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M U S I C A L   I N T E R E S T  
C H U R C H   A T T E N D A N C E  
A N D  
P E R S O N A L I T Y

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- Allan Ross Wards -

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ABSTRACT

WARDS, A.R., 1980, Musical Interest, Church Attendance and Personality, M.A. thesis, Massey University, New Zealand. This study set out to investigate whether any relationships might exist between an individual's personality, his/her secular status, and involvement in music performance. It was hypothesised that Groups differing in church and musical interests will vary in personality characteristics as measured by the PRF (for motivational variables) and the NSQ (for level of stability). Ten Groups were studied: Church Choir, male and female; Church non-Music, male and female; non-Church Instrumental, male and female; non-Church non-Music, male and female; Salvation Army Band, male; Pipe Band, male. Ten subjects, drawn from the City of Palmerston North, formed each group. Analysis of results took two forms: Profile analyses of all groups in the possible comparisons of groups; Q-type factor analysis of group and subject differences. It was concluded that such an approach to the study of groups and interests is practicable, but that the measuring instruments used in this study were too blunt, and that caution must be used in interpreting results.

PREFACE

The author wishes to thank all who have made work on this thesis possible: my wife, for bearing with me; my Supervisor, for patient help and assistance; my Subjects, for their willingness; my Church, for its interest and support.

CONTENTS

(d)

<u>Chapter</u>		<u>Page</u>
1	Introduction	1
2	Review of Literature	5
3	a) Hypothesis	
	b) Design of Study	
4	Method	19
	a) Subjects	
	b) Measuring Instruments	PRF NSQ
	c) Procedure	
	d) Analysis of Data	
	RESULTS	
5	Personality Profiles of the Sub-Groups	30
	NSQ	
	PRF	
6	Q-Type Factor Analysis of Group and Subject Differences	67
	a) Results	
	1) Unrotated Factor Matrix (first six factors only)	
	ii) Rotated Matrix	
	iii) Communalities	
	iv) Loadings	
	b) Discussion	
	1) First Inspection	
	ii) Second Inspection	
7	General Discussion and Conclusions	77
	a) NSQ	
	b) PRF	
	c) Factor Analysis	
	d) Conclusions and Suggestions for Future Research	
8	Over-all Conclusions	85
Appendix One	Raw Scores	1
	Standard Scores, Means and Standard Deviations	
	Group Totals	
	Mean Totals	

(e

Two	Varimax Rotated Factor Matrix	xiv
Three	First Analysis	
	Percentage of Variance	
	Cumulative Percentage	
	Varimax Rotated Factor Matrix	
	Percentage of Variance	
	Communality	

Bibliography	xxiv
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(Please note that profile analyses and tables are not listed separately here, as these form an integral part of the text.)

MUSICAL INTEREST,  
CHURCH ATTENDANCE  
AND PERSONALITY

Chapter 1      INTRODUCTION

Some years ago, a friend and I chanced in discussion to come upon the subject of the meaning of music. From our limited reading, it seemed to us that there had been very little attempt to study music per se, as distinct from the psycho-physical aspects of music. Similarly, it seemed to us that there had been little study of the relationship between personality and response to music.

Accordingly, in a Psychology stage III project at Victoria University, we tried to analyse people's responses to music. For this task, we played pre-recorded one-minute pieces of diverse kinds and origins to a number of subjects, giving them instructions something like this:-

"You will be played twenty one-minute extracts from various kinds of music. While each piece is playing, or after each piece, will you please write down what you feel when you hear this piece, or, if a story or memory comes to mind, will you write this down. Please try not to give me just a description of the music - I want you to tell me about your reactions to it."

From our knowledge of the subjects used, we attempted to match up factors in the responses given with the subjects themselves. Also, using code-marked copies of the responses, we asked friends of the subjects to match names with responses, to see if known people were readily identifiable in their music responses.

The results were most disappointing, and seemed

incapable of analysis. Firstly, it was not even possible to distinguish between Form II children and university music students on the basis of stories given or feelings recorded. Secondly, apart from just a few responses, the big majority of the responses gave no indication to us or the other analysers who the subject was. One of the few "good" responses was the following, to a piece of Gregorian chant, by a teenager known to us to be worried about her weight:-

"I can see an old grey stone church, a fat monk sitting sleepily in the front of the church. He has on a brown robe and wears a wide leather belt round his waist, drawn tight in an effort to control his girth."

In itself, the recording of just positive instances is not a valid approach: needs for frequency distribution and the like are evident.

Over the years, continuing as a keen amateur musician, it came to my attention that there are very few practising musicians among either academic or clinical psychologists. In eleven years' work in the Justice Department Psychological Service, I knew of no other practising musician in that group. In fact, I know of only two other psychologists who performed music at all, these being a psychology professor (since deceased) who played the piano very well, and an educational psychology lecturer who played the cornet exceedingly well. Many other psychological-world acquaintances enjoy music, but none performs. The question comes - why is this so? It seems intuitively plausible that analytic answers could be given, but I have been able to find no studies nor theorising on the topic. The relevance of this observation to the present study is that there may be certain personality factors required in music performance as an active interest which correlate negatively with academic and practical interest in psychology. Further, it seemed possible to me that this may be an explanation for the lack of studies on the meaning of music: such a question

may not readily occur to non-music-oriented psychologists.

The composer Felix Mendelssohn (d.1847) was once told by a friend that emotions aroused by music are so deep that they are unable to be described. Mendelssohn retorted immediately that this was not so: it is the fact that emotions aroused by music are so close to the surface that precludes their being described. Whichever is correct, it is evident that varieties of music, rhythmical and otherwise, play a great part in most cultures of the world and in our own not least.

Without much thinking on the topic, it would occur to most people that it is possible that people attracted to pop music may in some personality characteristics be different from those who profess no understanding of, nor interest in, music of any description, and that they may be different again from those who are attracted to classical church music. Perhaps these differences might be charted if tests were given to various groups of subjects with expressed music interests, for or against.

Working at various stages with people in both medical and mental hospitals, it seemed to me that Christian people may have some differing personality characteristics from those who profess no faith; I had certainly felt that Christian patients in medical hospitals seemed, on the whole, to be more cheerful and hopeful than non-Christian patients. A small, unpublished study, carried out for personal interest, used ten subjects in each of two groups (Christian and non-Christian) to whom Frankl's Purpose-in-Life Test was administered. The results generally confirmed this hypothesis. Post-hoc explanations could easily be given: for example, a person who has faith in an after-life need not be as frightened of dying as a person who believes in his own total annihilation at death.

These earlier results led to the idea that it might

be worthwhile to chart personality profiles of those who are church-goers and those who are not, to see if the groups differ. The question arises immediately, of course, to ask whether people of certain personality characteristics become Christians, or whether their faith shapes their personalities in some way. It may be that both of these interact.

These have been thoughts developed over the past two decades, with only casual reference to books and periodicals to see if these questions have occurred to others. Studies surveyed gave no definite information, one way or the other. The thought arose, then, whether it might be possible to use both musical interest and expressed church-going as variables in a study of personality characteristics of different groups within the community. This is the area of interest for the present study.

Chapter 2      REVIEW OF LITERATURE

Perhaps because of the nature of music and/or Christianity, or because the topic is not a "glamorous" one with application to industry or treatment, research in the area currently being looked at is almost non-existent.

There is a good deal of research on the psychophysics of music, in such things as hand-clapping to rhythms, pitch discrimination and the like (reference is made to some of these studies in a footnote to this chapter), but there seems to be none on what music is and why it affects people emotionally. Similarly, there is very little research relating to the effect of Christianity on personality. For this reason, some seminal non-research writings on the nature of music and Christian personality have been quoted.

It is common in our society to think that music can portray specific emotions or feelings, or even signify actual events. People sometimes report that, for example, it is quite clear why Beethoven's "Moonlight Sonata" is so-called: this, despite the fact that this piano piece was not nicknamed "Moonlight" by Beethoven at all. However, the nickname "Moonlight" could still illustrate a generalisable quality of the piece, even if the composer himself did not see it that way.

It is certainly true that some sounds in the world around us can be crudely copied in music: for example, Messiaen in his 20th-century music has made much of bird-song, in both his piano and his organ works. The most common way in which composers express "specific feelings" in music is to abide by certain conventions. In our society, this usually means abiding by the conventions of television and film score composers: for example, strings are often used to portray what we usually call "love scenes", flutes (especially if unaccompanied and played

in a minor key) to portray pastoral scenes, brass to portray martial sentiments. This doubtless has its place in stylised entertainment, but it does not mean that music qua music expresses anything specific.

Hanslick (1891) was one of the first writers to state dogmatically that music cannot express specific feelings or emotions:-

(p.33) "Music may reproduce such phenomena as whispering, storming, roaring, but the feelings of love or anger have only a subjective existence....Definite feelings and emotions are unsusceptible of being embodied in music."

Hanslick repeats the point a little further on:-

(p.35) "...it is enough to determine whether music is capable of representing any definite emotion whatever. To this question only a negative answer can be given...."

Considering that, except in the most hopelessly tone-deaf person, music is always seemingly bound up with emotion and feelings, this might seem to be an extraordinary claim, but Hanslick justified his attitudes:-

(p.19) "Music has no aim (object) and the mere fact that this particular art is so closely bound up with our feelings, by no means justified the assumption that its aesthetic principles depend on this union."

As far as the present writer is aware, Hanslick has not been challenged on this point.

Music qua music may have no aim or object but, as already indicated in mentioning mood music for films

or television, certain conventions are generally obeyed in producing certain kinds of feelings or associations in listeners. Another example would be this: organ music played in four-square rhythms would, in most people, arouse pictures of church and hymn-playing. Similarly, lilting waltz rhythms played by strings alone bring, to most people, pictures of Vienna, grand 19th-century balls and all that is associated with Strauss or Lehar.

More modern writers than Hanslick have written sparingly on the subject, but two authors stand out. L.B.Meyer (1962) reaffirms the stand taken by Hanslick:-

(p.vii) "Not only does music use no linguistic signs but, on one level at least, it operates as a closed system, that is, it employs no signs or symbols referring to the non-musical world of objects, concepts and human desires."

The other writer is D.Cooke (1962). He asserts that:-

(p.ix) "Music is widely regarded nowadays, not as a language at all, but as a "pure", inexpressive art, like architecture; and even those who do feel it to be some kind of language regard it as an imprecise one, incapable of conveying anything so tangible as an experience of life or an attitude towards it."

In other words, Cooke sees modern thought as totally dissociating music from everything else in human experience, and certainly from everyday living. Cooke cannot agree with this outlook. In his book, only readily understood by musicians because of its many musical quotations, he

(p.xi) ".....attempts to show that the conception of music as a language capable

of expressing certain very definite things is not a romantic aberration, but has been the common unconscious assumption of composers for the past five-and-a-half centuries at least."

Cooke clearly sees music as expressing cultural and philosophical ideas and aspirations, and condemns those who concern themselves with the minutiae of musical analyses:-

(p.x) "We musicians....preach the virtues of refusing to consider it (music) a language at all; when we should be attempting, as literary critics do, to expound and interpret the great masterpieces of our art for the benefit of humanity at large, we concern ourselves more and more with parochial affairs - technical analyses and musicological affairs....and pride ourselves on our detached, de-humanised approach."

It is certainly true that other artistic endeavours than the literary are now being understood as part of a cultural and philosophical backdrop to a society. For example, Stacpoole (1976) asserts that many of the early buildings in New Zealand, i.e. those from the 1860s to the 1890s, reflect the solid, conservative, confident values of the Victorian settlers. Similarly, Rookmaker (1973) is concerned with....

(p.11) "...modern art, its meaning and its relation to the contemporary cultural scene at large."

He is concerned to show that a culture can be analysed in terms of its art, and contends that....

(p.11) "...modern art did not just happen. It came as a result of a deep reversal of spiritual values in the Age of Reason."

Later in the same book, Rookmaaker discusses the atheist Picasso, the Roman Catholic Rouault and then asks the question:-

(p.157) "Where is the Protestant counterpart of Rouault?"

He asks why Protestants missed Rouault's showing what it means to believe in God and to love man in this age. Because Rookmaaker so clearly shows that deeper questions lie behind art than mere questions of technique, the physical use of materials, he is worth quoting at some length:-

(p.157-8) "Were they (the Protestants) fooled by Salvador Dali when he made his strange, mystic works? Dali's 'Last Supper' portrays a very mystical celebration of the sacrament, with a ghost-like Christ (one can look through Him). His 'Crucifixion of St John of the Cross' was named after a heretical mystic of the sixteenth century who had this strange conception of a cross hanging over the world but not touching it. Did not Christ die for this world, for the people of this earth, including their material concerns, their daily needs, for normal human life?"

Cooke (1962), without referring to modern art at all, clearly feels a kinship with the views of Rookmaaker:-

(p.xiii) (talking of the new non-tonal musical 'language') - "...since the new language is unrelievedly chromatic by nature, it must be restricted to expressing - what indeed we feel even the very earliest chromaticism of the 16th-century Italians still to this day expresses - emotions of the most painful

type....Thus from the purely negative point of view, the fact that the new music shuns the basic acoustical consonances of the octave, fifth, fourth and triad, suggests that it does not express the simple fundamental sense of being at one with nature and life."

It would seem, then, that if the broad levels of a society can reflect the philosophical assumptions and functioning of a culture, it is possible that individuals' reactions to differing kinds of music may reflect something of the nature of their personality and outlook. Further, it would seem that there may be sex differences to some extent determined by the cultural values of society and its sex-role stereotypes. This may, at least in part, be evidenced by the fact that there are no significant female composers. Hanslick (1891) noted this last century:-

(p.101) "...the paradox....that women, who by nature are highly emotional beings, have achieved nothing as composers."

Hanslick's implied statement that women are more emotional than men can be ignored. One modern exception, of a female composer, though hardly a world figure in composition, would be Jenny McLeod of Wellington. Nevertheless, any list of the top hundred composers from throughout history would include no women at all.

The present writer has found virtually no studies that in any way relate to the present research, in spite of looking up all possible references in the Psychological and Dissertation Abstracts for the past ten years.

K.C.Soh (1972) explored thy hypothesis that an individual's preference for certain musical styles may reflect his personality structure. He used 28 female art students and 24 female music students as subjects, and the works of five composers. The results showed that a preference

for Brahms is related to "closed-mindedness" and that a preference for Stravinsky is related to a lack of musical training.

Professor G. Shouksmith of Massey University, in a personal communication, has referred to an unpublished study carried out by him in 1975, in which subjects were asked to respond to a variety of recorded music, by rating each piece on a series of Semantic Differential scales. Although he had hoped to establish categories of music and of respondents in terms of the semantic differential profiles produced, no significant patterns emerged. The sole finding of any standing was that musicians responded in a more stylised and less self-oriented manner than did non-musicians. These results were presented by Shouksmith in a paper to the New Zealand Association of Music Teachers, Central Districts Branch.

There is an even smaller literature that relates Christianity and music with specific preferences, approaches and compositions, although many theologians from King David, who seemingly wrote a number of the Psalms in the Old Testament, to the present-day, believe in what might loosely be called the 'harmony of the spheres', or in 'celestial music'. The only book found specifically connecting the two topics of music and Christianity is one by J.H. Edwards (1904), whose stated purpose is:-

(p.8) "It is hoped that the following pages will give reasonable proof that music, by its constitution, correlations, and effects, discloses a Supreme Being who is all that the mind and heart of man need and rightly crave."

Even in his day, Edwards could say:-

(p.9) "It is, indeed, remarkable that the theological value of the whole territory of aesthetics has been so little appreciated."

Edwards says this, yet perhaps theology is more interested

with theology than with music, because its subject is, after all, God! What he seems to mean is that a certain 'harmony' in nature is also shown in (his version of) aesthetics and that this 'harmony' proves the existence of his kind of God. At this point, psychology is surely floundering in other fields of thought, having direct reference to human behaviour rather than aesthetics and theology. It would seem true that psychology itself cannot, except in a broad sense, ally itself with the following of Edwards:-

(p.18) "Music, with its implications and possibilities, would suffice to show to all minds capable of responding to its appeal, and of reasoning upon its causes and correlations, that there is a Supreme Power making for harmony, happiness, and spiritual perfecting."

He quotes with approval musicians who assert that their art is important. The words of Beethoven, for example:-

(p.24) "Music is the manifestation of the inner essential nature of all that is."

To put it more crudely in more modern words, music is the outward sign of things at gut level! We instinctively feel this is true, but are generally able to go no further to any other statement. After all, music is to be listened to and performed rather than analysed.

Mendl (1957) sought to add some thoughts to the place of faith in music, entitling his book "The Divine Quest in Music." After seeking to prove that there is a spiritual quality in great music, he finally asserts that:-

(p.235) "When we say that musical greatness is in a large measure dependent upon spiritual quality, we are in effect saying that it arises largely from the inspiration of God. For unless we believe in God, there is no meaning in the use of the word 'spiritual', and in that case

our whole scale of values would be upset".

He adds:-

(p.236) "The majesty of the expanding universe, the very beauty of its conception, as well as the loveliness of its countless manifestations on the earth below and in the heavens above us, attest the existence of a Creator. And in this process of proof, music plays its part."

A little more work has been done concerning religious belief and personality, but again, surprisingly little.

Barton and Vaughan (1976) studied groups of 108 active church members and 53 non-church members (all High School seniors in New Zealand) over a five-year period, using the 16PF as a measuring instrument. They found that at both times, active church members were significantly and consistently different on several personality dimensions. Specifically, the active church members tended to be more tender-minded, higher in superego strength, lower in dominance, and more conservative. Over the five-year period, only the active church member group decreased significantly in guilt proneness and anxiety. Barton and Vaughan assert that the results are consistent with other research in this area. It may be suggested that this research shows that christian belief and practice has an effect on personality, but there may also be influences on the subject young people from their parents and home environment as well.

Ushio in 1972 reported studying 127 religious and 60 non-religious college students and 502 religious and 49 non-religious adults (we are not told what religion, and this may be a significant omission). He used a questionnaire of 48 items from the religious behaviour scale and a personality scale of seven subscales constructed on the basis of H.A.Murray's needs:-

dependency	anxiety	application
aggression	abasement	nurturance
superego strength,		

He found that religious behaviour is positively related to needs for affiliation, nurturance superego strength, and negatively related to the need for aggression. Unless it is known that the people studied were of the same religion as those in the present study, it cannot be postulated that the study is directly relevant, because that would be to make the assumption that Christianity and other religions have the same effect on personality - there is no evidence for this.

Dodrill (1976) studied personality differences between Christian and secular College students. He concludes that there is little objective evidence for the Evangelicals' assertion that Christian personality is different from non-Christian. He had used the Guilford-Zimmermann Temperament Scale on 2722 Christian undergraduates and 1424 secular undergraduates. The results did suggest Christians have fewer social contacts than secular students, but that they saw themselves as more friendly and goodnatured. Christian female students saw themselves as more submissive and less energetic. These differences, however, were so small as to be of no practical significance, and the possibility that they might be related to factors other than Christian belief could not be eliminated.

Linton, Levine, Kuechenmeister and White (1978) studied two groups of ten thirty to fifty year olds, who reported a significant lifestyle change in adulthood following a significant emotional experience. Either

- i. through religious conversion, or
- ii. through a psychological encounter.

It would seem that the subjects in the two groups were very different, but that their basic temperament and personality characteristics were not changed by their emotional experience. It is concluded in this study that a person chooses a philosophy for his/her temperament rather than is changed by a religious or psychological encounter.

Heintzelman and Fehr reported in 1976 on a study of 82 undergraduates, having used the Manifest Hostility Scale. On this scale, it was found that highly-orthodox individuals scored lower than other subjects. It is said that this was predictable, as they were not forced to conform.

Writers of a wide range of Christian theological and devotional books have asserted that becoming a Christian makes a difference to personality. For example, Bennett and Bennett (1971) say:-

(p.12) "The 'soul', called psyche in Greek, is the psychological part of us - composed of our intellect, our will, and our emotions. This part of us is wonderful, when it is under the control of God through the Spirit, but when it is out of control it does terrible things."

Thus a Christian believes himself to be different when under the control of God. Further, as Moule would say (1971), Christians have someone to model themselves on:-

(p.68) "Christians believe that in a sense personality is a known entity, since in Jesus Christ the outlines of ideal human personality are revealed."

Conscious modelling of oneself on another person may, over time, make a considerable difference to one's outlook, values and ideals, as Jeeves says (1976):-

(p.145) "...the goal of the Christian to be conformed to the image of Christ."

It is the traditional Roman Catholic view that God makes a difference to human personality, as illustrated by the remarks of von Hildebrand (1943):-

(p.35) "The supernatural basis of the imitation of Christ is the divine life implanted by baptism, which in us is partly restored and partly fortified through the sacraments."

Many Christians believe that alcoholism is a personality problem that their faith can heal. For example, Neal (1958) suggests that her readers

(p.106) "...take the scores of instantaneous and complete healings of alcoholism, which are taking place under the ministry of healing. Many of these cases have spent thousands of dollars on unavailing psychiatric care and futile hospitalisation."

The writer is not concerned here with the truth of Neal's assertion, but merely with the fact that such assertions are made. On the other hand, when Christians are told that studies show no difference to behaviour and personality on becoming Christian, Christians will sometimes say this is because the Christianity is not "deep", or that so-and-so "does yet really have a close personal relationship with the living Lord." The New Testament itself liken becoming Christian to new birth.

#### Footnote

Examples of the more typical kinds of topics taken for research in music would include the following:-

Research on scales and modes - Blechner (1978).

Research on scales and melodies - Dowling (1978).

Research on music and symbolic functioning - Wagley (1978).

Research on aural abilities - Gephardt (1978).

Similarly, examples of the more typical kinds of topics chosen for research on Christianity would be the following:-

Research on attitudes - Keily and Dudek (1977).

Research on the effects of religious externals - Long (1978).

Research on psychological set - Noerager (1978).

Research on neurology and intelligence - Martindale (1978).

Chapter 3a) HYPOTHESIS

This study sets out to investigate whether any relationships exist between an individual's personality, his/her secular status, and involvement in music performance.

It would seem possible that there may, for example, be differences between different kinds of musicians. It would seem that persons from a pipe band, a "low-brow" secular group, may differ from those in a "high-brow" religious group such as a classical church choir. Similarly, there may be differences between those who profess no religious or musical interest and those who are not only Christians but active musicians in church as well. Yet again, there may be differences between those who are secular classical musicians and those who play in a church-oriented musical group, such as a Salvation Army Band. Various contrasting groups are clearly possible.

It is therefore hypothesised that

Groups differing in church and musical interests will vary in personality characteristics as measured by the PRF (personality Research Form) (for motivational variables) and the NSQ (Neuroticism Scale Questionnaire)(for level of stability).

b) DESIGN OF STUDY

To test the above hypothesis, it was decided two main comparisons could be made:-

church vs. non-church  
music vs. non-music.

Sub-categories can be made for further comparisons, such as "high-brow" vs. "low-brow". "High-brow" musical activities would include a classical orchestra and a classical church choir. "Low-brow" musical activities would include a pipe band and a Salvation Army Band. Similarly, male vs. female comparisons might produce significant results. Yet again, it would seem possible

that there may be differences between university-educated Christians and those who did not complete schooling beyond the fifth form. Many comparisons are clearly possible. As an example of the kinds of differences which might be found, it could be suggested that those in a sect rather than a mainstream church might score more highly on a measure of dogmatism, or one of defensiveness.

Chapter 4      METHOD

It was hoped to have at least twenty-five subjects in each group tested, but this was found to be impossible in practice. The Palmerston North musical population is relatively small and it was not possible to obtain non-overlapping groups with twenty-five subjects in each. The constraints of time for the thesis also led to certain limitations, resulting in ten groups of ten subjects being tested, as follows:-

1. Church Choir Female. Subjects were drawn from a Palmerston North church choir with a severely classical music preference.

2. Church Non-Music Female. Subjects were drawn from the congregations of main-stream churches, there being an expressed lack of interest in music.

3. Non-Church Instrumental Female. Subjects were drawn from those taking part in classical music regularly as performers, with no expressed church involvement.

4. Non-Church Non-Music Female. Subjects were drawn from those in the community with neither church nor music as part of their activities: the writer's neighbours, acquaintances of his friends, and so on.

5. Church Choir Male. The male counterpart of Group 1.

6. Church Non-Music Male. The male counterpart of Group 2.

7. Non-Church Instrumental Male. The male counterpart of Group 3.

8. Non-Church Non-Music Male. The male counterpart of Group 4.

9. Pipe Band Male. Performers from a local A-Grade Highland Pipe Band, perhaps loosely defined as Non-Church Non-Classical Music.

10. Salvation Army Band Male. Performers of a local Salvation Army Brass Band of some competence, perhaps loosely defined as Church Non-Classical Music.

It was not possible to find female counterparts to Groups 9 and 10.

It was not specifically intended that the groups should match for other factors, such as age, educational level, and socio-economic group, but the groups do in fact correlate on these factors: in other words, the groups are generally homogeneous. For example, there were people in both Pipe and Salvation Army Bands with professional jobs and university qualifications (to the writer's surprise and biased preconceptions, it must be admitted). Similarly, there were several in the Non-Church Instrumental group whose jobs seemed to belie their expertise in classical music: for example, one Symphonia player is a fireman. This study has shown the writer that some of the popular conceptions about who does what, and who has what outlook, can be demonstrably false.

#### b) MEASURING INSTRUMENTS

Two instruments were used:-

##### 1. Personality Research Form

This measure was developed during 1962/3 by Douglas N. Jackson at the Institute for the Study of Human Problems, Stanford University. The manuals (1967 and 1974) are published by Research Psychologists Press Inc. of Goshen, New York.

Some quotations from the Handbook will make clear why this measure was chosen:-

(p.4) "The Personality Research Form represents an application of developments in the areas of personality theory, personality assessment, and test theory to personality test construction. The expectation which guided this program of test construction was that by a careful application of certain modern principles of personality and of test theory, more rigorous and more valid assessment of important personality characteristics could be attained. The goals toward which these efforts were directed were, first, to develop

sets of personality scales and an item pool which might be useful in personality research, and, secondly, to provide an instrument for measuring broadly relevant personality traits in settings such as schools and colleges, clinics and guidance centers, and in business and industry...."

In other words, this measure was chosen as one for the variety of the factors (personality variables) and its applicability to non-clinical, non-pathological subjects. Other measures would have been as useful, but restraint had to be made, and choice.

(p.4) "The Personality Research Form is designed to yield conveniently a set of scores for personality traits broadly relevant to the functioning of individuals in a wide variety of situations. It is thus primarily focused upon areas of normal functioning, rather than upon psychopathology."

These are the variables, with their abbreviations:--

1. Abasement	Ab
2. Achievement	Ac
3. Affiliation	Af
4. Aggression	Ag
5. Autonomy	Au
6. Change	Ch
7. Cognitive Structure	Cs
8. Defence	De
9. Dominance	Do
10. Endurance	En
11. Exhibition	Ex
12. Harmavoidance	Ha
13. Impulsivity	Im
14. Nurturance	Nu
15. Order	Or
16. Play	Pl
17. Sentience	Se
18. Social Recognition	Sr
19. Succorance	Su

## 20. Understanding Un

In addition, there are Infrequency and Desirability measures.

(pp.4-5) "Factor analytic results have suggested a convenient basis for organising the characteristics measured by the scales into a number of superordinate categories. Listed below are the PRF scales organised into units suggested in part on the basis of theoretical considerations and in part upon the results of a number of factor analytic studies. All of the groupings do not, strictly speaking, define specific factors. This sentence thus, presumably intending 'Not all of the groupings do, strictly speaking, define specific factors.' Certain of the groupings are based on conceptual categories. It should also be emphasised that even though groups of scales can be defined, the separate measures are sufficiently distinct to justify their separate use as scales, having been shown to be uniquely and discriminantly associated with relevant criteria. Opposing scales are separated by a solid line."

## A. Measures of Impulse Expression and Control

Impulsivity

Change

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Harmavoidance

Order

Cognitive Structure

## B. Measures of Orientation toward Work and Play

Achievement

Endurance

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Play

## C. Measures of Orientation towards Direction from Other People

Succorance

---

Autonomy

D. Measures of Intellectual and Aesthetic Orientations

Understanding

Sentience

E. Measures of Degree of Ascendancy

Dominance

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Abasement

F. Measures of Degree and Quality of Interpersonal Orientation

Affiliation

Nurturance

Exhibition

Social Recognition

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Aggression

Defendence

G. Measures of Test-Taking Attitudes and Validity

Desirability

Infrequency

(p.8) "Norms are based upon separate samples of over a thousand female college students selected from initial groups approximately twice as large. These groups were assembled from over thirty North American Colleges and Universities".

If the Standard Scores (T) equivalents (Tables 2 and 3, p.9 and p.10 of the Handbook) of the Normative Means (Table 14, p.29 of the Handbook) are calculated, they vary only slightly from a score of 50, most being between 49.50 and 50.50, so it would seem that a direct comparison between the North American norms and the present results is possible. It cannot be assumed that the means of the one hundred subjects used in the present study can be taken to be New Zealand norms, or even those of Palmerston North itself, as the population cannot be divided into ten equally-sized groups: thus the present sample is not intended as a representative sample of the Palmerston North population, but is chosen to reflect the specific community groups related to the author's

interest area. Further, the fact that groups within the community do exist cannot be taken as indicating the relative strengths of any of the groups within a given population or town. On the other hand, the Results of this study show the various groupings to be much more homogeneous than might have been expected.

It should be added at this point that a search of the Psychological and Dissertation Abstracts for the past five years has failed to produce evidence of the use of the Measure in much research. However, many practising psychologists here in New Zealand and overseas have reported using it in practical work. It is to be noted, too, that as an up-date of the Edwards Personality Preference Schedule (for reference, cf Bibliography), the PRF has common referents with that test.

#### 11. Neuroticism Scale Questionnaire

This measure was developed during 1960/1 by Ivan H. Scheier and Raymond B. Cattell, both of Illinois. The manual (1961) is published by The Institute for Personality and Ability Testing of Champaign, Illinois.

To quote from the Handbook:-

(p.3) "The Neuroticism Scale Questionnaire (NSQ) is a brief, standard, easily administered and scored inventory measuring degree of neuroticism or 'neurotic trend'. It is suitable for normal and abnormal adults and adolescents."

(p.3) "...neurosis cannot be regarded as confined within the institution's walls or to the therapist's couch. Some degrees of neurosis exist throughout the entire population, affecting real-life adjustment and effectiveness. Therefore, the problem of neurosis is not the exclusive province of the clinician, but has to be considered by any practitioner concerned with selection and success in school, occupation,

marriage, group relations, etc. It may be dramatically relevant for only about five per cent of the population, but it has some real relevance for the other ninety-five per cent as well."

Three summary statements about the NSQ are also made on pages 3 - 4:-

"(The NSQ) helps diagnosis by giving a quantitative evaluation of neurotic trend without requiring the time of skilled practitioners, leaving them free...."

"NSQ scores discriminate not only between neurotics and normals, but also between varying degrees of slighter neurotic trend in persons usually classed as normal."

"The NSQ is rooted firmly, by validation research, in the common core of clinical judgment regarding the symptoms and nature of neurosis...This minimises confusion...."

The neurotic-associated personality factors measured by the NSQ are these:-

- |             |  |
|-------------|--|
| 1. Factor I | Overprotection; Tender-minded, cultured, protected emotional sensitivity (vs tough-mindedness) |
| 2. Factor F | Depressiveness; Inhibited, sober, seriousness (vs happy-go-lucky cheerfulness)                 |
| 3. Factor E | Submissiveness, suggestibility, dependence (vs dominance)                                      |
|             | / 4. Factor O  |
|             | / Worry, guilt proneness (vs assured self-confidence)  |
| ANXIETY     | / 5. Factor Q4   |
|             | / Ergic tension (from frustration)(vs calm relaxation)   |
|             | / 6. Factor C  |
|             | / Ego weakness of emotional immaturity and instability (vs ego strength)                       |

(p.5) "The last three dimensions listed above, as

indicated, are known to group together in a second-order factor of anxiety and the test provides only one separate subscore for these three dimensions - an anxiety score - which becomes the fourth component of the test. Psychiatric and clinical correlations show that this anxiety factor-measure conforms to the consensus of clinical judgment as the nature and level of free anxiety."

As with the PRF above, a search of the Psychological and Dissertation Abstracts failed to produce evidence of the use of the measure in the past five years. Nevertheless, validation would seem to be adequate, as (p.30) the Handbook states:-

"The total number of cases was over 2,000, averaging about 75 per group."

It seemed, therefore, that this measure could produce significantly different mean scores when applied to different groups within a population, hence its use.

#### c) PROCEDURE

The groups were surveyed as follows, subjects being chosen as indicated :-

1. & 5. The tests were given to a local church choir and the first ten males and ten females to complete the forms became subjects.
2. & 6. The tests were given to a representative group of church-goers known to the writer as not being interested in music.
3. & 7. The tests were given to many members of the local symphony orchestra and the first ten males and ten females to complete the forms became subjects.
4. & 8. The tests were given to local primary and high-school teachers, firemen (who often have secondary jobs of differing types), shop assistants (and others known to the writer), on con-

firming their lack of interest in music and church-going.

9. The tests were given to the members of two pipe bands and the first ten forms completed became subjects.
10. The tests were given to the members of the local Salvation Army Citadel Band and the first ten forms completed became subjects.

A verbal explanation of the purpose of the research was given to all groups, emphasising that:-

- i. results would be entirely confidential
- ii. there were no right and no wrong answers: individuals must answer honestly
- iii. names were not required on the test forms, only the sex of the person, and my group code number.

By emphasising these things, it was felt subjects could answer more easily without anxiety.

Each subject was given his/her test forms in a stamped envelope addressed to the writer; the forms to be completed without supervision.

#### d) ANALYSIS OF DATA

For a quick inspection of the results to indicate trends, it was decided to graph profile analyses in all possible combinations. Not only would this give a rough indication of inter-group variations, but would also give a comparison with published norms. For this purpose, simple means were calculated. The results are in Chapter 5. It will be seen that male-female comparisons have also been graphed, based on Standard Scores and using the male and female tables in order to give valid comparisons.

A more intensive analysis followed, using Q methodology. As Kerlinger (1964) states:-

(p.581) "Q technique is mainly a sophisticated form of rank-ordering objects and then assigning numerals to subsets of the objects for statistical purposes."

This methodology has two important basic ideas useful for the present purpose:-

i. correlations between persons

ii. correlations between persons clusters or factors.

Thus it deals with the correlations among the responses of different individuals. In this study, it means factoring the tests. To test the hypothesis, it is more desirable to factor subjects, rather than tests: the hypothesis was that subjects would group in terms of the loadings on the criterion measures. Subject groups were to be identified by the pattern of loading.\*

One of the strong points of Q methodology is its analytic possibilities. As Kerlinger (1964) states:-

(pp.591-2) "Oversimplified, conceive of summing the responses of the individuals of a cluster to any Q sort item. If we did this for every item in a Q sort, we would have sums (really weighted sums) for all items....They can be rank ordered and then fitted into the original Q distribution. This new synthetic Q sort is literally a description of the factor".

Q methodology uses factor analysis easily and frequently.

As seen below, factor analysis was therefore carried out using the S.P.S.S. programme on a Burroughs 6700 computer. The initial correlation matrix proved to be singular and therefore could not be inverted. For this reason, option PAI was invoked to produce a principal factor solution without iteration.

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\* (See footnote, p.29)

When this was carried out, a varmax rotation produced six significant factors. Of these, only the first five had significant individual loadings.

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\* (from p.28)

It is recognised that a multiple discriminant function analysis using the traditional R-methodology could have been applied in this study. However, as became known, the initial differences on individual test measures were slight, shown by the original graphical profile analysis.

Using an R-factor analysis could have led to a multiple discriminant function analysis as a second-order one, which, with the predominantly homogeneous sample, was not likely to have produced any clear-cut results.

Chapter 5    PERSONALITY PROFILES OF THE SUB-GROUPS

In this chapter, the personality profiles will be presented and discussed.

The profiles group as follows:-

Nos.1	NSQ Mean totals
ii - x	NSQ Group total comparisons
xi - xxiv	PRF Group total comparisons
xxv - xxix	NSQ Means of scores of Groups
xxx - xlix	PRF Means of scores of Groups

Throughout this discussion and presentation, it needs to be kept in mind that an inspection of the profile analyses does not give standard deviations, nor the significance of the differences. For these reasons, discussion must therefore be of trends, not of certainities. Nevertheless, it can be said that trends may give a picture which is worth examining, perhaps with other measuring instruments, at some later date. In research, other weapons than statistics may prove valuable. An illustration may make this clearer:-

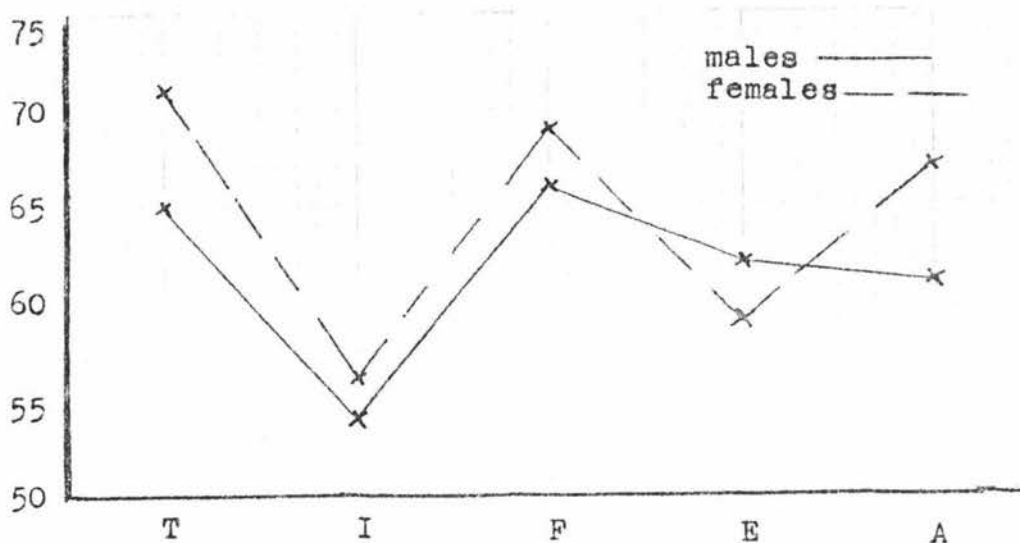
If a social scientist, impeccably armed statistically, gave manuscript paper and pencils to all the adults in the city of Palmerston North, perhaps some 30,000 persons of a total population of about 60,000, and asked each one to write a classical symphony, his result would almost certainly be that he would not get any symphonies that were to be regarded as of any degree of worth. At perhaps most, he would gain half a dozen very 2nd-rate symphonies. He would conclude that, statistically-speaking, listenable symphonies cannot be produced.

Similarly, if our social scientist were to research the possibility that Anglican clergymen play the bagpipes, he would send a questionnaire, say, to all the Anglican clergymen in a given area. In addition, as a check, he might send a questionnaire to all known pipe bands. If just one person escaped his net, and there is such a person in New Zealand, he would inevitably conclude that

Anglican clergymen never play the bagpipes, to a degree of probability of at least .0001.

The point is, clearly, that although statistical method is essential for certainties, or at least high degrees of probability, it is not sufficient on its own to answer all possible questions of trend and possibility, nor to provide all suggestions for further research. Even small correlations and trends may lead to possibilities for further knowledge of a particular group or behaviour.

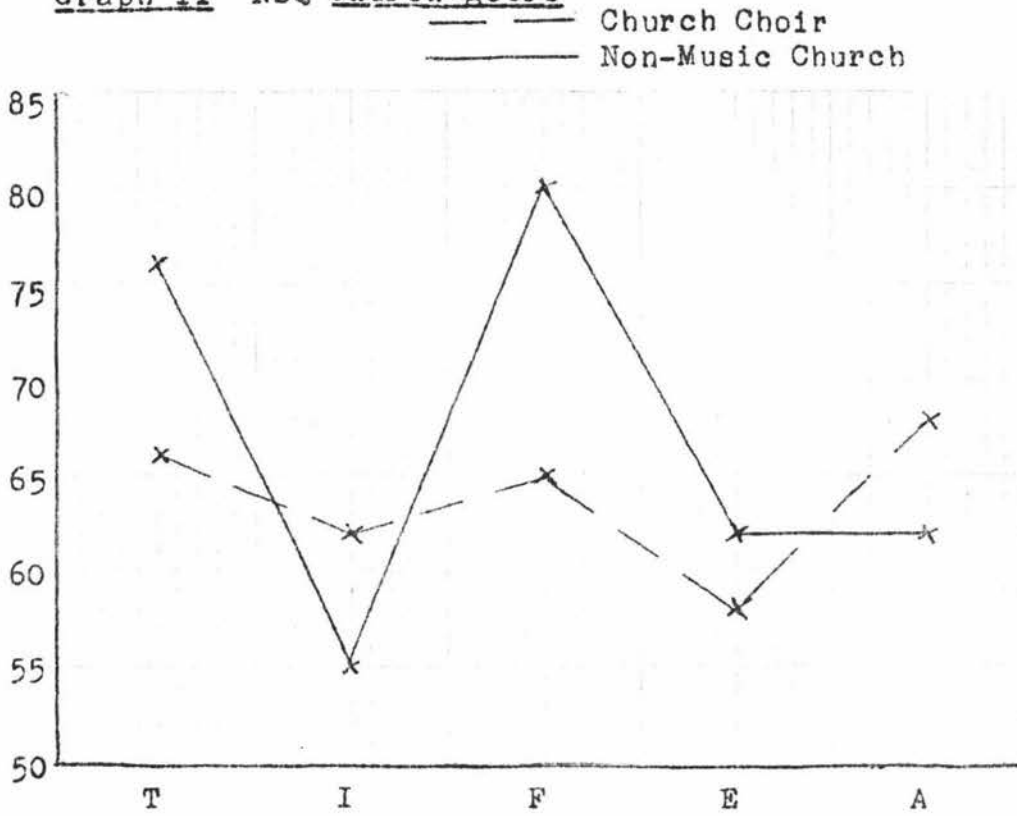
Graph 1 NSQ Mean Totals \*



Graph 1 represents the Means of Groups 1 to 4 and 5 to 8. It is remarkable how similar these are: there is a very slight tendency for females to be more tender-minded and sensitive than males, very slightly more inhibited and serious, slightly less submissive and dependent, slightly more anxious. It is perhaps surprising to find that males are slightly less dominant than females. On the basis of this graph alone, it could be said that New Zealand males and females are not widely different in their makeup, that there is nothing grossly neurotic about them, and that they tend to be conservative emotionally.

\*In all tables, the ordinate is measured in Mean sten scores.

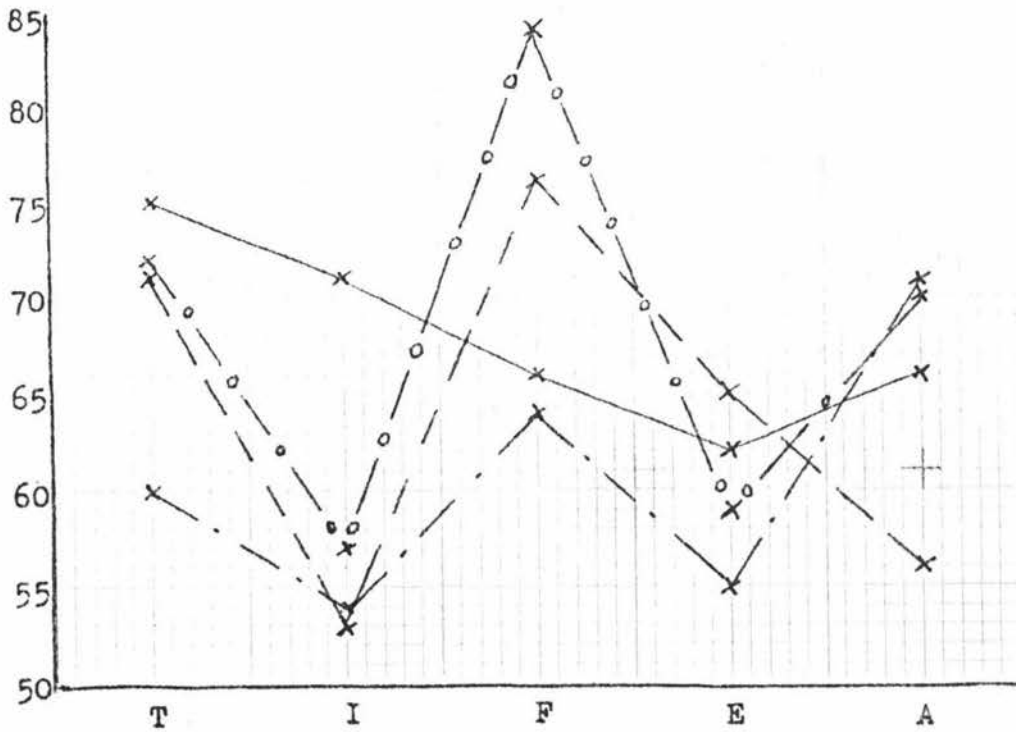
Graph ii NSQ Church-goers



Graph iii NSQ Church-goers

NSQ Church-goers

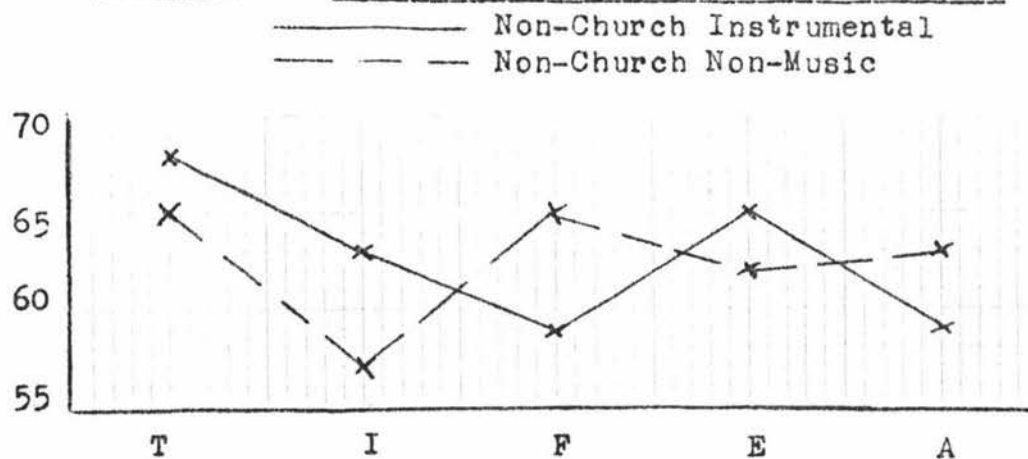
— Male Church Choir  
- - - Female Church Choir  
— Church Non-Mus. Male  
- - - Church Non-Mus. Female



Graph ii illustrates trends between musicians and non-musicians among mainstream church-goers. It can be seen that choristers are slightly more tender-minded, slightly more anxious, slightly less submissive and dependent and to some extent more free. It could be argued that these factors arise because musicians need to be aware of their emotions to be able to respond to music and perform it, yet need to be slightly assertive in order to perform in front of others.

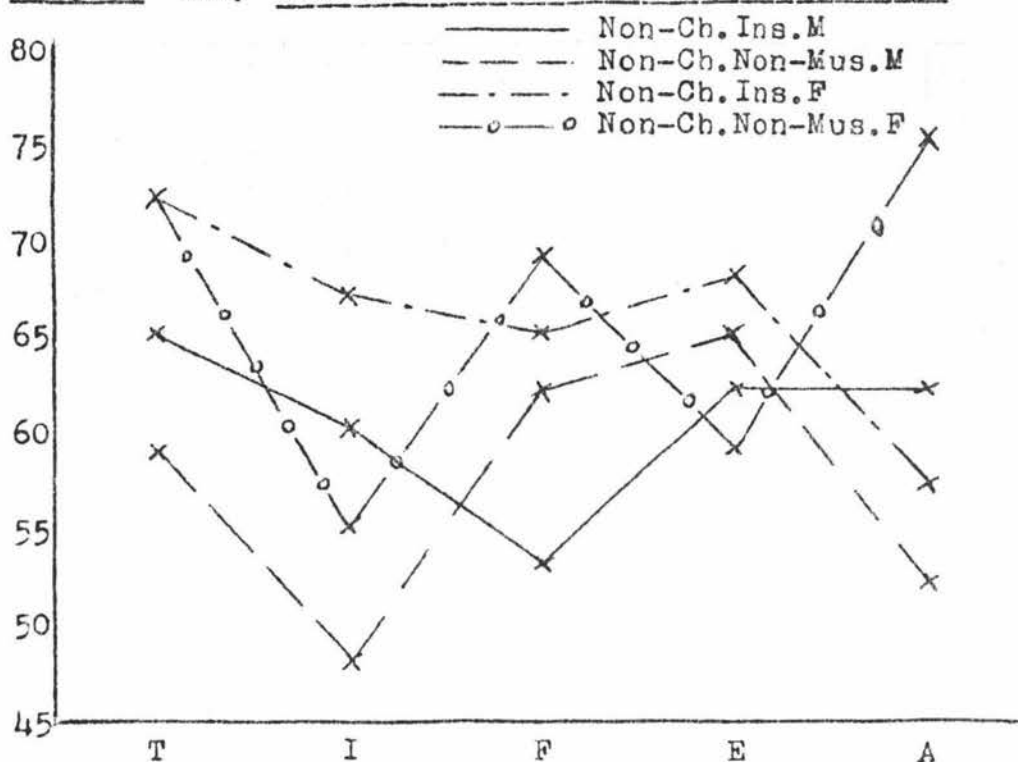
A slightly different picture emerges in Graph iii, where males and females in these groups are compared. In this, males and females are remarkably similar, if non-musicians, except that, as possibly suggested by Graph i, females are slightly more anxious than males. There are some slight differences between males and females from the musicians, however, notably that males score more highly on Factor I, which, as noted on p.25, includes not only overprotectedness and tendermindedness, but also culture and emotional sensitivity. It could be argued that male church musicians in our society must needs be more cultured and more emotionally-outgoing than their average non-church-musician counterpart. To work in a choir is to be part of a team, and the choir members need to be able to take direction: this may be the reason for the males in the church musician group to be slightly higher on the E factor than the females.

Graph iv NSQ Non-Church Instrumental & Non-Music



Graph iv shows the non-church groups to be very similar, except that the musicians are very slightly higher on Factor I, to be expected perhaps in comparison with Graph ii, very slightly less depressed and anxious. Perhaps there is a degree of emotional satisfaction in music-making that is denied the non-church non-musicians.

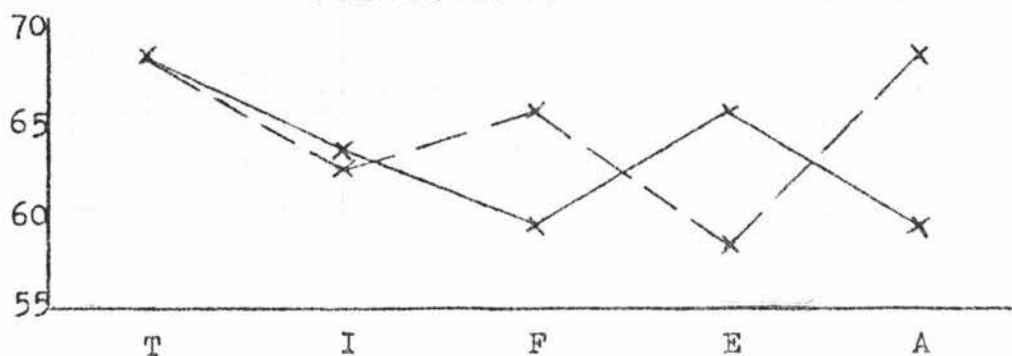
Graph v NSQ Non-Church Instrumental & Non-Music



Separated out into male and female scores, Graph v, differences appear. As with the church groups, for both males and females, the I factor is slightly higher for the musicians. Although, in the non-church groups, females score more highly than males in both music and non-music sub-groups, it can be noted that the male musicians score more highly on this factor than non-musician females, which leads to the "cultured" possibility referred to above (p.33). In both sub-groups on this graph, females are slightly up on Factor F (depressiveness). Factor E shows little distinction, except that the musician females score higher on this, indica-

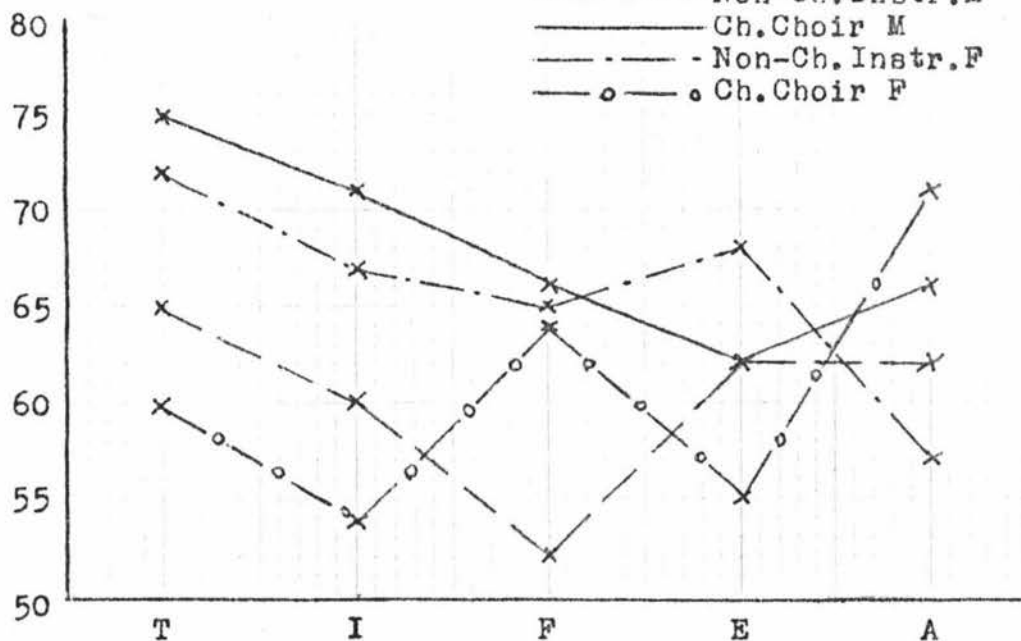
ting perhaps not necessarily submissiveness in a musician, but perhaps suggestibility (it could be argued that emotional suggestibility is a necessary trait for a performing musician, in order to be able to carry out the wishes of composer and conductor).

Graph vi NSQ Non-Church Instr. & Ch. Choir  
 ——— Non-Ch. Instr. ——— Ch. Choir

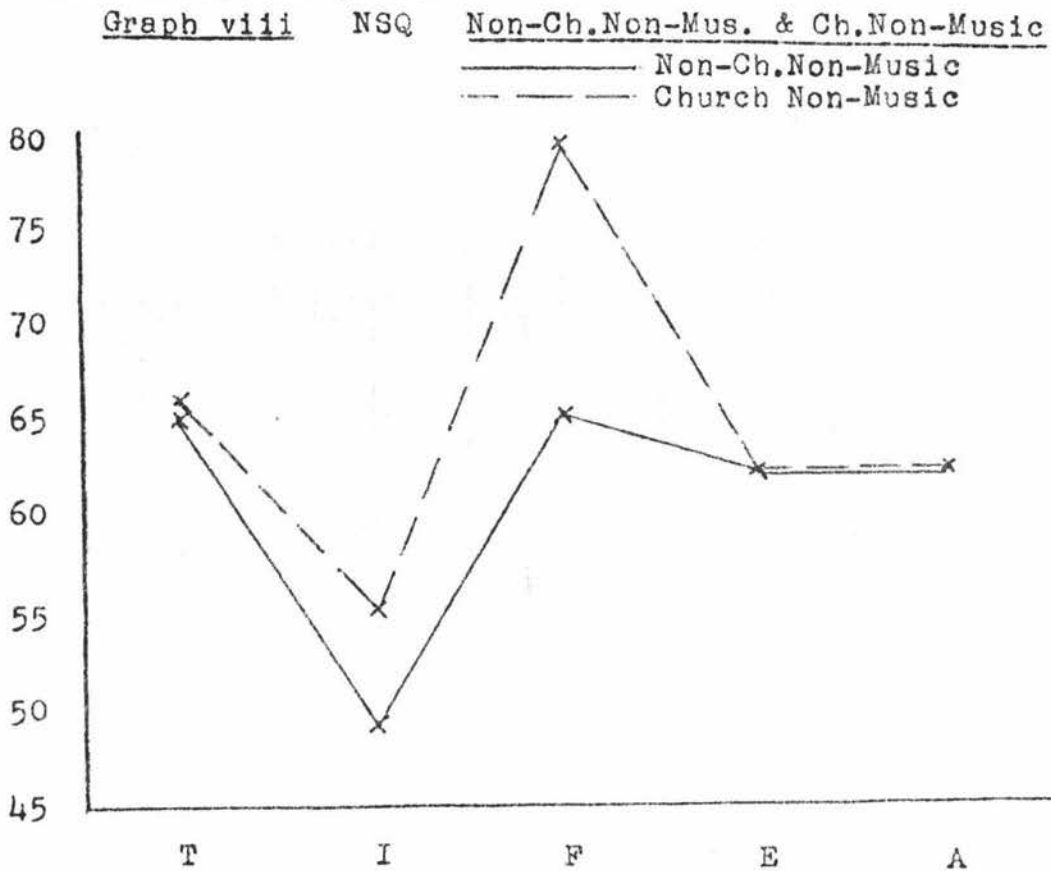


Graph vi compares the two main musical groupings, church and non-church. These are remarkably similar, in fact identical on the NSQ Total score. The church-going musicians' slightly higher F score may be more a factor of seriousness than of depressiveness, as they have a consistent significant philosophy of life in a sense that non-churchgoers do not have. Perhaps allied with this, churchgoing musicians are slightly more anxious.

Graph vii NSQ Non-Ch. Instr. & Ch.-Music  
 ——— Non-Ch. Instr. M  
 ——— Ch. Choir M  
 - - - Non-Ch. Instr. F  
 —○— Ch. Choir F

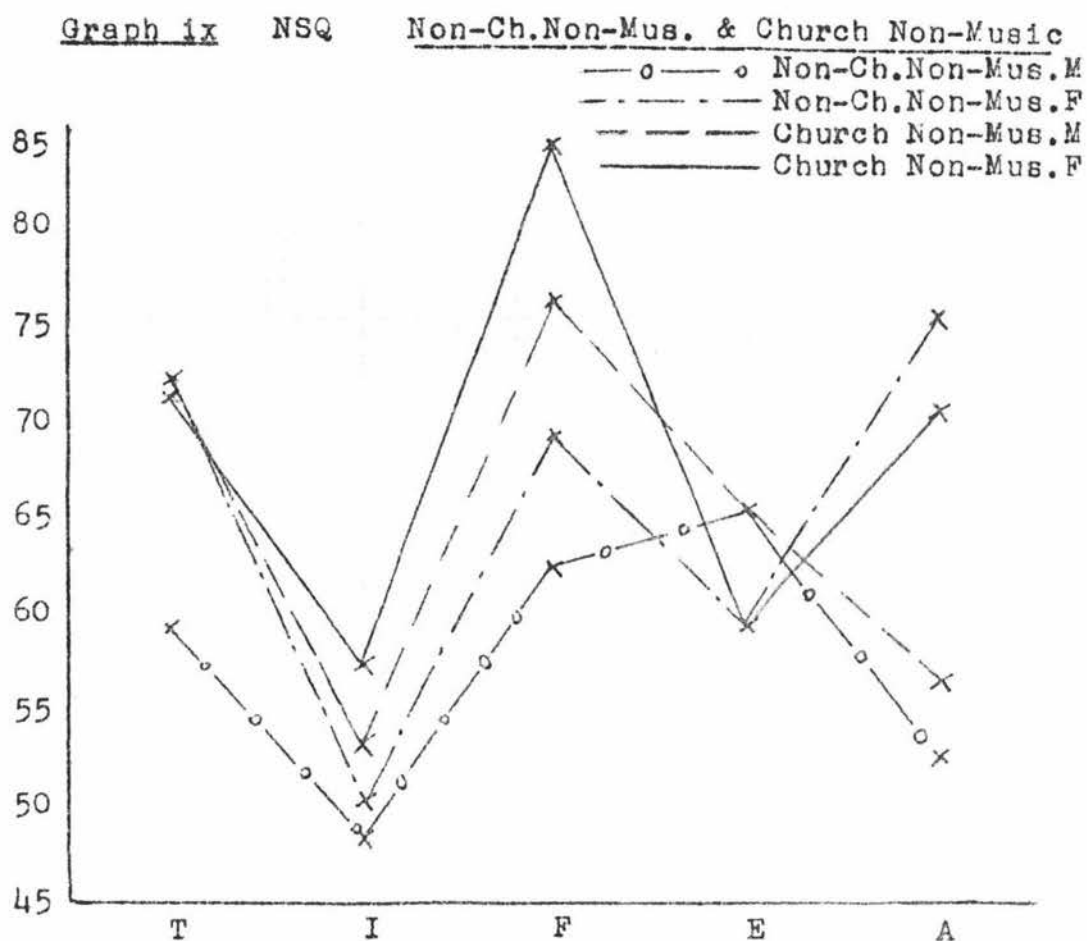


Divided into male and female subgroups from Graph vi, Graph vii displays little of significance. Church-going females are a little more anxious than their secular counterparts.



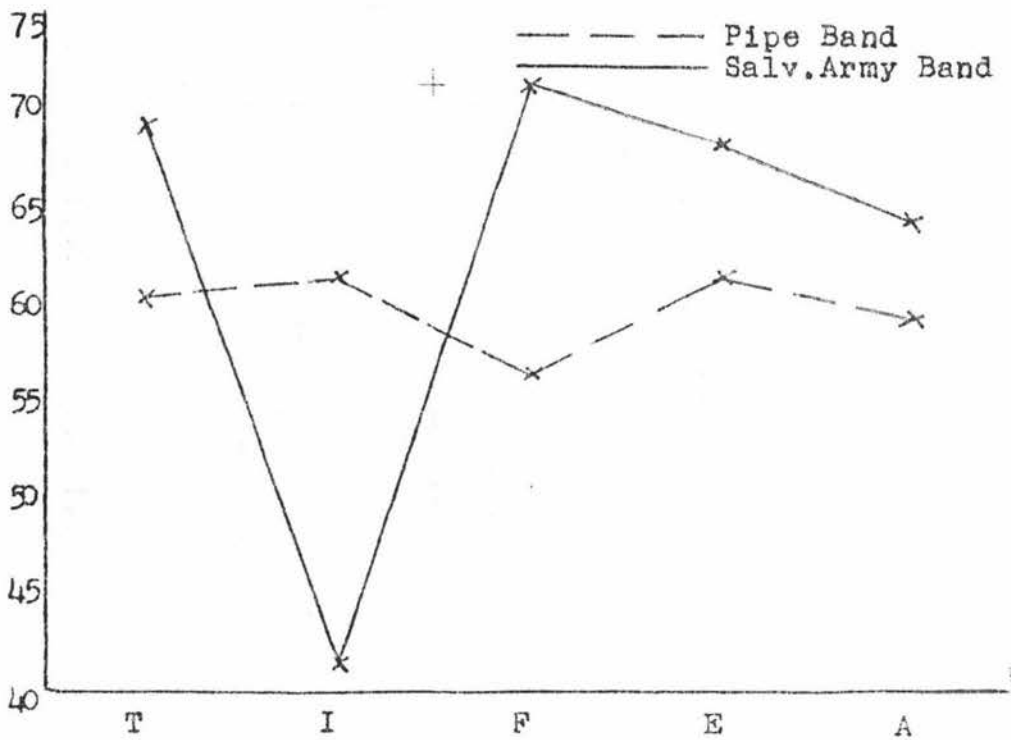
Graph viii compares the non-music groups, churchgoing and nonchurchgoing. Again, the profiles are remarkably similar, except that the churchgoers have a higher F factor, indicating, as suggested above, a degree of seriousness. In this factor, it seems that a degree of seriousness vs. happy-go-lucky outlook is being measured rather than depressiveness meaning 'being-depressed.' To be noted is that the E and A factors are identical here, suggesting that these factors are independent of religious faith. Where there are differences in subgroups, reasons must be found elsewhere, perhaps in degree of musical interest, for example.

Graph ix shows these non-music sub-groupings separated further into male-female sub-groups.



The four groups, male and female in both church and non-church categories, are still seen as having remarkably similar profiles, but the females seem a degree more anxious than the males, consistent with other profiles already discussed. The seriousness postulated as the meaning of Factor F in church-going is clearly seen again. A curious result, or rather tendency, is that nonchurch non-music males are a degree lower in Total NSQ score than their female counterparts or both males and females in the non-music groupings. This may mean little more than that they are slightly more happy-go-lucky: this could be shown, also, by their being the lowest here on the I, F and A factors.

Graph x NSQ Pipe Band & Salv. Army Band



There are some interesting variances between the "low-brow" music groups, as shown on Graph x. Pipe Band members are significantly more tender-minded than their Salvation Army Band counterparts. A possible reason for this may be the Salvation Army's tendency to be rigid and dogmatic. Members of a Pipe Band may come from a broader-based emotional background, although it is not possible to more than surmise this. To a lesser extent, the Pipe Band members are more happy-go-lucky, more dominant and less anxious, factors which would seem to inter-relate and which would seem intuitively plausible. A secular, low-brow music group might be seen as being likely to be more assertive and cheerful than its counterpart in a fairly puritannical and conservative religious group.

We turn now to comparing the various groupings on the PRF measure. Not all the noticeable differences will be looked at, but only those that seem to be possibly significant or worthy of note.

Graph xi compares the Salvation Army Bandsmen with the Pipe Band members. Generally, the profiles are quite similar, except for a few points: pipe bandsmen score more highly on the Au (Autonomy) factor, less highly on the Cs (Cognitive Structure) factor, they are slightly more impulsive, lower on the Or (Order) factor, lower again on both the Sr (Social Recognition) and Su (Succorant) factors and slightly higher on the Un (Understanding) factor. It must be noted that the similarities are greater than the differences, making a possible conclusion that the Salvation Army Bandsmen are bandsmen in essence rather than Salvationists. If this graph is compared with the next, Graph xii, it can be seen that the profiles are quite remarkably similar, suggesting that bandsmen as a group are not greatly different from others. To be noted, however, in all graphs examined, is that the American norms provide for a score of 50 on all the factors. For this reason, any of the sub-groupings being examined can be compared easily with the American norms by scoring a line across the graph at the 50th point.

In line with the above comments on the NSQ scores, it would seem that Salvation Army Bandsmen evidence their membership of a dogmatic, conservative religious group.

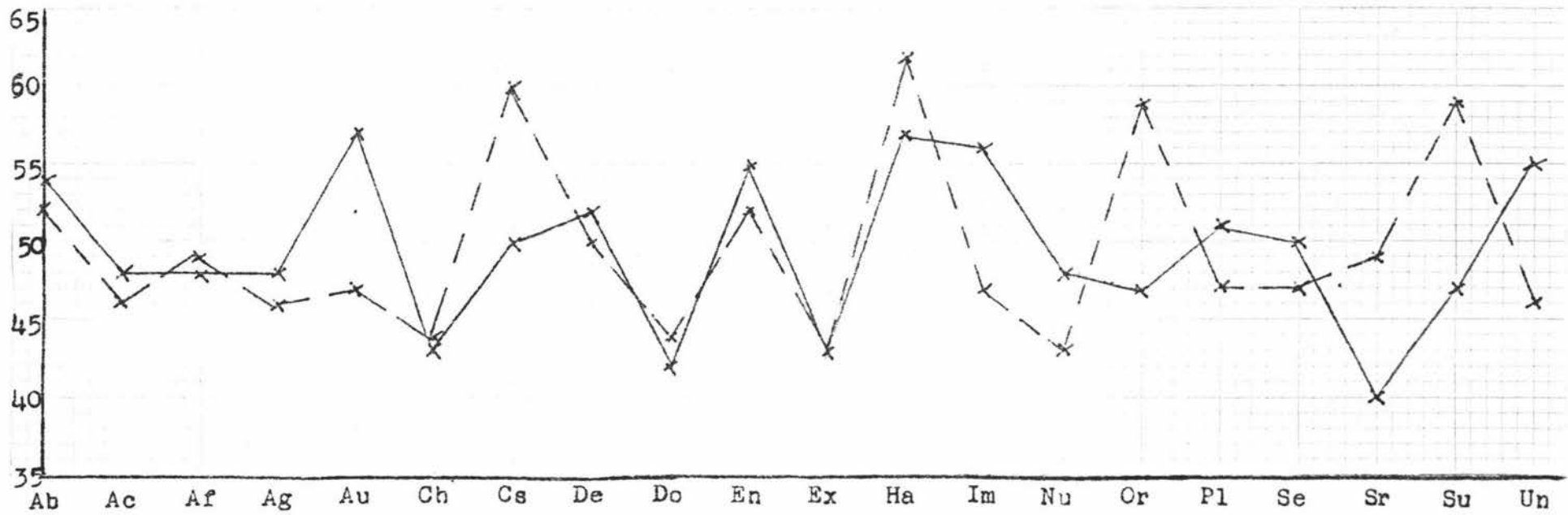
Graph xii compares all female groupings with their male counterparts. As has been noted earlier in this study, the data show males and females to be remarkably homogeneous, although very different from the North American norms. Females seem slightly more autonomous than men, slightly higher on Order, and to a degree less interested in Play. This would seem to indicate a more conservative outlook favouring a structured existence that is not dominating.

Graph xi

PRF

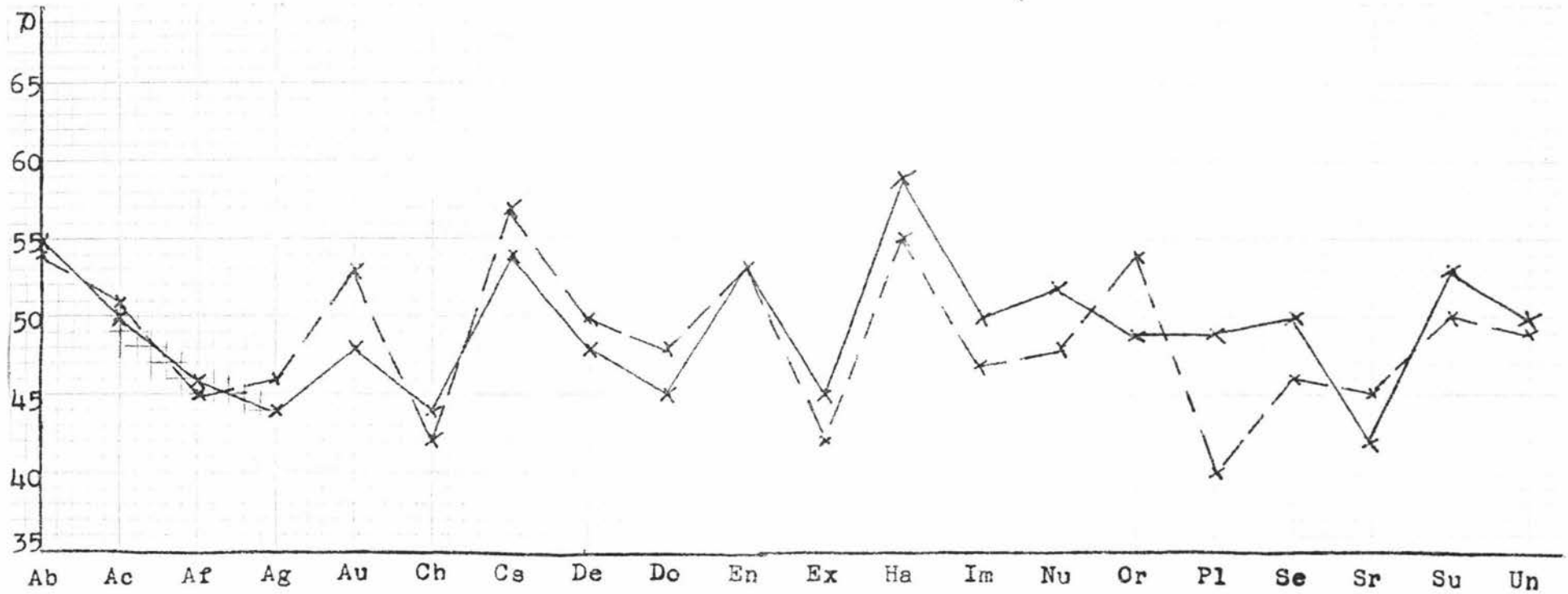
Pipe Band & Salvation Army Band

———— Pipe Band  
 - - - - - Salvation Army Band



All males vs. all females, from groups 1 to 8

————— males  
 - - - - - females



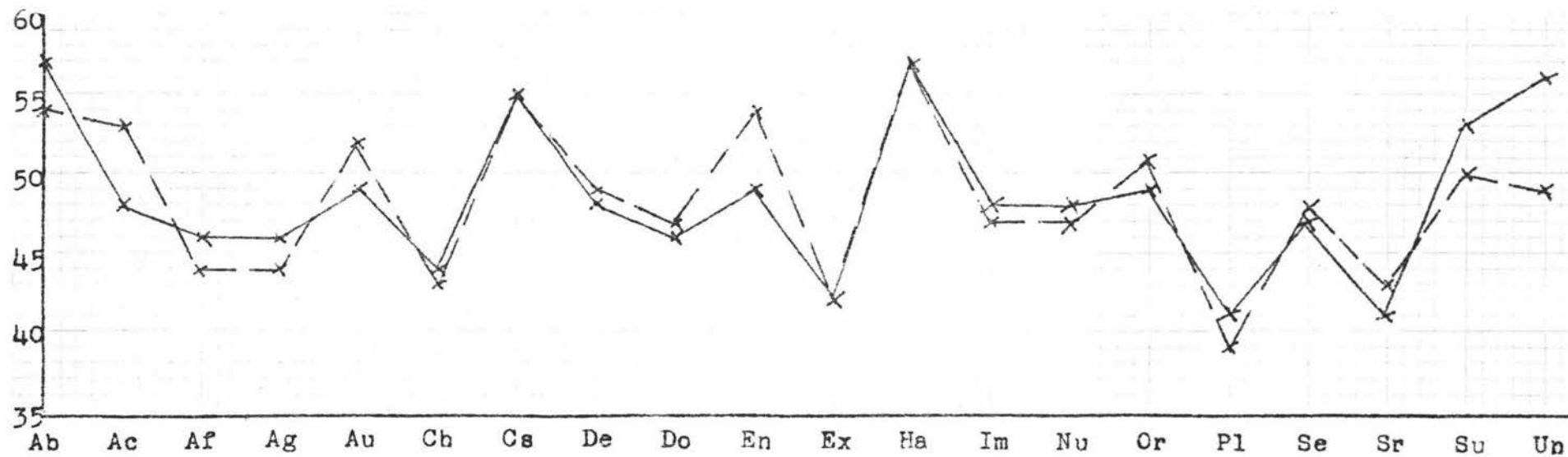
On the same graph, no.xii, it may be noticed that in comparison with the North Americans, New Zealanders in the sample studied are generally slightly more self-abasing, less affiliative, less aggressive, less keen on change, have a greater cognitive structure, are slightly less dominant, slightly more enduring, less exhibitionistic, less interested in play, very slightly less sentient, and slightly lower on social recognition. The picture emerges of the New Zealander of the sample studied being slightly more conservative and serious than his American counterpart. This would certainly also be the view of the local popular press.

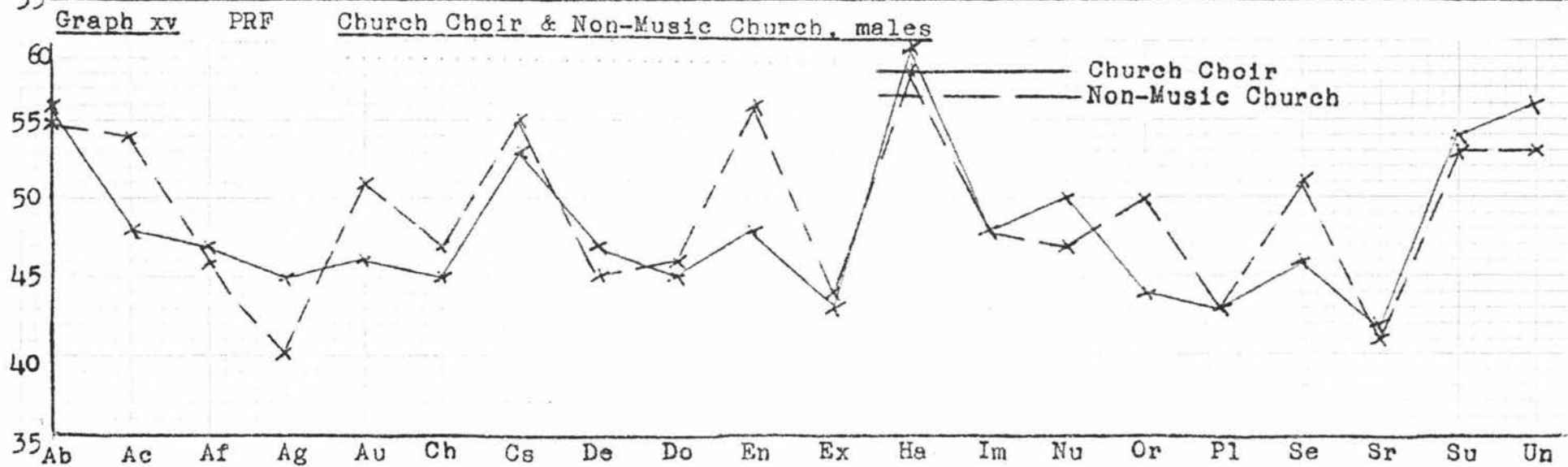
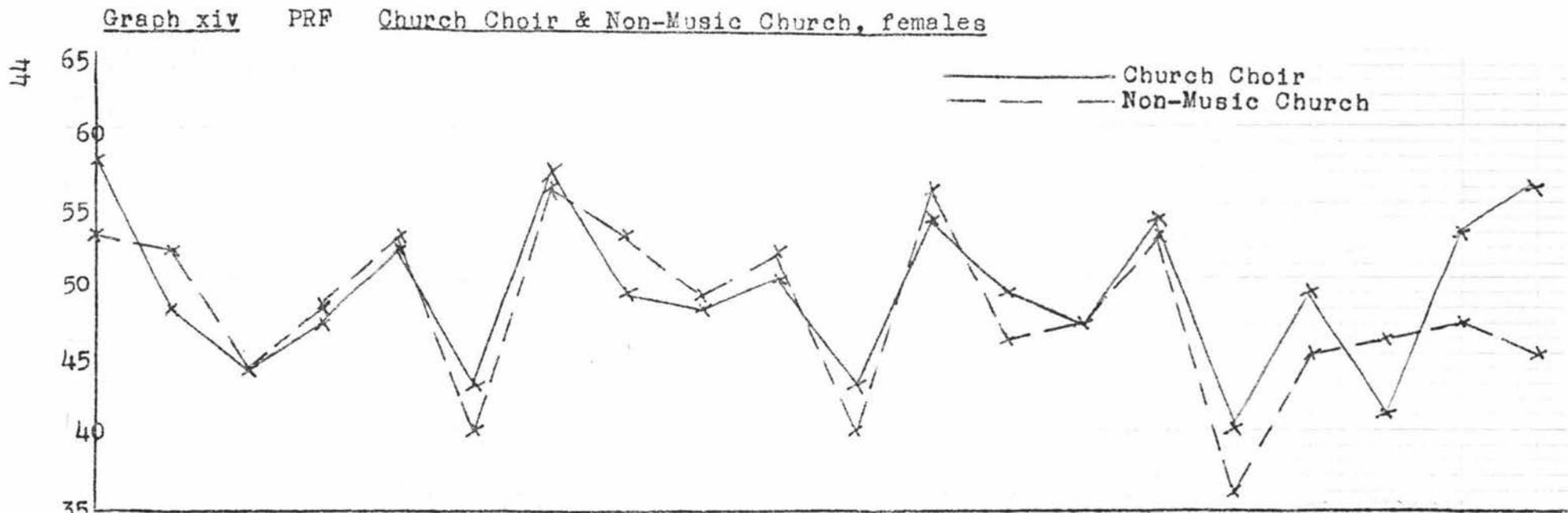
Graph xiii compares churchgoers, music and non-music, and calls for little comment, except the obvious one that the two groups are quite remarkably similar, indicating that little in a music factor is being measured. Non-musicians seem slightly more achievement-oriented, slightly more enduring, and slightly lower on Understanding. That this latter applies to the females and not to the males is shown on Graph xiv.

Graphs xiv and xv show the same data as Graph xiii, separating males and females.

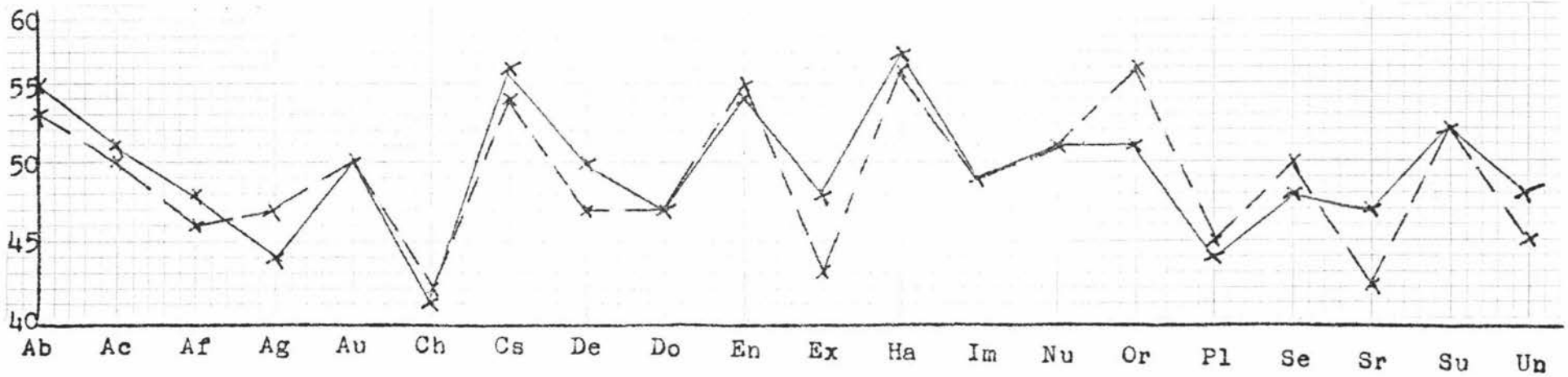
There is only one point to be noted when comparing musicians and non-musicians in the non-church groups, until the males and females are separated, as shown in Graph xvi on p.45. The non-church musicians are very slightly less conservative, in the popular meaning of the word; they are slightly higher on Exhibitionism, slightly lower on Order, and slightly higher on Social Recognition. However, when these groupings are divided (Graphs xvii and xviii on p.46), some slight divergencies arise. Male non-church musicians are slightly more self-abasing than their non-musician counterparts. On the other hand, the musical females are slightly more affiliative, but also more exhibitionistic.

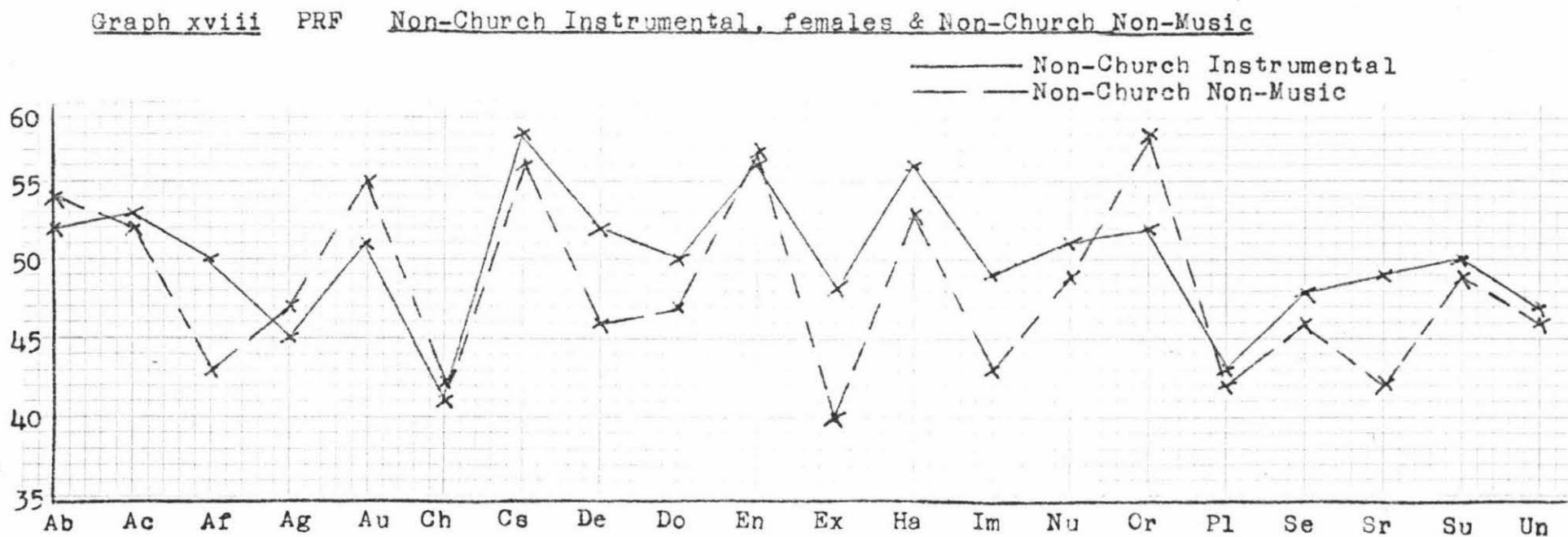
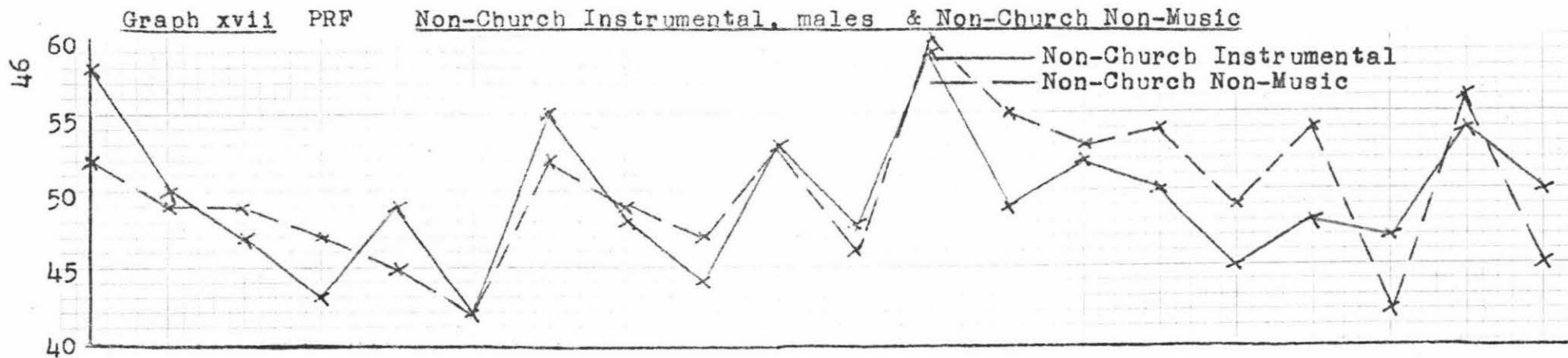
———— Church Choir, males and females  
 - - - - - Church Non-Music, males and females





————— Non-Church Instrumental, males & females  
 - - - - - Non-Church Non-Music, males & females





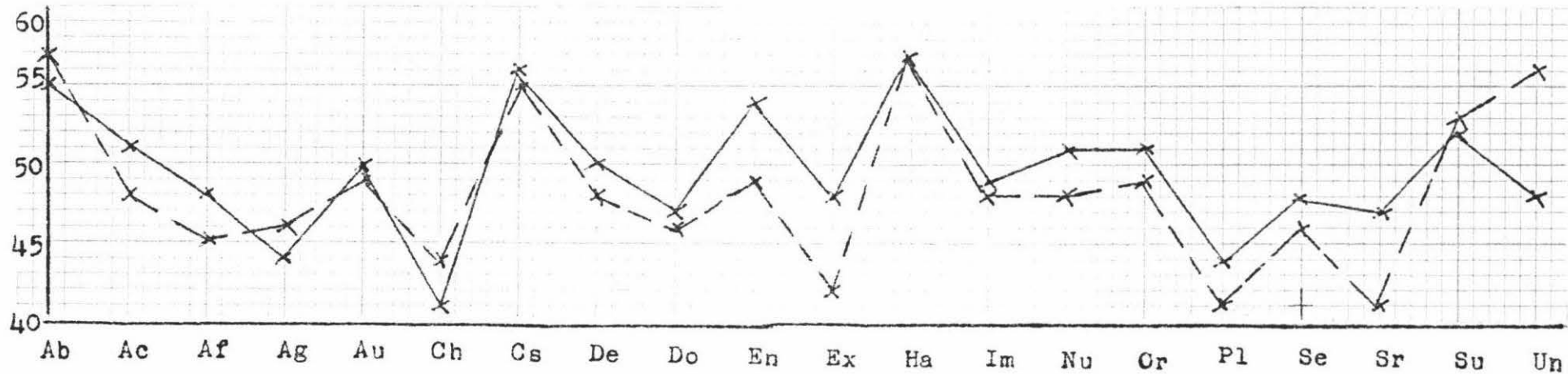
Graphs xix to xxi compare the Church Choir with its secular counterpart, the Non-Church Instrumental group. Again, the profiles are very much alike, Graph xix. Four points only need be noted: the Church choir members are slightly less enduring, slightly less exhibitionistic, slightly lower on the Social Recognition factor, and slightly higher on the Understanding factor. This would appear to mean the Choir is slightly more conservative than its secular counterpart, but slightly more 'bookish'. When the males and females are looked at separately, Graphs xx and xxi, p.49, it is seen that there are still very few observable trends of any note. With both males and females, the Understanding factor is higher among the Church Choir, more so among the females than males. The non-Church females are slightly more affiliative, slightly more enduring and slightly higher on the Social Recognition factor than their Church counterparts, perhaps indicating a generally higher sociability factor.

Graphs xxii to xxiv (pp.50 & 51) compare the non-music groups, church and non-church. With the males and females together, Graph xxii, two slight differences only need be noted: non-Churchgoers are slightly higher on the Order and Play factors than Churchgoers. It is uncertain what this indicates, as these two factors appear to be somewhat contradictory. The remarkable similarity of the two profiles is again to be noted. In all these PRF comparisons, the homogeneity of the groupings is evident, seeming to indicate that the PRF is not clearly measuring church-nonchurch and music-nonmusic factors, if there be such at all. When males and females are looked at separately, a few trends can be noted: church nonmusic females are slightly more dependent than their secular counterparts and slightly lower on the Play factor. This latter comparison may correlate with a female churchgoer conservative seriousness noted earlier in this study. For the males, the churchgoers are slightly less aggressive, slightly more autonomous and interested in change, slightly less exhibitionistic,

Graph xix PRF Non-Church Instrumental & Church Choir, males and females

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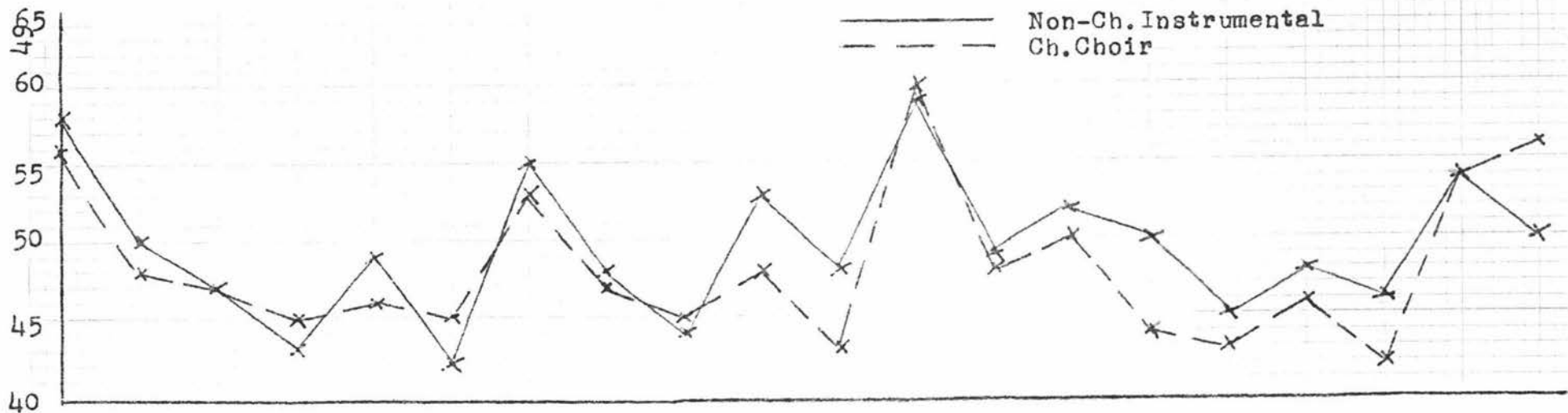
————— Non-Church Instrumental  
- - - - - Church Choir



Graph xx

PRF

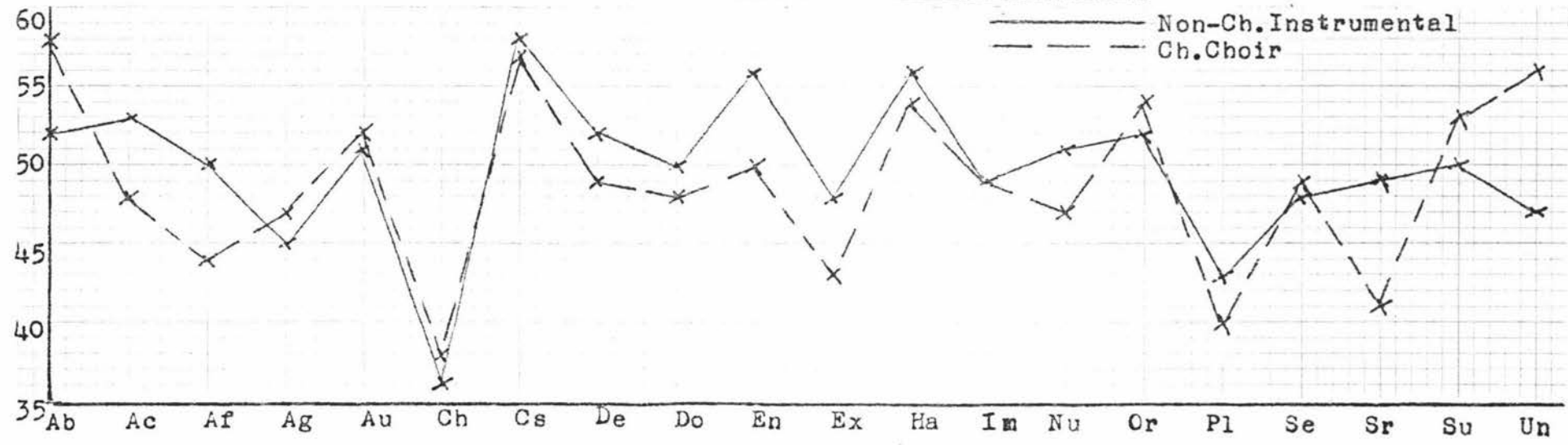
Non-Church Instrumental & Church Choir, males



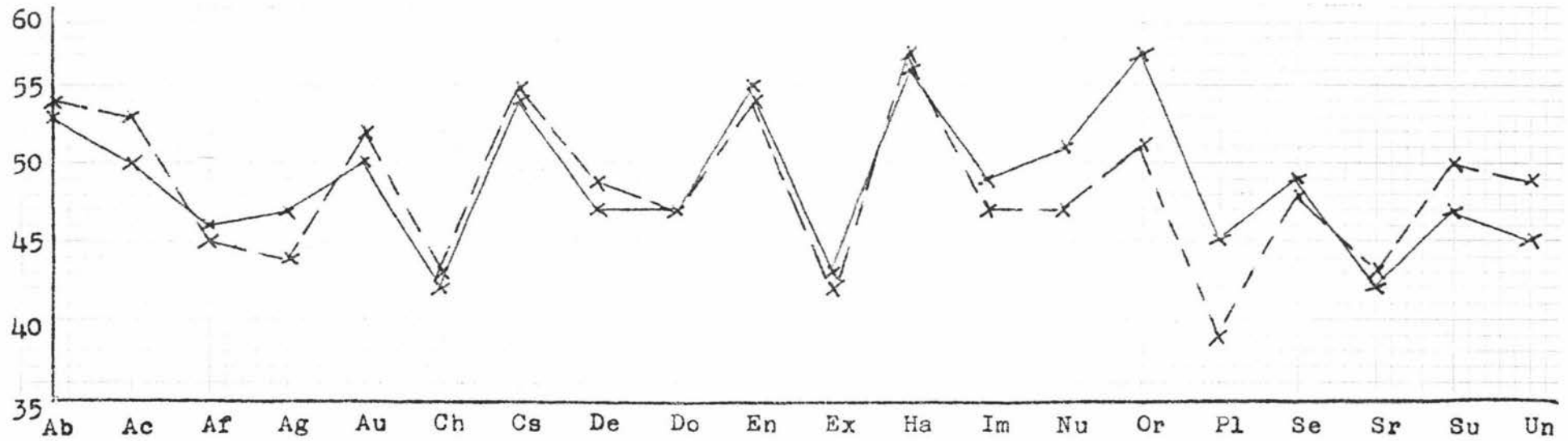
Graph xxi

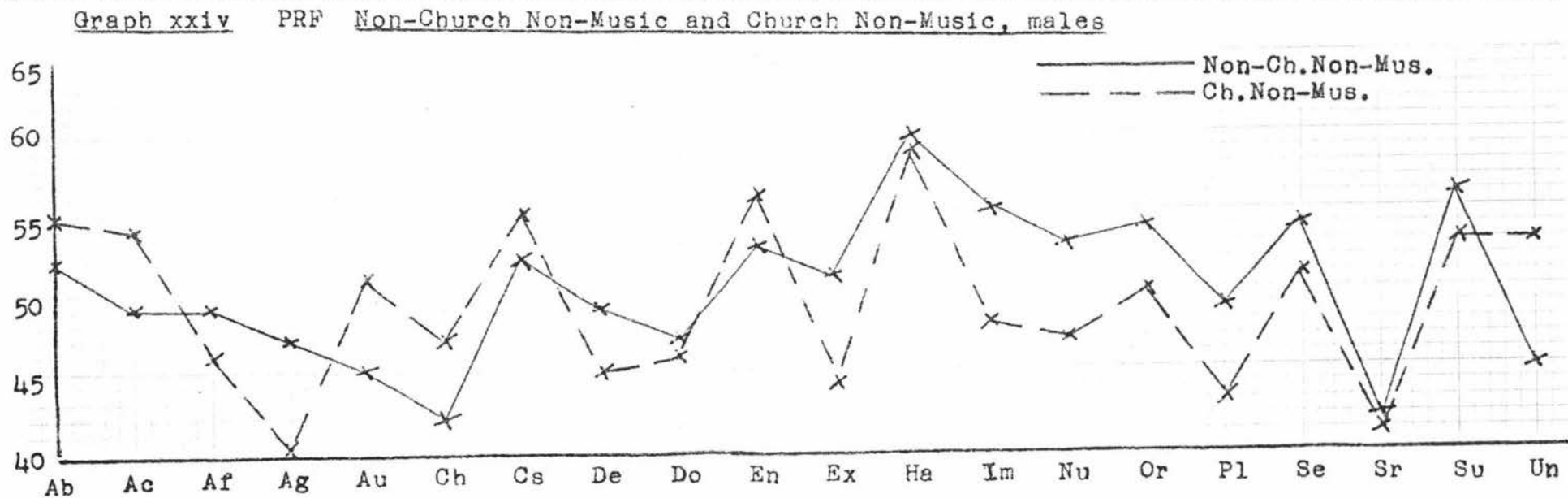
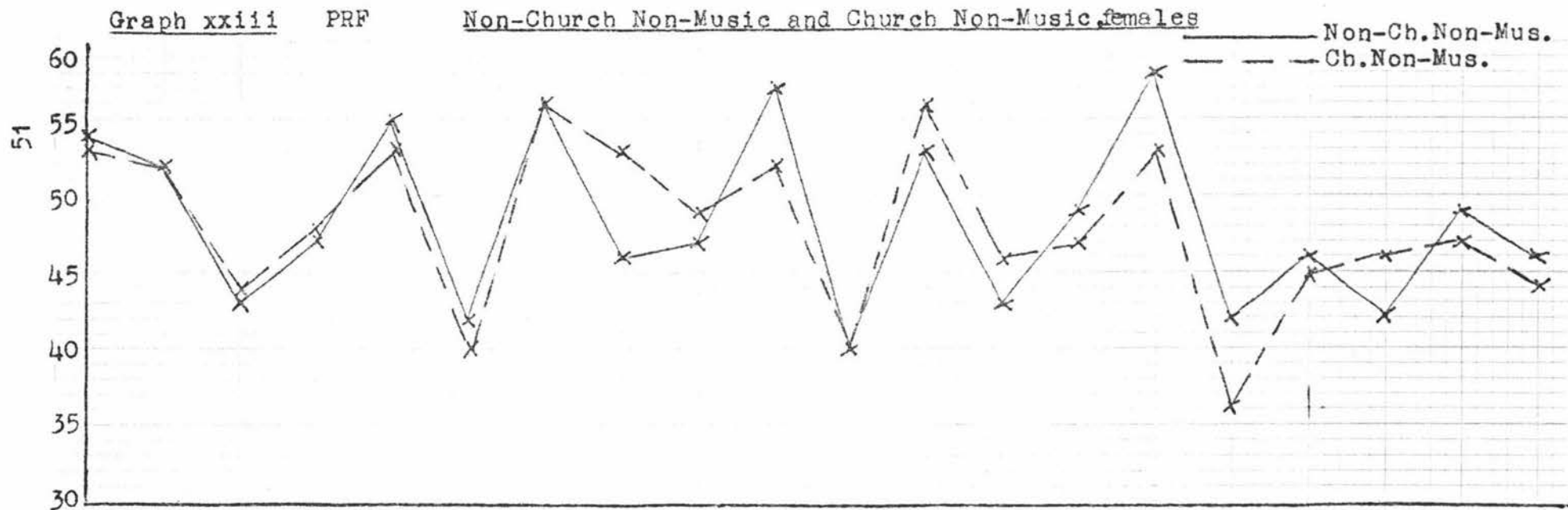
PRF

Non-Church Instrumental & Church Choir, females



— Non-Ch. Non-Music  
 - - - Church Non-Music



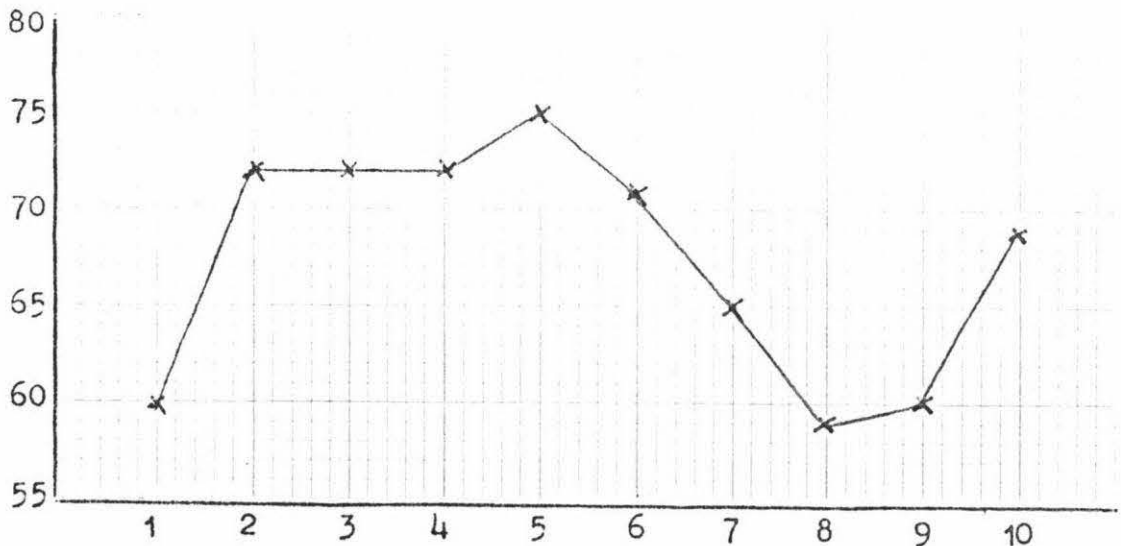


less impulsive, less nurturant, and less interested in Play than their secular counterparts, but slightly higher on the Understanding factor (as were the male Church musicians, it can be added). Again, this grouping of slight trends could be seen to indicate a conservative seriousness among the churchgoers. This is a factor which could well be explored using instruments designed specifically for the purpose, to discover what the factor really consists of.

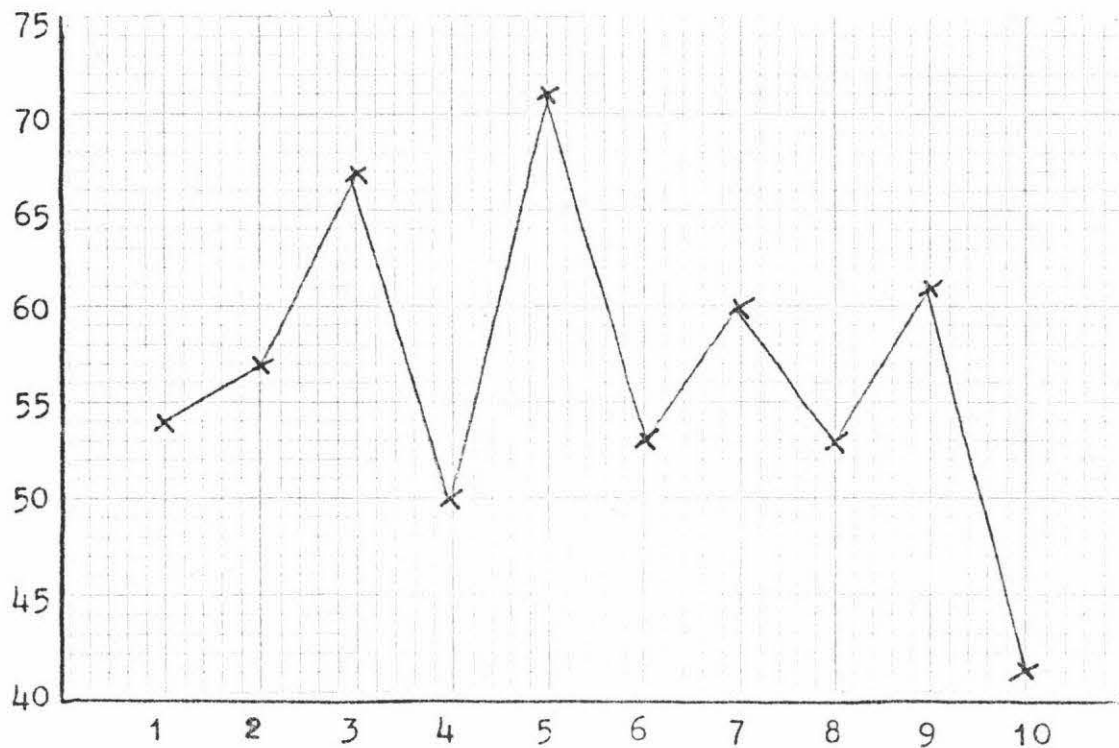
Graphs xxv - xxix compare NSQ Means of Scores of Groups, and Graphs xxx - xlix compare PRF Means of Scores of Groups, to show at a glance which groups are highest or lowest on any given factor on either of the two measures employed. It must be repeated again, however, that as no standard deviations are given on the profiles, conclusions can only be drawn with caution.

Graphs xxv - xxix NSQ Means of Scores of Groups

Graph xxv NSQ Total

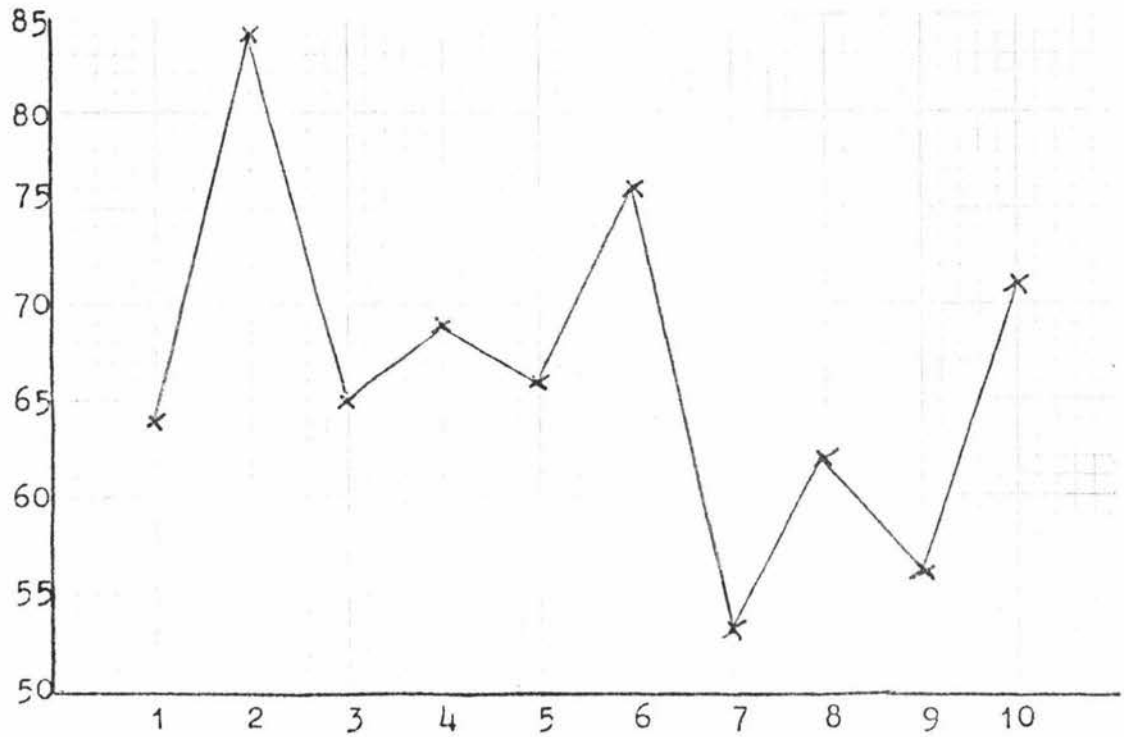
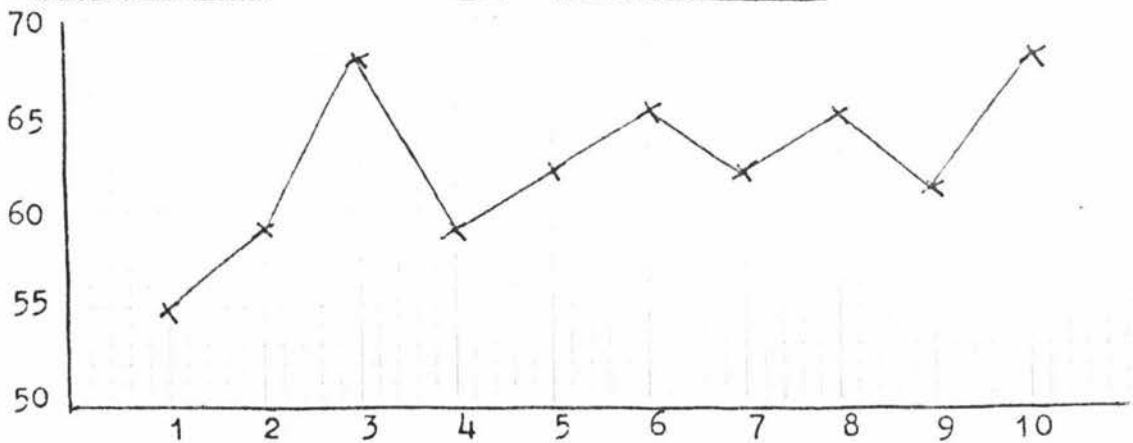


Graph xxv indicates the Total NSQ score. Church Choir females, non-church non-music males and Pipe Band members show least neurotic trend. Surprisingly, male Church Choir members score highest.

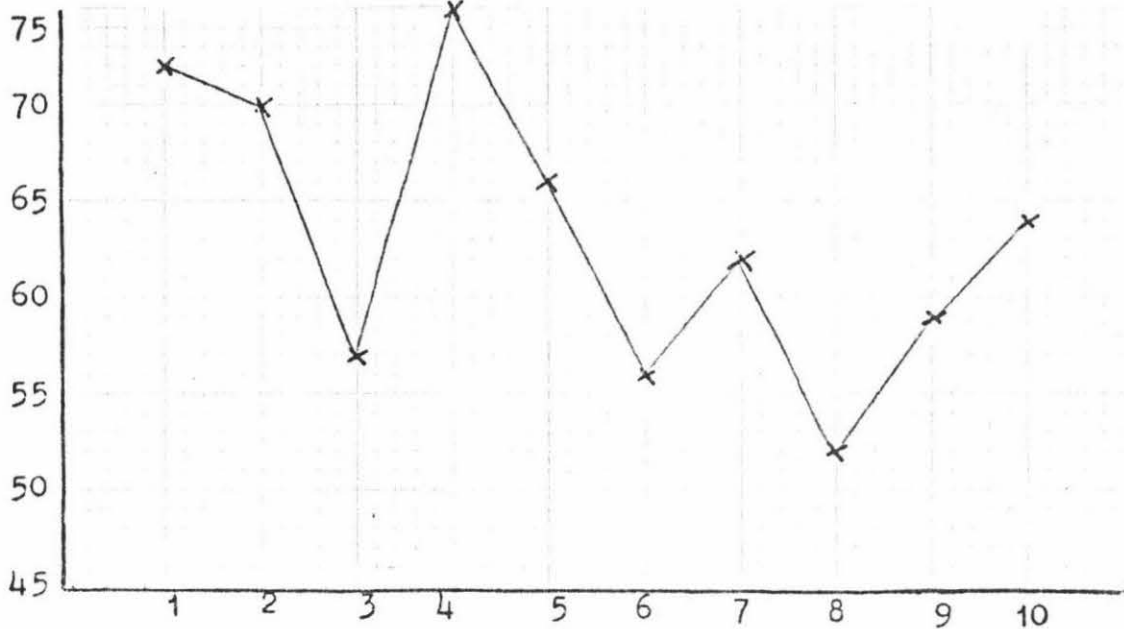
Graph xxvi      NSQ   I+   Overprotection

Church Choir males score highest here, and Salvation Army Band members lowest. This is perhaps surprising, as both are church musical groups, but it should be noted that it was felt above (pp.38 & 39) that Band members are bandsmen rather than Salvationists. On the other hand (as also noted on p.38), there may be something in the general outlook of Salvationists which does not encourage tender-mindedness: a possible denominational factor.

Graph xxvii (p.54) shows that Non-Music Church females score most highly on the Seriousness scale, and Non-Church Instrumental males the lowest. It would seem likely that women who go to church but do not practise music have a serious outlook on life. Group 6, the male counterpart, score second highest, making this tentative analysis more likely to be correct. An interesting comparison would be with Salvation Army members who are non-musicians. A high score does not seem to go with music-making, as shown by the Non-Church Instrumental Males and Pipe Band members scoring lowest.

Graph xxvii NSQ F+ SeriousnessGraph xxviii NSQ E+ Submissiveness

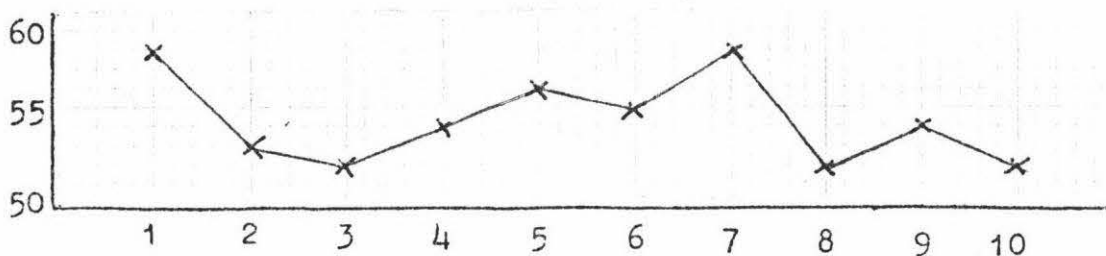
Church Choir females, Group 1, score lowest on this factor, in contrast with their secular counterparts, who score highest, with the Salvation Army Band members marginally higher still. It would be interesting to ask members of Groups 1 and 3 why they joined their particular group.

Graph xxix      A+      Anxiety

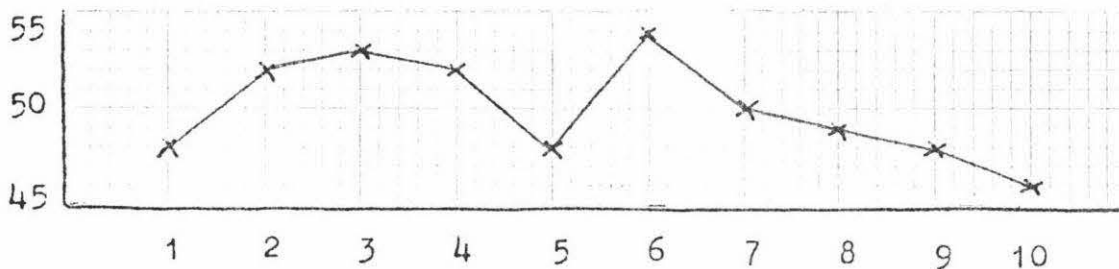
This is a significant graph: Non-Church Non-music females score highest (Group 4), while their male counterparts (Group 8) score lowest. It presents the picture of the "typical Kiwi male" as unanxious and un-worried, while his wife is the worrier and is more anxious and concerned. This is, in fact, a stereotype of popular acceptance in our society that may have some basis in fact. As the 2nd lowest scorers are the Church Non-music males (Group 6), and the Church Non-music females (Group 2) score highly, it would seem possible that there is a real sex difference here. Non-Church Instrumental females score low in comparison with their music-less counterparts: it would seem possible that secular music-makers have an outlet for their anxieties, pouring them into their music as it were.

Graphs xxx - xlix      PRF      Means of Scores of Groups

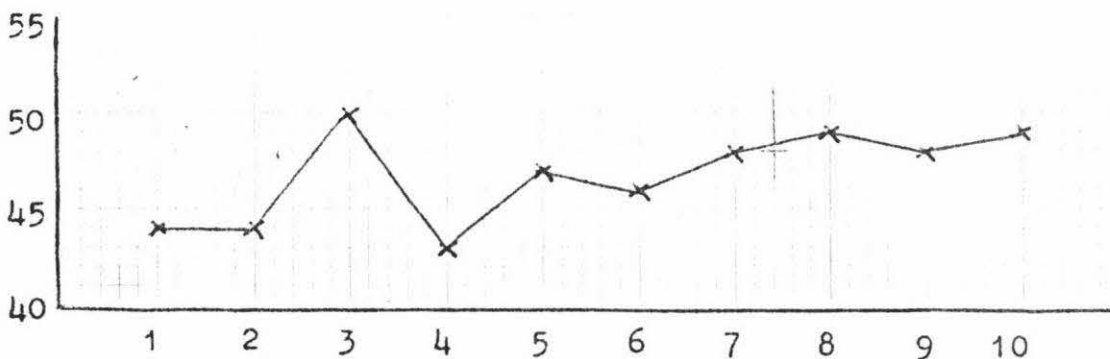
There are few real differences among the PRF factors between the groups, but again, the highest and lowest scoring groups can be noted with interest.

Graph xxx PRF Abasement (Ab)

Church Choir females and non-Church Instrumental males highest, several groups roughly equivalent at the lower end.

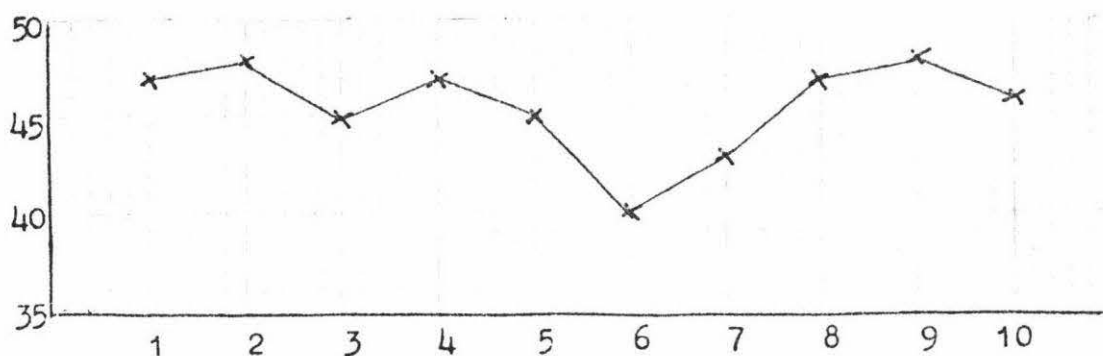
Graph xxxi PRF Achievement (Ac)

Church Non-Music males highest (though only very slightly), Salvation Army Band males lowest (though again by only a tiny margin).

Graph xxxii PRF Affiliation (Af)

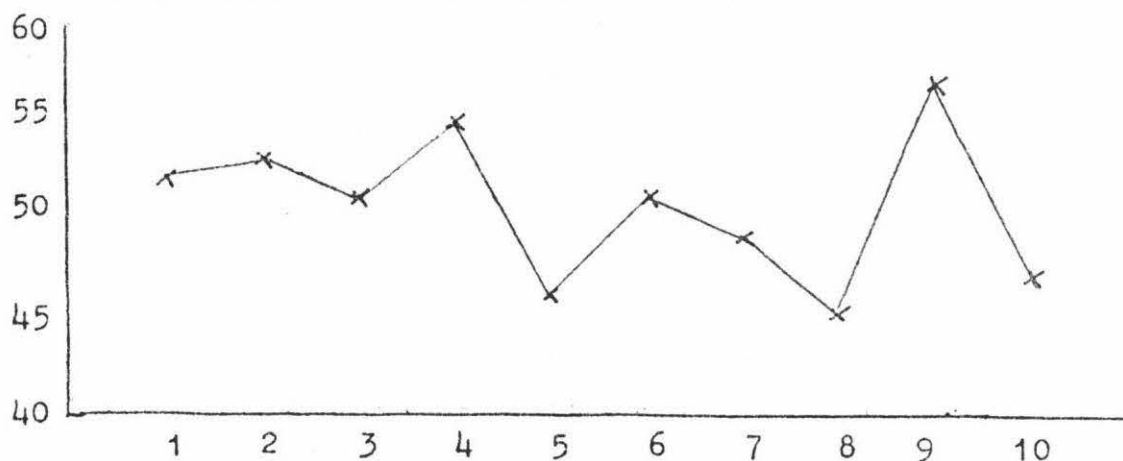
Non-Church Instrumental females marginally higher than several other groups, non-Church non-Music females marginally lower than several other groups. It is to be noted, though, that these highest and lowest scores are both in the female non-Church subgroups.

Graph xxxiii PRF Aggression (Ag)

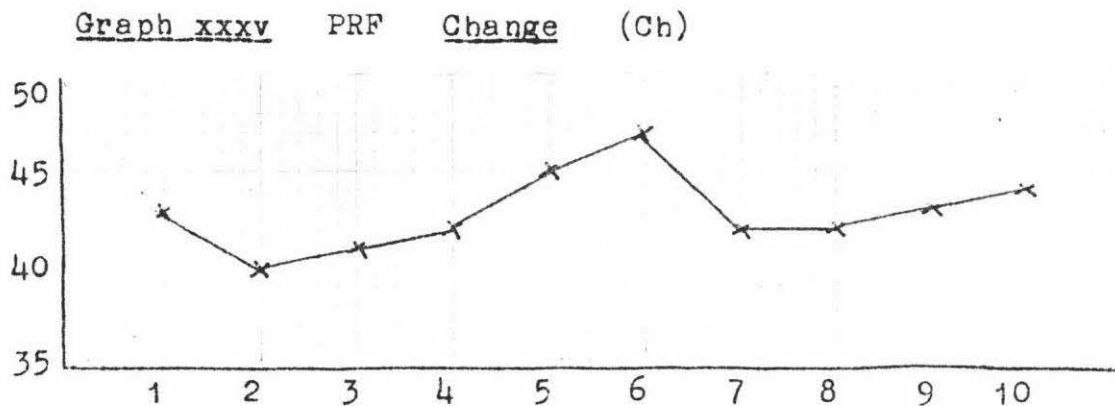


By a slight amount, Church non-Music females and Pipe Band members score highest, and non-Music Church males the lowest. There would appear to be a slight sex difference here, as the non-Music and Church factors are common to both.

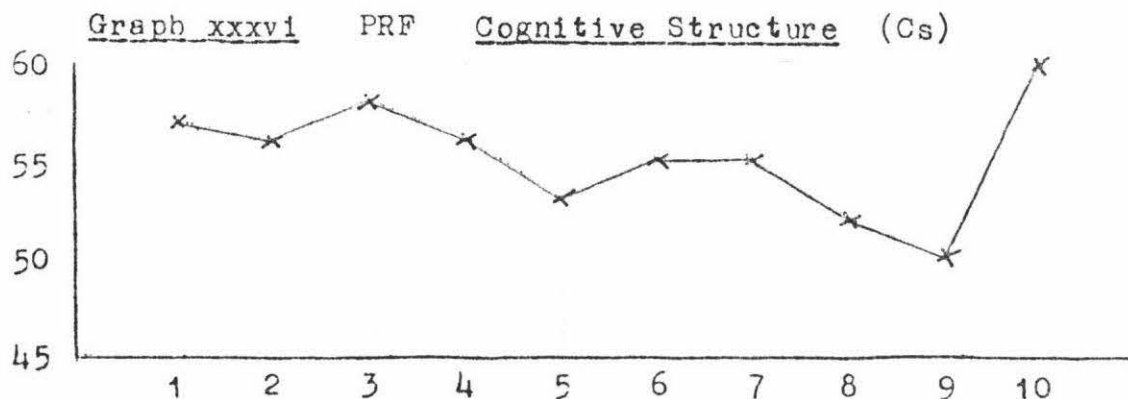
Graph xxxiv PRF Autonomy (Au)



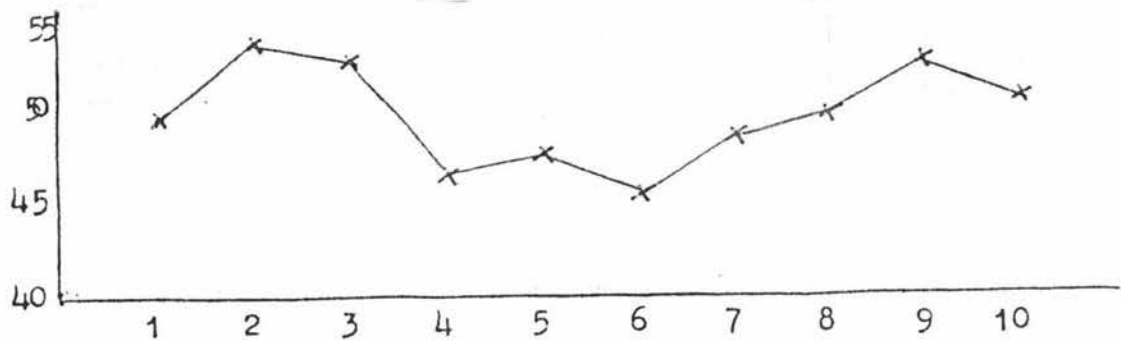
Pipe Band males highest, Church Choir males and non-Music non-Church males lowest. This is curious, as it might have been thought that Pipe Band and non-Music non-Church males would have been equivalent on this factor. On the other hand, to like and play the bagpipes is sometimes regarded as a peculiar interest, so it may be that a person needs to be fairly independent, in the popular meaning of the word, to take part in this activity. Against that, male Church-Choir singing is also not a "popular" activity, yet the Autonomy factor here is low.



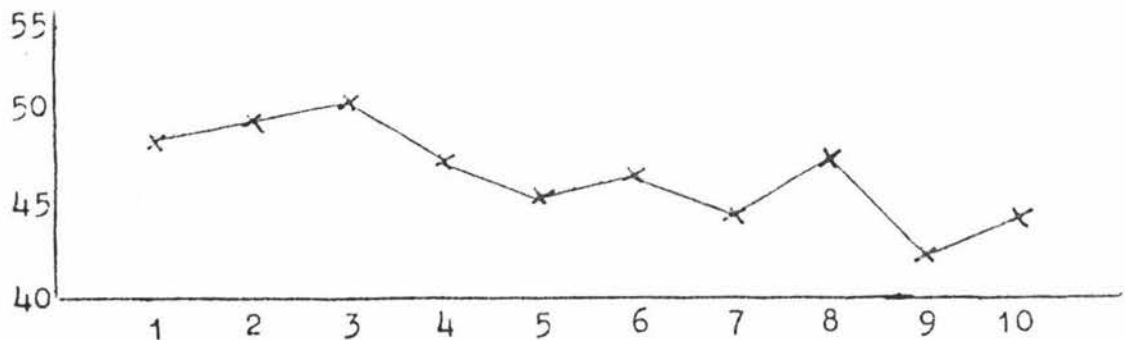
Most scores on this factor conservatively low, but Church males (both Music and Non-Music) slightly the highest. Without further knowledge, it is not possible to state whether a high score on this factor indicates adaptability or fickleness.



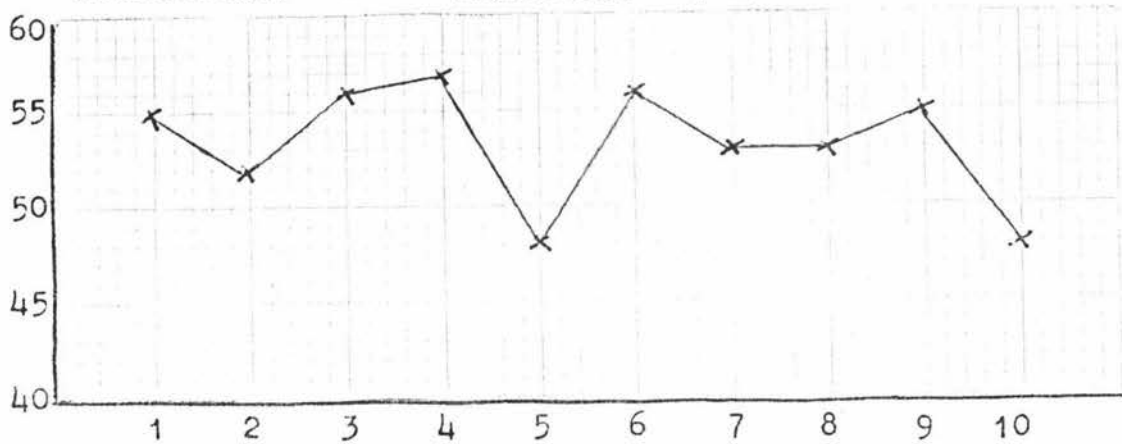
Salvation Army Band the highest, Pipe Band the lowest. It was suggested earlier in this study that Salvation Army Bandsmen are Salvationists rather than bandsmen, but there would appear to be a religious-outlook factor as well, as from the above scores it could be suggested that Salvationists favour a more ordered, structured style of life than do their secular bandsman counterparts. Certainly the Pipe Band score would seem to indicate a lack of interest in order, consistent with that of the non-Music non-Music males group, scoring second lowest on this factor.

Graph xxxvii PRF Defendence (De)

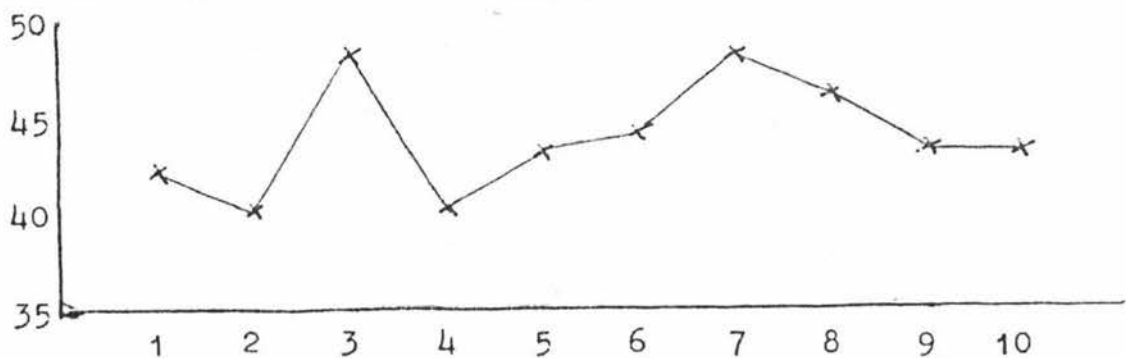
Church non-Music females very slightly the highest, Church non-Music males very slightly the lowest score. This gives an interesting, albeit very slight, male/female Church separation. Compare Graph xxxiii, PRF Aggression, where is the same divergence between the two Church non-Music groups. Low aggression and low defendence would seem to be consistent, as would high aggression and high defendence.

Graph xxxviii PRF Dominance (Do)

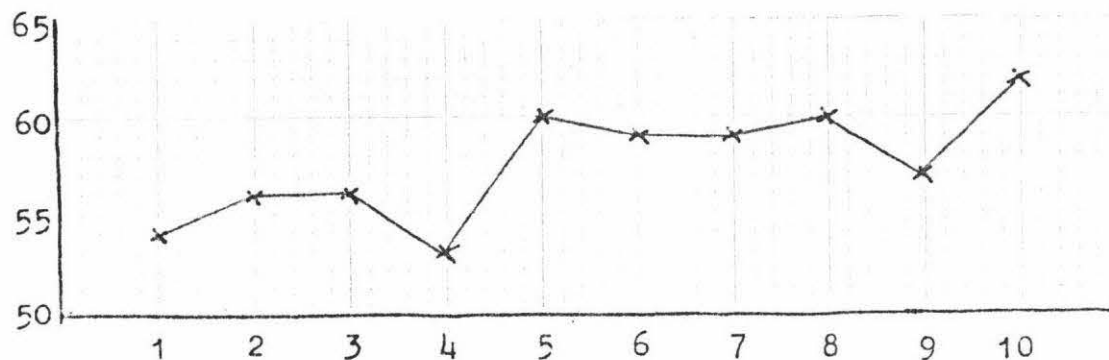
The first three female groups at the higher end, the Salvation Army Band and Pipe Band at the other, creating a male/female separation, in the reverse direction from what might have been predicted. In fact, the graph shows a clear, though slight trend through all ten groups. How much this trend has to do with the current women's liberation movement is not known, but there seems to be no correlation with the Graph i Abasement scores.

Graph xxxix PRF Endurance (En)

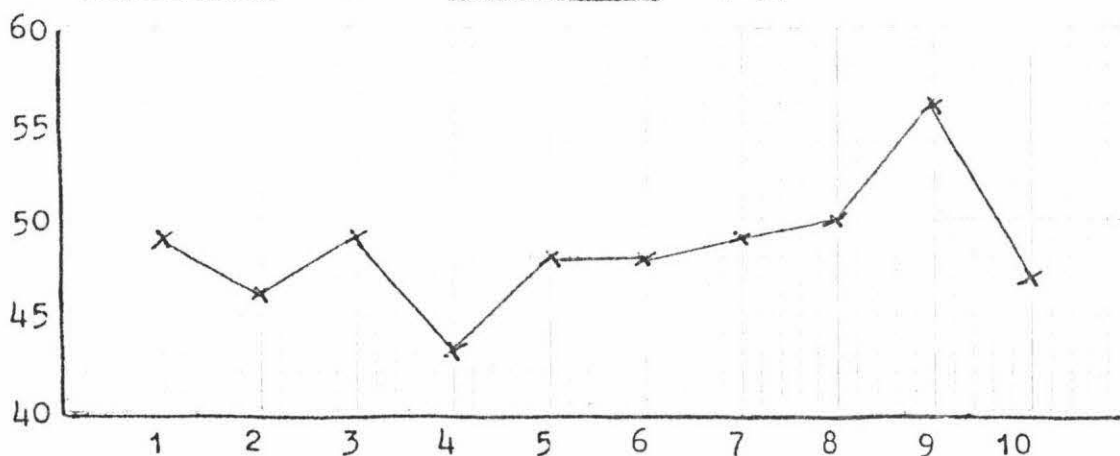
Non-Church non-Music females (the typical New Zealand housewife?) very slightly the highest-scoring group, the Salvation Army Band and the Church Choir males at the lowest-equal score. It would perhaps be easy to suggest, but difficult to prove, that the highest scores came from a group used to unrelenting drudgery: it may have been true a century ago, but is not in the 1980's.

Graph xl PRF Exhibition (Ex)

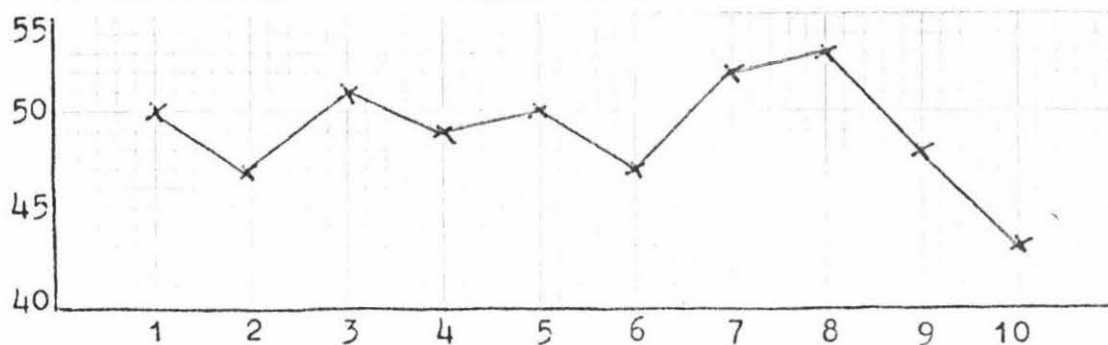
Non-Church instrumental females the highest (do women need an element of this factor to play publicly in an orchestra?) and with them the non-Church instrumental males (does the same question apply?) Lowest are the non-Music Church females and the non-Music non-Church females. Perhaps those not playing publicly do not need this Ex factor. Church Choir members, both male and female, do not consider their music as a public performance, so it is not surprising that they do not score highly on this factor.

Graph xli PRF Harmavoidance

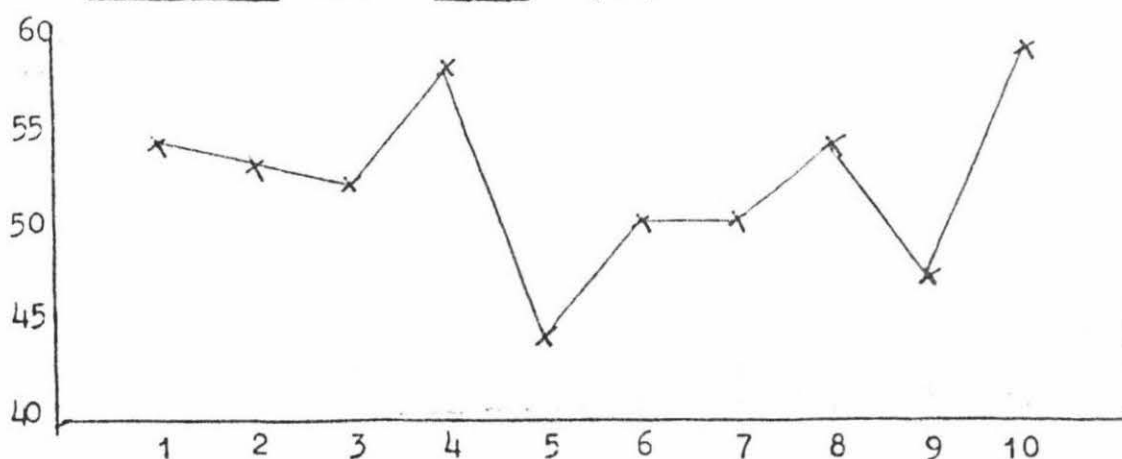
Salvation Army Band males the highest, non-Music non-Church females the lowest. Role expectations and outlooks in our society, between these two groups, might make an interesting study. To be noticed also is the fact that all four women's groups score lower than any men's group, perhaps indicating a certain defensiveness among New Zealand males that is generally masked in public. Another valuable study could be made to test this harmavoidance sex factor.

Graph xlii PRF Impulsivity (Im)

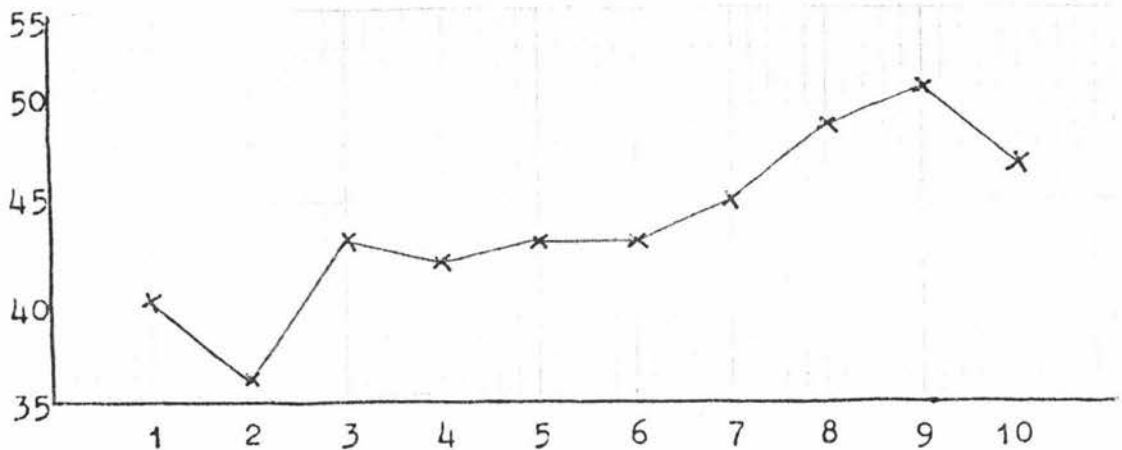
Pipe Band males to a degree higher than any other group, non-Church non-music females to a degree lower. It might be possible to suggest the caricature (if it be such) of the bandsman as a happy-go-lucky fellow, while his wife is a serious stay-at-home person. Most groups are very similar on this score.

Graph xliii PRF Nurturance (Nu)

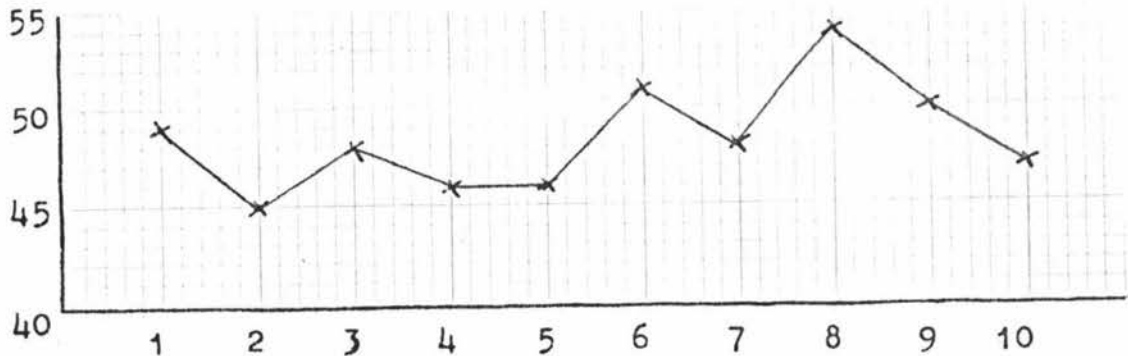
It may not be surprising to find the non-Church non-Music males and the non-Church Instrumental males at the highest level on this factor, but it would seem surprising to find the Salvation Army Band males the lowest. There may be a link-up here again with the suggestion that the Salvation Army credo influences the bandsmen. It might have been thought that the females would have been the most nurturant, but this has proved not to be the case. However, the trends, except for Group 10, are slight.

Graph xliiv PRF Order (Or)

Church Choir males the lowest, with the Pipe Band next (the non-practical sort of person?), non-Church non-Music females and the Salvation Army Band the highest (both needing their worlds to be structured?). Most groups are quite similar, but these three appear to have some degree of significance. The female average on this score is higher than that of the male average, perhaps suggesting cultural expectations.

Graph xlv PRF Play (Pl)

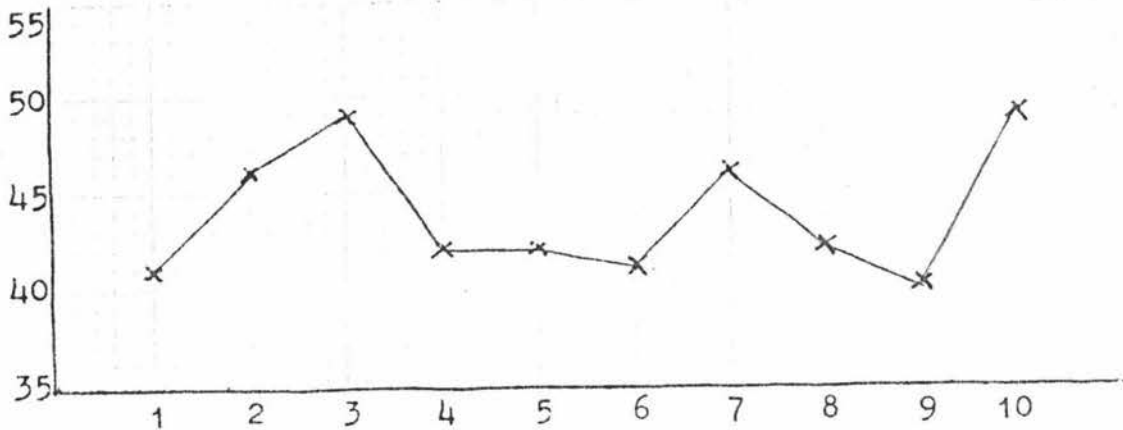
The latter four male groups (Groups 7 to 10) are the highest-scoring on this factor, above all female groups, church non-music females being a degree lower than any other. Females in our society, especially the church-going group, would seem to have a lesser sense of Play, of "doing-things-for-the-fun-of-it". It is not known whether there is a specific male/female factor here, but there would seem to be cultural expectations involved. It would seem that the average New Zealand male may indeed join in bands or other activities where his spouse may not. From the graph, it would seem that church-going and church music are not regarded perhaps as play, although playing in a Salvation Army Band may be. It would be a worthwhile study to have comparable scores for the NSQ and PRF of Salvation Army males and females who do not play in their bands.

Graph xlvi PRF Sentience (Se)

Non-Church non-Music males the highest, several

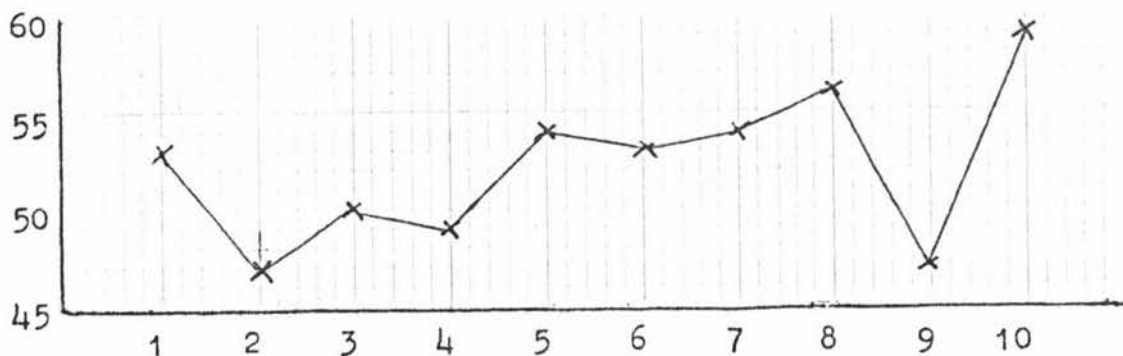
groups at the other end of the scale. Among other things, this may mean the typical "Kiwi-in-the-street" is more hedonistic than any other social grouping looked at, especially since the same group scored second highest on the Play factor.

Graph xlvii PRF Social Recognition (Sr)



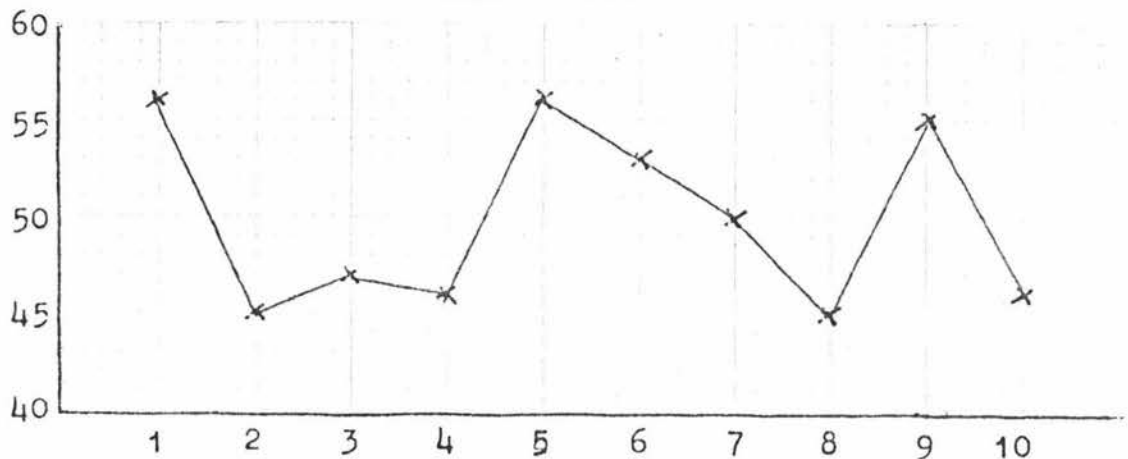
Non-Church Instrumental females and Salvation Army Band the highest, but most groups quite similar. As with a number of other factors already noted, the Salvation Army Band would appear to fall outside the possible expectations. It would appear to be true that the Church Choir males are more of a muchness with other New Zealand males than are the Salvation Army Band males. In line with the slightly-elevated score of Exhibition as well, Instrumental non-Church females may have a factor including aspects of need for public self-expression and acceptance.

Graph xlviii PRF Succorance (Su)



Here, the Salvation Army Band is the highest, and Church non-Music females and the Pipe Band members the lowest. It might be suggested from this graph that the Salvation Army Band males demand or crave caring more than any of the female groupings, and that the two non-music female groupings need to be cared for least of all with, perhaps surprisingly, the Pipe Band males, who are thus seen as differing greatly from their church "low-brow" music counterparts. It may be a reflection of something in our culture that puts five of the six male groups higher on this factor than any of the four female groups.

Graph 11 PRF Understanding (Un)



Here, the highest-scoring groups are the Church Choir males and females, with the Pipe Band marginally lower, several groups at the other end of the continuum. A quote from the PRF Handbook (1974) may be apposite here:-

(p.7) a high scorer "...wants to understand many areas of knowledge, values synthesis of ideas, verifiable generalisation, logical thought, particularly when directed at satisfying intellectual curiosity...analytical...reflective...."

Some of these descriptions would seem to apply to those who are seeking meaning-in-life through church association and/or membership of a group that seeks to work

together, as do bands and choirs. While this may be so, there is no ready answer for the other three female groups scoring so much lower.

\*

While few of these highs and lows seem, on inspection, to be more than slight trends, it would appear that sharper measuring instruments and further investigations into social groupings, their roles and expectations, could yield valuable information not only about the nature of individual groupings within our society, but also about sex differences in roles and expectations as well. Certainly, some of the trends discernible above and outlined here would seem, intuitively, to correspond with a general understanding of groups within New Zealand society.

Chapter 6      Q-TYPE FACTOR ANALYSIS OF GROUP AND  
SUBJECT DIFFERENCES

a) Results

i. Unrotated Factor Matrix.

For the relevant data, please refer to p.xix of the Appendix and to p.28, last paragraph, for comment.

ii. Rotated Matrix.

For the data, please refer to pp.xiv following of the Appendix.

iii. Communalities.

For the data, please refer to pp.xx following of the Appendix.

iv. Loadings.

For the data, please refer to pp.xiv following of the Appendix.

b) Discussion

i. Defining the Factors

- a) First Inspection
- b) Second Inspection

a) First Inspection

A first look at the factors was made by taking the ten highest scores on each factor produced and listing them in order from the highest down:-

Factor One

Group 7	S6	0.874
	3	0.848
	4	0.821
	7	0.819
	10	0.810
	6	0.801
	4	0.797
	3	0.796
	5	0.792
	1	0.792

By inspection of the profiles for these people, it will be seen that they share high scores on the following

three measures:

Cognitive Structure (Cs)  
Endurance (En)  
Order (Or).

There also appears to be an element of the NSQ F- here, the opposite of seriousness. Therefore we may define this factor as one concerned with needing structure, durable, organised, yet not gloomy or depressed. A person high on this factor would be seen to be stable, methodical, conservative, perhaps even unemotional and dull. The first five highest-scorers come from non-Church groups, which may be significant.

#### Factor Two

Group 9	S1	0.864
	7	0.822
	6	0.804
	8	0.711
	1	0.705
	9	0.675
	9	0.646
	9	0.645
	8	0.626
	3	0.621

This factor produced PRF aspects of Sentience (Se), Autonomy (Au) and Play (Pl). There appears to be no dominant influence from NSQ factors. A person with these factors in his personality would be one who is aware of his surroundings and is responsive to them, who is not unemotional but tends to do things for the fun of them, and who likes to be self-determining. It would seem that no one in this group would also be high-scoring on our Factor One, as these are apparently opposites. Note, for example, that no one from Group 9 scored highly on our Factor One, but four have done so on our Factor 2. Similarly, scores 3, 4 and 5 represent groups not occurring in the top 5 scores of Factor One.

Factor Three

Group 8	S8	0.841
5	2	0.675
8	5	0.642
6	8	0.549
10	6	0.499
7	8	0.496
8	3	0.471
8	4	0.468
5	4	0.457
1	2	0.442

Four subjects with this factor high come from Group 8 (Non-Church non-Music male). The factor itself has a large component of Dominance in it, but is not exclusively so. From the NSQ profile analyses, Graph xxix, p.55, this Factor Three would appear to have elements of the Anxiety-negative in it. The first nine of the top ten-scoring subjects come from male groups, so there is clearly a sex factor present, also apparent in Graph xxix at the lower end. Further, six of the first ten come from non-Church groups. There is no suggestion that Dominance in itself is an undesirable characteristic, as there is in popular usage. A person scoring high on this Factor Three may therefore be seen to be unanxious and self-directing.

Factor Four

Group 1	S4	0.689
7	7	0.607
3	5	0.600
10	5	0.597
5	9	0.527
6	2	0.519
9	9	0.482
10	6	0.482
4	2	0.468
3	7	0.448

Factor Im (Impulsivity) is strongly involved in our Factor Three, and aspects of NSQ F-negative, the other end of the Seriousness continuum. There would appear to be no male/female or church/non-church separation. Group 4 (non-Music non-Church female) has been noted above in the discussion on the profile analyses to be low-scoring on Impulsivity, and it is to be noted here that Group 4 appears only at place 9 on our Factor Four. Groups 2 and 8 are not represented at all.

#### Factor Five

Group 9	S7	0.699
	8	0.596
	10	0.593
	10	0.472
	7	0.463
	5	0.442
	4	0.440
	7	0.426
	9	0.401
	5	0.395

The Play (P1) factor predominates in our Factor Five and, following earlier discussions in this study, it is not therefore surprising that male groups predominate among the higher-scoring subjects: nine of the first ten are males, and the tenth is from the non-Church Instrumental female group, which has a higher play factor than other female groupings. NSQ scores have little influence on this factor. To be noted is that nine of the first ten scores come from musical groupings. It can therefore be suggested that there is not only a male/female separation here, but also a musical one.

#### Factor Six

Group 7	S8	0.491
	8	0.371
	10	0.286
	8	0.285

3	6	0.281
4	8	0.244
1	10	0.241
4	6	0.239
10	4	0.237
4	2	0.216

The leading associated factors in producing our Factor Six are Affiliation (Af), and Order (Or). NSQ scores, again, have little influence. The meaning of this factor is therefore one of interest in people and in stable situations.

b) Second Inspection

A more accurate inspection is now discussed, using a method allowing greater discussion of the factors. The means and standard deviations of each set of loadings were calculated and ranked in order.

Factor One

Group	Loading	Std.Dev.
2	0.722	0.070
4	0.688	0.111
3	0.646	0.141
1	0.644	0.152
<hr/>		
6	0.634	0.133
10	0.628	0.164
5	0.590	0.195
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7	0.556	0.212
8	0.540	0.140
9	0.520	0.188

This is clearly a male/female factor, as the first four groups are all females, the last six all males. It could be said to represent the general New Zealand personality, shown here to be attuned to a structured, ordered society. the person being seen as "plodding on", sober-sided, submissive and serious. This would

seem to accord generally with the first factor on the first inspection above. NSQ factors do not appear to influence our Factor One greatly.

Factor Two

9	0.518	0.214
6	0.501	0.161
5	0.467	0.090
7	0.447	0.157
1	0.432	0.134
3	0.415	0.122
4	0.414	0.109
8	0.406	0.158
2	0.402	0.095
10	0.345	0.116

The dominant factors here are Sentience (Se), Autonomy (Au) and Play (Pl). The person with this group of factors tends to be lacking in anxiety, tends to dominate, and is cheerful. He has a happy-go-lucky, non-anxious outlook. It is curious that the Pipe Band and the Salvation Army Band (Groups 9 and 10) are at opposite ends of this factor's continuum. It is to be noted that the NSQ Anxiety factor does not mean quite the same thing, an illustration of how different tests can produce factors which have differing components. It would be a worthwhile exercise to study anxiety as assessed by a variety of personality measures.

Factor Three

8	0.421	0.197
1	0.329	0.159
3	0.321	0.102
10	0.319	0.008
7	0.303	0.104
6	0.297	0.110
5	0.262	0.195
2	0.257	0.062
4	0.248	0.086
9	0.248	0.081

Attention should be drawn here to the fact that only Factors One, Two and Three have adequate loadings for much significance.

Group 8 (Non-music non-Church male) defines our Factor 3. The factor includes aspects of Affiliation (Af), Social Recognition (Sr) and Dominance (Do). The person scoring highly on this factor can therefore be seen as somewhat tough-minded, but seeking the approval of others although non-anxious. This might perhaps be described as an establishment-factor: perhaps "don't rock the boat." NSQ scores have little influence on this factor. There to be no male/female church/non-church separations here.

#### Factor Four

1	0.367	0.193
3	0.360	0.123
10	0.355	0.125
5	0.354	0.075
7	0.326	0.144
2	0.324	0.059
4	0.294	0.109
9	0.258	0.146
8	0.257	0.083
6	0.260	0.131

This factor marks a division between music groups and non-music groups. Thus, the first five groups on this factor are all music-oriented. There is a degree of neurotic impulsivity (Im), slight anxiety, and both Nurturance (Nu) and Succorance (Su). Yet again, NSQ scores have little influence. These three PRF factors, Im, Nu and Su, may perhaps be seen as contributing to an emotionally-sensitive make-up necessary for music-making. The loadings are not high, but the trend would appear to be observable.

#### Factor Five

9	0.327	0.170
10	0.293	0.148

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8	0.265	0.108
4	0.258	0.084
5	0.254	0.138
2	0.239	0.073
7	0.229	0.148
1	0.215	0.100
6	0.214	0.119
	NS	NS

The motif here is Play (P1). This is perhaps, then, a popular-taste, 'middle-brow' factor. Where this factor is strong, the person is little interested in responsibility, has some anxiety, does not want help, and has low social recognition and dominance factors. In addition, he tends to be tender-minded and sensitive. The two Bands (Salvation Army and Pipes) and the non-music non-Church groups, both male and female, clearly define this factor. It has been noted earlier in this study that appears to be a Play factor in Band and non-Music, non-Church groups.

#### Factor Six

There are no significant loadings at all on this sixth factor.

#### ii. Comparing Groups

Particular note should be taken of the great weight on the first factor. The weight of this first factor is confirmed by the fact that the original matrix is singular and cannot be inverted.

Clearly, differences between groups have been found, but the differences are not as great as might have been hoped.

It is important to look at the homogeneity of the groupings studied. In popular understanding, there is a "great, Kiwi, clobbering machine", which, the press assures us, reduced all New Zealanders to an amorphous, shapeless personality devoid of character or passion. Certainly, there are few issues which arouse New Zealan-

ders to passion in the press or in public meetings. Even the subjects of abortion and trades unions, once keenly felt, generally are regarded as dull and boring. Many New Zealanders feel amused, and certainly not threatened, by television comedies showing class and social distinctions in other countries, notably Great Britain and the United States. Here, we feel, all people are generally equal, and that there is little observable difference, or need to be different, between occupational, social and sex groupings. Also, where the dominant Christian culture still influences our laws and mores, Christian personality is little different from the non-Christian. Put simply again, the groups studied are notable for their homogeneity. This does not mean that New Zealanders as a whole are such, although the writer would strongly suspect this to be the case, but it does mean that the average citizen of Palmerston North is not greatly influenced by his outlook or practical part in music-making, church attendance or band membership, or even whether male or female. As has been clearly seen, however, in the chapter above on profile analyses, there are clear trends and distinctions between Palmerstonians and North American norms.

Factor One shows that there are male/female differences. These are not great, but large enough to have all female groups listed before any male groupings. With Church membership apparently causing a male trend to a mean, it may also be significant in this respect that the first three male groups are all church-oriented. With the gradual disintegration of influence of the more traditional churches, and with a growing "women's consciousness" movement, it may be that in twenty years' time, a replication of this study would show greater distinctions not only between males and females, but also between Christians and agnostics.

With Factor Two, as seen above, males take all four first placings, suggesting that autonomy, play and sentience are not dominant characteristics of New Zealand females, be the latter church-goers or not. It has been suggested that the Salvation Army Bandsmen are in a special category of their own, bandsmen yet influenced by their denomination's conservative, somewhat 'put-upon' outlook, so it is not surprising to see Pipe Band and Salvation Army Band members at opposite ends of the Factor Two continuum.

If the loadings were more significant, greater distinctions between groups could be drawn, but where, as in this factor, there is only 0.116 between the first and the ninth placing, distinctions can only be seen as slight trends.

Where the musically-minded and the church-oriented have scored highly on other factors, in the fourth factor, non-music non-Church males predominate a little. The "ordinary Kiwi bloke", not interested much in music or church, has a slight tendency to be more friendly and socially aggressive than his fellow-citizens, but other factors, in day-to-day encounters, would tend to mask this slight trend.

Distinctions can be made, on the slight statistical evidence, that factors are evident, but it would seem, on inspection, that there is little difference in personality between Factors Three, Four and Five. For example, Factor Five seems to distinguish "middle-brow" persons, a concept little different from those in Factor 1 in reality. However, although Pipe Bands, Salvation Army Bands and non-Music non-Church males would not, perhaps, tend to be regarded by society at large as "high-brow" or "academic" in outlook, it was, as noted on p.20 of this study, discovered that all groups were remarkably homogeneous in respect to educational level and socio-economic group. Whether the groups are completely homogeneous, or whether the measuring instruments used were inadequate, is uncertain, but there may be truth in both statements.

Chapter 7    GENERAL DISCUSSION AND CONCLUSIONS

a) NSQ

The NSQ Handbook (1961) refers to the raw score mean of (American) population as the cutting point dividing sten 5 from sten 6, i.e. it falls exactly at 5.5 Thus the average or 'normal' scores fall into 5 and 6. It is therefore possible to compare American norms and this study's results directly.

Graph 1 on p.31 gives the NSQ mean totals.

Component I scoring is no different from the North American mean. Palmerstonians are therefore not to be seen as any more tender-minded, overprotected, cultured or emotionally sensitive than their American counterparts.

Component F falls above the American mid-range, although not to a great degree, with a mean of 6.75 for men and women together. The Handbook describes the high-scorer as showing an almost classical picture of depression: glum, sober, serious, subdued, and pessimistic, in addition to being incommunicative, smug, retiring and introspective, simmering, brooding, unadaptable, rigid, phlegmatic. Clearly, not all these adjectives can be used to describe a population as a whole, but it may be suggested that Palmerstonians, and hence New Zealanders generally by implication, may be more serious-minded and introspective than their American counterparts. It is certainly the popular stereotype that Americans in contrast with New Zealanders are brash, noisy and over-confident. We are sometimes said to be proud of our "English reserve" and this may be what is being measured here. There is no suggestion that the mean score on this component is high enough to postulate a clinically-depressed or neurotic population.

Component E, measuring submissiveness and dependence, also has a component to do with "drive" or assertion.

As the subjects in this study have a mean just very slightly above the American norm, it may be possible to suggest that New Zealanders are to a very slight extent less assertive than Americans. Again, the popular stereotype would suggest that New Zealanders are not as "pushy" as their American counterparts. It would be unwise, however, to conclude anything with a Palmerston-study mean of only 6.1.

The Handbook asserts that there is (p.24) almost nothing good to be said about a high anxiety score, represented by Component A on the NSQ. The male mean is within the normal range from the sample studied, but the female mean is slightly above, at 6.7. In effect, this means that the local females tested tend to be slightly more worried, irritable, exacting, tense, restless and excitable than their American counterparts. In fairness to the females tested locally, it could be suggested that the general level of anxiety in the United States may have increased since 1961, due to the pressures of inflation, political unpopularity and the like, and that comparative scores would need, to be accurate, to be based on current data. There is no evidence to suggest that the published American norms are stable over nineteen years.

Following this last suggestion, that the general level of neurotic trend in a given population may be affected by socio-economic, political and cultural changes, direct comparisons of scores becomes difficult, if not impossible, unless based on current studies. For example, it is possible plausibly to suggest that a published 25% inflationary rise in the cost of food could cause a rise in the female mean on Component A (Anxiety) of the NSQ.

As a research tool, the NSQ would appear to be of value, measuring useful factors, provided the caution of comparisons, as just noted, is heeded. It would appear to be more useful as a comparative tool than

as one presumably showing an absolute score on a given psychological component.

Again, there needs to be a caution. Where there is a list of adjectives in the Handbook used to describe a particular component of the NSQ, it would be unwise to assume that all those adjectives describe a given population or group. For example, in looking at Graph viii, comparing Non-Church Non-Music groups with Church non-Music groups. it could be assumed that the Church non-Music groups (i.e. male and female) are to a considerable degree more depressed than their secular counterparts. It was suggested above, p.36, that in this study, a high F score may indicate seriousness rather than depression. To equate seriousness of purpose with depression may in fact indicate more of the test constructor's preconceptions than anything else. On the other hand, to make this suggestion may indicate something of the writer's preconceptions as well!

Nevertheless, yet another caution needs to be made, that of assuming that a mid-range score is in fact a "good" or "psychologically-healthy" score. It is easy to assume that because a particular score falls within a mean, that this is in fact a "good" score. Definitions of mental health and "goodness", of values and beliefs, arise if the meaning of a particular mean and/or score is to be assessed. All that can be given, impartially, is the person or group's score on a measure. It may be possible to define a factor in some way, but it would be unwise to make a private, personal definition, unstated.

Nevertheless, a few conclusions can be drawn from the NSQ means produced in this study.

Graphs such as Graph x (p.38), comparing Pipe Band members with Salvation Army Band members, indicate that it is possible to group people by expressed interests and activities. The I factor differences here indicate significant differences between the

"church low-brow music" group and the "secular low-brow music" group, that would appear to be accounted for only by assuming that the Salvation Army faith has a significant emotional and personality effect on its members.

Various other clear groupings exist, and differences, as outlined not only in graphs ii to x, but also graphs xxv to xix, as seen above. It has been found, as discussed above on pp.67 - 74, that NSQ scores do not appear to figure prominently in the factors found by factor analysis. For this reason, the writer regards the profile analyses as important, indicating specific trends, even if, as has been suggested, factors are difficult to define. The profile analyses may tend to make it appear that there are greater differences between groups than there actually are, but differences such as occur on Graph xxvi, p.53, where one group scored a mean of 7.52 and another scored a mean of 4.02, are great enough to be suggestive of real groupings. Further research using other instruments may confirm whether this is so.

b) PRF

Much has already been said above, about cautions in comparing scores and test results, that need not be repeated. It can be noted, however, that North American norms give a score of 50 on all factors as being the mean. Graph xii, p.41, shows remarkable homogeneity between males and females in Palmerston North subjects, but also indicates some real divergences with American norms.

As noted above when comparing the Pipe Band scores on the NSQ with those of the Salvation Army Band, significant differences exist, the test results of the NSQ and the PRF being compatible. In illustration of this, it may be noted that Factor I of the NSQ shows Salvation Army Band members to be more rigid and less tender-minded than those in the Pipe Band

and this is consistent with the Salvation Army Band's higher mean score on Factor Or (Order) on the PRF. Similarly, it would seem that the Pipe Band's lower score on the NSQ Factor F (depressiveness) is consistent with lower PRF Su (Succorance) score. Many other comparisons between groups might be similarly made, but the point to be noted is that profile analysis shows the test results to be compatible.

It is not considered necessary here to outline all noticeable trends and significant differences between the various groupings. Indications of these have been given above. It is more important, in line with the purpose of this study, to affirm the validity of the original hypothesis, that groups differing in church and musical interests will vary in personality characteristics as measured by the PRF and the NSQ.

c) FACTOR ANALYSIS

To some extent, the factor analysis has seemed to be a blunter measuring instrument than the profile analyses, direct comparisons of scores being impossible, but, in this statistically more valuable method of analysis, the homogeneity of the groups has been demonstrated.

Reliable factors have been produced, however, which show trends of difference between groupings, for example the male/female separation of Factor 1, discussed on p.71.

Further, the two types of analysis do tend to be compatible. For example, the differences between the Salvation Army Band and the Pipe Band have already been described, in discussion of the Profile Analyses. Factor Two of the factor analysis, discussed on p.72, again shows a degree of difference between these two groups.

d) CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH

In a very real sense, the present research has been a pilot study, inasmuch as it was not known if the method adopted of studying groups, music and Christianity could produce significant results. It is felt that a number of things have been learned from the study:-

1. It is possible to make male/female comparisons within and across groups within a society on the bases of personality measure scores.

ii. The measuring instruments themselves were too blunt, in that each factor was too general. For any future research, measures produced for quite specific factors would be preferable to those which merely give a general score over a broad area of personality.

iii. Other groups could also be studied using the present approach, for example other denominational groupings such as non-Music Salvation Army, to good effect.

iv. The general influence of our culture is greater than the influence of one of its subgroups - this is shown in the high degree of homogeneity between groups.

v. Both the NSQ and the PRF are valid research tools in New Zealand, but caution needs to be taken in interpreting mean scores, against American norms.

vi. Personality measures are themselves influenced by the outlook of the person constructing the test: as noted above, for example, seriousness and depressiveness tend to be equated in the NSQ.

There is the possibility that other factors than express interest may be operating in the various groups, and that these other factors may cause distortion in a group. For example, people may not only become church-goers because of a strong Christian faith, which may have measurable components in it, but also because of

habit since childhood, or a desire to be seen to be respectable, or because the spouse insists on attendance, and so on. Factors such as these, in future research, would need to be taken into account: a purer sample of "expressed-interest" persons may give different results from those in the present study.

Also, with many groups, initial membership may be for a variety of reasons, such as those just outlined, but it also may be that continued membership of a group is maintained because of social linkings; in other words, a person may join a Pipe Band because a friend has done so, then remain after the friend has left the group, finding the group's activity congenial even if not an over-riding interest. Yet again, making friendships and contacts may be the main reason for most people in our society to remain in most groups. It could be informative to compare these two groups within any given group: those who remain because of a dominant interest in the stated purposes of the group, and those who remain through other factors as outlined.

It is suggested that the research be repeated in a different town, using other groups in addition, such as sportsmen. If the results of this study were similar to those in the present study, the above conclusions would be strengthened.

It is suggested that there needs to be more research into the nature of music, as the bald category "musical interest" may be too broad, even when defining church-attending classic-oriented choirs. People may, it would seem, become practising musicians for a variety of reasons: for example, one musician may have a gift for (and a great interest in) rhythm, another may have a good ear for tone, a third may have great finger dexterity, and yet another may have a combination of these factors.

With the church groups, also factors may be distinguishable which affect personality. For example, one

person may express a great interest in charismatic worship, or in formal liturgical worship, or be sensitive only to the meanings of the words used and not their musical possibilities or to the actual church's architecture.

Research could therefore be carried out to test the hypothesis that any given group of people within a given interest area, such as church-attending or music, are more sight-oriented than others, or more sound-oriented, or more verbal-oriented. What effect this may have on personality is unknown, but it is suggested that the differing kinds of worship interests, for example as outlined above, may greatly be reflected in personality measure scores. For example, it would seem plausible to predict that those involved in charismatic worship may score more highly on the Su (Succorance), Nu (Nurturance) and Af (Affiliative) factors on the PRF than those who are only happy with a rigid, codified liturgy. These latter may well score more highly on such PRF factors as Or (Order) and Ha (Harmavoidance). In the music area, it may be possible to test the hypothesis that string quartet players would score more highly on the Or (Order) PRF factor than jazz musicians, with the latter's involvement in free improvisation.

The possibilities for future research are thus seen to be well-nigh endless. While the approach used in the present study may lead to ways of studying the kinds of people in the various groupings, it would seem that no contribution has been made to the understanding of music itself, nor of Christian belief.

## Chapter 8    OVER-ALL CONCLUSIONS

1. The outstanding finding to emerge from the data is that, in spite of "interest" and "value" differences, the various groups show a homogeneous personality pattern. Results show a first factor so strong that it dominates the whole analysis. The chief characteristic of the profile patterns is similarity among sub-groups. The general citizen of Palmerston North (and probably New Zealand) is serious-minded, conservative, reserved, slightly anxious, and less aggressive.

2. Beyond the general finding, however, subsidiary conclusions of note emerge. There are some significant differences between sub-groups. Most note-worthy of these are the following:-

a) The Salvation Army and the Pipe Band. These differ from all others. Chief characteristics of the Salvation Army Band members are their tough-mindedness, perhaps rigidity and dogmatism being adequate descriptive words, their high NSQ F score, meaning depressiveness or seriousness, their low score on the Nurturant factor contrasting with their high score on the Succorance factor, and their high score on the Harmavoidance factor. The chief characteristics of the Pipe Band members are their tender-mindedness, their generally happy outlook on life, their autonomous outlook, their general "freedom" of personality in contrast with other groupings.

b) A strong male/female differential occurs in non-Church non-Music groups:- The females tend to be less affiliative, more endurant, less exhibitionistic, much less harmavoidant, to a degree less impulsive, less needing of a structured environment, less interested in play activities, less sentient, less succorant, more serious, less submissive, to a degree more anxious. The picture has emerged of the tough, Kiwi housewife, tough and unfeeling (or with feelings well hidden), in contrast with her happy-go-lucky, impulsive, gregarious spouse.

Interestingly enough, this male/female differential is not so strong in church-affiliated groups. The male Kiwi syndrome is strongest in non-Church groups.

3. No significant findings emerge relating to personality differences based on music preferences. It seems likely that the differences observed in the instrumental music groups, i.e. Salvation Army Band and Pipe Band, are related to factors other than music, for example religious belief and values, and socially-related, non-music reasons for joining the group.

Appendix One      RAW SCORES

The code numbers for each of the groups in the following data are as follows:-

1. Church Choir Female
2. Church Non-Music Female
3. Non-Church Instrumental Female
4. Non-Church Non-Music Female
5. Church Choir Male
6. Church Non-Music Male
7. Non-Church Instrumental Male
8. Non-Church Non-Music Male
9. Pipe Band Male
10. Salvation Army Band Male

The factor abbreviations are given above under METHOD, p.21 and 25

N S Q

(Here, T = Total NSQ score)

1. Church Choir Female						2. Church Non-Music Female					
	T	I	F	E	A		T	I	F	E	A
1.	46	12	15	11	8	1.	54	14	16	13	13
2.	44	15	8	10	11	2.	49	12	10	14	13
3.	59	14	12	15	18	3.	46	13	14	12	7
4.	44	11	5	15	13	4.	52	11	14	17	10
5.	45	12	11	12	10	5.	57	11	17	16	13
6.	35	5	13	17	14	6.	49	12	11	12	14
7.	59	15	13	17	14	7.	60	11	16	16	17
8.	55	9	14	19	13	8.	52	14	13	11	14
9.	53	16	10	13	14	9.	58	14	16	14	14
10.	41	10	8	13	10	10.	43	14	10	14	5

3. Secular Instrumental  
Female

	T	I	F	E	A
1.	53	14	7	16	16
2.	47	11	14	17	5
3.	63	14	16	17	16
4.	51	18	9	11	13
5.	47	15	8	9	15
6.	42	17	8	14	3
7.	43	9	9	18	7
8.	54	13	15	14	12
9.	46	10	15	16	5
10.	47	16	10	16	5

4. Non-Church Non-Music  
Female

	T	I	F	E	A
1.	44	11	8	11	14
2.	40	9	9	10	12
3.	54	9	12	17	16
4.	50	15	7	14	14
5.	56	14	14	16	12
6.	44	11	13	16	4
7.	60	13	17	14	16
8.	42	3	13	14	12
9.	49	12	11	14	12
10.	60	14	14	13	19

## 5. Church Choir Male

	T	I	F	E	A
1.	44	14	11	8	11
2.	28	4	4	9	11
3.	40	8	11	13	8
4.	46	15	8	13	10
5.	53	13	17	8	15
6.	46	10	13	10	13
7.	55	12	15	16	12
8.	42	11	12	9	10
9.	44	10	3	17	14
10.	48	15	12	11	10

## 6. Church Non-Music Male

	T	I	F	E	A
1.	47	11	18	8	10
2.	51	16	12	16	7
3.	40	8	12	11	9
4.	52	9	14	13	16
5.	44	7	14	10	13
6.	37	6	12	12	7
7.	42	8	10	12	12
8.	33	9	8	10	6
9.	42	10	11	15	6
10.	46	8	15	13	10

7. Non-Church Instrumental  
Male

	T	I	F	E	A
1.	57	16	13	15	13
2.	41	6	10	10	15
3.	37	16	6	3	12
4.	35	11	9	9	6
5.	48	7	14	17	10
6.	51	10	14	17	10
7.	34	15	5	4	10
8.	32	7	1	13	11
9.	39	5	10	17	7
10.	38	7	11	9	11

8. Non-Church Non-Music  
Male

	T	I	F	E	A
1.	39	10	14	9	6
2.	51	12	13	15	11
3.	35	12	8	7	8
4.	37	5	11	13	8
5.	40	7	10	17	6
6.	44	7	13	12	12
7.	42	5	7	16	14
8.	28	1	11	7	9
9.	35	9	7	12	7
10.	43	6	8	17	12

## 9. Pipe Band Male

	T	I	F	E	A
1.	31	10	8	8	5
2.	44	10	15	13	6
3.	49	8	9	14	18
4.	42	11	9	9	13
5.	38	8	11	9	10
6.	43	13	8	14	8
7.	39	4	8	13	14
8.	35	7	11	10	7
9.	58	17	9	17	15
10.	41	14	9	15	3

10. Salvation Army Band  
Male

	T	I	F	E	A
1.	41	3	15	14	9
2.	48	10	13	12	13
3.	59	15	15	18	11
4.	42	7	12	16	17
5.	46	12	8	14	12
6.	40	10	1	15	14
7.	39	6	16	9	8
8.	55	17	10	16	12
9.	57	11	16	16	14
10.	51	10	15	18	8

## N S Q

Standard Scores, Means and Standard Deviations

T				I			
Grp.				Grp.			
1.	6.0	48.1	8.02	1.	5.4	11.9	3.35
2.	4.2	52.2	5.53	2.	5.7	12.6	1.35
3.	7.2	49.3	6.20	3.	6.7	13.7	2.99
4.	7.2	49.9	7.37	4.	5.0	11.1	3.51
5.	7.5	44.6	7.44	5.	7.1	11.2	3.43
6.	7.1	43.4	5.93	6.	5.3	9.2	2.78
7.	6.5	41.2	8.16	7.	6.0	10.0	4.29
8.	5.9	39.4	6.24	8.	4.8	7.4	3.44
9.	6.0	42.0	7.50	9.	6.1	10.2	3.77
10.	6.9	47.8	7.41	10.	4.1	10.1	4.12

F				E			
Grp.				Grp.			
1.	6.4	10.9	3.14	1.	5.5	13.0	3.91
2.	8.4	13.7	2.63	2.	5.9	13.9	1.97
3.	6.5	11.1	3.48	3.	6.8	14.8	2.86
4.	6.9	11.8	3.08	4.	5.9	13.9	2.18
5.	6.6	10.6	4.45	5.	6.2	11.4	3.24
6.	7.6	12.6	2.80	6.	6.5	12.0	2.40
7.	5.3.	9.3	4.22	7.	6.2	11.4	5.25
8.	6.2	10.2	2.62	8.	6.5	12.5	3.84
9.	5.6	9.7	2.16	9.	6.1	12.2	3.01
10.	7.1	12.1	4.72	10.	6.8	14.8	2.74

A			
Grp.			
1.	7.1	12.3	2.80
2.	7.0	12.0	3.62
3.	5.7	9.7	5.19
4.	7.5	13.1	3.96
5.	6.6	11.4	2.19
6.	5.6	9.6	3.31
7.	6.2	10.5	2.64
8.	5.2	9.3	2.79
9.	5.9	9.9	4.91
10.	6.4	10.8	2.62

## P R F

v

	Ab	Ac	Af	Ag	Au	Ch	Cs	De	Do	En	Ex	Ha	Im	Nu	Or	Pl	Se	Sr	Su	Un	
<b>Grp.1</b>	<b>Church Choir Female</b>																				
1.	13	11	15	3	6	5	13	4	11	7	9	16	8	16	11	6	18	7	16	11	
2.	9	13	9	7	2	11	17	7	14	15	8	14	13	17	16	11	18	9	17	14	
3.	6	8	13	5	3	8	19	10	7	6	8	17	8	17	18	5	16	15	15	14	
4.	13	9	20	2	4	11	10	3	7	5	10	12	13	17	6	13	14	12	17	15	
5.	9	10	16	5	10	10	11	6	5	8	6	10	8	13	8	9	11	2	8	12	
6.	5	14	8	2	12	12	14	11	7	13	5	13	6	10	16	3	11	7	4	15	
7.	9	15	16	4	1	10	18	7	2	13	4	19	6	16	20	8	18	5	15	16	
8.	10	12	15	4	4	3	12	5	8	8	2	8	7	14	13	7	18	11	8	17	
9.	8	13	11	7	11	12	11	8	2	11	4	11	11	10	10	8	18	3	10	17	
10.	14	14	13	3	12	16	6	3	7	13	5	2	17	15	8	16	18	3	13	13	
<b>Grp.2</b>	<b>Church Non-Music Female</b>																				
1.	6	15	13	5	8	4	14	9	14	13	12	14	8	14	15	4	15	8	7	10	
2.	5	12	14	2	1	9	14	3	9	8	8	16	4	11	15	5	15	8	9	9	
3.	5	14	13	9	11	12	7	8	15	11	8	11	12	12	12	8	8	12	10	12	
4.	9	15	17	1	8	8	13	2	4	10	2	15	6	18	7	5	13	10	8	11	
5.	9	11	16	3	6	7	12	14	2	10	2	12	8	20	16	5	18	8	12	9	
6.	11	17	16	2	8	13	16	5	7	15	4	14	10	16	13	8	18	8	9	12	
7.	8	10	12	4	11	5	15	10	3	9	5	13	9	10	13	7	12	15	8	8	
8.	8	12	12	9	5	10	14	11	6	9	5	13	6	14	12	8	16	10	12	13	
9.	8	12	14	7	5	7	14	9	7	9	3	10	5	15	9	4	17	9	13	12	
10.	10	12	17	2	7	14	8	6	9	9	3	12	12	16	9	10	18	8	8	12	

	Ab	Ac	Af	Ag	Au	Ch	Cs	De	Do	En	Ex	Ha	Im	Nu	Or	Pl	Se	Sr	Su	Un
<b>Grp.3</b>	<b>Non-Church Instrumental Female</b>																			
1.	16	14	15	3	13	14	11	5	4	10	9	8	10	16	8	11	17	4	6	17
2.	5	14	13	3	6	4	17	10	8	15	6	19	3	14	14	5	10	11	10	6
3.	7	17	15	5	4	8	18	8	5	13	4	17	9	19	15	11	16	10	18	14
4.	5	16	17	4	6	13	9	10	13	14	10	13	13	17	9	8	20	16	11	12
5.	6	8	17	3	3	8	12	6	7	7	18	6	16	16	5	11	19	15	12	15
6.	6	14	18	2	10	12	16	4	13	13	10	16	8	19	16	11	14	7	9	10
7.	9	9	19	4	6	8	11	9	6	12	7	16	10	13	8	11	13	11	11	10
8.	9	18	18	5	3	6	14	9	10	12	6	13	8	17	15	6	19	11	11	13
9.	4	11	12	5	8	6	15	5	6	14	5	13	5	12	15	7	16	11	9	9
10.	6	13	18	3	4	12	10	11	8	11	14	11	11	11	9	15	17	12	9	9
<b>Grp.4</b>	<b>Non-Church Non-Music Female</b>																			
1.	6	15	16	6	7	14	11	8	14	15	8	9	11	13	12	11	15	6	9	13
2.	11	11	16	5	9	11	12	3	9	12	5	10	12	14	11	15	16	12	15	9
3.	11	12	13	4	9	7	13	4	3	18	2	17	8	16	14	5	14	10	11	15
4.	6	12	16	5	5	14	11	2	10	5	7	4	9	17	12	11	19	2	9	12
5.	7	6	12	9	7	8	11	10	2	8	3	17	3	12	14	14	15	4	15	2
6.	5	14	14	4	6	3	13	7	3	16	12	12	5	18	18	9	14	7	5	11
7.	11	16	18	3	10	6	16	4	6	16	1	17	5	17	13	7	9	11	10	16
8.	7	16	13	2	10	12	17	6	8	14	6	14	4	17	15	8	19	9	10	13
9.	11	13	13	2	10	14	10	3	5	12	3	11	9	15	17	7	16	13	8	15
10.	6	15	12	2	9	8	14	6	4	9	3	7	4	11	16	5	16	9	9	6

	Ab	Ac	Af	Ag	Au	Ch	Cs	De	Do	En	Ex	Ha	Im	Nu	Or	Pl	Se	Sr	Su	Un
Grp.5	Church Choir				Male															
1.	1	10	10	4	6	9	8	7	4	5	5	13	8	8	5	5	10	3	6	16
2.	8	12	17	13	7	11	11	13	12	11	14	11	11	11	9	15	17	12	9	9
3.	10	12	16	11	4	9	8	13	9	11	9	8	13	15	3	14	14	8	10	11
4.	8	13	13	7	8	15	17	10	16	16	16	12	11	20	10	14	19	15	11	16
5.	6	14	10	4	6	12	11	4	4	11	5	14	5	10	11	6	13	15	15	16
6.	6	9	12	5	11	11	7	8	4	9	4	6	7	8	5	7	9	8	6	18
7.	9	13	14	1	7	8	13	6	0	11	1	10	8	13	8	5	12	1	9	15
8.	7	15	18	1	7	10	15	2	12	11	12	12	6	17	9	7	16	8	5	19
9.	11	11	16	6	5	5	7	4	2	6	6	15	11	12	5	12	16	6	7	7
10.	10	10	14	0	7	9	17	6	0	8	2	17	5	13	11	8	11	5	10	14
Grp.6	Church Non-Music				Male															
1.	5	18	15	2	15	19	12	10	13	17	12	3	14	16	6	12	19	3	3	18
2.	4	12	17	4	5	10	15	4	10	7	10	13	13	13	9	11	18	12	18	14
3.	4	15	13	3	7	9	12	11	3	16	2	10	6	13	9	7	13	8	6	8
4.	3	8	15	6	5	8	15	8	9	10	3	18	4	7	16	6	14	10	6	11
5.	9	15	17	1	8	8	13	2	4	11	9	13	5	15	12	10	12	10	12	13
6.	6	11	14	2	6	13	13	10	9	13	8	12	8	14	11	14	17	4	5	13
7.	5	15	6	1	10	9	15	7	8	12	5	13	6	18	12	9	17	7	9	11
8.	9	18	17	5	5	11	11	6	14	18	14	11	13	17	11	7	16	11	9	14
9.	13	18	13	7	11	10	8	4	11	13	9	4	10	16	12	10	16	6	8	16
10.	12	12	8	5	10	5	13	4	5	10	5	12	6	8	8	10	13	8	7	14

	Ab	Ac	Af	Ag	Au	Ch	Cs	De	Do	En	Ex	Ha	Im	Nu	Or	Pl	Se	Sr	Su	Un
<b>Grp.7</b>	<b>Non-Church Instrumental Male</b>																			
1.	3	19	17	4	6	3	20	13	6	17	8	15	6	15	8	2	15	15	10	17
2.	12	17	9	4	9	11	13	9	5	13	6	13	5	9	7	10	15	9	5	8
3.	10	18	20	9	13	16	8	6	13	16	12	4	13	14	3	8	19	8	13	18
4.	7	8	19	2	8	11	14	14	7	6	13	15	10	13	13	14	14	10	7	18
5.	4	16	16	4	5	7	11	6	8	13	12	14	9	12	8	7	17	11	8	14
6.	6	12	8	3	8	6	19	8	9	18	6	16	1	12	18	5	11	10	9	10
7.	11	6	15	1	8	7	7	5	4	6	9	10	14	12	7	13	16	8	8	10
8.	11	11	19	4	5	8	15	3	11	11	12	4	11	15	16	15	17	11	9	11
9.	9	12	12	7	9	8	13	10	8	9	11	8	8	13	8	13	10	10	9	9
10.	9	10	7	5	8	10	6	12	8	5	6	13	12	15	6	14	13	10	10	9
<b>Grp.8</b>	<b>Non-Church Non-Music Male</b>																			
1.	7	15	14	4	9	8	10	4	15	12	9	9	13	16	6	11	18	4	5	14
2.	6	8	7	4	5	8	10	6	3	10	8	19	8	10	8	10	18	10	10	15
3.	5	11	13	8	9	12	9	8	13	12	12	11	14	13	13	10	18	6	9	6
4.	7	15	18	6	4	9	10	7	10	9	5	12	7	13	14	10	14	9	9	8
5.	2	13	15	12	6	12	12	16	12	11	18	15	13	16	19	11	20	12	13	14
6.	7	11	13	6	8	7	11	6	6	15	7	12	11	14	10	9	14	10	10	11
7.	7	11	10	6	8	8	5	6	3	8	3	7	15	6	12	16	14	3	12	4
8.	4	14	18	10	1	6	12	12	19	17	9	10	16	13	17	12	14	18	14	10
9.	7	11	13	3	8	13	14	10	10	7	11	8	5	16	13	15	19	6	7	13
10.	8	14	16	4	6	3	17	5	7	14	5	11	8	16	17	11	15	6	6	11

	Ab	Ac	Af	Ag	Au	Ch	Cs	De	Do	En	Ex	Ha	Im	Nu	Or	Pl	Se	Sr	Su	Un
<b>Grp.9</b>	<b>Pipe Band Male</b>																			
1.	14	13	20	4	9	16	2	5	5	15	12	3	18	17	0	14	20	6	7	20
2.	8	12	17	3	10	11	9	6	10	15	5	3	9	15	6	8	15	9	2	15
3.	5	9	12	2	6	2	17	8	11	14	6	13	8	13	17	10	8	11	6	7
4.	5	15	14	13	15	14	12	9	12	10	14	11	12	11	6	14	18	9	7	17
5.	5	12	16	9	4	9	11	12	5	9	5	11	9	10	11	14	12	10	16	18
6.	7	16	11	6	18	13	9	11	4	16	7	7	14	15	12	10	17	5	1	10
7.	3	7	7	11	13	5	11	12	2	9	3	10	9	5	15	15	13	2	4	5
8.	3	14	13	4	11	9	13	8	6	10	6	9	7	9	9	13	14	2	4	15
9.	9	6	16	7	11	5	11	12	3	12	9	14	14	13	6	15	17	13	8	14
10.	6	10	19	3	8	7	10	7	8	10	8	12	14	13	9	8	15	5	8	17
<b>Grp.10</b>	<b>Salvation Army Band Male</b>																			
1.	5	3	13	13	12	13	13	11	7	6	7	8	7	9	8	12	11	13	8	5
2.	6	13	17	6	4	6	15	18	5	7	10	14	9	14	6	6	12	14	15	12
3.	5	10	16	4	7	4	15	8	5	11	7	17	5	15	11	8	15	9	15	7
4.	7	15	18	1	8	8	13	7	11	13	11	16	9	15	15	9	16	4	10	16
5.	4	7	17	7	8	13	10	9	10	4	12	6	14	18	5	17	17	15	15	12
6.	8	15	20	7	7	12	15	4	12	10	14	11	11	18	12	18	17	18	10	12
7.	8	7	7	7	7	13	13	7	0	7	2	8	7	11	12	12	15	15	10	5
8.	8	14	18	3	6	13	15	1	8	18	10	13	4	16	11	12	16	4	6	17
9.	4	17	10	5	8	8	16	10	9	13	5	18	6	7	7	4	11	10	8	8
10.	5	7	12	2	4	6	17	8	8	9	6	14	7	12	13	8	11	12	10	12

## P R F

Standard Scores, Means and Standard Deviations

Grp.		Ab				Ac				Af		
1.	58	9.6	2.99	48	11.9	2.33	44	14.6	3.57			
2.	53	7.9	2.02	52	13.0	2.16	44	14.4	1.96			
3.	52	7.3	3.47	53	13.4	3.27	50	16.2	2.35			
4.	54	8.1	2.56	52	13.0	3.02	43	14.3	2.06			
5.	56	7.6	2.88	48	11.9	1.91	47	14.0	2.79			
6.	55	7.0	3.53	54	14.2	3.39	46	13.5	3.78			
7.	58	8.2	3.08	50	12.8	4.44	47	14.2	4.87			
8.	52	6.0	1.82	49	12.3	2.26	49	13.7	3.40			
9.	54	6.5	3.27	48	11.4	3.34	48	14.5	3.92			
10.	52	6.0	1.63	46	10.8	4.64	49	14.8	4.13			
Grp.		Ag				Au				Ch		
1.	47	4.2	1.81	52	6.5	4.33	43	9.8	3.71			
2.	48	4.4	2.99	53	7.0	2.98	40	8.9	3.35			
3.	45	3.7	1.06	51	6.3	3.23	41	9.1	3.41			
4.	47	4.2	2.20	55	8.2	1.81	42	9.7	3.86			
5.	45	5.2	4.26	46	6.8	1.87	45	9.9	2.64			
6.	40	3.6	2.19	51	8.2	3.29	47	10.2	3.74			
7.	43	4.3	2.31	49	7.9	2.33	42	8.7	3.53			
8.	47	6.2	3.01	45	6.4	2.54	42	8.6	3.06			
9.	48	6.2	3.74	57	10.5	4.14	43	9.1	4.46			
10.	46	5.5	3.41	47	7.1	2.28	44	9.6	3.57			
Grp.		Cs				De				Do		
1.	57	13.1	4.01	49	6.4	2.76	48	7.0	3.65			
2.	56	12.7	2.95	53	7.7	3.71	49	7.6	4.33			
3.	58	13.3	3.13	52	7.7	2.50	50	8.0	3.13			
4.	56	12.8	2.30	46	5.3	2.54	47	6.4	3.81			
5.	53	11.4	3.95	47	7.3	3.74	45	6.3	5.58			
6.	55	12.7	2.16	45	6.6	3.10	46	8.6	3.69			
7.	55	12.6	4.74	48	7.6	3.37	44	7.9	2.69			
8.	52	11.0	3.16	49	8.0	3.68	47	9.8	5.18			
9.	50	10.5	3.78	52	9.0	2.62	42	6.6	3.47			
10.	60	14.2	1.99	50	8.3	4.47	44	7.5	3.50			

Grp.		En			Ex			Ha	
1.	50	9.9	3.51	41	6.1	2.56	54	12.2	4.89
2.	52	10.3	2.16	40	5.2	3.22	56	13.0	1.83
3.	56	12.1	2.33	48	8.9	4.36	56	13.2	4.05
4.	57	12.5	4.12	40	5.0	3.33	53	11.8	4.49
5.	48	9.9	3.11	43	7.4	5.13	60	11.8	3.26
6.	56	12.7	3.47	44	7.7	3.89	59	10.9	4.43
7.	53	11.4	4.79	48	9.5	2.84	59	11.2	4.50
8.	53	11.5	3.17	46	8.7	4.30	60	11.4	3.50
9.	55	12.0	2.75	43	7.5	3.57	57	9.3	3.86
10.	48	9.8	4.13	43	8.4	3.63	62	12.5	4.12

Grp.		Im			Nu			Or	
1.	49	9.7	3.65	47	14.5	2.72	54	12.6	4.74
2.	46	8.0	2.79	47	14.6	3.10	53	12.1	2.96
3.	49	9.3	3.71	51	15.4	2.80	52	11.4	3.98
4.	43	7.0	3.20	49	15.0	2.40	58	14.2	2.30
5.	48	8.5	2.84	50	12.7	3.83	44	7.6	2.88
6.	48	8.5	3.72	57	13.7	3.65	50	10.6	2.76
7.	49	8.9	4.01	52	13.0	1.89	50	10.4	5.40
8.	55	11.0	3.78	53	13.3	3.23	54	12.9	4.12
9.	56	11.3	3.46	48	12.1	3.48	47	9.1	4.95
10.	47	7.9	2.96	53	13.5	3.69	49	10.0	3.30

Grp.		Pl			Se			Sr	
1.	40	8.6	3.86	49	16.3	2.50	41	7.4	4.33
2.	36	6.4	2.07	45	15.0	3.23	46	9.6	2.32
3.	43	9.6	3.03	48	16.1	3.07	49	10.8	3.46
4.	42	9.2	3.50	46	15.3	2.83	42	8.2	3.53
5.	43	9.3	4.00	46	13.7	3.27	42	8.1	4.72
6.	43	9.6	2.46	51	15.5	2.37	41	7.9	2.96
7.	45	10.1	4.43	48	14.7	2.80	46	10.2	1.99
8.	49	11.5	2.27	54	16.4	2.41	42	8.4	4.43
9.	51	12.1	2.81	50	14.9	3.41	40	7.2	3.77
10.	47	10.6	4.50	47	14.1	2.56	49	11.4	4.68

Grp.		Su		Un		
1.	53	12.3	4.52	56	14.4	2.01
2.	47	9.6	2.07	45	10.8	1.69
3.	50	10.6	3.10	47	11.5	3.31
4.	49	10.1	3.03	46	11.2	4.42
5.	54	8.8	2.97	56	14.1	3.90
6.	53	8.3	4.22	53	13.2	2.78
7.	54	8.8	2.10	50	12.4	3.98
8.	56	9.5	2.95	45	10.6	3.66
9.	47	6.3	4.19	55	13.8	4.92
10.	59	10.7	3.23	46	10.6	4.22

Mean Totals

## N S Q

	Men	Women	All
T	42.50	49.87	46.18
I	9.45	12.32	10.88
F	10.67	11.87	11.27
E	11.82	13.90	12.86
A	10.20	11.77	10.98

## P R F

	Men	Women	All
Ab	7.20	8.22	7.71
Ac	12.80	12.82	12.81
Af	13.85	14.87	14.36
Ag	4.82	4.12	4.47
Au	7.32	7.00	7.16
Ch	9.35	9.37	9.36
Cs	11.92	12.97	12.44
De	7.37	6.77	7.07
Do	8.15	7.25	7.70
En	11.37	11.20	11.28
Ex	8.32	6.30	7.31
Ha	11.32	12.55	11.93
Im	9.22	8.50	8.86
Nu	13.17	14.87	14.02
Or	10.37	12.57	11.47
Pl	10.12	8.45	9.28
Se	15.07	15.67	15.37
Sr	8.65	9.00	8.82
Su	8.50	10.65	9.57
Un	12.57	11.97	12.27

Appendix TwoVARIMAX ROTATED FACTOR MATRIX

The five significant factors found, with the correlation of each subject's score to these factors; with means and standard deviations for each group.

Factor	1	2	3	4	5
1. Church Choir Female					
1.	0.699	0.373	0.268	0.443	0.084
2.	0.591	0.409	0.442	0.423	0.063
3.	0.766	0.211	0.305	0.437	0.213
4.	0.445	0.423	0.249	0.689	0.163
5.	0.658	0.532	0.141	0.364	0.296
6.	0.786	0.427	0.211	0.098	0.197
7.	0.792	0.319	0.221	0.341	0.177
8.	0.713	0.391	0.259	0.354	0.246
9.	0.666	0.534	0.079	0.329	0.344
10.	0.326	0.705	0.088	0.352	0.362
Mean	0.644	0.432	0.329	0.367	0.215
St.Dev.	0.152	0.134	0.159	0.193	0.100

2. Church Non-Music Female					
1.	0.765	0.393	0.350	0.214	0.194
2.	0.762	0.315	0.339	0.350	0.149
3.	0.637	0.474	0.341	0.256	0.247
4.	0.757	0.429	0.181	0.349	0.168
5.	0.755	0.325	0.231	0.324	0.302
6.	0.715	0.503	0.223	0.276	0.196
7.	0.774	0.268	0.203	0.329	0.386
8.	0.745	0.358	0.245	0.372	0.297
9.	0.754	0.379	0.226	0.371	0.257
10.	0.557	0.580	0.235	0.402	0.193
Mean	0.722	0.402	0.257	0.324	0.239
St.Dev.	0.070	0.095	0.062	0.059	0.073

Factor	1	2	3	4	5
<b>3. Non-Church Instrumental Female</b>					
1.	0.558	0.621	0.055	0.372	0.313
2.	0.848	0.201	0.357	0.187	0.145
3.	0.774	0.323	0.258	0.374	0.240
4.	0.570	0.520	0.391	0.405	0.159
5.	0.404	0.490	0.362	0.600	0.172
6.	0.629	0.470	0.361	0.263	0.029
7.	0.631	0.346	0.337	0.448	0.264
8.	0.743	0.399	0.354	0.316	0.156
9.	0.796	0.315	0.329	0.207	0.229
10.	0.511	0.468	0.409	0.427	0.267
Mean	0.646	0.415	0.321	0.360	0.197
SD	0.141	0.122	0.102	0.123	0.082

Factor	1	2	3	4	5
<b>4. Non-Church Non-Music Female</b>					
1.	0.563	0.585	0.379	0.247	0.263
2.	0.526	0.436	0.300	0.468	0.306
3.	0.797	0.359	0.164	0.287	0.230
4.	0.519	0.557	0.249	0.410	0.263
5.	0.713	0.204	0.183	0.387	0.440
6.	0.727	0.376	0.360	0.157	0.152
7.	0.821	0.379	0.161	0.283	0.170
8.	0.742	0.404	0.319	0.112	0.209
9.	0.709	0.477	0.168	0.307	0.224
10.	0.764	0.360	0.192	0.280	0.326
Mean	0.688	0.414	0.248	0.294	0.258
SD	0.111	0.109	0.086	0.109	0.084

Factor	1	2	3	4	5
<b>5. Church Choir Male</b>					
1.	0.694	0.504	0.144	0.349	0.229
2.	0.161	0.360	0.675	0.299	0.442
3.	0.415	0.509	0.377	0.414	0.395
4.	0.510	0.536	0.457	0.345	0.165
5.	0.771	0.372	0.181	0.358	0.191

6.	0.647	0.549	0.098	0.302	0.342
7.	0.755	0.478	0.087	0.309	0.256
8.	0.626	0.611	0.326	0.262	-0.024
9.	0.525	0.383	0.193	0.527	0.369
10.	0.792	0.369	0.080	0.380	0.174
Mean	0.590	0.467	0.262	0.354	0.254
SD	0.195	0.090	0.195	0.075	0.138

#### 6. Church Non-Music Male

1.	0.441	0.804	0.229	0.046	0.254
2.	0.601	0.411	0.346	0.519	0.157
3.	0.739	0.444	0.286	0.130	0.293
4.	0.801	0.246	0.313	0.251	0.286
5.	0.722	0.415	0.251	0.339	0.155
6.	0.578	0.544	0.375	0.150	0.284
7.	0.736	0.432	0.261	0.165	0.253
8.	0.444	0.626	0.549	0.187	-0.083
9.	0.526	0.673	0.235	0.201	0.216
10.	0.750	0.218	0.123	0.269	0.325
Mean	0.634	0.501	0.297	0.226	0.214
SD	0.133	0.161	0.110	0.131	0.119

#### 7. Non-Church Instrumental Male

1.	0.819	0.315	0.345	0.218	0.104
2.	0.684	0.434	0.184	0.170	0.392
3.	0.244	0.822	0.216	0.317	0.061
4.	0.500	0.478	0.331	0.433	0.067
5.	0.676	0.454	0.395	0.284	0.198
6.	0.874	0.236	0.292	0.113	0.200
7.	0.368	0.541	0.162	0.606	0.220
8.	0.298	0.413	0.497	0.392	0.165
9.	0.577	0.369	0.369	0.311	0.426
10.	0.518	0.398	0.244	0.416	0.463
Mean	0.556	0.447	0.303	0.326	0.229
SD	0.212	0.157	0.104	0.144	0.148

## 8. Non-Church Non-Music Male

1.	0.488	0.711	0.338	0.198	0.143
2.	0.716	0.362	0.202	0.400	0.290
3.	0.433	0.542	0.471	0.253	0.279
4.	0.641	0.356	0.468	0.265	0.242
5.	0.484	0.293	0.642	0.224	0.274
6.	0.697	0.430	0.313	0.304	0.306
7.	0.476	0.344	0.200	0.358	0.596
8.	0.296	0.130	0.841	0.110	0.091
9.	0.472	0.524	0.384	0.256	0.276
10.	0.695	0.353	0.352	0.207	0.239
Mean	0.540	0.406	0.421	0.257	0.265
SD	0.140	0.158	0.197	0.083	0.108

## 9. Pipe Band Male

1.	0.538	0.864	0.127	0.354	0.119
2.	0.563	0.675	0.253	0.190	0.214
3.	0.749	0.211	0.372	0.240	0.293
4.	0.417	0.645	0.305	0.256	0.390
5.	0.584	0.346	0.343	0.414	0.295
6.	0.522	0.646	0.147	0.069	0.422
7.	0.580	0.221	0.196	0.104	0.699
8.	0.598	0.600	0.248	0.089	0.329
9.	0.583	0.405	0.197	0.482	0.402
10.	0.571	0.570	0.287	0.382	0.112
Mean	0.520	0.518	0.248	0.258	0.327
SD	0.188	0.214	0.081	0.146	0.170

## 10. Salvation Army Band Male

1.	0.542	0.225	0.312	0.276	0.593
2.	0.679	0.262	0.354	0.437	0.250
3.	0.771	0.280	0.268	0.395	0.255
4.	0.675	0.478	0.382	0.204	0.102
5.	0.352	0.443	0.371	0.597	0.365

6.	0.358	0.401	0.499	0.482	0.217
7.	0.642	0.233	0.203	0.312	0.472
8.	0.665	0.556	0.227	0.294	0.145
9.	0.810	0.319	0.251	0.206	0.294
10.	0.785	0.256	0.326	0.342	0.232
<b>Mean</b>	0.628	0.345	0.319	0.355	0.293
<b>SD</b>	0.164	0.116	0.088	0.125	0.148

Appendix Three      FIRST ANALYSIS

Percentage of Variance

factor	%
1	82.5 (Communality)
2	3.5
3	2.1
4	1.9
5	1.5
6	1.2

Cumulative Percentage

factor	%
1	82.5
2	86.0
3	88.2
4	90.1
5	91.6
6	92.8

VARIMAX ROTATED FACTOR MATRIX

Percentage of Variance

factor	%
1	40.603
2	20.132
3	10.041
4	11.341
5	6.911

COMMUNALITY

- with Means and Standard Deviations of each Group  
of Ten Co-Variables (Subjects)

Ss        r

1. Church Choir Female

1.	0.914	
2.	0.922	
3.	0.961	M 0.940
4.	0.969	SD 0.027
5.	0.966	
6.	0.893	
7.	0.959	
8.	0.930	
9.	0.962	
10.	0.925	

2. Church Non-Music Female

1.	0.946	
2.	0.958	
3.	0.890	M 0.948
4.	0.957	SD 0.025
5.	0.934	
6.	0.966	
7.	0.969	
8.	0.971	
9.	0.968	
10.	0.926	

3. Non-Church Instrumental Female

1.	0.971	
2.	0.952	
3.	0.976	M 0.940
4.	0.941	SD 0.029
5.	0.925	
6.	0.895	
7.	0.923	
8.	0.968	
9.	0.953	
10.	0.901	

Ss      r

## 4. Non-Church Non-Music Female

1.	0.941	
2.	0.915	M 0.934
3.	0.949	SD 0.019
4.	0.916	
5.	0.937	
6.	0.904	
7.	0.960	
8.	0.931	
9.	0.932	
10.	0.940	

## 5. Church Choir Male

1.	0.949	
2.	0.899	M 0.936
3.	0.902	SD 0.028
4.	0.906	
5.	0.940	
6.	0.955	
7.	0.975	
8.	0.953	
9.	0.919	
10.	0.963	

## 6. Church Non-Music Male

1.	0.962	
2.	0.947	M 0.934
3.	0.932	SD 0.017
4.	0.946	
5.	0.923	
6.	0.917	
7.	0.919	
8.	0.953	
9.	0.909	
10.	0.935	

## 7. Non-Church Instrumental Male

1.	0.949	
2.	0.881	
3.	0.895	M 0.905
4.	0.822	SD 0.043
5.	0.941	
6.	0.971	
7.	0.888	
8.	0.927	
9.	0.898	
10.	0.878	

## 8. Non-Church Non-Music Male

1.	0.923	
2.	0.928	
3.	0.849	M 0.903
4.	0.929	SD 0.048
5.	0.860	
6.	0.958	
7.	0.910	
8.	0.831	
9.	0.868	
10.	0.970	

## 9. Pipe Band Male

1.	0.912	
2.	0.921	
3.	0.911	M 0.910
4.	0.912	SD 0.028
5.	0.839	
6.	0.914	
7.	0.943	
8.	0.912	
9.	0.937	
10.	0.903	

## 10. Salvation Army Band Male

1.	0.876	
2.	0.932	
3.	0.970	M 0.926
4.	0.940	SD 0.045
5.	0.947	
6.	0.890	
7.	0.830	
8.	0.948	
9.	0.957	
10.	0.962	

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