expected to have adequate intellectual (academic) ability. Today, most communicants of the church are well educated and critical. In order to serve them, the church (the seminary) must develop and maintain a proper intellectual posture when addressing the problem within the church and society (Daia, 1994).

The issue of declining academic performance levels have become a problem for the staff members, the Archdiocese office, and the seminarians. It also has been selected as the

problem for the study at hand. What is the relationship between the seminarians' academic performance and selected environmental constructs among Indonesian seminarians at the Archdiocese of Ujung Pandang?

## Purposes

The study was designed as an exploratory field study. The study was designed with the following purposes in mind. First, it was designed to test and to systematically describe the relationship between the seminarians' academic performance levels and selected environmental constructs (social support systems within their families, seminary, and ideals). Second, it was designed to systematically explore the relationships among the seminarians' academic achievement levels, their individual difference characteristics, and constructs related to their social support systems. Third, a special focus was directed at exploring the variability and patterns of grouping subjects across the variables. And finally, the study was designed in a effort to get a better understanding about the seminarians' families, the seminary atmosphere, and the seminarian's ideals, as perceived by the seminarians themselves.

In other words, the main purpose of the study was to systematically describe the interrelationships among the variables across the subjects, the strength and direction of the relationships, the variability (differences) among the variables, the variability of subjects across the variables,

and the patterns of grouping subjects across the variables. By exploring the relationships among the variables studied, suggestions for further studies would arise.

Finally, it should be noted also that the study was not intended to examine and/or to evaluate the training policies at the seminary. Rather, an attempt was made to seek a deeper foundation for establishing training policies in the future.

Research Questions

The following research questions were addressed:

1.  What is the relationship between the seminarians' academic performance levels and their views of their families, seminary life, and their ideals?

2.  What is the relationship among the seminarians' academic performance levels, their individual difference characteristics, and selected environmental constructs?

Stated in the null form:

1.  There is no relationship between the seminarians' academic performance levels and their views of their families, seminary life, and their ideals.

2.  There is no relationship among the seminarians' academic performance levels, their individual difference characteristics, and selected environmental constructs.

In this repertory grid study, the academic performance (GPA) of the seminarians was the dependent variable. The

independent variables consisted of the selected environmental constructs (the family, the seminary, the ideals) and the individual difference characteristics (the age, the length of stay within the seminary, the birth order position) among the seminarians.

# CHAPTER II

## REVIEW OF THE LITERATURE

The study was framed within the personal constructs theory. Several reasons were used to make this decision.

First, the fundamental belief (assumption) of personal constructs theorists is that the reality of human life is a result of a subject's here and now interpretation about the world (experiences). The theory assumes that active, personal, concrete interactions are continuously taking place within the environment.

Second, personal constructs theorists assume that everyone construes their perceptions upon the world. Everybody functions as a scientist, constructing a concept about the world in order to predict and control his/her world. In this sense, the theory actually implies a future-oriented view.

Third, this theory deals directly with subjects by asking them how they think about certain situations and how they interact in concrete situations.

Fourth, subjects, who are the main role-players, are requested to rate their own thinking (ideas) about their relationships with the environment across individual difference characteristics.

Fifth, the repertory grid technique of personal

constructs theory provides a practical and flexible technique that can be used to systematically establish correlations between environmental variables and individual difference respondent characteristics. Dichotomous attributes are postulated among a selected set of variables. The _elements_ represent a set of figures (persons or objects) to be construed/sorted. The _constructs_ represent a set of characteristics (ways) by which the figures are being systematically examined.

## Learning Processes and the Environment

**The environment is viewed as indispensable.**

The environment, as usually approached in psychology, is primarily related to the genuine interaction between individuals and their surrounding situations. Environmental psychologists study relationships between human actions (behaviors, thoughts, emotions) and physical situations (climates, spaces, air pollution). Environmental measures refer to the instruments employed to examine the concrete interactions between an individual and his/her surroundings (Corsini, 1994).

Some researchers (Darom & Rich, 1988; Wentzel, 1989) have investigated the extent to which a person adjusts himself/herself to his/her environments. Focus has been given to the way and the extent to which people interact with their environments. Other researchers are interested in the way and to what degree the environment affects human life (Holland,

1966; Song & Hattie, 1984).

Some focus has also been given to human development. Bronfenbrenner (1986) sees the environment as representing external systems surrounding the subjects. His concern is to trace the structure and the way in which the environment affects human development, both the family and the individual. He differentiates environment into three model-systems (mesosystem, exosystem, and chronosystem). A mesosystem refers to the first environmental circle around an individual that directly binds him/her up (the family, the school). The second environmental circle is the exosystem. It indirectly influences the subject. The chronosystem is understood to be a setting that occurs and influences human development over time (normative - the school entry, the marriage; non-normative - the divorce, moving). Bronfenbrenner claims that the influences of the environment on human development and family can be approached and categorized into these three model-systems. The degree and manner of their differential effects depend on each the dynamics taking place within the system.

Within the context of the present investigation, Bloom's study (1964) is particularly noteworthy. He defined environment as the "conditions, forces, and external stimuli which impinge upon the individual" (p. 187). All individuals dwell in and relate to the environmental stimulation. In fact, human beings discover themselves amidst the environment. Bloom

stated the nuance of his understanding about such an environment. He said:

> "There is little that is new in the recognition that individuals live in and interact with their environment. No theory of psychology, learning, or growth has ever dismissed the environment as unimportant or to be ignored in accounting for development" (Bloom, 1964, p. 183).

That is to say that the environment is seen as an essential factor in human reality. It externally conditions and stimulates individuals and their lives. This view of the environment is the context within which this study was conducted.

The interaction of the environment and the person.

The basis of the relationship between the environment and human characteristics, as well as their effects, were described by Gage & Berliner (1991) as consisting of two factors ("two factors determine any human characteristic: heredity [nature] and environment [nurture]. Both are indispensable to human development" [p. 62]). Heredity and environment cannot be separated from human life. Few would challenge the view that both nature and nurture nourish human development.

Bloom (1964) focused on the development of human characteristics amidst various environments. He acknowledged that humans develop throughout their life-time. Some of these characteristics are visible (e.g., height, weight) and others are invisible (e.g., honesty, strength, and empathy). Focus was given to describing stable and unstable patterns of

development. In other words, human characteristics are considered to be both stable and changeable over time along with human growth and development in various environments.

Learning processes.

The term learning process (Gage & Berliner, 1991; Fromm, 1993) is applied to the part of the education process viewed from the students' stand point. The other part is the teaching process as viewed from the teachers' side of the fence. Thus, education consists of two main key-role-players, namely, the teachers (dealing with the teaching process) and the students (dealing with the learning process).

Gage & Berliner (1991) define learning as "the process whereby an organism changes its behavior as a result of experience" (p. 225). Gradual behavioral changes that take place are caused by the interaction with experiences. Those changes are not the results of natural developments and/or temporary causes (Bower & Hilgard, 1981) within the learners themselves. Learning takes time and occurs throughout life as one interacts with their environment. Regarding the learning that takes place in school, they declare that "the change in behavior we are looking for is the ability to remember, understand, and apply various things and the tendency to have certain attitudes and values, of the kind set forth in our educational objectives" (Gage & Berliner, 1991, p. 225). Thus, the learning process both in the general sense and in the school context, is designed to bring about personal behavioral

changes.

From another perspective, Fromm (1993) was concerned with what really happens "in" students as a result of the learning process. He was interested in "exploring the personal learning process of students" (Fromm, 1993, p. 196). What the students factually receive from such learning was his main focus. Hence, students would be given the opportunity and freedom to articulate their own views with respect to the learning processes.

<u>The interactions taking place between the environment and the student.</u>

There have been numerous attempts made to describe, understand, and evaluate the overall learning process in relation to contextual variables such as students' individual difference characteristics and academic achievement (Brophy & Good, 1985; Holland, 1966; Darom & Rich, 1988; Song & Hattie, 1984; Wentzel, 1989). A few researchers have utilized personal constructs methodology to explore and document relationships among selected contextual variables (e.g. Pope & Keen, 1981; Fromm, 1993; Salmon, 1993).

The investigators have been attempting to document relationships among academic achievement, types of environment, gender differences, classroom goals, teacher behaviors, standards of performance, self-concept, and home environment variables. Holland (1966) differentiated the environment into six categories according to six types of people (the realistic, intellectual, social, conventional,

enterprising, and artistic person). The most and the least influential environmental variables related to academic achievement were found to be intellectual environments and enterprising environments.

With respect to gender differences, it has been reported that girls are more positively responsive than boys towards the commitment to school work. This is evident from both student self-reports and teacher perceptions (Darom & Rich, 1988). Meanwhile, Wentzel (1989) reported that there is a significant positive relationship between student GPA and the students' efforts to achieve several goals (e.g., to be a successful student, to be dependable and responsible, and to get things done on time). There is a significant negative relationship between the GPA and the goal of trying to have fun. More specifically, Brophy & Good (1985) reported that teacher behaviors were consistently correlated with student academic achievement.

Song & Hattie (1984) documented relationships among home environment variables, self-concept, and academic achievement. They reported that there was an indirect relationship between home environment (which was subdivided into family structure, social status, and family psychological characteristics) and academic achievement. They also differentiated the self-concept into academic self-concept, social self-concept, and presentation of self. It should be noted that the home environment is believed to affect the self-concept through the

interactions taking place within the family. The academic self-concept has the most effect on academic achievement.

## The Learning Process and the Use of Personal Constructs Theory as a Theoretical Anchor

As noted above, the learning process is basically considered to be a process of individual changes (transformation) that take place within the learners themselves. It has also been previously investigated that there is an interaction taking place between the environment and the individual difference human characteristics. This interaction shapes the learning process and affects the academic performance of students.

Fromm (1993) himself believes in using the perspective of personal constructs theory and utilizing optimum freedom of students to approach the learning process. Detailed information about students' learning process can be achieved in this way.

### Personal constructs theory.

Personal constructs theory was crafted by George A. Kelly. Kelly (1955) based his theory on his belief (basic assumption) about human reality. Human reality is viewed as the result of a continuous process of here and now interactions (perceptions and interpretations) between a subject and his/her experiences. The subject uses his/her own patterns to perceive and interpret events that he/she experiences. By continuously interpreting (construing and constructing) the events, a person is believed to better

understand his/her reality. Such a reality is considered to be subject to reinterpretation. That is to say that there is no interpretation-free and/or perpetual constants. Kelly's view basically involves a fundamental orientation toward the future and an active engagement with the present environment (Kelly, 1955; Hjelle & Ziegler, 1992).

Kelly believed that everyone is a scientist (man-the-scientist) (Kelly, 1955; Adams-Webber, 1979; Pope & Keen, 1981; Hjelle & Ziegler, 1992). Everybody has his/her own personal ideas (Beail, 1985) and continuously construes his/her ideas about his/her environments (Salmon, 1993). Kelly claimed that humans construe and construct their own constructs, his chosen-term for concepts and/or for percepts (Kelly, 1955). It is believed that throughout a person's life they build their own constructs up (Fransella & Bannister, 1977; Beail, 1985; Hjelle & Ziegler, 1992). With this in mind, everyone is responsible for the values of his/her experiences (see Adams-Webber, 1979; Anderson & Kirkland, 1990).

Accordingly, on one hand, subjects build up their own ways of seeing the world where they live. Their thoughts and actions are intended to anticipate experiences. The way a subject predicts his/her future conditions his/her behavior. On the other hand, the world (events or experiences) does not propose its own meaning to subjects. Adams-Webber puts it in this way, "reality does not directly reveal itself to us, but rather it is subject to as many alternative ways of construing

it as we ourselves can invent" (Adams-Webber, 1979, p. 1;
Anderson & Kirkland, 1990). Kelly summarizes this fundamental
rationale by saying that "a person's processes are
psychologically channelized by the ways in which he
anticipates events" (Kelly, 1955, p. 46).

Learning processes and personal constructs theory.

In terms of the learning process itself, it seems that
Kelly doesn't really offer any special focus. Yet, probably
(and perhaps that is the reason) Kelly's personal constructs
theory can be accepted as his theory of learning (Kelly, 1955;
Fromm, 1993). Since to him "learning is not a special class of
psychological processes, it is synonymous with any and all
psychological processes. It is not something that happens to
a person on occasion; it is what makes him a person in the
first place" (Kelly, 1995, p. 75).

However, Kelly does make one point about learning in
general. Overall, he is concerned in what really happens to
the learners. It is believed that people always learn
something by perceiving and constructing experiences. Hence,
one may misjudge a person if what he/she actually learns is
different from what he/she is expected to learn. Kelly
formulated his thoughts about the learning process as follows:
"how does the subject phrase the experience, what recurrent
themes does he hear, what movements does he define, and what
validations of his predictions does he reap? ... Let the
experimenter find out what the subject is thinking about,

rather than asking the subject to find out what the experimenter is thinking about" (Kelly, 1955, p. 77).

Many researches have utilized personal constructs theory (e.g. Fromm, 1993; Salmon, 1993; Bonarius et al, 1981; Pope & Keen, 1981) and/or its methodology especially the repertory grid technique (e.g. Beail, 1985; Fransella & Thomas, 1988; Solas, 1992) to explore and document relationships among selected contextual variables related to the learning process.

Thomas & Harri-Augstein (1985) attempted to propose a real interconnection between teaching and the learning process. They employed both the theory of personal constructs theory and the repertory grid technique in their investigation. They anchored their investigation onto the notion of viewing learning as a <u>reaction to teaching</u> and not a <u>reception of teaching</u>. The subjects were asked to describe their learning experiences which happened inside themselves as the reaction to the teaching. They didn't deal with what the students materially received from the teaching. Such learning process "always involves simultaneous changes in perceiving, thinking and feeling" (Thomas & Harri-Augstein, 1985, p. 261-262) and results in behavioral changes. The theory and the technique of personal constructs theory were used to assist the learners to structure and report their learning processes in an effort to enhance personal meaning.

<u>The repertory grid technique.</u>

Kelly also claimed that he was a practical man. He said

that he was "committed to writing a cook book based wholly on the theory's novel chemistry" (Kelly, 1955, p. 559). Among other things, he proposed a way to represent and systematically examine constructs by organizing experiences into similarities and differences. This organizing procedure is what became known as the repertory grid.

Since there is no single repertory grid (Fransella & Bannister, 1977; Sperlinger, 1976), there are numbers of explanations, developed structures, applications, and ways of systematically interpreting a repertory grid. Bell, for example, defined the repertory grid as "a set of representations of the relationship between the set of things a person construes (the elements) and the set of ways that person construes them (the constructs)" (Bell, 1988, p. 102).

Originally, the repertory grid technique was designed to be used in the clinical and/or preclinical settings. The investigator either listed several objects (figures, roles) or let the respondents list them. Subjects were asked to choose two objects that were alike and another that was different from the first two. Respondents were asked to explain the similarities and the differences. The investigator took the records of how the subjects chose the objects and how they articulated (sorting or rating) the similarities and differences. In this way, the clinician attempted to describe the relationship of the subjects' constructs to a selected set of objects (Kelly, 1955).

Later this descriptive procedure was replaced by the use of a formalized technical repertory grid format and evaluation procedure. This formalized form consisted of three components: the representative figures (along the axis); the representative characteristics (along the margin); and the repertory grids (the range of personal constructs, the cross-references of the rows and the columns) (Kelly, 1955).

Today, most repertory grids consist of two components, namely, the elements and the constructs. The elements are the objects to be sorted which can be persons, roles, situations, etc. The constructs are the concepts or attributes that characterize the focuses of sorting (the objects as in the elements). They are bipolar concepts which can be generated from the subjects or provided to them. The grids represent the matrix of interrelationships between the elements and the constructs (Kelly, 1955; Bannister, 1965).

Thus, the repertory grid was designed to document how the subjects deal with the objects in a series of situations. This arrangement is based on the assumption that to every subject, objects are always perceived to be similar to and/or different from one another in some way. That is to say that it is assumed that there are neither two mathematically identical nor mathematically separated objects.

Summary

Several basic assumptions (notions) described in this chapter are as follows:

First, the environment is considered to be an actual setting of contextual variables which externally conditions human behaviors and can be approached from various points of view (describing the way people interact with it and/or the way it affects human life).

Second, the environment is one pole of the bipolar human condition. Together with heredity (nature, internal stimuli), the environment (nurture, external stimuli) nourishes and/or constrains development.

Third, human characteristics can be differentiated into stable, continuously changeable, and temporarily changeable. Both visible and invisible individual differences exist. There is little doubt that human characteristics develop amidst the dialectics of internal and external conditions.

Fourth, learning is assumed to be the central component of the education process. It deals with the process inside the subjects, namely, the learners or students. This learning is considered to be a process of changing attitudes and values within a person throughout their lifetime. Each learning process occurs within a particular context (nature and nurture, along with individual difference characteristics) which determines the learning outcomes, such as academic performance. Such a process is considered to consist of a series of dynamic interactions between learners and environmental contexts. That is to say that the learning process is considered to be an individual transformation

peculiar to all learners.

Fifth, researches have documented many relationships among environmental variables, student characteristics (individual differences), and academic performance levels. There is no doubt about the importance and strength of the interrelationships (direct and/or indirect) among the environment variables, individual differences, and academic performance levels. Furthermore researches have documented the importance of particular environments, such as goals (ideals), home (family), and school conditions as being important with respect to doing well in school.

Sixth, Kelly views human reality as the result of continuous interactions and anticipations (constructs) about daily experiences. Everyone basically represents the world due to his/her constructs, since everyone is a man-the-scientist. (See also "the reasons to choose this theory as the frame of this study" section at the beginning of this chapter).

Seventh, a case was made for the utility of using personal constructs theory as the theoretical framework for testing relationships among the selected environmental constructs, student individual difference characteristics, and academic performance levels. The repertory grid technique has much to recommend it with respect to systematically establishing relationships among a selected set of elements and constructs.

In the study to be described in what follows, three kinds

of environmental support atmosphere variables (which are to be considered to be mesosystems in Bronfenbrenner's term) were selected as the focus (objects) of the investigation. <u>First</u>, the family environment (mesosystem-one) is understood as the atmosphere that conditions a student as a part of the family. It is assumed that such an environment plays important roles among all family members. <u>Second</u>, in the same respect, the school environment (mesosystem-two) is included in this study. Few would disagree with the notion that the school atmosphere influences student learning. <u>Third</u>, the ideals environment (mesosystem-three) differs from the other two environments mentioned. The ideals environment, though invisible, manifests itself within students themselves. However, its influential role over the students are considered to be indispensable since it conditions students from the inside.

# CHAPTER III

## METHOD

The study was anchored onto both the theory and technique of George A. Kelly's Personal Constructs Psychology (Adams-Webber, 1979; Kelly, 1955). Subjects were asked to describe (think about) here and now situations by utilizing a repertory grid technique. A cluster analysis procedure (Anderberg, 1973; Romesburg, 1984), utilizing the SPSS computer program (Norusis, 1990), was applied to the repertory grid data sets.

<u>The Instrument</u>

The repertory grid technique was applied to the research problem in the following way:

1. Listing 17 <u>elements</u> of the <u>role players</u>.

2. Developing 25 <u>constructs</u> (<u>bipolar attributes</u>) about the role players.

3. Having subjects complete the grids using the rating scales.

4. Analyzing data sets by using a cluster analysis procedure.

5. Interpreting the results within the context of study.

<u>Seventeen elements of the role players.</u>

The elements (Bannister, 1965; Liseth & Ford, 1993) of the repertory grid consisted of 17 role players differentiated

into three groups (family, seminary, and ideals). These three groups (Diamond, 1985; Hetherington, 1988) represented the selected clusters of environmental stimulation. The family role-players were categorized into: the "self; father; mother; sibling I like most; sibling I like least; relative I like most; and relative I like least." The seminary role-players were categorized into: the "seminary staff-member I like most; seminary staff-member I like least; fellow seminarian I like most; fellow seminarian I like least; professor I like most; and professor I like least." The ideal role-players were categorized into: the "most ideal self; least ideal self; most ideal priest; and least ideal priest" (see Appendix B).

Twenty five constructs (bipolar attributes) about the role players.

The constructs (Bannister, 1965; Liseth & Ford, 1993) consisted of 25 bipolar (Kelly, 1955; Riemann, 1990; Landfield & Epting, 1987) items representing a selected set of personal characteristics. The selected characteristics were anchored onto Spence & Helmreich's parental attributes and Kennedy & Heckler's individual attributes (Kennedy & Heckler, 1972; Spence & Helmreich, 1978). Kennedy & Heckler utilized such items in studies designed to examine the individual beliefs, values, meanings, abilities, ideas, among a selected group of respondents. They focused on the individual concepts and attempted to assess personality characteristics. Spence & Helmreich utilized their items to rate the parental roles in the family life. They focused on the individual perceptions

that emerge from factual relationships.

Eleven (11) items were anchored onto Spence & Helmreich's parental attributes, 12 were anchored onto Kennedy & Heckler's individual attributes, and the remaining two items were formulated to relate to sexuality. It should be noted that sexuality is considered to be a critical issue within the context of seminarian life. However, it was not easy to openly discuss sex within the seminarian environment (see Appendix B).

### Subjects.

The subjects were the present seminarians of the Archdiocese of Ujung Pandang. The total population of the seminary was 37 seminarians. An effort was made to include all of the seminarians in the study.

All subjects were from average middle class backgrounds. The age range was between 20.50 to 30.67 years with a mean age of 23.12. All of the subjects had been in the seminary from six months to 5.50 years, the average period of stay in the seminary was 2.42. Twenty five (25) of them were in the middle birth order position. Seven seminarians were first born, and the remaining four were the last born in their families. Their GPAs ranged from 2.00 to 3.70 with the mean GPA of 3.03. Nine of the seminarians had a GPA of less than the seminary required point (3.00). Yet the overall mean of their GPA (3.03) is still slightly above the minimum requirement (see Appendix C and D).

Subjects were asked to rate the bipolar attributes (constructs) for each of the role players (elements) on a seven-point rating scale.

The data set and the cluster analysis procedure.

As mentioned above, the data set was collected utilizing the repertory grid rating process applied to a series of dichotomous attributes. The collected data set was transferred into a to-be-cluster-analyzed data matrix. The columns represented cases (subjects) to be clustered and the rows represented the selected environmental constructs (which were the seminarians' view about their families, seminary, and ideals). Given this arrangement, the data matrix consisted of a 36 x 3 (columns by environmental constructs) matrix.

Using the SPSS computer program (Lee & Maykovich, 1990; Norusis, 1990, 1992), the statistical analysis of the data set was conducted in two steps: $\underline{a}$, describing the nature of relationships among the variables based on the collected data; and $\underline{b}$, cluster analyzing the transferred data matrix with respect to the selected environment constructs, the subjects, and the individual difference characteristics among the subjects.

The first step in the analysis was designed to explore the strength, the direction, and the variability of the interrelationships (Table 1 and Table 15). These factors appeared as the statistical features of the variables under study (see Appendix D).

The second step in the cluster analysis procedure, was to homogeneously pair the subjects, based on their ratings about their families, seminary life, and their ideals, in an effort to examine patterns of clustering. The figurial representations (dendrograms) of the data sets were then compared.

Therefore, the process of the cluster analysis was managed as follows: first, an agglomeration schedule was created for overall and each of constructs (Table 5; Table 6; Table 7; Table 8); second, a dendrogram was crafted for overall and each construct (Table 9; Table 10; Table 11; Table 12); third, a distribution of mean ratings was developed for constructs related to the GPA and individual difference characteristics among the respondents (Table 4; Table 16; Table 17; Table 18); and finally, the patterns of clustering subjects were compared across dendrograms and the distribution of mean ratings.

Procedure

First of all, it should be noted that the repertory grid was carefully piloted and translated into Indonesian (bilanguage research). The pilot study took place in USA at the end of November 1994. It included 12 Indonesian seminarians who were studying at Catholic Theological Union in Chicago (four seminarians), in San Antonio, Texas (three seminarians), in Iowa (two seminarians), and three others in Milwaukee, Wisconsin. The repertory grid was translated into

Indonesian and sent to them. Only nine (9) repertory grids were returned to the investigator.

The repertory grid (see Appendix A) that was piloted consisted of 18 role players (elements) and 30 bipolar attributes (constructs). Several small problems were revealed in the pilot study related to the selected items (both the elements and the constructs) and to the translation as well. Given the pilot findings, the repertory grid was recast as a 17 x 25 grid (elements by constructs).

The revised repertory grid (see Appendix B) was sent to one of the seminary staff members by the third week of December 1994. He was instructed to distribute it to all seminarians (N = 37). This request was followed by three phone calls in an effort to double check whether or not things were going as planned. In the second week of January 1995, the completed repertory grids were returned to the investigator in 37 envelopes.

All of the repertory grids were returned. One was returned blank. There was no explanation given relating to the return of the blank form, except that it was from a first year seminarian.

The collected data set was then analyzed using a cluster analysis procedure (Anderberg, 1973; Everitt, 1980; Kaufman & Rousseeuw, 1990; Romesburg, 1984), in order to establish a pattern of interrelationships among the subjects based on the "average distances" (UPGMA) among their ratings related to

their families, seminary life, and their ideals.

Romesburg (1984) reported that there are thousands of published articles related to the cluster analysis procedure. The procedure may vary based on the goal, the type of data, the measurement for distances, and the basis for clustering (Bell, 1988). Yet there are basically two major ways (agglomerative and divisive methods) to conduct the cluster analysis procedure (Norusis, 1990, 1992; Romesburg, 1984).

The agglomerative way with an euclidean distance measurement and an average linkage between groups method (UPGMA) for combining clusters was used in the study at hand. The procedure provides a dendrogram that shows the hierarchy of similarities among all pairs of subjects.

The procedure was designed to examine whether or not the closer average distances of GPAs would be clustered together at the first stages and/or the farther average distances would be at the later stages within an agglomerative hierarchical clustering process. If the distribution eventually clusters the subjects corresponding to the closeness of average distances within the GPA categories - where students with similar GPAs are grouped together - then, there will be a statistically (significant) evidence for relationships between the GPAs and the rated constructs (Romesburg, 1984).

In the same way, the relationships between the constructs and other variables were systematically examined. The nature (statistical features) of the subjects (see Appendix D) and

the strength of the differential relationships are developed in Table 1 and Table 15.

An agglomeration schedule shows step by step the process of clustering, starting from the closest (smallest average distance between) two subjects at the first stage until the farthest at the last stage.

Dendrograms present the hierarchical distribution of interrelationships among subjects. The hierarchy of clustering subjects for the overall and each of constructs is presented in Table 9 - 12. The dendrograms also display the distance between and among the clustered subjects. It should be noted that the distances have been rescaled into an interval of 1 - 25. Thus, the distance in each of dendrograms are not real values of distances among the subjects.

Mean ratings and standard deviations of each construct are displayed to explore the position and the variability among subjects corresponding to their natural distribution. Subjects are categorized into three or four subgroups related to their GPAs and individual difference characteristics. The mean ratings and standard deviations for each construct by subgroups and the overall ratings were taken from the results of the one way analysis of variance (*ANOVA*) procedure.

Finally, an effort was made to observe the patterns of clustering subjects and the nature of subjects through comparing the dendrograms and differential distributions within the mean ratings. This was done to determine whether or

not their patterns were symmetrical with (similar to) one another. If they were found to be symmetrical (similar), that would be considered another indicator that could be used to establish interrelationships among the variables.

Reliability and Validity Issues

The reliability and validity of a repertory grid are confounded by its flexibility (Beail, 1985; Pope & Keen, 1981). The repertory grid has no single fixed structure (Sperlinger, 1976). It can be developed in various sizes and forms. Many researchers have developed the repertory grid and tested its reliability and validity. For example, the 10 x 10 grid developed by Bieri et al. has been used to support the reliability and validity for a nomothetic approach (Spengler & Strohmer, 1994). Fransella & Bannister (1977) have argued that it is useless to discuss the reliability and validity of the repertory grid because THE grid does not exist. Grids can vary widely in their form.

A discussion about the reliability and validity is also confounded due to the basic nature of personal constructs theory. Everyone is considered to be man-the-scientist (Kelly, 1955). One approaches the world in his/her own way. Therefore, the reliability and validity of any given way depends on the peculiar way the subjects view the constructs under study. With this in mind, one may see that a repertory grid can be lacking in reliability and validity, and/or that any repertory grid can always be reliable and valid in its own special way

(Sperlinger, 1976).

Kelly (1955) himself prefers to discuss the logical consistency rather than the formalized reliability of the repertory grid. Based on Hunt's study, he confirmed the logical consistency approach of a repertory grid (Kelly, 1955, p. 231-232).

Limitations

It is recognized that this study has many limitations. First, questions about the validity and the reliability of a "one-shot" study could be raised. There is no comparison group. Second, there may be a language translation problem. There are always obstacles in any translation, especially relating to the notion of feelings and/or the selection of the dimensions used to rate of the respondents' feelings. Third, with respect to the ratings of feelings and emotions, five (5) very similar terms were formulated. It is not easy to translate and differentiate emotions among these five items. There may have been some overlapping content and/or missing components in nuance. Fourth, the repertory grid rating procedure may have confused some subjects who may have found such structures (diagrams) to be cumbersome. Fifth, taking items of attributes from two different sources might also have created its own set of problems. There is always some possibility for overlap, inconsistency, and confusion as well. Finally, both theoretical (education and personal constructs) and technical (repertory grid and dichotomous attributes)

sources are taken from a different tradition from the subjects' tradition. One could certainly build a case for the notion that there is some cultural gap in ways of thinking. This particular issue should be considered in a practical application of the results of this study.

## CHAPTER IV

### RESULTS

This chapter contains the results related to testing the two null hypotheses stated at the end of chapter one. <u>First</u>, there is no relationship between the seminarians' academic performance levels and their views about their families, seminary life, and their ideals. <u>Second</u>, there is no relationship among the seminarians' academic performance levels, their individual difference characteristics, and selected environmental constructs across the subjects. Each hypothesis is approached with the following concerns in mind: (a) the strength and the direction of relationships, (b) the variability (differences) among the variables, (c) the variability among subjects across the variables, (d) the patterns of grouping the subjects across the variables.

Results Related to Testing Null Hypothesis # 1

The strength and the direction of relationships.


TABLE 1

CORRELATION COEFFICIENTS FOR CONSTRUCTS
ABOUT THE FAMILY, SEMINARY, AND IDEALS BY GPA

|  | GPA | FAMILY | SEMINARY | IDEALS |
|---|---|---|---|---|
| GPA | --- | .44 ** | .57 ** | .47 ** |
| FAMILY |  | --- |  |  |
| SEMINARY |  |  | --- |  |
| IDEALS |  |  |  | --- |

GPA (Grade Point Average); FMLY (Family);
SMRY (Seminary); IDLS (Ideals).

** : Significant at .01 alpha level
 * : Significant at .05 alpha level


Table 1 shows a fairly strong linear relationship between
the GPA and the seminarians' views about their families,
seminary life, and their ideals. Each of those relationships
was found to be positive. The higher the GPA is, the higher
the relationships. The strongest relationship is that between
the GPA and the seminarian's view of the seminary. This
relationship was found to be statistically significant at the
.01 alpha level.

The variability among the variables.

The variability among the constructs may be examined
through an examination of the highest and lowest means of each

## TABLE 2

### THE HIGHEST AND THE LOWEST MEANS PER ELEMENT BY CONSTRUCT

| ELEMENT/ CONSTRUCT | HIGHEST | LOWEST | ELEMENT/ CONSTRUCT | HIGHEST | LOWEST |
|---|---|---|---|---|---|
| A    – 20 | 5.89 | | I    – 21 | | 3.25 |
| 23 | | 4.44 | J    – 05 | 6.62 | |
| B   – 01 | 6.25 | | 24 | | 5.36 |
| 04 | | 4.44 | K    – 13 | 4.61 | |
| C   – 25 | 6.17 | | 07 | | 3.28 |
| 13 | | 4.61 | L    – 20 | 6.67 | |
| D   – 05 | 5.92 | | 24 | | 5.50 |
| 13 | | 4.86 | M    – 18 | 5.33 | |
| E   – 24 | 4.86 | | 21 | | 4.17 |
| 21 | | 3.61 | N – 12.19 | 6.67 | |
| F   – 05 | 5.94 | | 24 | | 5.86 |
| 14.22 | | 5.28 | O    – 24 | 3.42 | |
| G   – 25 | 4.22 | | 20 | | 2.36 |
| 21 | | 2.89 | P   – 19 | 6.56 | |
| H   – 19 | 6.58 | | 24 | | 5.56 |
| 24 | | 5.33 | Q   – 24 | 4.22 | |
| I   – 01 | 5.33 | | 21 | | 3.22 |

element and construct (Table 2). The table shows that there were 34 high and the low means. It is evident that the lowest mean for each element is within the element O (the "least ideal self") and the highest score is within elements L and N (the "professor I like most" and the "most ideal self"). The second and the third highest are the means of the element J (the "fellow seminarian I like most") and the element H (the

"seminary staff I like most"). The second and the third lowest means are that of the element G (the "relative I like least") and the element Q (the "least ideal priest").

From this table, one can infer: first, subjects rate their seminary higher than they do their families and ideals. Subjects also rate their ideals lower than their families and the seminary. Second, the highest and lowest scores are found within the ideals section related to the most liked and the least liked role players. Subjects appear to experience a critical situation with respect to rating their ideals, especially what they like most and/or least. Third, both the lowest and the highest means appear on the same attribute (the construct 20: the "late - on time"). Subjects are concerned very much with this attribute. Subjects place the highest score on professors they like most on the "late - on time" attribute and rate their "least ideal self" on the "late - on time" condition. This finding may indicate that the "late - on time" variable seems also to be a critical concern for subjects.

TABLE 3

AVERAGE DISTANCES WITHIN THE OVERALL AND CLUSTERS

|  | OVERALL | FAMILY | SEMINARY | IDEALS |
|---|---|---|---|---|
| RANGE : | 1606.41 | 552.54 | 787.43 | 573.38 |
| MINIMUM : | 361.00 | 159.00 | 124.00 | 46.00 |
| MAXIMUM : | 1967.41 | 711.54 | 991.43 | 619.38 |

Table 3 - <u>continued</u>

Data were taken from the agglomeration schedules.

Table 3 shows the average distances within the overall data set and each of the three clusters (family, seminary life, ideals). The clusters were found to be similar. The variability among them is relatively small. Among the selected environmental constructs, the seminary cluster appears to have the largest variability (range).

<u>The variability among subjects across the variables.</u>

TABLE 4

MEAN RATINGS FOR CONSTRUCTS ABOUT
THE FAMILY, SEMINARY, AND IDEALS BY GPA

| GPA | N | CONSTRUCTS | | MEAN RATINGS | ST.DEV |
|---|---|---|---|---|---|
| | | FAMILY | : | 4.67 | .38 |
| 2.00 - 2.90 | 9 | SEMINARY | : | 4.53 | .64 |
| | | IDEALS | : | 4.12 | .43 |
| | | FAMILY | : | 5.09 | .62 |
| 3.00 - 3.30 | 17 | SEMINARY | : * | 5.36 | .57 |
| | | IDEALS | : * | 4.99 | .80 |
| | | FAMILY | : | 5.18 | .61 |
| 3.40 - 3.70 | 10 | SEMINARY | : * | 5.43 | .65 |
| | | IDEALS | : | 4.88 | .74 |
| | | FAMILY | : | 5.01 | .59 |
| T O T A L | 36 | SEMINARY | : | 5.17 | .70 |
| | | IDEALS | : | 4.74 | .78 |

* = significantly different at .05 alpha level

The mean ratings and standard deviations were taken from a two-tailed one way analysis of variance (*ANOVA*) procedure.

Table 4 shows the position (distribution) and the variability of subjects for constructs due to the GPA. An examination of the standard deviations indicates that the homogeneity and/or the variability among the subjects. In the lower subgroup subjects seem to be more homogeneous than those in other subgroups. The lowest standard deviation within the family and the ideals are those at the lower subgroup. The lowest standard deviation within the seminary is within the middle subgroup. That is, for the family and the ideals variables, the subjects are more homogeneous within the lower GPA subgroups; for the seminary the most homogeneous subjects are in the middle GPA subgroup. The subjects within the middle subgroup for the ideals variable are the only ones who are more heterogeneous than the subjects in overall data set.

The mean ratings (Table 4) for the family appear to vary positively corresponding to the GPA. The higher the GPA is, the higher the mean rating. The same thing happens to mean ratings for the seminary variable. Mean ratings for both the family and the seminary within their subgroups are higher than the mean ratings in general. There is a considerable variability in the mean ratings for the ideals variable. In the lower subgroup it is lower than the overall mean rating. In the middle subgroup it is the highest among those three subgroups. Also it is higher than the overall mean rating. The upper subgroup shows lower mean ratings than the middle subgroup, yet it is higher than the mean rating within the

lower subgroup and within the overall data set. Among those constructs, mean ratings within the seminary appear to be highest for both the overall data set and the subgroups.

Given the findings, one can infer: first, the GPA and the constructs rated in the three clusters are symmetrical. The higher the GPA is, the higher the construct scores and vice versa. Also construct ratings in the subgroups appear to be higher than the overall data set. Second, mean ratings are positively distributed according to the subject's GPA. Thus, GPAs positively differentiate subject's constructs corresponding to their levels. Third, the higher the GPA is, the higher the variability among the subjects.

<u>The patterns of grouping the subjects across the variables.</u>

The agglomeration schedule shows the value of the average distance among those subjects. The agglomeration schedule for the overall data set (Table 5) begins with subjects 9518 and 9526. The last clustering is between subjects 9501 and 9505. Thus, the closest average distance with the value of 361.00 is found between subject 9518 and subject 9526. The farthest average distance is between subject 9501 and subject 9505, with the value of 1967.41.

The agglomeration schedule for the family (Table 6) shows that subjects 9512 and 9513 have an average distance value of 159.00. In contrast, subjects 9501 and 9524 have an average distance value of 711.54.

TABLE 5

THE AGGLOMERATION SCHEDULE USING AVERAGE LINKAGE
( FOR THE OVERALL )

| STAGE | CLTR COMBINED | | COEFFICIENT | STAGE CLTR 1ST APPEARS | | NEXT |
| | CLTR-1 | CLTR-2 | | CLTR-1 | CLTR-2 | STAGE |
|---|---|---|---|---|---|---|
| 1 | 9518 | 9526 | 361.00 | 0 | 0 | 2 |
| 2 | 18 | 35 | 503.50 | 1 | 0 | 11 |
| 3 | 2 | 4 | 517.00 | 0 | 0 | 23 |
| 4 | 7 | 31 | 536.00 | 0 | 0 | 8 |
| 5 | 9 | 10 | 589.00 | 0 | 0 | 8 |
| 6 | 16 | 23 | 608.00 | 0 | 0 | 16 |
| 7 | 8 | 13 | 624.00 | 0 | 0 | 12 |
| 8 | 7 | 9 | 665.00 | 4 | 5 | 13 |
| 9 | 13 | 25 | 732.00 | 0 | 0 | 11 |
| 10 | 29 | 36 | 735.00 | 0 | 0 | 14 |
| 11 | 14 | 18 | 748.67 | 9 | 2 | 15 |
| 12 | 8 | 19 | 765.00 | 7 | 0 | 16 |
| 13 | 7 | 11 | 777.75 | 8 | 0 | 17 |
| 14 | 6 | 29 | 812.50 | 0 | 10 | 24 |
| 15 | 14 | 30 | 850.60 | 11 | 0 | 21 |
| 16 | 8 | 16 | 851.00 | 12 | 6 | 20 |
| 17 | 7 | 20 | 855.40 | 13 | 0 | 20 |
| 18 | 1 | 3 | 897.00 | 0 | 0 | 23 |
| 19 | 17 | 27 | 926.00 | 0 | 0 | 22 |
| 20 | 7 | 8 | 930.90 | 17 | 16 | 24 |
| 21 | 14 | 15 | 1001.17 | 15 | 0 | 27 |
| 22 | 5 | 17 | 1026.00 | 0 | 19 | 26 |
| 23 | 1 | 2 | 1033.50 | 18 | 3 | 25 |
| 24 | 6 | 7 | 1077.06 | 14 | 20 | 26 |
| 25 | 1 | 22 | 1245.00 | 23 | 0 | 33 |
| 26 | 5 | 6 | 1250.12 | 22 | 24 | 28 |
| 27 | 14 | 28 | 1276.85 | 21 | 0 | 30 |
| 28 | 5 | 34 | 1341.12 | 26 | 0 | 29 |
| 29 | 5 | 24 | 1437.94 | 28 | 0 | 30 |
| 30 | 5 | 14 | 1475.34 | 29 | 27 | 31 |
| 31 | 5 | 21 | 1560.92 | 30 | 0 | 32 |
| 32 | 5 | 32 | 1679.32 | 31 | 0 | 34 |
| 33 | 1 | 33 | 1690.80 | 25 | 0 | 34 |
| 34 | 1 | 5 | 1967.41 | 33 | 32 | 0 |

All subjects are in a four digit code. But for simplicity, in this table they are coded in single and/or double digits.

The subject 9512 was eliminated because of missing values.

TABLE 6

THE AGGLOMERATION SCHEDULE USING AVERAGE LINKAGE
( FOR THE FAMILY )

| STAGE | CLTR COMBINED | | COEFFICIENT | STAGE CLTR 1ST APPEARS | | NEXT |
| | CLTR-1 | CLTR-2 | | CLTR-1 | CLTR-2 | STAGE |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 9512 | 9513 | 159.00 | 0 | 0 | 7 |
| 2 | 26 | 29 | 163.00 | 0 | 0 | 4 |
| 3 | 2 | 4 | 189.00 | 0 | 0 | 22 |
| 4 | 18 | 26 | 189.50 | 0 | 2 | 6 |
| 5 | 9 | 10 | 197.00 | 0 | 0 | 9 |
| 6 | 18 | 35 | 203.00 | 4 | 0 | 15 |
| 7 | 12 | 31 | 226.50 | 1 | 0 | 8 |
| 8 | 12 | 20 | 251.33 | 7 | 0 | 12 |
| 9 | 8 | 9 | 256.50 | 0 | 5 | 17 |
| 10 | 14 | 25 | 273.00 | 0 | 0 | 14 |
| 11 | 3 | 11 | 278.00 | 0 | 0 | 16 |
| 12 | 7 | 12 | 281.00 | 0 | 8 | 16 |
| 13 | 17 | 27 | 297.00 | 0 | 0 | 24 |
| 14 | 14 | 15 | 300.50 | 10 | 0 | 19 |
| 15 | 16 | 18 | 300.75 | 0 | 6 | 18 |
| 16 | 3 | 7 | 307.00 | 11 | 12 | 21 |
| 17 | 8 | 19 | 316.00 | 9 | 0 | 19 |
| 18 | 16 | 36 | 322.80 | 15 | 0 | 20 |
| 19 | 8 | 14 | 328.67 | 17 | 14 | 23 |
| 20 | 16 | 23 | 335.00 | 18 | 0 | 23 |
| 21 | 3 | 5 | 340.43 | 16 | 0 | 24 |
| 22 | 1 | 2 | 346.50 | 0 | 3 | 26 |
| 23 | 8 | 16 | 368.08 | 19 | 20 | 27 |
| 24 | 3 | 17 | 370.87 | 21 | 13 | 25 |
| 25 | 3 | 34 | 380.00 | 24 | 0 | 32 |
| 26 | 1 | 22 | 384.67 | 22 | 0 | 30 |
| 27 | 6 | 8 | 414.86 | 0 | 23 | 28 |
| 28 | 6 | 21 | 437.07 | 27 | 0 | 29 |
| 29 | 6 | 30 | 445.87 | 28 | 0 | 31 |
| 30 | 1 | 32 | 486.00 | 26 | 0 | 34 |
| 31 | 6 | 33 | 490.47 | 29 | 0 | 33 |
| 32 | 3 | 28 | 499.00 | 25 | 0 | 33 |
| 33 | 3 | 6 | 544.49 | 32 | 31 | 34 |
| 34 | 1 | 3 | 647.01 | 30 | 33 | 35 |
| 35 | 1 | 24 | 711.54 | 34 | 0 | 0 |

All subjects are in a four digit code. But for
simplicity, in this table they are coded in single and/or
double digits.

TABLE 7

THE AGGLOMERATION SCHEDULE USING AVERAGE LINKAGE
( FOR THE SEMINARY )

| STAGE | CLTR COMBINED | | COEFFICIENT | STAGE CLTR 1ST APPEARS | | NEXT |
| | CLTR-1 | CLTR-2 | | CLTR-1 | CLTR-2 | STAGE |
|---|---|---|---|---|---|---|
| 1 | 9518 | 9526 | 124.00 | 0 | 0 | 3 |
| 2 | 10 | 13 | 127.00 | 0 | 0 | 5 |
| 3 | 18 | 30 | 144.00 | 1 | 0 | 4 |
| 4 | 18 | 29 | 146.67 | 3 | 0 | 11 |
| 5 | 10 | 12 | 147.50 | 2 | 0 | 7 |
| 6 | 7 | 31 | 155.00 | 0 | 0 | 12 |
| 7 | 10 | 19 | 182.00 | 5 | 0 | 10 |
| 8 | 2 | 4 | 188.00 | 0 | 0 | 26 |
| 9 | 9 | 23 | 189.00 | 0 | 0 | 12 |
| 10 | 10 | 16 | 203.50 | 7 | 0 | 13 |
| 11 | 18 | 35 | 209.00 | 4 | 0 | 15 |
| 12 | 7 | 9 | 214.50 | 6 | 9 | 17 |
| 13 | 10 | 36 | 230.80 | 10 | 0 | 14 |
| 14 | 6 | 10 | 234.33 | 0 | 13 | 19 |
| 15 | 14 | 18 | 237.00 | 0 | 11 | 20 |
| 16 | 8 | 20 | 251.00 | 0 | 0 | 18 |
| 17 | 7 | 34 | 259.00 | 12 | 0 | 19 |
| 18 | 8 | 11 | 272.50 | 16 | 0 | 22 |
| 19 | 6 | 7 | 279.63 | 14 | 17 | 22 |
| 20 | 14 | 25 | 291.83 | 15 | 0 | 28 |
| 21 | 15 | 28 | 293.00 | 0 | 0 | 23 |
| 22 | 6 | 8 | 297.64 | 19 | 18 | 24 |
| 23 | 15 | 24 | 315.50 | 21 | 0 | 24 |
| 24 | 6 | 15 | 346.96 | 22 | 23 | 25 |
| 25 | 6 | 27 | 362.05 | 24 | 0 | 28 |
| 26 | 2 | 3 | 395.00 | 8 | 0 | 29 |
| 27 | 5 | 17 | 406.00 | 0 | 0 | 30 |
| 28 | 6 | 14 | 428.41 | 25 | 20 | 30 |
| 29 | 2 | 33 | 481.67 | 26 | 0 | 32 |
| 30 | 5 | 6 | 562.15 | 27 | 28 | 31 |
| 31 | 5 | 21 | 589.43 | 30 | 0 | 33 |
| 32 | 1 | 2 | 616.75 | 0 | 29 | 34 |
| 33 | 5 | 32 | 617.34 | 31 | 0 | 35 |
| 34 | 1 | 22 | 657.40 | 32 | 0 | 35 |
| 35 | 1 | 5 | 911.43 | 34 | 33 | 0 |

    All subjects are in a four digit code. But for
simplicity, in this table they are coded in single and/or
double digits.

## TABLE 8

### THE AGGLOMERATION SCHEDULE USING AVERAGE LINKAGE
### ( FOR THE IDEALS )

| STAGE | CLTR COMBINED | | COEFFICIENT | STAGE CLTR 1ST APPEARS | | NEXT |
| | CLTR-1 | CLTR-2 | | CLTR-1 | CLTR-2 | STAGE |
|---|---|---|---|---|---|---|
| 1 | 9504 | 9511 | 46.00 | 0 | 0 | 2 |
| 2 | 4 | 36 | 59.00 | 1 | 0 | 5 |
| 3 | 10 | 31 | 62.00 | 0 | 0 | 7 |
| 4 | 18 | 26 | 63.00 | 0 | 0 | 13 |
| 5 | 1 | 4 | 72.67 | 0 | 2 | 10 |
| 6 | 19 | 30 | 80.00 | 0 | 0 | 16 |
| 7 | 10 | 29 | 81.00 | 3 | 0 | 11 |
| 8 | 16 | 23 | 94.00 | 0 | 0 | 22 |
| 9 | 13 | 17 | 97.00 | 0 | 0 | 17 |
| 10 | 1 | 6 | 97.50 | 5 | 0 | 14 |
| 11 | 3 | 10 | 115.33 | 0 | 7 | 12 |
| 12 | 3 | 9 | 118.00 | 11 | 0 | 15 |
| 13 | 18 | 35 | 121.50 | 4 | 0 | 16 |
| 14 | 1 | 2 | 140.40 | 10 | 0 | 18 |
| 15 | 3 | 7 | 142.40 | 12 | 0 | 20 |
| 16 | 18 | 19 | 154.67 | 13 | 6 | 21 |
| 17 | 5 | 13 | 155.50 | 0 | 9 | 23 |
| 18 | 1 | 22 | 158.00 | 14 | 0 | 20 |
| 19 | 14 | 25 | 159.00 | 0 | 0 | 21 |
| 20 | 1 | 3 | 165.67 | 18 | 15 | 31 |
| 21 | 14 | 18 | 173.30 | 19 | 16 | 26 |
| 22 | 8 | 16 | 188.00 | 0 | 8 | 23 |
| 23 | 5 | 8 | 196.89 | 17 | 22 | 24 |
| 24 | 5 | 24 | 204.33 | 23 | 0 | 27 |
| 25 | 20 | 21 | 232.00 | 0 | 0 | 31 |
| 26 | 14 | 15 | 249.29 | 21 | 0 | 28 |
| 27 | 5 | 27 | 266.86 | 24 | 0 | 29 |
| 28 | 14 | 28 | 268.37 | 26 | 0 | 30 |
| 29 | 5 | 33 | 275.50 | 27 | 0 | 30 |
| 30 | 5 | 14 | 338.04 | 29 | 28 | 33 |
| 31 | 1 | 20 | 378.69 | 20 | 25 | 32 |
| 32 | 1 | 32 | 426.50 | 31 | 0 | 33 |
| 33 | 1 | 5 | 522.77 | 32 | 30 | 34 |
| 34 | 1 | 34 | 619.38 | 33 | 0 | 0 |

All subjects are in a four digit code. But for simplicity, in this table they are coded in single and/or double digits.

The subject 9512 was eliminated because of missing values.

The agglomeration schedule for the seminary (Table 7) shows that subjects 9518 and 9526 have an average distance value of 124.00. In contrast, subjects 9501 and 9505 have an average distance value of 911.43.

The agglomeration schedule for the ideals (Table 8) shows that subjects 9504 and 9511 have an average distance value of 46.00. In contrast, subjects 9501 and 9534 have an average distance value of 619.38.

Table 46s show that the patterns of clustering subjects across those dendrograms are very similar to one another. The dendrogram for the overall data set (Table 9) is very similar to the seminary dendrogram (Table 11). There are two groups of subjects that merge at the largest average distance (at 25 on the rescaled distance). The first group consists of 29 - 30 subjects. The second group consists of only six subjects. Both the overall and the seminary share exactly the same subjects for each group. The differences are found only on the stage of merging (that is the average distance) and the way of first combination (dual, triple, or quadruple).

The family dendrogram (Table 10) is very similar to the dendrogram of the ideals (Table 12). The first 34 or 35 subjects are similar. A few subjects were found to be different (subjects 9524 and 9534). Four out of six subjects at the last stages of the combination appear to have the same overall, family, and seminary dendrograms. The ideals cluster shows slightly different structure.

## TABLE 9

### A DENDROGRAM USING THE AVERAGE LINKAGE BETWEEN SUBJECTS
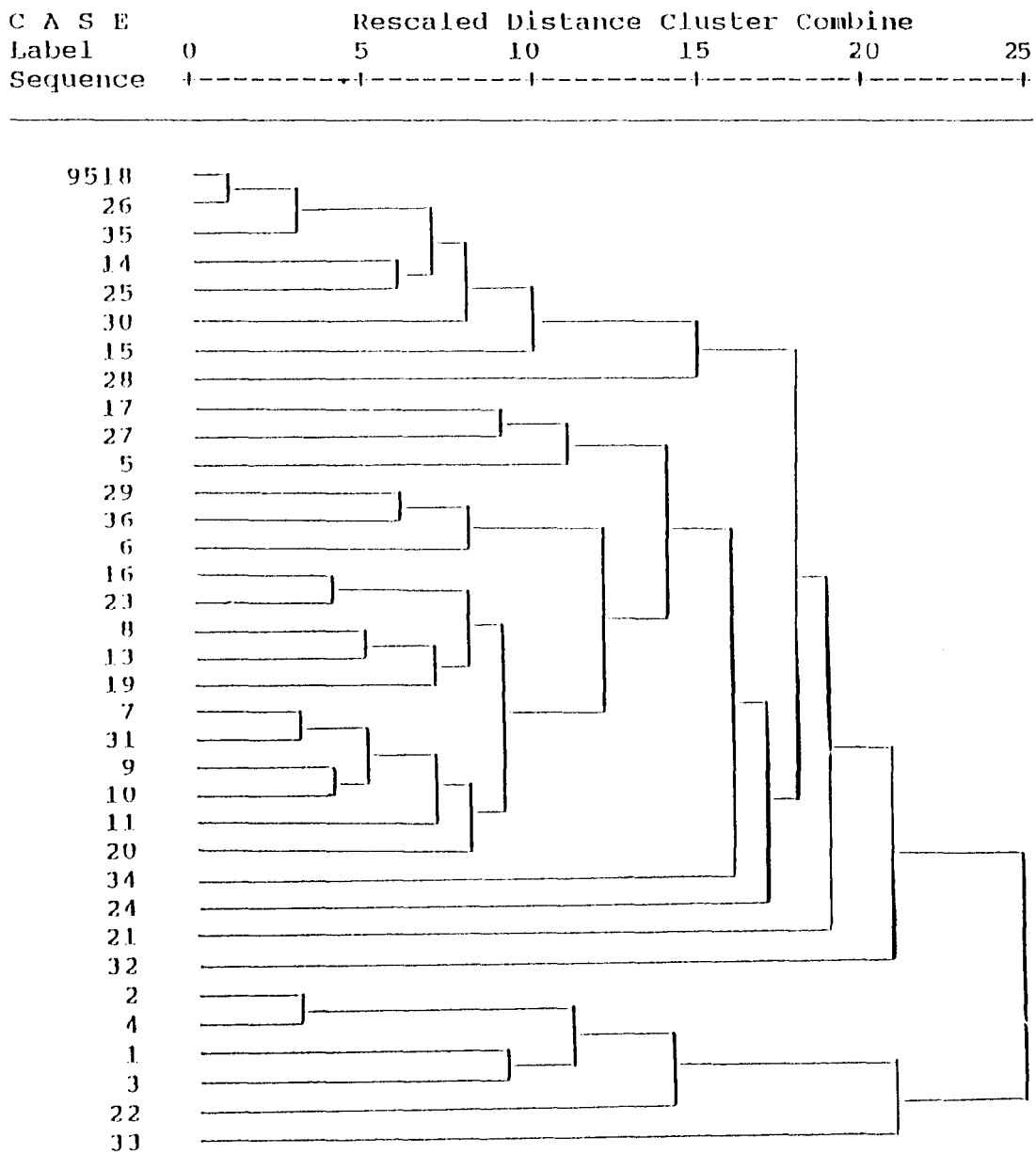### ( FOR THE OVERALL )

```
C A S E              Rescaled Distance Cluster Combine
Label        0         5        10        15        20        25
Sequence     +---------+---------+---------+---------+---------+
```

TABLE 10
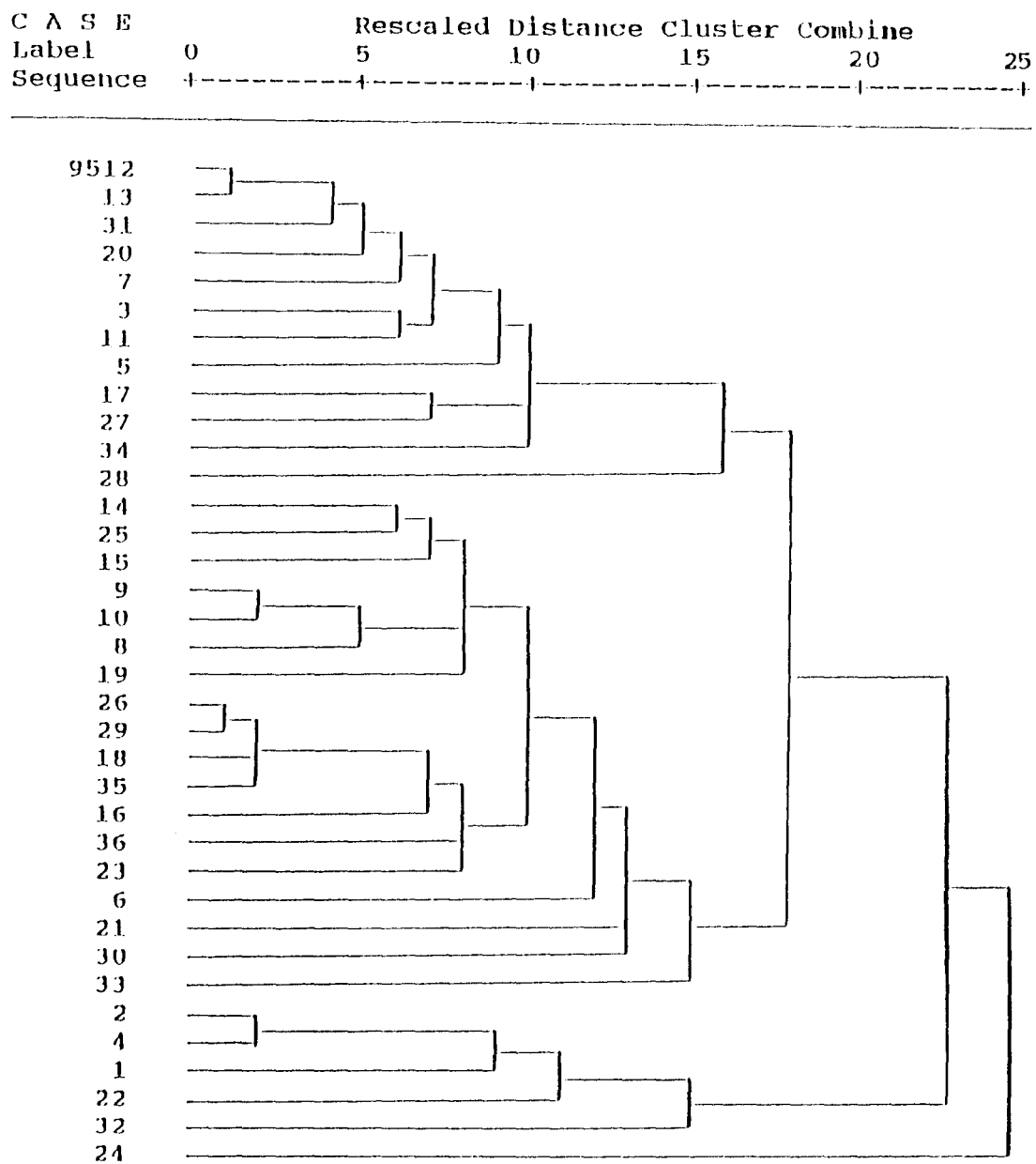
A DENDROGRAM USING THE AVERAGE LINKAGE BETWEEN SUBJECTS
( FOR THE FAMILY )



```
C A S E                Rescaled Distance Cluster Combine
Label          0        5        10        15        20        25
Sequence       +--------+---------+---------+---------+---------+

    9512
      13
      31
      20
       7
       3
      11
       5
      17
      27
      34
      28
      14
      25
      15
       9
      10
       8
      19
      26
      29
      18
      35
      16
      36
      23
       6
      21
      30
      33
       2
       4
       1
      22
      32
      24
```

TABLE 11

A DENDROGRAM USING THE AVERAGE LINKAGE BETWEEN SUBJECTS
( FOR THE SEMINARY )

```
C A S E                    Rescaled Distance Cluster Combine
Label        0          5          10         15         20         25
Sequence     +----------+----------+----------+----------+----------+
```
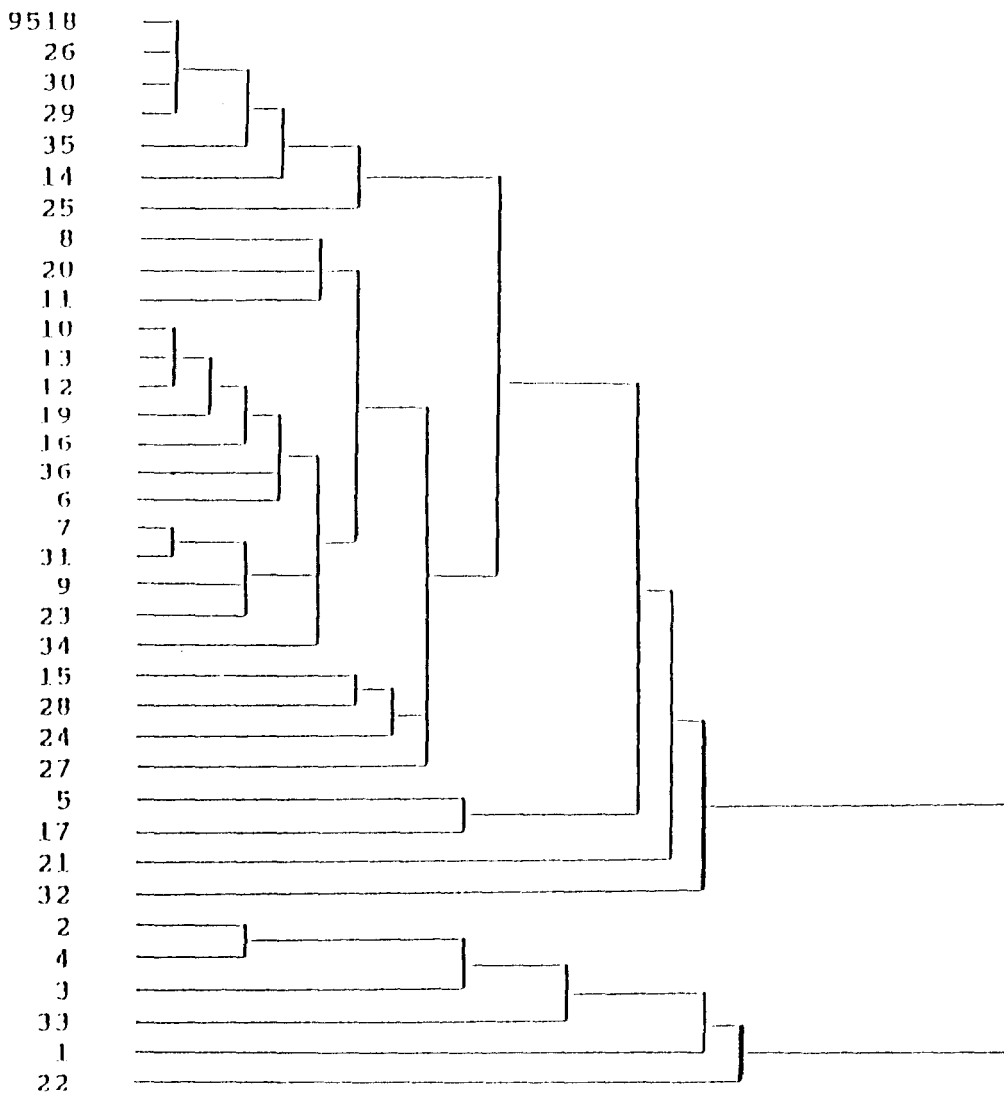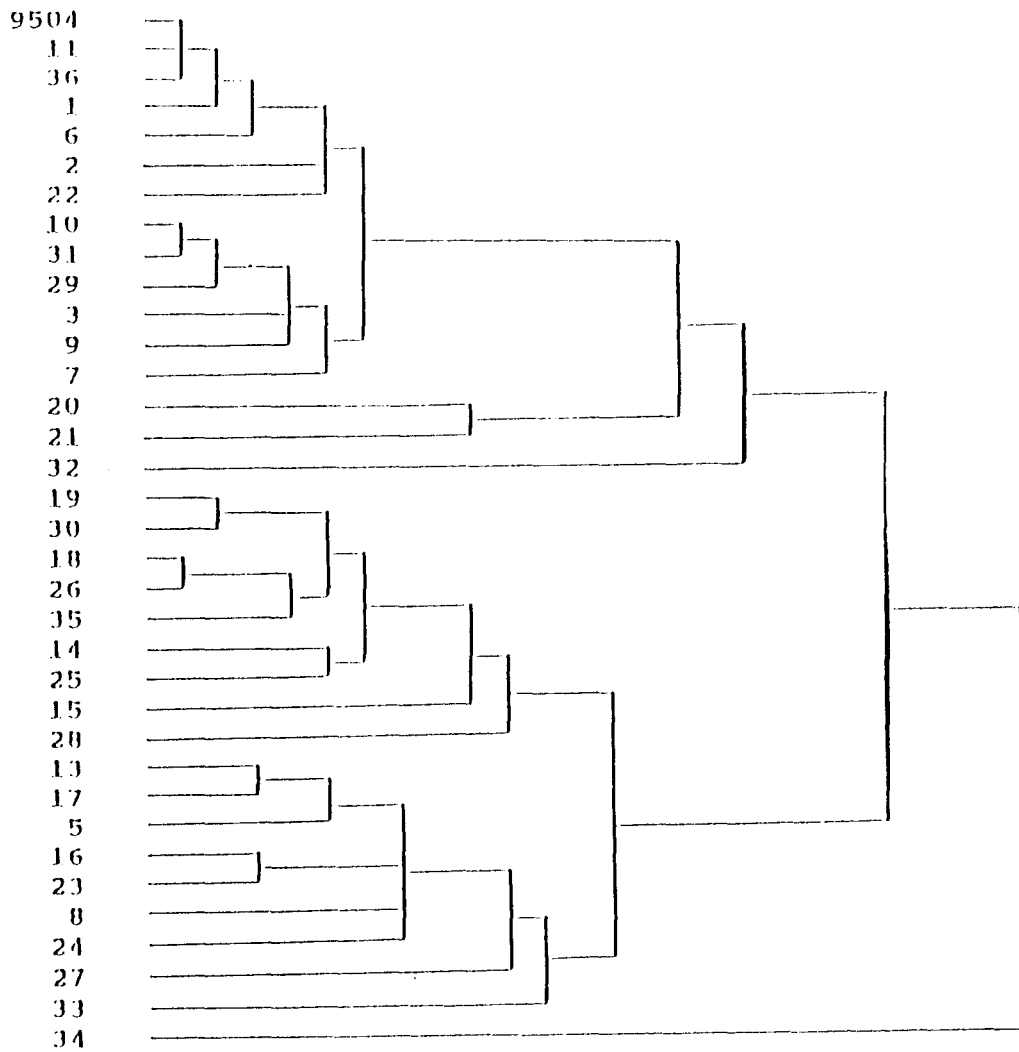
# TABLE 12

## A DENDROGRAM USING THE AVERAGE LINKAGE BETWEEN SUBJECTS
### ( FOR THE IDEALS )

These observations support the following notions. First, the subjects could be divided into a large group of 29/30 or 34/35 subjects and a small group of six or single subjects with respect to the some of the variables. Second, the patterns of clustering appear very similar to one another. The majority of subjects are apparently treated in the very same way. Only a few subjects (six and/or one) are treated differently. Third, most of the average distances are very close. The subjects are mostly combined around the point of 15 on the rescaled distance. Fourth, the subjects seem to appear very close to one another. It seems like there is no distance in between them.

Taken together, these findings indicate that the subject's responses may be located (structured) at any position (stage) along the dendrograms. That is to say, the average distance among the majority of subjects is found to be very small.

TABLE 13

FIRST DUAL CLUSTERS BY CONSTRUCTS
ACROSS CATEGORIES WITHIN MEAN RATINGS OF GPA

|  | | TOTAL | G P A | |
|---|---|---|---|---|
|  | | | SG | DG |
| OVERALL | : | 10 | 5 | 5 |
| FAMILY | : | 7 | 3 | 4 |
| SEMINARY | : | 4 | 1 | 3 |
| IDEALS | : | 7 | 5 | 2 |

Table 13 - <u>continued</u>

SG = same group; DG = different group

The criteria for grouping was taken from the grouping subgroups within the distribution of mean ratings.

Table 13 shows the results of a comparison made between the dendrogram and mean ratings. The first individually dual merged subjects are very few in number within the seminary cluster. The reason probably is that the seminary cluster has quite a few of the (first) triple and/or quadruple merged subjects. That is, the seminary cluster consists of very similar subjects (those of very small average distances). The observation of the first triple/quadruple mergers across the constructs is presented on Table 14. The findings reported in this table indicate that the subjects within the selected environmental clusters are similar.

TABLE 14

FIRST TRIPLE/QUADRUPLE CLUSTERS
ACROSS THE SELECTED ENVIRONMENTAL CONSTRUCTS

|  | OVERALL | FAMILY | SEMINARY | IDEALS |
|---|---|---|---|---|
| TRIPLE : | 0 | 5 | 6 | 3 |
| QUARTET : | 0 | 0 | 1 | 1 |

The data appearing in Table 13 - 14 can be viewed in two ways: First, they may indicate that a subject can be clustered

with any other subject at the first individual cluster regardless of their individual difference characteristics. That is to say that they appear to be very homogeneous. They may consider themselves very much similar to each other. Second, the results reported in both dendrograms and mean ratings cannot be offered in support of the notion that there are differences in the clusters across subjects.

Results Related to Testing Null Hypothesis # 2

The strength and the direction of relationships.

TABLE 15

CORRELATION COEFFICIENTS AMONG VARIABLES

|       | GPA   | AGE         | STAY        | B.OD  | FMLY        | SMRY        | IDLS        |
|-------|-------|-------------|-------------|-------|-------------|-------------|-------------|
| GPA   | ---   | -.53 **     | -.55 **     | .06   | .44 **      | .57 **      | .47 **      |
| AGE   |       | ---         | .75 **      | -.11  | -.01        | -.30        | -.07        |
| STAY  |       |             | ---         | -.20  | -.06        | -.46 **     | -.19        |
| B.OD  |       |             |             | ---   | .35 *       | .28         | .21         |
| FMLY  |       |             |             |       | ---         |             |             |
| SMRY  |       |             |             |       |             | ---         |             |
| IDLS  |       |             |             |       |             |             | ---         |

GPA (Grade Point Average); B.OD (Birth of Order); FMLY (Family); SMRY (Seminary); IDLS (Ideals).

** : significant at .01 alpha level
 * : significant at .05 alpha level

An examination of the results reported in table 8

indicates that one third of the linear interrelationships are statistically significant at the .01 and/or the .05 alpha levels. Statistically significant correlations were found between the length of stay within the seminary and constructs about the seminary (-.46); the GPA and constructs about families (.44), the ideals (.47), the age (-.53), the length of stay in the seminary (-.55), constructs about the seminary (.57); and the age and the length of stay in the seminary (.75).

It is evident that the GPA is inversely related to both the age and the length of stay. The older the seminarians are and the longer they have been in the seminary, the lower their GPAs. It is also shown that there is (almost) no linear relationship between the GPA and the birth order (.06).

Age was found to be inversely correlated with constructs related to the family, seminary, and ideals. The correlation between the age and the seminary was not found to be significant (-.30). The length of stay in the seminary inversely correlated with the constructs related to the family, seminary, and ideals. Its linear correlation with the seminary was not significant at the .01 alpha level.

The variability among the variables.

The relationship between the rating grids and the variables shows several extreme $R$s (all negative or positive multiple correlation coefficients).

The variable GPA had seven elements with extreme

correlation coefficients (positive: father, the sibling I like least, the seminary staff I like least, the fellow seminarian I like least, the professor I like least, the least ideal self, the least ideal priest). That is, the higher their GPAs were, the higher they rated those elements. Most of these correlations were statistically significant at .01 and/or .05 alpha levels. The magnitudes of the relationships were average (mostly $.35 < R < .45$). That is to say that for some, the GPA levels positively correlated with the role players the respondents liked the least.

The variable age was negatively correlated with all the three elements (the seminary staff I like least, the fellow seminarian I like least, the professor I like least). The older the seminarians were, the lower they rated these elements. The age of the seminarians is inversely correlated with their constructs related to the support systems within the seminary that they like the least.

The variable length of stay was related to six elements with extreme correlation coefficients (negative: the sibling I like least, the relative I like least, the seminary staff I like least, the fellow seminarian I like least, the professor I like least, the least ideal priest). The longer they have been in the seminary, the lower they rated those elements. Though the correlations are not strong (mostly $.20 < R < .30$), several of them are statistically significant at level alpha of .01 and/or .05. This fact is considered to provide

information that the length of stay in the seminary inversely correlates with constructs about environment role players they like the least.

From these data, one can infer that first, constructs about overall role players they like most are varied, yet there is none that statistically occurs in an extreme positive nor an extreme negative relationship. Second, constructs about overall role players they like the least are varied as follows: the GPA positively correlates with the overall construct ratings; and the age and the length of stay is inversely related to the overall construct ratings. Third, there is a slight indication that the seminarians have a critical construct related to those they like the least, and they have a moderate construct related to those they like the most. It seems that they have no problem with those like most, but they do with those they like least. Fourth, the variable GPA is strongly correlated with all variables, except to the birth order variable. It inversely relates to the age and the length of stay in the seminary, and positively correlates with the birth order and construct related to the family, seminary, and ideals. The GPA's strongest linear relationship is found within the seminary. Fifth, both the variable of age and length of stay in the seminary were inversely correlated with the family, seminary, and ideals ratings.

<u>The variability among subjects across the variables.</u>

The difference among the average distances of subjects across the overall and within each of the clusters (see Table 3; 5; 6; 7; 8) appears to be relatively small. There is no extremely (distinguished) large average distance among the subjects. These tables show the range of the average distance distributions. From these data, one can infer that the subjects are likely very close to each other.

TABLE 16

MEAN RATINGS FOR CONSTRUCTS ABOUT
THE FAMILY, SEMINARY, AND IDEALS BY AGE

| AGE | N | CONSTRUCTS | | MEAN RATINGS | ST.DEV |
|---|---|---|---|---|---|
| 20.10 - 22.49 | 17 | FAMILY : | | 4.89 | .61 |
| | | SEMINARY : | * | 5.32 | .64 |
| | | IDEALS : | | 4.80 | .74 |
| 22.50 - 25.00 | 11 | FAMILY : | * | 5.39 | .46 |
| | | SEMINARY : | * | 5.41 | .49 |
| | | IDEALS : | | 4.93 | .84 |
| 25.10 - 30.75 | 8 | FAMILY : | | 4.73 | .47 |
| | | SEMINARY : | | 4.53 | .76 |
| | | IDEALS : | | 4.36 | .74 |
| T O T A L | 36 | FAMILY : | | 5.01 | .59 |
| | | SEMINARY : | | 5.17 | .70 |
| | | IDEALS : | | 4.74 | .78 |

* : significantly different at .05 alpha level.

With respect to constructs by age, Table 9.1 shows that the highest mean ratings are found within the middle subgroup (at the ages of 22.50 - 25.00). All of them are higher than

the mean ratings in general (in the total). The lowest mean ratings of subgroups are in the upper subgroup (at the ages of 25.10 - 30.75). All of them are lower than the overall mean ratings. Such a distribution of means may imply that in general the constructs are better than those at the upper subgroup.

The standard deviations reported in Table 9.1 indicate that the construct ratings related to the family are the most homogeneous both in general and in each of subgroups. The most heterogeneous are within the construct ratings related to the ideals. The subjects across the family are more homogeneous than others and those across the ideals are more heterogenous.

Significant differences at .05 alpha level are found at the lower and middle subgroups within the seminary, and at the upper subgroup within the family. There is no statistically significant difference among subjects across the subgroups within the ideals. Thus, most subjects are very alike across the overall and subgroups.

The length of stay in the seminary is differentiated into four subgroups (Table 17). It is clear that the third year covers the highest mean ratings and consists of the most homogeneous subjects for all constructs. The lowest mean ratings and the most heterogeneous subjects are found in the fifth year. A comparison across constructs shows that the highest mean ratings are within the seminary. The lowest ones are found within the ideals. The most homogeneous subjects are

found within the family and the most heterogeneous were within the seminary.

### TABLE 17

MEAN RATINGS FOR CONSTRUCTS ABOUT
THE FAMILY, SEMINARY, AND IDEALS BY LENGTH OF STAY

| STAY | N | CONSTRUCTS | | MEAN RATINGS | ST.DEV |
|------|---|------------|---|--------------|--------|
| FIRST YEAR | 8 | FAMILY : | | 4.93 | .71 |
| | | SEMINARY : | * | 5.59 | .66 |
| | | IDEALS : | | 5.02 | .81 |
| SECOND YEAR | 11 | FAMILY : | | 4.91 | .59 |
| | | SEMINARY : | | 5.13 | .54 |
| | | IDEALS : | | 4.44 | .70 |
| THIRD YEAR | 9 | FAMILY : | | 5.37 | .24 |
| | | SEMINARY : | | 5.38 | .45 |
| | | IDEALS : | | 5.16 | .59 |
| FIFTH YEAR | 8 | FAMILY : | | 4.82 | .65 |
| | | SEMINARY : | | 4.57 | .85 |
| | | IDEALS : | | 4.40 | .84 |
| T O T A L | 36 | FAMILY : | | 5.01 | .59 |
| | | SEMINARY : | | 5.17 | .70 |
| | | IDEALS : | | 4.74 | .78 |

* : significantly different at .05 alpha level

There is only one subgroup that was found to be significantly different at .05 alpha level. It is at the first year within the seminary. That is, it happens 95 % by chance that the subjects within this subgroup significantly vary from one another.

This information may show that regarding the length of stay in the seminary, the subjects within the third year best

view their family, seminary, and ideals. They are also the most homogeneous subjects arrays in those subgroups.

TABLE 18

MEAN RATINGS FOR CONSTRUCTS ABOUT
THE FAMILY, SEMINARY, AND IDEALS BY BIRTH ORDER

| BIRTH ORDER | N | CONSTRUCTS | MEAN RATINGS | ST.DEV |
|---|---|---|---|---|
| FIRST BORN | 8 | FAMILY : | 4.68 | .58 |
| | | SEMINARY : | 4.75 | 1.02 |
| | | IDEALS : | 4.53 | .87 |
| MIDDLE BORN | 23 | FAMILY : | 5.17 | .57 |
| | | SEMINARY : | 5.39 | .55 |
| | | IDEALS : | 4.94 | .74 |
| LAST BORN | 4 | FAMILY : | 4.61 | .18 |
| | | SEMINARY : | 4.73 | .20 |
| | | IDEALS : | 3.97 | .34 |
| T O T A L | 36 | FAMILY : | 5.00 | .59 |
| | | SEMINARY : | 5.17 | .71 |
| | | IDEALS : | 4.74 | .79 |

The birth order is distinguished in three categories. All the non-first and non-last born are considered the middle born. Table 18 shows that the highest level of mean ratings for all subgroups are located in the middle born. The highest mean ratings across the constructs are within the seminary.

The most homogeneous subjects are found within the last born group. The most heterogeneous subjects are first born. The most variable subjects are the first born within the seminary cluster. The most heterogeneous subjects in overall subgroups and constructs are located within the first born of

the seminary cluster. These data may render a conclusion that the birth order in general within the middle born covers the best rating for constructs.

There are no two significantly different subjects at the .05 alpha level across subgroups and within constructs. Subjects between and within subgroups were found to be similar.

The patterns of grouping the subjects across the variables.

Those tables (Table 4; 9; 10; 11; 12; 16; 17; 19) show that dendrograms and mean ratings present a homogeneity of patterns in clustering subjects. Both dendrograms and mean ratings show very similar patterns in distributing subjects across their individual difference characteristics and across their environmental constructs. The comparison indicates that there is a homogeneity of subjects in general, within subgroups, and across the three clusters.

Visual examination of the results reported in Table 9 - 12 indicates the similarity across the overall data set and the three clusters. Since the opposite cannot be proved, a conclusion may be derived that there is a considerable similarity of clustering subjects across dendrograms and mean ratings. That is, there may be an indication of the relationships among variables. Those relationships are characterized by the distribution of subjects with respect to their individual difference characteristics.

TABLE 19

FIRST DUAL CLUSTERS BY CONSTRUCTS
ACROSS CATEGORIES WITHIN MEAN RATINGS

| | TOTAL | G P A | | A G E | | STAY | | B.ORDER | |
|---|---|---|---|---|---|---|---|---|---|
| | | SG | DG | SG | DG | SG | DG | SG | DG |
| OVERALL : | 10 | 5 | 5 | 6 | 4 | 3 | 7 | 5 | 4 |
| FAMILY : | 7 | 3 | 4 | 4 | 3 | 2 | 5 | 4 | 3 |
| SEMINARY: | 4 | 1 | 3 | 2 | 2 | 1 | 3 | 2 | 2 |
| IDEALS : | 7 | 5 | 2 | 4 | 3 | 2 | 5 | 3 | 3 |

SG = same group; DG = different group

The criteria for grouping was taken from the grouping subgroups within the distribution of mean ratings.

An examination of Table 19 shows that in the overall dendrogram there are ten (10) subjects with first dual clusters. Across categories within mean ratings, there are five (5) subjects that belong to the same groups and another five (5) subjects fall into different groups due to the GPA category. Due to the age there are six (6) subjects from the same group and four (4) subjects are from different groups. Due to the category of stay, three (3) subjects are from the same groups and seven (7) subjects from different groups. Due to the birth order, there are five (5) subjects from the same group and four (4) subjects from different groups.

These data show that the clustering both in the overall data set and each of the three clusters seem on average to follow the distribution of subjects across the GPA, age, and

birth order variables. They also show that the distribution across the length of stay shows that the first dual merged subjects are more from a different group than from the same group.

## Summary

**First**, the GPA is statistically related to the age, stay, and the environmental construct ratings. The stay is significantly related to the construct about the seminary.

**Second**, the relationships among the variables vary due to subject's GPA (the major dependent variable used in this study).

**Third**, the response patterns of the subjects are similar across the variables.

**Fourth**, the strongest construct is that about the seminary. The lowest constructs is that about the ideals. In general the subjects rated the seminary slightly higher than the other clusters (the family and the ideals).

**Fifth**, the lowest and the highest rating score is within the ideals cluster.

# CHAPTER V

## DISCUSSION

### What is the Relationship between the Seminarians' Academic Performance Levels and Their Views of Their Families, Seminary Life, and Their Ideals?

The results reported in the previous chapter show that the GPA was related to each of constructs under study. Given these findings, the first null hypothesis was rejected.

As previously stated, studies by Song & Hattie (1984), Brophy & Good (1985), and Wentzel (1989) found a relationship between academic achievement (GPA) and environment conditions. They found that there are positive/negative, direct/indirect, cause-effect, and/or consistent relationships among those variables. The results of this repertory grid study appear to support their conclusions. From the results, one can infer that the environment plays a key role in the seminarian academic performance levels (GPA). Therefore, one may further conclude that if the environment is perceived as supporting a seminarian (for example, via providing good conditions and/or open more opportunities to freely articulate what he learns about), then the seminarian can better manage his GPA.

Kelly has viewed everyone as man-the-scientist. The learning process has also been considered a personal transformation caused by personal experiences. If the

seminarians are man-the-scientists and their learning processes are their personal transformations, then their GPA is an indicator of such transformation. That is, every seminarian continuously creates his own transformation which is represented (at least partly) through their academic performance (GPA).

In this study, constructs referred to seminarian here and now understandings (perceptions, anticipations) about their social support systems within their environments. If such constructs are considered to be a part of concrete individual transformations (changes), then, for seminarians such constructs may become barometers of their concrete learning processes. Maintaining the learning process entails maintaining the environmental constructs. Developing a good construct may enhance the academic performance of the seminarians.

Overall, the results of the study have documented a positive relationship between GPA and environmental constructs related to the social support systems variables. The strongest relationship with the GPA was found to be the construct about the seminary. That is to say, first, the personal transformation within a seminarian may also be indicated by his personal views and thoughts (constructs) about his seminary. Second, maintaining the GPA may indicate a good feeling of being supported by the environment. Third, the seminary atmosphere is probably supposed to be one of the

primary focuses in the seminary education. A good atmosphere created within the seminary might be a significant help for seminarians to maintain their GPAs. In turn, if the seminarians realize and live within a supporting environment, it would be easier for them to maintain their GPAs.

In sum, the patterns of clustering among the subjects were found to be very similar to one another. These findings may indicate that seminarians appear to be very homogeneous. Perhaps this homogeneity is consistent with the seminarians' natures. A vast majority of the seminarians are the Torajans and the Munanese and come from similar social economic backgrounds. They also graduated from the same Catholic minor seminary.

## What is the Relationship among the Seminarians' Academic Performance Levels, Their Individual Difference Characteristics, and Selected Environmental Constructs?

The results show that there is a statistically significant relationship among academic performance levels, age, and length of stay. The relationship with birth order was not found to be significant. One may infer that a greater focus should probably be given to the age and the length of stay than to the birth order.

The result of the study also supported the existence of a positive relationship between the birth order and each of the clusters. Most of the interrelationships were not found to be significant, yet one of them (the family) appears to be important. From this finding, one may infer that the birth

order relates to seminarian constructs but it is not strong enough to be a useful barometer. One needs other individual difference variables to make useful predictions.

Age was inversely related to their construct ratings about those role players within the social support systems they liked least. Three elements that they like least bear extreme-negative correlation coefficients. It is interesting to note that the ideals cluster seems to have no relationship with age.

The length of stay within the seminary seems to have some influence on a seminarian's view of their families, seminary, and ideals. The longer they have been in the seminary, the lower their rating. It is interesting to note that length of stay is significantly and negatively correlated with their construct ratings about the seminary. It seems that the longer they have been in the seminary, the more they know about their environment, the more critical they are about their environmental support systems. There are six out of seven elements across "I like least" that the seminarians extreme-negatively rated. These ratings may indicate that they are probably concerned much with the role players they liked least. Thus, to do well with respect to the GPA, the constructs they like least may need to be addressed.

Thus, given these findings, the second null hypothesis was rejected. It is also interesting to note that their constructs about the ideals were found to be negatively

related to their length of stay in the seminary. The longer they have stayed there, the lower they rate their ideals. It is a challenge to explain this result. That is, if they rate them low, they  attach little value to them. Another way to view it is that the ideal cluster (especially due to the most and least liked role players) has placed the seminarians in a critical situation. This fact may render information that the ideals cluster, the most liked role players, and the least liked role players should be considered crucial concerns among the seminarians.

Summary

Conclusions that may be inferred from these data:

First, there is a statistically significant relationship between the academic performance levels and the constructs about the family, seminary, and ideals across the subjects.

Second, there is a relationship among the academic performance levels, the individual difference characteristics, and the selected environmental constructs across the subjects. The GPA is positively related to the birth order position, and negatively related to both the age and the length of stay within the seminary. The age and the stay variable are negatively related to the constructs. Birth order is positively related to the construct ratings.

Third, the seminarians are very homogeneous. They appear very close to one another across the variables.

<u>Suggestions</u>

Within its limitations, this study offers several ideas as suggestions both for further researches and to the seminary administration.

<u>For further studies.</u>

First, a more fine-grained examination of possible cause effect relationships among variables is needed. These studies could help the seminary administration to make more precise decisions about the declining academic performance and/or to maintain the seminary education generally.

Second, studies should be designed to include several and/or all of Indonesian seminaries and/or seminarians. These large scale studies would provide a more accurate picture about the Indonesian seminaries and seminarians. Further, such studies would help the Indonesian Catholic Church to view herself and her mission amidst her ever changing environment.

Third, use of a repertory grid methodology is believed to be a useful way to collect data and to explore values among societies. However, many people in the society are not used to spelling out their opinions and feelings and thoughts (Hollan & Wellenkamp, 1994). They are not used to dichotomize their experiences. A repertory grid with rating scales is considered to be an alternative simple way to overcome those <u>cultural differences</u>. It just asks for information through scores. Numbers are probably easier and more familiar than sentences and/or statements for most people. Thus, a repertory grid

methodology seems suited to cross cultural studies.

Fourth, it is recommended that investigators pursue the following areas of research: Why does the age of the seminarians negatively relate to their ideals? How to administrate a positive relationship with the support systems within the seminary, particularly with the role players I like least, across the age and the length of stay in the seminary? How to best maintain a good seminary atmosphere in order to help seminarians in building up their environmental constructs?

For the seminary administration.

First, an effort should be made to assess the declining academic performance through considering all possible features and developing a holistic approach to both the seminarians and the seminary education. That is, on one hand, every proposed solution regarding learning processes probably consider (be based) on all the involved features. On the other hand, the solution should be directed at the seminarians' peculiar point of view (constructs). They are the center in their learning processes.

Second, a focus should be given to all social support systems that seminarians encounter within their life processes (the mesosystem, exosystem, or the chronosystem). That is, the seminary administration should maintain proper conditions for the seminarians to experience their best performance in the widest sense (lives) and their best academic performance in

particular (learning processes).

Third, it might be very helpful to the seminarians when they are continuously helped to think their personal learning and/or when they are consecutively encouraged to create their own personal transformation from each of experiences. The seminary administration should help them to make themselves a man-the-scientist.

&&&&&&&&&&&&&&&&&&&&&&&&&&&&&

## APPENDIX A

<u>R E P E R T O R Y - G R I D</u>

Role Players in the Environment (ELEMENTS)
Attributes of the Role Players (CONSTRUCTS)

**E L E M E N T S**

A. Self ( )
B. Father ( )
C. Mother ( )
D. Closest I Love Most ( )
E. Closest I Love Least ( )
F. Happiest I Love Most ( )
G. Happiest I Love Least ( )
H. Director of Seminary ( )
I. Seminarian I Love Most ( )
J. Seminarian I Love Least ( )
K. Professor I Love Most ( )
L. Professor I Love Least ( )
M. Most Alive Self ( )
N. Least Alive Self ( )
O. Most Alive Friend ( )
P. Least Alive Friend ( )
Q. Most Alive Minister ( )
R. Least Alive Minister ( )

**C O N S T R U C T S**

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

A B C D E F G H I J K L M N O P Q R

| Construct (left) | Construct (right) |
|---|---|
| very dependent | very independent |
| very unemotional | very emotional |
| very passive | very active |
| very rough | very gentle |
| not at all helpful to others | very helpful to others |
| very unkind | very kind |
| very unaware of feelings of others | very aware of feelings of others |
| gives up easily | never gives up easily |
| very inconfident | very self-confident |
| not at all understanding of others | very understanding of others |
| very cool in relations | very warm in relations |
| goes pieces under pressure | stands up well under pressure |
| emotionally disorganized | emotionally integrated |
| unwilling to be a leader | willing to be a leader |
| unwilling to be a follower | willing to be a follower |
| inconsistent feelings about self | consistent feelings about self |
| exhibits exaggerated behavior | exhibits moderate behavior |
| stubborn | cooperative |
| short-lived relationships | enduring relationships |
| self-doubting | self-assured |
| tense | relaxed |
| fears death | accepts of death |
| easily distracted | able to concentrate |
| despairing | hopeful |
| late | on time |
| demanding | giving |
| difficulty in showing feelings | express feelings easily |
| very sexually anxious | very sexually secure |
| very sexually unattractive | very sexually attractive |
| very sexually immature | very sexually mature |

## REPERTORY-GRID

### Role Players in the Environment (ELEMENTS)
### Attributes of the Role Players (CONSTRUCTS)

ELEMENTS

A. Self (_____)
B. Father (_____)
C. Mother (_____)
D. Strong I Like Most (_____)
E. Strong I Like Least (_____)
F. Respect I Like Most (_____)
G. Respect I Like Least (_____)
H. Seminary Staff I Like Most (_____)
I. Seminary Staff I Like Least (_____)
J. Fellow Seminarian I Like Most (_____)
K. Fellow Seminarian I Like Least (_____)
L. Professor I Like Most (_____)
M. Professor I Like Least (_____)
N. Most Ideal Self (_____)
O. Least Ideal Self (_____)
P. Most Ideal Friend (_____)
Q. Least Ideal Friend (_____)

CONSTRUCTS

A B C D E F G H I J K L M N O P Q    1  2  3  4  5  6  7

very dependent _____ very independent
very unemotional _____ very emotional
very passive _____ very active
very rough _____ very gentle
not at all helpful to others _____ very helpful to others
very unkind _____ very kind
very unaware of feelings of others _____ very aware of feelings of others
gives up easily _____ never gives up easily
very unconfident _____ very self-confident
not at all understanding of others_____ very understanding of others
goes pieces under pressure _____ stands up well under pressure
emotionally disorganized _____ emotionally integrated
unwilling to be a leader _____ willing to be a leader
unwilling to be a follower _____ willing to be a follower
inconsistent feelings about self _____ consistent feelings about self
exhibits exaggerated behavior _____ exhibits moderate behavior
short-lived relationships _____ enduring relationships
fears death _____ accepts death
despairing _____ hopeful
late _____ on time
demanding _____ giving
difficulty in showing feelings _____ express feelings easily
very sexually anxious _____ very sexually secure
very sexually unattractive _____ very sexually attractive
very sexually immature _____ very sexually mature

# APPENDIX C

## RAW FEATURES OF SUBJECTS

| SUBJECT | GPA | A G E YR. | MN. | S T A Y YR. | MN. | BIRTH ORD BO.  PS. |
|---------|-----|-----------|-----|-------------|-----|--------------------|
| 9501 | 2.00 | 25 | 03 | 05 | 06 | 04 LAST |
| 9502 | 2.00 | 26 | 00 | 05 | 06 | 01 FIRST |
| 9503 | 2.00 | 25 | 09 | 05 | 06 | 01 FIRST |
| 9504 | 2.00 | 27 | 00 | 05 | 06 | 01 FIRST |
| 9505 | 2.50 | 25 | 10 | 05 | 06 | 04 MIDDL |
| 9506 | 2.50 | 22 | 06 | 01 | 06 | 06 MIDLL |
| 9507 | 2.60 | 21 | 07 | 00 | 06 | 02 MIDLL |
| 9508 | 2.70 | 26 | 09 | 05 | 06 | 01 FIRST |
| 9509 | 2.75 | 25 | 03 | 05 | 06 | 02 MIDDL |
| 9510 | 3.00 | 22 | 01 | 01 | 06 | 06 MIDDL |
| 9511 | 3.00 | 22 | 06 | 01 | 06 | 05 LAST |
| 9512 | 3.00 | 22 | 05 | 01 | 06 | 01 FIRST |
| 9513 | 3.00 | 20 | 09 | 00 | 06 | 02 MIDDL |
| 9514 | 3.00 | 30 | 08 | 02 | 06 | 03 MIDDL |
| 9515 | 3.00 | 24 | 10 | 02 | 06 | 05 MIDDL |
| 9516 | 3.00 | 23 | 00 | 02 | 06 | 03  ?? |
| 9517 | 3.00 | 21 | 03 | 01 | 06 | 01 FIRST |
| 9518 | 3.00 | 21 | 06 | 00 | 06 | 03 MIDDL |
| 9519 | 3.10 | 22 | 11 | 02 | 06 | 07 MIDDL |
| 9520 | 3.10 | 22 | 02 | 01 | 06 | 02 MIDDL |
| 9521 | 3.10 | 23 | 06 | 02 | 06 | 02 MIDDL |
| 9522 | 3.10 | 22 | 00 | 01 | 06 | 04 LAST |
| 9523 | 3.20 | 22 | 07 | 01 | 06 | 06 MIDDL |
| 9524 | 3.20 | 20 | 06 | 00 | 06 | 02 MIDDL |
| 9525 | 3.30 | 23 | 05 | 02 | 06 | 07 MIDDL |
| 9526 | 3.30 | 21 | 05 | 01 | 06 | 08 MIDDL |

| | GPA | YR | MN | ORD | STAY | PS | |
|---|---|---|---|---|---|---|---|
| 9527 | 3.40 | 20 | 10 | 00 | 06 | 02 | MIDDL |
| 9528 | 3.40 | 21 | 02 | 00 | 06 | 02 | MIDDL |
| 9529 | 3.40 | 20 | 08 | 00 | 06 | 03 | MIDDL |
| 9530 | 3.40 | 21 | 05 | 00 | 06 | 01 | FIRST |
| 9531 | 3.40 | 22 | 02 | 01 | 06 | 05 | LAST |
| 9532 | 3.50 | 22 | 04 | 02 | 06 | 02 | MIDDL |
| 9533 | 3.60 | 22 | 07 | 02 | 06 | 02 | MIDDL |
| 9534 | 3.70 | 21 | 10 | 01 | 06 | 02 | MIDDL |
| 9535 | 3.70 | 23 | 03 | 05 | 06 | 01 | FIRST |
| 9536 | 3.70 | 23 | 01 | 02 | 06 | 02 | MIDDL |
| 9537 | -- | -- | -- | -- | -- | -- | -- |

```
BO    :  Birth Order        GPA  :  Grade Point Average
MIDDL:  Middle              MN   :  Month(s)
ORD   :  Order              PS   :  Position
YR    :  Year(s)
STAY  :  Length of stay within the seminary
```

# APPENDIX D

## STATISTICS FOR SUBJECTS BY VARIABLES

|       | MEAN  | MEDIAN | MODE  | ST. DEV | VARC. | RANGE | MINIMUM | MAXIMUM |
|-------|-------|--------|-------|---------|-------|-------|---------|---------|
| GPA   | 3.03  | 3.05   | 3.00  | .46     | .21   | 1.70  | 2.00    | 3.70    |
| AGE   | 23.12 | 22.50  | 21.42 | 2.21    | 4.86  | 10.17 | 20.50   | 30.67   |
| STAY  | 2.42  | 1.50   | 1.50  | 1.81    | 3.28  | 5.00  | .50     | 5.50    |
| B.OR  | 3.08  | 2.00   | 2.00  | 2.02    | 4.08  | 7.00  | 1.00    | 8.00    |
| FMLY  | 5.01  | 5.00   | 4.49  | .59     | .34   | 2.21  | 3.96    | 6.17    |
| SMRY  | 5.17  | 5.25   | 3.53  | .70     | .50   | 2.99  | 3.53    | 6.53    |
| IDLS  | 4.74  | 4.58   | 4.22  | .78     | .61   | 3.01  | 3.44    | 6.45    |

```
GPA : grade point average    ST. DEV: standard deviation
VARC: variance               B.OR   : birth order
FMLY: family                 SMRY   : seminary
IDLS: ideals
```

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