## Eric Hall



[^0]
## ACKNOWLEDGEMENTS

I would like to acknowledge a number of people who made an invaluable contribution to the work involved in the compilation of this thesis.

I am particulả̉ly indebted to Dr. Jacob Stattman who first introduced me to the techniques of guided fantasy during an extensive experiential training course in humanistic psychology.,

I would also like to thank Carol Hopkins for the hours of labour she provided in guiding the adolescent group through the procedures and checking the final manuscript,

Mick Youngman and Sue Davies provided valuable advice on statistics and computing.

Linda Wightman bore the painstaking task of typing the manuscript.

Finally I would like to thank the sixty-two subjects whose experiences are recorded in this thesis.

## CONTENTS

page
Acknowledgements(ii)
Contents(iii)
List of Diagrams ..... (iv)
List of Tables ..... (vi)
Abstract ..... (vii)
CHAPTER ONE: Introduction ..... 1
CHAPTER TWO: Problems of Definition ..... 15
CHAPTER THREE: Historical Background ..... 19
CHAPTER FOUR: Theoretical Considerations ..... 44
CHAPTER FIVE: Aims of the Studies ..... 58
CHAPTER SIX: Study 1 ..... 65
CHAPTER SEVEN: Study 2 ..... 102
CHAPTER EIGHT: Study 3 ..... 147
CHAPTER NINE: Critique, Conclusions, Implications and Applications ..... 172
Bibliography ..... 205
Appendix: Raw Data for Study $2(a)$ ..... 213
Raw Data for Study 2 (b) ..... 226
Raw Data for Study 3 ..... 256

## LIST OF DIAGRAMS

page

1. Rearranged Matrix for Subject A ..... 79
2. Rearranged Matrix for Subject B ..... 80
3. Rearranged Matrix for Subject C ..... 81
4. Rearranged Matrix for Subject D ..... 82
5. Rearranged Matrix for Subject E ..... 83
6. Rearranged Matrix for Subject $F$ ..... 8k
7. Rearranged Matrix for Subject G ..... 85
8. Rearranged Matrix for Subject $H$ ..... 86
9. Rearranged Matrix for Subject I ..... 87
10. Rearranged Matrix for Subject J ..... 88
11. Rearranged Matrix for Subject $K$ ..... 89
12. Rearranged Matrix for Subject L ..... 90
13. Composite Diagram based on the Factor Loadings of Components One and Two from the Principal Components Analysis of the Group Data from Study $2(a)$ ..... 115
14. Composite Diagram based on the Factor Loadings of Components One and Two for Subject C.H. from Study 2 (a) ..... 127
15. Composite Diagram based on the Factor Loadings of Components One and Two for Subject S.L. from Study $2(a)$ ..... 128
16. Composite Diagram based on the Factor Loadings of Components One and Two for Subject M.K. from Study $2(a)$ ..... 129
17. Composite Diagram based on the Factor Loadings of Components One and Three from the Principal Components Analysis of the Group Data from Study $2(b)$ ..... 134
18. Superimposed Composite Diagrams for the Elements of Study $2(a)$ based on the Factor Loadings for Components One and Two, and the Elements of Study $2(\mathrm{~b})$ based on the Factor Loadings for Components One and Three. ..... 138
19. Composite Diagram based on the Factor Loadings of Components One and Two for Subject K.B. from Study 2(b) 142
page
20. Composite Diagram based on the Factor Loadings of Components One and Two for Subject L.D, from Study 2 (b) ..... 142
21. Composite Diagram based on the Factor Loadings of Components One and Two for Subject G.L. from Study 2 (b) ..... 143
22. Composite Diagram based on the Factor Loadings of Components One and Two for Subject J.M. from Study 3 ..... 151
23. Composite Diagram based on the Factor Loadings of Components One and Two for Subject R.B. from Study 3 ..... 152
24. Composite Diagram based on the Factor Loadings of
Components One and Two for Subject J. P. from Study ..... 3153
25. Composite Diagram based on the Factor Loadings of Components One and Two for Subject S.B. from Study 3 ..... 154
26. Composite Diagram based on the Factor Loadings of Components One and Two for Subject J.B. from Study ..... 3155
27. Composite Diagram based on the Factor Loadings of Components One and Two for Subject M.C. from Study 3156
28. Composite Diagram based on the Factor Loadings of Components One and Two for Subject C.J. from Study 3 ..... 157
29. Composite Diagram based on the Factor Loadings of Components One and Two for Subject A.M. from Study ..... 158

## LIST OF TABLES

page

1. Factor Loadings for Components One, Two and Three from the Principal Components Analysis of the Group Data from Study 2 (a) ..... 116
2. Factor Loadings for Components Three, Four and Five from the Principal Components Analysis of the Group Data from Study 2 (a) ..... 117
3. Inter-Element Correlations for the Elements from Study 2 (a) ..... 123
4. Factor Loadings for the First Three Components from the Principal Components Analysis of the Group Data from Study 2 (b) ..... 135

## ABSTRACT

The focus of this study is on guided fantasy; a technique which is increasingly used in educational and psychotherapeutic situations. The potential coherence of guided fantasy is examined by establishing the degree to which the elements of various guided fantasy experiences are perceived as being similar. Two forms of guided fantasy are examined:-
(a) A situation in which an individual subject is relaxed, with closed eyes and he is given a theme to begin the fantasy journey. The subject describes the fantasy aloud and the experimenter acts as a guide, using a non-directive mode of intervention.
(b) A group form of guided fantasy in which the subjects are relaxed, with closed eyes, and a script of the fantasy journey, with long pauses, is read to the group.

The elements of fantasy were evaluated using the subjects' personal constructs, except in the case on one group study where Cattell.'s sixteen personality factors were used.

All of the individual subjects, the two group analyses and the individuals within the groups produced significant organizations of fantasy experience. This provides a basis for discussion of guided fantasy in terms of its meaningful structure. This is relevant to the consideration of interpretation, the possibility of sub-personalities and the ideas of overdetermination and condensation.

## CHAPTER ONE

## INTRODUCTION

This study examines fantasy and its underlying structure. Fantasy is a term which is used to describe a variety of different internal experiences. In this study, attention is directed entirely to a particular technique for exploring fantasy. This is given a variety of different names in the literature, such as guided fantasy (Assagioli 1965), directed daydream (Watkins 1976), guided affective imagery (Leuner 1969) and active imagination (Jung 1961). The term 'guided fantasy' will be used as a general term in this text.

There are slight variations in these different approaches to exploring fantasy, but the procedure is basically the same. The perspn who is to experience the fantasy is asked to relax, with his eyes closed. Tuen he is given a theme or an image as a starting point, from which he is encouraged to permit the fantasy to develop and to attend to it in a deliberate, conscious manner. This tends to produce an experience that is qualitatively different from a daydream. Usually, the daydreamer is not aware of the beginning of a daydream and tends to get lost in the series of images that develop. Often the daydream provides a distraction from a mundane and monotonous task and the person 'snaps out of it' when he realizes what he is doing.

In all of the forms of guided fantasy, apart from the 'active imagination' of Jung, the person is assisted on the fantasy journey by a guide. The fantasizer is encouraged to talk out his fantasy aloud, in as much detail as he can. The function of the guide is to help the other person to maintain
this conscious awareness of what is going on and to help him through the difficult parts. This is done in as neutral a way as possible, so that the guide imposes himself minimally on the person's fantasy. How best to achieve this is described later.

It is claimed that this sort of experience can have a therapeutic and educational effect, although the techniques are not well known in current established therapeutic and educational situations. They are used in a variety of radical therapeutic procedures, such as encounter groups, gestalt groups, psychosynthesis and a variety of other activities with interchangeable names. Leaders of these groups claim that their activities also promote personal growth. Modified forms of these techniques have probably been used for decades in'schools, as a stimulus for creative writing.

Experiencing a guided fantasy seems to proc'uce an altercd state of consciousness which is difficult to understand without undergoing the experience. This could create a problem for the naive reader and to partly solve this problem, the typescript of a short ex:mple will be given. Unfortunately, a typescript of a guided fantasy completely removes the emotional quality of the experience. In many cases, the person undergoing the fantasy journey goes through extremes of emotion and the fantasy has a powerful impact which may last for several days. The fantasy 'trip' may last as much as an hour, although often the subject feels that it has only lasted a few minutes. Some individuals have strong physical reactions that accompany the fantasy. Some subjects may claim that they have little or no imagination and yet in a few moments, they are lost in extended
fantasy, rich in imagery.

The subject of the following example was a twenty nine year old man, with no previous experience of guided fantasy. He was seated in a comfortable chair, asked to take three deep breaths in order to. relax, and then guided in the following manner:-

WRITER: The theme I want you to use for this fantasy is that - of climbing a mountain. It doesn't have to be a mountain you know, just take the first image that comes of being at the foot of a mountain and describe what you can see.

VOLUNTEER: Er, immediately Switzerland and probably the Eiger, umm, (PAUSE) well from one of the lower valleys. A big chunk of rock, which has snow on it from about half way up goes to two, two, two peaks, one slightly higher than the other. Er, it seems a, seems another - world. That'r the mountain I immediately see.

W: How do you feel about going up it?

V: Well, (LAUGH) er, umm, it appeals to me, I er, it's warm; it's warm and sort of comfortable on the lower slopes, and even er, even say, a third of the way up it but after that it changes quite rapidly. (COUGH) I don't know about going to the top; I think that would be quite er, well quite er, difficult.

W: Well have a go and just describe what happens.

V: (LONG PAUSE) Yes, O.K. yes. At the moment all I can see is er, sort of alpine flowers in the lower slopes and it all looks, it's very warm there, and I sort of get sticky walking through the, the summer heat. I quite like that. Well, you can go upwards, it's always going upwards. (LONG PAUSE).
$\underline{W}$ : What's happening now?

V: Er, I'm trying to imagine the change of scenery, but er.

W: Just go along with what happens . . . in imagination

V: Well, I'm on a track, it's quite, it's quite well-used, it's got a lot of rocks on it now, and the er, the mountain, you can't see much of the mountain at that, you can't see the summit at all from this point. It er, it's beyond the, it's beyond the tup of the first ridge I can see, some way over the back of us. We've come so close to it you can't see the top and er, the stones are pretty loose, er, it's, it's not too bad going. The, the weather's still quite warm, the vegetation's gone, you can look behind you now and there's a, there's quite a slope away at the back of you, right down to the valley. It seems you've come a hell of a long way but in actual fact you haven't got very far at all, and it's all before you (PAUSE). I can feel the calf muscles from the, from the walking, and the boots are so stiff you've gotta use the calves quite a lot. (LONG PAUSE) Come over the top of the
first ridge you can see the, you still can't see the summit but you can see most of the way up the mountain there, it looks pretty er, (PAUSE) imposing (PAUSE). I haven't got, I haven't got any climbing equipment with me and I realise I'm going to have to climb it. There's no way I'm going to be able to continue to walk shortly. The path's beginning to run out (PAUSE). All right now we've got, I've got climbing equipment, I've given it to myself. Crampons, ice axe, ropes. (LONG PAUSE)
$\underline{W}$ : Even though it might seem strange, see if you can become the mountain. See what it's like to be the mountain and describe yourself: I am the mountain and . , •

V: Right, I am the mountain (LONG PAUSE)

W: What are you like mountain?

V: Most solid. High (PAUSE) surrounded by cloud, snow and all sorts of things I like to come onto me. Every now and again people try to climb up me, quite a few are successful these days, they know more about me, but nevertheless, I mean, there's still quite a few who don't succeed. Far more don't succeed than do.
$\underline{W}$; What do you think of Tony down there?

V: Umm, don't know yet he hasn't come far enough up.
$\underline{W}$ : See if you can say something to Tony. Tony . . .

V: (PAUSE) Umm, Tony have you climbed mountains before? I mean once you, once you meet the snow line on this one it's very difficult and you're all by yourself. Nobody climbs me by myself. I don't, I don't imagine how you're going to try and go beyond the snow line all by yourself.
$\underline{W}$ : Be Tony and reply: Mountain . . . Anything that comes into your head.

V: I don't think it's a matter of me being by myself, I just have to climb you, whether I'm by myself or with people doesn't matter.
$\underline{W}$ : Be the mountain and reply. Tony , , .

V: But you're by yourself now and you're climbing me, What are you going to do (PAUSE)
$\underline{W}:$ O.K. be Tony and just carry on on your journey.

V: (SHORT PAUSE) Now I'm, I'm walking on top of the snow now. It's, it's quite firm. You can sink a few inches into it but it's not difficult (PAUSE) I cam see the start of the walls up ahead of me, it's still, unm, it's still quite warm: it's not like it was in the valley, it's different, the warmth of the exertion, and I have proper equipment, I'm not too bothered about that but I'm worried about the time, the daytime (PAUSE). It.'s the climbing that worries me now, I'm up to the face, I'm going to start climbing up (PAUSE) I can't, I don't think I can do it on my own. If I fall I've had it.

W: Go on and see what happens.

V: (SHORT PAUSE) Umm, I put a crampon into er, into the ice and I'm sort of standing a foot off the, off the wall just to see how it holds me. It holds me O.K. But it's the, it's the feeling of being pressed up against the, the surface of the wall. I realise I don't have to do that I can step back. I can press myself back as long as the crampons are there. I kick it again a couple of steps up. That's alright. If I do that it's no sweat because I'm only a couple of feet off the, off the bottom. It's when I'm 50 foot, 100 foot it would be worrying. I don't like heights that much, not sheer ones. Now I kick it; start to climb. Umm . . I've gone so far and I, er find it er, I've almost gone beyond the point of going back. If I fall now I'm a gonner. Nothing aatters if I'm another thousand foot up. (LONG PAUSE) I'm still climbing (PAUSE) I begin to think about the, the height (SLIGHT PAUSE) and it just seems sheer the wall. I've changes, I've changed the wall is a crevice, I can rest there; I get in there (PAUSE) I don't know whether to go back down or carry on up the mountain. Er, I've got to go on now. I'm very worried about it but I know I'll have to go on, I mean that's, $I$ don't really have am option. (PAUSE)
$\underline{W}$ : What's it like around you now?

V: It's er, (LONG PAUSE) I feel very high up, well I am very high up; even though the valley's right below me it's quite cold . . . rock, ice. I think how warm it is in the valley and to be four hours away amd I could be in the heat (SLIGHT PAUSE) I end up in this place. (PAUSE)

W: How do you feel about going on?

V: I think it's important.

W: What's important about it?

V: Because I'm frightened of going on.

W: And what's frightening?

V: Well, the possibility of falling or not falling and going back , , that's probably more frightening or just as frightening as, as falling and dying. It's umm, it's always there, I mean, the, the . . . well to do it. $\Psi=h, I$ mean, it'd be something to do, because it's difficult and because there's umm, because you're frightened to be.
$\underline{W}$ : See if you can go on up.

V: (COUGH) (LONG PAUSE) I've got the impression this is the hard part of the mountain I'm on now (PAUSE) Er, if you can get over this part it'll, it'll be easier towards the summit (LONG PAUSE) My legs are getting stiff at the back the calves beginning to feel the strain - continue to take a lot of weight on my legs.

I don't like that I think they may start' shaking, if they get cramp or something. Actually I'm, I'm scared about it. I knock in some pegs and hold myself off for a time (PAUSE) Everything's all right, I mean if the weather stays fine I'll not have any problems, it's only when the weather goes it's really dangerous. That's what I tell myself anyway. Maybe I can go on. I have impressịons of running up it now . .. I'm just striding up it,
$\underline{W}$ : Is that what you're doing?

V: Why not?
$\underline{W}$ : Just go along with that.

V: Yes, I've been on it long enough. It's no longer fearful. All I have to do is have the confidence of continuing. I mean, this step is the same as a thousand other steps. (SLIGHT PAUSE) You don't fall. (PAUSE) I've reached the, I've reached the umm, start of the slope of the summit . . er . , . it's very, very bright and it's all, it's all snow. It's quite crisp.
$\underline{W}$ : Be the snow and see what that's like. I am the snow and I . . .

V: And I, have lain here for quite a time compacting. I'm completely unbroken, but now somebody's walking on me (PAUSE) .
$\underline{W}$ : What does it feel like to be the snow?

V: Well, totally unmoving, it's just like a, I feel like a structure, a tense structure which slowly condenses; and changes ever sc imperceptively. I like it, I like. it on this, on this mountain like where I am, I mean, I'm usually in the sun, I shine very white only I stayed hard. Every now and again there's winds whip amongst me. And the temperature is very cold, I like it like that when I'm in the bright,
$\underline{W}$ : Be the wind and see what that's like, I am the wind and I . . .

V: Well I career through these mountains,
$\underline{W}$ : What does it feel like to be the wind?

V: Well it's nice being the wind (SHORT PAUSE) it's in everywhere, $\{$ completely encircle everything. Brush against everything, amd I continue, and I coitinue, and I continue
$\underline{W}$ : See if you've got anything to say to the snow. Snow . .

V: I will make you hard, I will blow against you and pile you amd make you hard.
$\underline{W}$ : Be the snow and reply. Wind . . .

V: Wind I like being hard, I like you to blow against me. (PAUSE) Stiffens me and toughens me. Forms me to the mountain. And it blows, keeps blowing cold up here, very cold from all the mountains you've pressed against.
$\underline{W}$ : Be the wind amd talk back to the snow. Snow . . .

V: Yes, yes I can pick up cold from you, I cam brush against you amd I can be ice cold, I can blow up here high, high above the ground, I can swoop down different places carrying all your cold. I can change as I go on, I can pick up other things; I can pick up heat and slowly change but now I just want to be cold because cold is the only thing left, it's right for me to be up here.
$\underline{W}$ : Be the snow and reply. Wind , . , whatever comes into your head,
$\underline{V}$ : Wind (PAUSE) (LAUGH) I thought there , ,

W: What was the thought?

V: Er, I was going iu say, "Wind I love you", but it, I was too embarrassed . . .

W: What was embarrassing?

V: To say, "I love you".
$\underline{W}$ : O.K. be Tony again and see what you think about all that.

V: (LONG PAUSE) I thought it, I thought it was hard (PAUSE) I took such a long time to recognise (PAUSE) a feeling of love, or what I was trying to say was love (PAUSE) at the end of it. I was sort of caught out almost in a way, I'm still embarrassed about it now, I suppose that's what it was.

W: O.K, stay with being Tony and carry on up the mountain.

V: (PAUSE) I walk up the mountain it, it's very easy now, it's in snow (PAUSE) I just tramp over it. I'm dark I feel dark against it. (PAUSE) It's very, very bright. Now I reach the top, I've not looked around, I don't wamna look around at the moment, ' I wamna wait till I get to the top before I stand there and look. So I reach the top - it's done I Now it doesn't really matter whether I fall, (PAUSE)
$\underline{W}$ : What can you see?

V: Other mountains, just great bi,g chasms, blue, blue rocks, ice, sunlight, shadows, dry patches, peaks everywhere; mass of peaks, all slightly below where I am.

W: And how do you feel about being at the top?

V; (GROAN) I feel wonderful about being at the top (PAUSE) I feel pretty small, but wonderful.
$\underline{W}: ~ O . K$. when it's right for you, come out of the fantasy.

Another way for the reader himself to experience the quality of guided famtasy is to sit, relaxed and with eyes closed, in a comfortable chair, having persuaded a friend to slowly read one or more of the scripts used in study $2(b)$. Using a script does not permit the free flow of fantasy obtained by using the technique described above. It is however, a technique which is used and both approaches are used in the studies that are to be described. $\backslash$

It is obvious from the example given above, that guided fantasy is not the normal subject matter of erperimental psychology. Indeed, until recently, it would not be considered am appropriate area for investigation. Now that imagery has returned from its ostracism (Holt 1964) more attention is being paid to visual representation and the part that it plays in internal processes. Much of this work, however, relates to the influence of imagery on cognitive processes such as thinking and problem solving (Pavio 1971)// and until the work of Singer (1974) the more fantastic aspects of internal processes seem to have been ignored by more rigorous psychological investigation.

This neglect could be due to the possibility that many experimental psychologists are not consiciously aware of the workings of fantasy. This is suggested by Galton's (1880) early work on the imagery of scientists. Many of his subjects denied the experience of visual imagery. Singer (1976! reports am usually vivid visual imagination in himself, throughout his life and this may explain the direction of his research activities.

Whatever the nature amd status of the fantasy elements of thought processes, most people report a considerable amount of experience that could be described as famtasy. The surveys described by Singer and Antrobus (1963) and in Singer (1966) imply that daydreaming occupies a high percentage of the waking day of most people and also occurs with a surprising frequency when individuals are performing tasks that require a high degree of concentration. Gordon (1972) suggests that we all live in a fantasy world of our own, much of wnich we are not aware of and certainly rarely receives our direct attention.

The series of short studies reported in this thesis focus on guided fantasy, either in the form of the verbatim report given above or using a scripted form which is read to the subject. The content of the fantasies, namely those parts of , the famtasy that are looked at in detail, will be examined to see if there is an orderliness in the evaluation of seemingly disparate images that are reported over a period of time.

CHAPTER TWO

## PROBLEMS OF DEFINITION

All of the aspects of fantasy involved in this study are represented in some form of visual imagery which is reported verbally by the person who is experiencing the fantasy.

Since this is an internal process that can only be experienced by the person indulging in the fantasy, it is difficult to provide am adequate general definition of the process that is being studied.

A recent comprehensive definition of imagery is given by Richardson (1969) in which he suggests that both external experience and internal stimulation cam play a part in the production of imagery.

> "Mental imagery refers to (1) all those quasisensory or quasi-perceptual experiences of which (2) we are self consciously aware, and which (3) exist for us in the absence of those stimulus conditions that are known to produce their genuine sensory or perceptual counterparts, and which (4)may be expected to have different consequences from their sensory or perceptual counterparts." pp. $2-3$

He uses this definition to cover a variety of activities; after imagery, eidetic imagery, memory imagery and imagination imagery. None of these categories would involve fantasy in the context that it is used in this study. Even imagination imagery is limited to hypnagogic imagery, perceptual isolation imagery, photic stimulation imagery, pulse current imagery, sleep deprivation imagery and meditation imagery. In these categories, the subject is a passive recipient of the images and in some cases, the subject is unable to control or stop the production of images.

The experience of guided fantasy, however, still fits the broader definition. Quasi-sensory and quasi-perceptual experiences are involved, as the subject has an experience which is 'as if he is seeing something. The person is self-consciously aware of what is going on and is, indeed, reporting it verbally. There is no immediately external experience which is being described, although some subjects use real people, places and events as elements of their fantasy journeys. Also the fantasy experience is usually reported as being different from similar 'real-life' experiences.

The experience is made more complicated by the process of talking through the fantasy and taking part in conversations within the fantasy. This necessarily involves the sensoryperceptual experiences normally associated with talking.

An early distinction made between imagery and normal sensory experience was to suggest that images were more faint than sensory experiences. Hume (1809) suggested that they had less 'force and vivacity' than normal 'sensations, passions and emotions'. This idea was taken up by many later writers.

This distinction, however, has been brought into question by Perky's experiments (1910), more recently repeated by Segal and Nathan (1964), which showed that several subjects failed to distinguish between an object they were asked to imagine and a picture of the same object projected onto a screen. This would suggest that the boundary between fantasy and reality is not as clear as most of us would like to think.

Another problem of definition is the view that imagery is neither a suitable subject for empirical investigation nor even a topic that can be talked about in a meaningful way. The
development of behaviourism produced a period during which internal processes were ignored because they could not be operationally defined. The positivist trend in philosophy developed at the same time. Ryle (1955) makes out a case that, in being unobservable, mental images can neither be proved to exist or not to exist.

More recent trends in philosophy, however, tend to accept the importance of unobservables. Hannay (1971) points out that the positivist argument denies the existence of hallucinations and dreams amd goes on to suggest that mental images are sensations that have the look of what is imagined, rather than of something that is inwardly perceived. Certainly the person who is experiencing the image is doing something and this raises the question as to whether a process can be examined without being able to observe the material involved in the process.

MacIntyre (1958) points out that to reject unobservables in such a wholesale way is ". . , too a priori in its framing of criteria by which concepts were to be judged legitimate or the reverse; . . .". This is certainly not the nature of scientific theorizing, in which unobservables play an important and necessary part in the framing of hypotheses. The development of modern physics depended a great deal on the use of unobservable concepts such as the electron to help the development of experimental work.

The objection regarding unobservable phenomena could also be made concerning the existence of attitudes based on the responses to questionnaires and interviews. In the same way that attitudes can be confirmed by observable behaviour, so too, reports of imagery can be shown to relate meaningfully to an individual's total life situation.

Since imagery is reported as an almost universal phenomena, apart from Galton's (1880) scientists and some contemporary scientists, the assumption will be made that the reports of imagery reflect processes which play an important part in human experience and therefore justify psychological investigation.

## CHAPTER THREE

## HISTORICAL BACKGROUND

This review of the literature will relate to the development of the use of guided fantasy. It will begin with a brief summary of the ongoing work on imagery as reflected in experimental psychology that developed for an English speaking readership. It will then go back over the ground showing the considerable interest in imaginal and fantasy experiences which developed from clinical work. Much of this relates to procedures that could be described as guided fantasy.

A consideration of aspects of imagery has always played a part in the argument of the metaphysical philosophers. As psychology grew out of philosophy through the work of Wundt and Fechner in the 19th century, the early psychological studies of imagery were conducted using the process of introspection, culminating in the work of Tichener at the turn of the century.

Tichener is reported to have had vivid visual imagery and he argued that all thinking involved forms of visual and auditory imagery. This was opposed by the Wurzburg school in Germany, led by Kulpe and Ach, who found that the reports of imagery from subjects who were working on simple problems were inadequate to explain how the problems were solved. From this they argued that it was possible to have imageless thought.

Studies which stand out during this period include those of Galton (1883) in which he demonstrated the range of vividness of imagery by asking subjects to summon up an image of their breakfast table. Again, in a survey of the imagery of scientists,
artists, schoolboys and statesmen, Galton (1883) demonstrated a paucity of imagery among scientists and vivid, strong imagery among artists. The statement from one of Galton's scientists reflects the position of some contemporary analytical philosophers.
". . . It is really only a figure of speech that I can describe my recollection of a 'mental image' which I can see with the mind's eye."

The study by Perky (1910) described above came from
Tichener's laboratory, but still involved reasonable experimental conditions. Similarly, Shaub (1911) demonstrated that some subjects found it difficult to separate auditory imagery from real sounds.

It is understandable that the period of introspectionism produced considerable discussion of imagery, as it involved the study of mental content. Following the development of behaviourism in psychology, with its insistence on objective operational methods, mentalistic concepts such as imagery fell out of favour as appropriate areas of study.

This produced a virtual eclipse in the study of imagery in English speaking psychology for a considerable period. There were exceptions, such as the work of Pear (1937). Also, the work of Jeansch (1930) on eidetic imagery was well known.

In the fifties, interest in imagery began to revive. Roe (1951) examined differences in the imagery of different kinds of scientists. Physiological research demonstrated that imagery could not be ignored. Differences in E.E.G. recordings are thought to reflect qualitative differences in imagery. Short (1953) reported that subjects with persistent alpha, that was hard to abolish, tended to be verbal imagers, whereas normally
responsive alpha reflected a predominance of visual imagery. A lack of alpha was associated with reports of vivid powers of visualization.

The results of the work of Penfield and his associates (Penfield and Roberts 1959) were extremely dramatic and imply a cortical localization for the revival of memory imagery. Epileptic patients undergoing brain surgery under local anaesthesia volunteered to have their exposed brains explored electrically. Many patients reported the re-experience of previous events as if they were being relived. These patients maintained an awareness of current reality while this was going on. The experiences were predominantly visual, but often involved other sensory modalities.

This revival was formally heralded in the key article by Holt (1964), 'Imagery: the Return of the Ostracized'. Holt points out that the study of imagery had to be developed because of the practical problems presented by long distance drivers, arctic explorers, astronauts amd individuals involved in continuous tasks that involved elements of sensory deprivation. In these situations, unwanted imagery and hallucinations intrude and interfere with the task. These intrusions cannot be ignored because of academic objections based on methodological arguments.

The return has been established by a series of formal textbooks reviewing aspects of research into imaginal processes. This was anticipated by McKeller (1957) in a book with an emphasis on thinking, but which goes into aspects of imagery in considerable detail.

This was followed by Singer's (1966) review of research into daydreaming, which suggests that daydreaming occurs most

```
of the time, with most people and even intrudes into complex directed mental activity. Richardson (1969) reviews research into a variety of forms of imagery; after imagery, eidetic imagery, memory imagery and imagination imagery. Horowitz (1970) provides a scholarly review of the role of imagery in pathological thought, particularly unbidden images, which intrude into consciousness against the will of the patient. Klinger (1971) focuses particularly on fantasy, with an emphasis on play and the Thematic Apperception Test.
Pavio (1971) and Segal (1971) report research that reflects
``` the growing recognition that imagery inevitably plays an important part in the cognitive processes of most people.

None of the texts mentioned in the last two paragraphs include any discussion of guided famtasy, or even acknowledge its existence. Singer (1974) in his 'Imagery and Daydream Methods in Psychotherapy amd Behaviour Modification' presents the first formal and academic analysis of these processes to an English speaking audience, apart from some isolated journal articles. This book was followed by Watkin's (1976) superb integration of literary and psychological approaches to what she calls 'Waking Dreams'. Singer (1976) presents a shorter and more popularized account.

This is the picture that is drawn from the academic literature on experimental psychology, showing a growing interest in imagery, but with only isolated attempts to examine aspects of imagery such as daydreaming and fantasy. Guided fantasy would seem to have been ignored.

The writer now proposes to go back to the beginning again, to present a parallel review of the historical background which seems to have had little contact with the development described in the previous part of this section. Most of the work that is reviewed is written by workers in the clinical field. A clinician cannot ignore the fantasies, delusions, hallucinations and daydreams of his patients, because they often play an important part in the problem that is being treated. Current fashions in experimental research become less important when faced with real. problems that urgently require attention.

The revival of romanticism in the \(19 t h\) century produced a renewed interest in the imagination and the creative nature of the unconscious. This was partly inspired by the dramatic results of the earlier work on hypnotism, particularly by Mesmer (1734-1815), using what he called animal magnetism and later by Charcot (1825-1893) at the Salpêtrière hospital. (See Ellenberger, 1970) Under a magnetic sleep, several patients appeared to change personality, as if a new character had emerged, which had am autonomy of its own. This new personality often showed finer qualities than the patient displayed in his normal life. This relates to the problem of multiple personality which is discussed later.

Early psychologists such as James (1885) and Myers (1885-7) investigated the 'automatic writing' of mediums and saw this as a way of examining unconscious processes. Myers wrote about the 'mythopoetic function' of the subliminal self, which he used to describe the unconscious tendency to weave fantasies. This term mythopoetic has been taken up by Watkins (1976) as a descriptive term for the process behind the generation

Ellenberger (1970) discusses the work of Theodor Flournoy (1854-1920) and Pierre Janet (1859-1947). Flournoy, who was a student of Wundt, examined dreams, daydreaming, somnambolism, hypnosis, possession, delusion and mediums. He came to similar conclusions as Myers, that these phenomena were manifestations of the creative function of the unconscious and that they could produce material that implied a wisdom and intelligence that was not normally displayed by that person; as well as regressive and bizarre thoughts.

Janet combined hypnosis with spiritist procedures such as automatic writing and crystal gazing to generate images from his patient's unconscious. He related these images and ideas to split-off parts of the personality which were not included in the patient's conscious experience. Having brought this material into consciousness, Janet attempted to change or even eradicate the unconscious material. Most of Janet's patients quoted by Ellenberger had been diagnosed as hysterical and experienced internal dramas, similar to dreams, which could be elicited and shared with the doctor, through a lowering of conscious attention or 'abaissement du niveau mental'.

Alfred Binet (1857-1911) was a contemporary of Janet and worked on similar lines. He developed a technique of helping his patients talk to the visual images that they produced and related this material to the expression of unconscious subpersonalities.

Psychoanalysis grew out of Freud's early experience with hypnosis, which, as has been suggested above, is related to imagery in complex ways. He later turned to the direct use of imagery in the case of Elizabeth Von R. (1955), who was not a
good subject for hypnosis. He pressed his hand on the patient's head to generate images related to the patient's problems. In the case of Lucy R. he offered the suggestion that images would appear when the pressure on the head was removed. He was soon to move from the direct use of imagery techniques to a more extended type of free association. This involved keeping the eyes open, and must have diminished the possible use of imagery.

Obviously, visual and auditory images still played an important part in the examination of dreams and fantasies and the evocation of early memories. Indeed, many reports of early memories were often shown to be fantasy experience such as the imagined seductions of several women by their fathers. /' Later psychoanalysts who focussed more directly on the use of imagery in the emalytic situation include Varendonck (1921), Silberer (1951), Clark (1925), Kubie (1943) and Reyher (1963). Reyher developed images much in the manner of Jung's 'active imagination' (see later), but worked with the images using the assumptions of a Freudian psychoanalytic approach to the symbolic nature of the imagery.
C. J. Jung (1875-1961) has probably had more influence than any other writer in developing an awareness of the importance of imaginal processes for understanding unconscious processes. After his breach with Freud, Jung went through a period of intense personal analysis. This included considerable experimentation with spontaneous activities, such as building sand castles, carving stone, painting mandalas and pictures, generating visual images and holding conversations with persons appearing in the imagination. / Jung (1961) describes these activities as 'confrontations with the unconscious'.
```

    /Jung (1960) argued that the process of free-association is
    often used by the patient as a means to avoid important elements
of dreams and fantasies. He stressed the importance of staying
with the feelings associated with the images so that they can
be properly understood;/

> "Fantasy must be allowed the freest possible play, yet not in a manner that it leaves the orbit of the object, namely the affect, by setting off a kind of 'chain reaction' association process."
Jung (1960) argued that civilized life, which seems to place a high value on conscious rational directed thought processes, encourages the individual to be split off from or unaware of unconscious processes. However, the energy associated with the emotional aspects of these unconscious processes cam easily break out, often with undesirable consequences. He suggests that by working with amd elaborating these verbal elements, progress can be made towards the unification of conscious and unconscious. He calls this 'the transcendent function'.

```

Jung encouraged his patients to use some of the techniques that he had used with himself, such as painting and drawing, in order to explore the imagination. Also, based on his own experience of examining his own unconscious, he developed the technique of 'active imagination*. This was done by the patient away from the consulting room. /He was asked to re-experience aspects of dreams and fantasies. He was asked to encounter and confront elements of dreauns amd fantasies, engage them in conversations and develop them in imagination./ This was said to permit experience of the unconscious while awake./This approach is similar to the techniques of Gestalt therapy,/which are used in the studies to be described later.

The material produced by the patient is dealt with in a non-interpretative manner. He (Jung 1961) would ask questions like, "What occurs to you in connection with that?", "How do you mean that?", "Where does that come from?", "How do you think about it?". (Again, a mode of questioning similar to that of Gestalt therapy.) The interpretations seemed to emerge of their own accord from the patients' replies and associations.

Another aspect of Jung's (1954) view of dream and fantasy elements is that they have an important creative function for the individual. This contrasts with the impression given by Freud that the unconscious is merely a sink for experiences, feelings, thoughts and infantile wishes that have traumatic and unpleasant associations.

He suggests (1961), that by looking at and concentrating on the images, they become pregnant amd filled with power, implying a purposive as well as a repressive function of the unconscious. He goes on to suggest that part of the creative function of the psyche is to provide a dynamic psychic. equilibrium for underdeveloped or missing parts of the personality. These other parts of the personality may represent aspects of the personality which are no longer a part of the individual's awareness, or they may represent Jung's (1959) 'archetypes', which have developed in man's racial history.
? Jung's work and ideas are probably the most important influence on later developments in the use of fantasy and imagery in therapeutic situations. / Another important writer, who was also influenced by Jung, was the poet and philosopher of science, Gaston Bachelard (1964, 1969, 1971)./He stressed
that human imagination has influence that goes beyond sense experience and makes a unique contribution to man's interpretation of his phenomenal world and hence, his individual perception of reality./ Bachelard uses the term 'valorization' to describe the way in which perception is enriched by affective distortion of reality. Imagination not only deforms the images provided by perception, but goes beyond reality and surpasses it.

In a scholarly review of Bachelard's writing, Kaplan suggests that the process of poetic reverie is central to Banchelard's ideas on imagination. Reverie is described as a creative daydream, in which the unconscious can confront perceptions of reality, giving the latter unique emotional associations. This process continues during both sleeping and waking life, but while awake, the individual becomes aware of his own creative activity. Bachelard considers that the ability to exercise imagination is central to mental health, and he discusses the work of Desoille, who appears to be the first to use the waking dream as a central technique in psychotheraphy.

Desoille developed the use of guided fantasy as a complete psychotherapeutic system, though previous investigators had used aspects of daydreams, fantasies and imagination in their psychotherapeutic endeavours. Happich (1932) describes a similar approach. He suggests that it is important to encourage 'emergent images' in a relaxed state. /He argued that working; with and developing awareness of imaginal contents was more important for personal change than the verbal abstractions that are used in Freudian free association. He would stimulate imagery by suggesting scenes for the patient to visit in imagination.

Schultz (Schultz and Luthe, 1969) encouraged patients to engage in extended visual exercises, while in a state of relaxation which they had induced in themselves. This 'autogenic state', which has some of the advantages of hypnosis, avoids excessive dependence on the therapist. They also incorporated the ideas of Frank (1910) who suggested that the production of hypnagogic visions in a state of relaxation has a cathartic effect.

Guillery (Fretigny and Virel, 1968) in his experiments on 'directed reverie' stressed the relationship between disturbing imagery and motor or physiological problems. He suggests that autonomic responses effect both the emotional nature of the images and the individual's neuromuscular functioning. This relationship between emotion, imagery and bodily tension is stressed by the various schools of body therapists, and is reflected in the work of Reich (1949), Lowen (1975) and Kelley (1974). The assumption is made that unconscious material is held in a mysterious way in individual patterns of muscular tension and by working on the muscular tension, the material may be released, often in the form of vivid visual imagery.

Caslant (1921) had a direct influence on Desoille and made specific use of ascent and descent in imaginary situations. He found that higher levels were generally associated with good feelings amd lower levels with bad feelings. An imaginary journey could be controlled by moving from one level to another.
/' Desoille has probably played the major role in the introduction of the use of guided fantasy into psychotherapeutic situations.; His use of 'le rêve éveillé dirigé' is described as early as 1938 and more recently in a much more extended account
(Desoille, 1966). Therapy for Desoille consists largely of a series of fantasy trips, which he claims are curative in their own right. Analysis, interpretation and re-education processes are related to the fantasy trip.

The patient lies on a couch in a relaxed position. He is given a starting theme and the therapist asks questions in order to develop the fantasy. The main starting themes and their purposes are given in the following list:-

No, Purpose Theme
1. Confronting one's more For a man, a sword obvious characteristics For a woman, a vessel or container
2. Confronting one's more For both sexes, a descent into
2. suppressed
the depths of the ocean
characteristics
3. Coming to terms with
the parent of the opposite sex

For a mam a descent into a cave to find a witch or a sorceress

For a woman, a descent into a cave to find a wizard or a magician
4. Coming to terms with the parent of one's own sex

For a man a descent into a cave to find a wizard or a magician
For a woman a descent into a cave to find a witch or a sorceress.
5. Coming to terms with social constraints
6. Coming to terms with the Oedipal situation

For both sexes, a descent into a cave to find the fabled dragon

For both sexes, the castle of the Sleeping Beauty, in a forest 1
/Frightening images that emerge during the fantasy trips are focussed on and worked with, to try and find out more about them and the emotions that are associated with them. It is
assumed that this will reduce the negative affective charges. Techniques are used to help the patient cope with difficult emotional situations. Monsters may be tamed with the powers of a magic wand. If the suggestion is made that the magic wand will transform the monster into a real person, it often turns out to be a person close to and important in the patient's emotional life. Another approach to difficult situations in the fantasy trip is to ask the patient to imagine he is being led by the hand. The guide, again, often turns out to be a person who is close to the patient.

Desoille stresses the importance of Caslant's ideas concerning ascent amd descent. He invariably found that descent was associated with negative feelings and often produced frightening images. Ascent was said to be associated with positive feelings and played an importamt part in the reeducation process. He suggests that these feelings develop through association with the rising and setting sun. Another strange assumption is that for a right-handed person, movement to the left induces feelings about the past and movement to the right induces feelings about the future. This is reversed in left-handed people.

Watkins (1976) suggests that the clearly defined symbology offered by Desoille may be imposing a structure and a value on the patients' inner worlds, which are not necessarily their own.

In his later writing, Desoille (1966) used Pavlovian concepts of conditioning to explain the affective changes that are produced by his techniques. It seems reasonable to assume that the experience of imaginal situations that involves unpleasant feelings is similar to the experiences obtained during the process of desensitization.
```

    A similar amd more systematic use of imagery trips in
    psychotherapy is that of Leuner (1969). The patient is relaxed
on a couch, using Schultz's (1959) autogenic training. Over a
series of sessions, the patient is introduced to ten standard
imagery themes, which are said to represent different aspects
of the patient's inner psychic life. Initially they are used
for diagnostic purposes (Initiated symbol projection) and later
for more extended fantasy trips (Guided affective imagery).
Leuner claims that his first three themes, the meadow,
climbing a mountain and following a stream, either up to its
source or down to the ocean, tend not to produce frightening
material. (This was not true in the writer's experience.)
These themes are useful to help the subject become familiar
with journeys into the imagination. Leuner claims that other
themes, such as the fierce beast, the dark forest and the swamp,
tend to produce material that is more difficult to cope with.
Leuner has developed what he calls the 'symbol dramatic
method', which includes the following techniques for helping
the individual through his fantasy trip:-

1. The Inner Psychic Pacemaker is represented by elements which emerge from the famtasy; such as a person or an animal. These help to cope with problems that arise, often leading the patient into difficult areas and helping him to deal with these difficulties. This is possible because these elements are one remove from the patient.
2. Confrontation, in which the patient is encouraged to stay with and become more aware of threatening elements in the fantasy.
```
3. Feeding, which is used when the threatening element is too frightening to confront. By overfeeding, the monster may become less threatening.
4. Reconciliation, which involves making friends with the threatening image.
5. Exhausting and killing the threatening element in the fantasy. Leuner suggests that this is a risky operation since the threatening element could represent a sub-personality of the patient.
6. Magic Fluids, which are used for relieving bodily aches and pains.

Leuner claims that a series of fantasy sessions can provide therapy, which is shorter in duration, but as effective as conventional forms of therapy. Most of his success is with neurotic patients.

Kosbad (1972, reported in Singer, 1974) has developed
Leuner's standard themes as part of the training of students of psychiatry at the Virginia Commonwealth School of Medicine. The students were trained in Schultz's autogenic relaxation techniques and then taken through all of Leuner's ten standard themes. Then the students carried on a series of weekly sessions on their own, using single themes as a starting point for an extended imaginal exploration. At the end of the series, the recorded and summarized material is discussed with the supervisor. Kosbad claims that the case-study material provides some interesting examples of personal growth resulting from these experiences./ This would suggest that guided famtasy can be used privately for individual self-analysis and personal growth.

Kretschmer (1969) provides another approach to the use of specific themes as stimuli for encouraging the flow of imagination. He develops the ideas of Happich (1932) who suggested visiting places in the imagination such as a prairie, a mountain, a chapel or sitting by a fountain listening to water. Kretschmer stresses the importance of bringing significant imagery to a higher level of consciousness. He uses the term 'exorcism' to describe the process of change that cam take place as a result of these experiences.

Thus, it would seem, that most of the work developing the use of guided fantasy as a technique in psychotherapeutic situations took place largely in Europe and mainly in France and Germany. This work has been consolidated and developed by André Virel amd Roger Fretigny, a psychologist and a psychotherapist respectively. They use the term oneirotherapy, from the Greek 'oneiros' meaning dream, to describe these processes and use the term oneirodrama to describe their own form of therapy.

Their approach is largely a synthesis of earlier techniques. They include a thorough case history, relaxation training and a free approach to the development of imagery. After giving an initial stimulus the patient is encouraged to participate bodily in the fantasy experiences. Some patients who have difficulties with visualization are given a small dosage of ten to thirty micrograms of LSD 25. They work within a neo-Freudian framework to aid understanding the experience, paying particular attention to problems of resistance and transference.

Apart from their own developments with regard to the technique of guided fantasy, Frétigny and Virel have played a central role in the development of the 'Société Internationale des Techniques d'Imagerie Mentale' and the journal 'L'Arbre Vert' as a means of advamcing and disseminating work done in this area.

This European work has developed without the constraints of the development of behaviourism that dramatically changed the course of English-speaking psychology. It seems to have grown naturally out of the Romantic era with the work of Janet, Flournoy, Jung and Bachélard. More recently, the use of imagery techniques has become acceptable in the United States, but even these developments originated largely from Europeans.
J. L. Moreno, who was brought up in Vienna, has been working in the U.S. for nearly half a century. He has probably had more effect on therapeutic and counselling techniques than is generally realised, particularly in relation to the value of role playing and role reversal, which he developed in psychodrama (Moreno 1967). In psychodrama, fantasies are acted out in public, which seems to have a therapeutic effect on both the patient in the central role and on the 'auxiliary egos'; individuals who are playing subsidiary roles in the famtasy. It even appears to effect the passive audience. These techniques are being used in a variety of different educational and therapeutic situations, such as T-groups, encounter groups, Gestalt therapy, simulation games, organizational development and many others.

George Kelly (1955) described a related approach, which he calls 'Fixed Role Therapy' in which the individual is
encouraged to act out underdeveloped parts of himself, for limited periods of time and in real-life situations.

Psychosynthesis, developed by the Italian psychiatrist Roberto Assagioli, is another approach to personal growth and development using fantasy as one of its central techniques. Assagioli suggests that treatment should go beyond analysis and extend to synthesis, which involves the development and integration of all man's potentialities. This development is taken to spiritual levels amd uses techniques drawn from both western and oriental sources.

Assagioli (1969) described various categories of symbols which represent, he claims, man's transpersonal experiences and capacities. These include introversion, light-illumination, fire, development, strengthening-intensification, love, way-pathpilgramage, mutation-sublimation, rebirth-regeneration amd liberation. These symbols form the basis of a large number of techniques using fantasy, ranging from the visualization of extremely specific themes, to extended imagery trips similar to those of Desoille and Leuner.

Gerard (1964) played am important part in the development of psychosynthesis in the U.S. and stressed the importance of 'symbolic identification techniques', which involve identification with various parts of a fantasy production. These can be persons, animals, natural phenomena, objects, or any elements that occur in the fantasy,

Gerard (1967) has produced a systematic description of the visualization techniques that can be used. A bare outline of this description is given as follows:-
A. Controlled Symbolic Visualization, which uses predetermined images includes:-
1. Controlled visualization of dynamic symbols either in a static form or changing the image in a predetermined direction. This approach involves elements of interpretation such as a sword for masculinity, a cup or vase for femininity and a rose opening as a symbol of growth,

2, Controlled visualization of symbolic scenes, which are based on the particular needs of the patient, such as a couple helping each other along a path.
B. Spontaneous Symbolic Visualization, which has a starting image amd then the images are permitted to arise as they occur.
C. Symbolic Visualization for Spiritual Psychosynthesis, which involves sequences of images for reaching higher levels of consciousness and transpersonal experience.

The term existential is often loosely applied to the approaches to self-awareness which involve exploring exactly what is happening to a person as it happens. This approach was given important theoretical support in the existential analysis of Binswanger (1947) and developed by Boss (1963). Working mainly with dreams, it was emphasized that rather than seeing these phenomena as distorted forms of important parts of the psyche, they should be seen as part of 'being-there' (dasein). Rather than try and see through, fathom or decipher dreams, the dreamer should be helped to experience them. It is suggested that the dream is a message from and to the dreamer about his mode of 'being-in-the-world'.

It is, however, Fritz Perls \((1947,1969,1973)\) who has provided the most extensive set of techniques for helping the individual develop his awareness of 'here-and-now' experience. Perls makes extensive use of fantasy, which is allowed to develop spontaneously during workshop situations, rather than with the use of specific techniques and themes. The feel of this approach is best obtained through direct experience, or, in a more limited way, from the transcripts of Perls' (1969) workshops. An important aspect of his use of famtasy is to help the patient to 'own' his own projections. As in several of the systems described in the previous pages, such as psychosynthesis and Jung's active imagination, the patient is encouraged to act out the roles of the various elements of dreams and famtasies. Again, the assumption is made that these elements in some way represent disowned parts of the personality of the individual.

Often, conflicting polarities are identified by the patient and he is encouraged to act out the roles of each of these conflicting poles and engage them in conversation, or even confrontation. An important polarity described by Perls (1969a) is between 'top-dog' and 'underdog'. The 'top-dog' tends to be a moralizing part of the individual, emphasizing what should amd ought to be done. The 'underdog' tends to be lazy, backsliding and fearful, and generally gives in to less noble motives.

Perls also used fantasy to help individuals understand what was happpening inside their bodies. Patients would be asked to take on the role of 'the clenched fist', 'the knot in the stomach' or 'the tears that were locked away'. These suggestions were developed out of what the patient said or what could be clearly seen. Work on these bodily sensations would
often develop into a catharsis such as an outburst of temper or a period of deep sobbing. This has been extended by Schutz (1967) with the 'Into the Body' fantasy. This is a guided fantasy, in which the individual becomes very small and, in imagination, enters and explores his own body.

Three important aspects of Perls' approach are:-
1. The procedures are carried out in the present, or 'the here and now'. The patient is encouraged to use the first person present, rather than distance himself from the experience by using words like one, we, he, it and people. This helps to permit the patient to experience feeling and imagery as it happens, rather than indulge in an analysis of feelings that took place at an earlier date.
2. The form of questioning used by the therapist makes it a potent, yet non-directive technique. Questions emphasize the 'what?' and 'how?' of the situation, and avoid the 'why?', which often involve am implicit moral stance on the part of the questioner, 'What is happening to you now?', 'How are you keeping your shoulders tense?', 'What do you feel about being in this situation?'. The questions ask for information in a neutral manner amd use words and images produced by the patient himself. The procedure aims to make the experience amd feeling of the patient clear to himself, rather than impose the feelings and needs of the therapist.
3. The technique is non-interpretative. Perls (1951) suggests that all interpretation is a trip laid by the interpreter on the interpreted, implying that interpretations are projections of the therapist. Often, by using this mode of questioning, an important part of Gestalt therapy, the patient is led into making his own interpretations. One person's tree-trunk may be, phenomenologically, totally different from another person's tree-trunk. A reading of Perl's transcripts, however, suggests that he often broke his own rules about interpretation.

A considerable number of new and radical therapies have developed in the last two decades, many of them associated with the 'personal growth movement' which often assumes that all individuals are in need of therapy. Many of these systems use fantasy as a central technique, making the assumption that the use and experience of fantasy can produce important educational and therapeutic effects. Two well developed systems that have extensive use of fantasy are Shorr (1972) and Progoff (1963).

A parallel development has been the publication of self-help books which consist of a series of exercises involving fantasy which can be done at home, alone or in a group. Examples of this kind of book would include Huxley (1963) and Stevens (1971). The book by Stevens is particularly important for his section on how a group leader should conduct himself when leading a group in fantasy situations. He stresses the point that has already been made - that it is very easy for a person leading a fantasy exercise to impose his own problems and personality into the
situation. Other books, such as Masters and Houston (1973) and Anderson and Savary (1974) provide exercises that take individuals into deeper trance states, which probably approach hypnotic states.

The discussion of the literature so far seems to suggest that techniques involving fantasy are being introduced into psychotherapeutic and educational situations, but little attempt is made to find empirical support for the use of these techniques. Indeed, much of the clinical literature involves descriptions of how to use the techniques, with examples of tramscripts.

Justification for the use of guided fantasy is based on the clinician's intuitive judgement. Hammer (1967) who is often quoted by later writers, merely reiterates the general principles laid down by Leuner (1969) and Desoille (1966).

Johnsgard (1969) describes how the techniques cam be applied to the confrontation of frightening images in recurrent nightmares. Alexander (1971) provides some interesting examples of the use of the 'into the body' fantasy and demonstrates the effect they had on the patient's physical problems. He argues that both the content of fantasy and rigidity in the body can be expressions of preconscious material.

An extremely useful descriptive survey by Riha (1972)
summarizes interviews with four therapists, all of whom use guided famtasy, but are influnced by different theoretical backgrounds. These therapists were Dr. Hedda Bolgar who used what she calls the 'waking dream' within a psychoanalytic framework, Dr. Harold Stone who uses Jung's 'active imagination', Dr. Robert Gerard who has developed the 'guided daydream' within the framework of psychosynthesis and Dr. Robert Resnick who uses dreamwork as a part of Gestalt therapy.

Many writers describe the importance of fantasy in the form of well written exhortations, but still produce little in the way of empirical evidence. A good example is Ungersma (1976) who discusses the importance of fantasy in relation to creativity and conformity.

There is a recent, but growing literature regarding the application of fantasy techniques in counselling situations. Morgan and Skarholt (1977) summarize this development and apply the techniques specifically to career counselling. They develop fantasy themes that illustrate sexist and racial problems in work situations and also have themes that relate to specific career problems, such as the "mid-career change" fantasy amd the "retirement" fantasy.

A serious attempt to evaluate the use of guided fantasy in counselling situations is provided by Wilson (1975) who made the assumption that experience of guided famtasy would improve the empathy of trainee counsellors. He failed to show any difference in the ability to evaluate counsellor responses to client statements between a control group amd a group of trainees who had experienced eight guided fantasies. He suggests that there may be no connection between empathy as an interpersonal experience and guided fantasy as an intrapersonal experience.

One form of psychotherapy which makes extensive use of the imagination is the process of desensitization, which is one of the key techniques in behaviour modification (Wolpe 1969). These techniques have been seriously evaluated (Singer 1974), with a rigour that has not been applied to the guided fantasy techniques. This literature will not be reviewed here, but it should be borne in mind that there are probably similarities
between the therapeutic effect of both of these procedures. The psychotherapeutic and educational value of visualization has been known about and developed for many centuries in other cultures. This is particularly true of the Vajrayan system of Tibetan buddhism (Blofeld 1970). Various sects within Tibetan buddhism, particularly the Nyingmapa sect use exercises involving forms of visualization that aim to help the adept along his spiritual path to enlightenment. Tarthang Tulku (1977) a lama of the Nyingmapa sect, resident at Berkeley, California, has produced a handbook, based on these exercises, suitable for the western world.

\section*{CHAPTER FOUR}

\section*{THEORETICAL CONSIDERATIONS}

The discussion so far has not made clear the nature of the state involved in a guided fantasy. Several writers suggest that there are fantasy and imagination processes going on all the time, but most often, we are not consciously aware of these processes, except when we catch our daydreams, Fromm (1951) describes this as 'The Forgotten Language', which is a way of expressing inner experiences as if they were sensory experiences, thus changing them into events in the outer world. He suggests that this language, still used by infants and primitive man, has been largely forgotten by modern man and only intrudes on him when he is asleep. Fromm's discussion refers mainly to dreams, but the same ideas could be applied to imaginative processes.

Similar ideas would include Myer's (1885-7) mythopoetic function and Bachelard's (see Kaplan 1972) valorization. Both imply an ongoing, probably unconscious process. Jung's (1959) archetypes imply that the process has continued through racial history. Mythomania is a term which was used to describe the pathological contact with these forms of thinking. Thinking of this nature is often considered to be separate from those required for more rational activities or dealing with the practical needs of day-to-day living. Jung (1954) writes about directed thinking as opposed to dreaming and fantasizing. Bleuler (1951) prefers the term autistic thinking, instead of fantasy, as this reflects its inner directedness and compares it to logical or realistic thinking. Both writers
insist, however, that these forms of thinking are not that clearly separable. The contents of most fantasies are based on realistic experience. Experience of frogs is necessary to the fantasy of being turned into a frog. Experience of beautiful women, even if it were only second hand from literature, would be necessary to having a fantasy about rescuing a beautiful woman. The literature abounds with examplec of scientific and even mathematical ideas being developed in a state of drowsiness or reverie. Indeed, techniques have been developed for using the imagination to solve scientific and practical problems, such as brainstorming (Osborne 1953) and synectics (Gordon 1961).

The state of consciousness involved in guided fantasy has often been likened to hypnagogic imagery. This term is usually reserved for images that emerge in a drowsy state, often when the person is about to fall asleep. Both Silberer (1951) and Varendonck (1921) state that the condition in which they explored chains of fantasied associations was a hypnagogic state. Silberer suggests that practice is required to stay in the hypnagogic state so that it can be used creatively.in relation to a particular problem.

Watkins (1976), however, suggests that attention directed to the imagery processes in guided fantasy makes it qualitatively different from other phenomena such as hypnagogic images, hallucinations, dreams and daydreams. In the latter states, the images tend to intrude and are not attended to consciously. "By waking dream we mean not just an experience of dreamlike character received while awake, but an experience in the imagination undertaken with a certain quality or attitude of av.'areness."

Crampton (1969) talks about the 'exercise of witness' or 'training of the observer self, which is a way of observing the stream of consciousness without judging or analysing the images as they occur.

It may be that the process of talking through the fantasy . and the interaction with another person is permitting an optimal level of conscious awareness, while still not interfering with the flow of fantasy.

The writer's experience during guided fantasy is of an altered state of consciousness which is unique to that situation. The fantasy unrolls with an imaginal self playing a part in the fantasy and at the same time there is a detached observer recounting what.is going on. It is as if there is a rational part of the self which has separated off from the part that is engaged in the fantasy and both parts are functioning simultaneously. At no time is there any feeling of drowsiness or falling asleep. Although, at times, ':'here is a high level of emotional involvement, with extremely euphoric or frightening situations, it always seems possible that the fantasy could bo ended at a moment's notice. A small minority of individuals who have been guided by the writer reported that they would have had difficulty in coming out of the fantasy on their own.

This description may seem strange to the inexperienced reader. On the other hand, all of the subjects tested in the studies to be described later, who were completely naive about the process, slipped quickly into the business of describing their fantasy experiences within a minute or two of closing their eyes for the first time.

The. writer has described his own experience, which seems to fit the definition by Watkins quoted above. It could be,
however, that different people are entering different states. More suggestible subjects may be mildly hypnotised. Others may be experiencing hypnagogic imagery, or may even be experiencing images of an hallucinatory nature. Unless specific neurological correlates were established for the various states involving imagery, it would be difficult to give specific labels to tise reported experiences. Given the problem of describing the psychological state of the individual being taken through a guided fantasy, there is a further problem of the nature of the processes that are being tapped.

All of the writers described in the previous section, who use guided fantasy as part of thei'r approach to psychotherapy, agree that the process helps the individual to make contact with unconscious material. The exception is Perls (1969), who preferred to talk about expanding areas of awareness. For Perls, the use of the term unconscious implies a division of experience that is too clear-cut. He suggests that his techniques can move the individual into areas that would normally be relatively inaccessible by helping him to refocus his awareness.

Even though Freud paid scant attention to fantasy processes, in the sense they are being discussed here, he refers to imagery in many places and suggests (1927) that imagery, in visual form, or thinking in pictures came closer to unconscious processes than thinking in words. He suggests that thinking in images is older, both ontogentically and phylogenetically than thinking in words. So he is suggesting that imagery.is providing an inroad into the unconscious, as well as the dreams,
to which he paid so much attention.
Horowitz (1970) made a particular study of unbidden images that occurred to patients in his clinical practice. These were images that were usually frightening and emotionally disturbing that appeared in spite of the patient's attempts to prevent them. He explained this phenomena as a failure in repression, allowing unconscious material to burst into consciousness.

Watkins (1976) takes a different approach concerning the nature of frightening images. She suggests that some images have to appear in a frightening form in order to force themselves into consciousness. This suggestion is supported by the fact that when a frightening image is worked with using guided fantasy or active imagination, it often turns out to be far more benign than it did in the initial experience. This could lead to the fanciful speculation that there are repressed 'parts of a person' which 'want' to play a fuller role in the individual's psychic functioning and use imagery as a means of intruding into consciousness. Certainly, this way of thinking implies that imagery provides a means of tapping unconscious processes.

It could be that images generated by guided fantasy represent the working of what Freud called the 'primary process and that the images of fantasies and daydreams can be seen as a displacement activity providing an outlet for the charge associated with repressed ideas.

Klein (1967) in a discussion of the motivational intensity
of a chain of thought draws of neurophysiological eridence (particularly Eccles 1964) to explain how chains of associations
can be integrated. This integration could be achieved either by the facilitating or inhibiting effect of neural firing. This would offer a partial explanation of the motivational intensity of repressed chains and how they can be activated or repressed through association. It would also provide a possible explanation for the continuation of repressed chains of thought even though the individual concerned is not consciously aware that it is going on.

This attempt at a neurophysiological explanation is obviously highly speculative, as there is little evidence to connect specific images to specific aspects of neural firing, apart from the work of Penfield (described above).

An important consideration concerning the nature of the unconscious material which is brought to the surface during guided famtasy was referred to previously in terms of the differences between Freud amd Jung regarding their respective evaluations of the r.aterial. Freud tended to emphasize the negative aspects of unconscious material and how the problems associated with it had to be resolved for healthy psychological functioning. Jung insisted that unconscious material can have both negative and positive sides and went further to suggest that unconscious material may ropresent man's highest creative endeavours.

Most of the writers who have been involved in guided fantasy agree with Jung and were obviously influenced by him. In the earlier description of Assagioli's (1965) use of fantasy, it was pointed out that guided fantasy can be used to make contact with spiritual aspects of the person and can be used vo create a balance between all aspects of the person in a process of unification that he calls psychosynthesis.

It could be that the pressures to conform in contemporary society are deadening us to an awareness of the extremes of experience, which may, or may not, be judged as good or bad. This is implied in Fromm's (1951) statement in relation to dreams ". . . we are not only less reasonable and less decent . in our dreams, but that we are also more intelligent, wiser, and capable of better judgement when we are asleep than when we are awake".

This view is certainly not held in wider society where a distinction is often made between fantasy, which is seen as a self indulgence and imagination which is seen as the application of imagery in the creative process, often playing a part in the creation of works of art. This involves a denial of the value of an uncontrolled examination of the self and reflects the need for control in our anti-interoceptive western culture. This view is well summed up by Iris Murdoch (1978):-
"Let us establish, say, a contrast between imagination amd famtasy, with imagination being thought of as a good creative power and fantasy as a sort of private consolation; I think both philosopher and writer have to face a conflict between imagination and fantasy in themselves."

Tauber and Green (1959), in an influential book, also
st:•ess the creative as well as the regressive aspects of fantasy. They offer a particularly novel suggestion for the use of famtasy in psychotherapeutic situations, that the fantasies of the therapist may play an important part in the therapeutic process and should be discussed with the patient. In this way, problems of both transference and countertransference can be illuminated by the use of fantasy and dream material.

Having discussed the state of consciousness involved in a guided fantasy and the processes that may be involved, some issues will be raised regarding the content of these experiences.

A great deal of discussion centres on the symbolic meaning of the images and the importance of these meanings to the imager.This has obvious relevance to the problem of interpretation, which has pre-occupied man since the dawn of civilization. However, before discussing the problem of interpretation, it is important to consider exactly what constitutes an image.

A guided fantasy may include gross images such as a mountain or a house, but these can be broken down into large numbers of minute elements. A small pebble on the path up the mountain, or the keyhole in the door of the house,' may be as significant, to the imager, as the larger images of which they are a part.

Some images stand out in an obvious way. The imager is obviously fascinated by them and there is a clear emotional involvement. Often these images are people, sut:1 as a strong plenter who was working against a powerful current, or they must be animals such as a cat or a fish. One subject was fascinated by a deep ponl that he came across on a journey down a river. Other images relate to abstract qualities such as light, energy, heat, blackness, emptiness, pressure and so on. Individuals seem to have no problem in identifying with these abstract images and ascribing to them qualities and feelings.

It is possible to take seemingly insignificant aspects of the fantasy and, by developing them, show that they are significant to the imager. Often, a useful clue is given when the person going through the fantasy mentions something apparently insignificant, in passing, and then quickly moves away from it.

It is implied in Gestalt therapy (Perls 1969) that every aspect of a fantasy or dream does, in some way, represent a part of the fantasizer or dreamer. If, however, each one of this, vast number of potential elements uniquely represented a part of the person, then it would be impossible to have a coherent. understanding of such a fragmented structure. It would make more sense if many different elements of fantasy representrd the same thing. Then there would be recurrent themes involved in one fantasy, or running through several fantasies.

Freud (1900) refers to the continual reappearance of important ideas as multiple, or overdetermination and produces many examples from his own dreams. He suggests that elements which are emotionally highly charged are stripped of their emotional charge, which is displaced into seemingly unimportant elements. This provides a means of by-passing resistance and censorship.

At the same tir: 2 , Freud suggests that a considerable amount of material is reduced to a single image. He calls this process condensation. He supports this notion with the fact that he was able to develop extensive analyses from tiny fragments of dreams. People who appeared in his dreams seemed to be composites of more than one person. He developed these ideas from materials generated from dream content during the process of free-association. This may be similar to the process of guided fantasy.

Both of these ideas, overdetermination and condensation
will be considered in relation to the studies that follow.

If, as the Gestalt therapists maintain, elements of dreams and fantasies represent, in some way, parts of the personality of the dreamer or fantasizer, this would suggest that a person may consist of several sub-personalities. It has been shown how this possibility fascinated writers at the turn of the century, who used the terras 'dipsychism' and 'polypsychism'. Flournoy, Janet and Binet used these terms to describe their experiences with mediums and hysterical patients under hypnosis. There are several well-documented cases of patients who switch from one personality to another. Probably the most famous of these is Eve White (Thigpen and Cleckley, 1957). Eve, a quiet conscientious woman would change into the extroverted, highliving Eve Black, without the conscious awareness of Eve White. Under therapy a more balanced personality emerged. It has since been shown that this third personality was developed by Eve Black to fool the therapist, but this still leaves two separate and distinct peisonalities.

Assagioli (1965) stresses the importance of the use of fantasy as a means of coming to an understanding of different 'parts' of the person. Horowitz (1970) suggests that the 'bad parts' of the self are often externalized and disguised and may re¥ppear in daydreams amd fantasies as frightening monsters. Klinger (1971) refers to 'subselves' in relation to the analysis of T.A.T. stories. He points to groupings of responses and adjective check-list scores as implying momentary changes in personality, implying that there are discrete parts to the self.

Shapiro (1962), in a recent development of ego psychology, implies that the ego is wade up of several parts, which may be in conflict with each other. A patient who presents himself
for therapy may be just one of his several subselves and it may be important for the patient to become aware of the other subselves and how they function, before he can operate as am integratsd person.

The earlier discussion of Gestalt therapy regarding
disowned parts of the self, relates directly to the possibility of sub-personalities and the standard conflict between 'top-dog' and 'underdog' have already been discussed. In his workshops, Perls would invite a person who was working on a problem to sit in different chairs or cushions, to emphasize and separate out different parts of the personality.

Another popular approach to psychotherapy and personal grov/th, which implies that there are several parts to the person is transactional analysis (Berne 1964).

Much of the discussion so far suggests that the content of fantasy experiences are amenable to interpretation. These may be in the form of specific interpretations for specific images, in which case, it is meaningful to refer to symbols. Freud's (1)00) forms of interpretation are of this nature and he offers interpretations of dream syrbols, which are often related to sexual organs or sexual activity.

Another approach is to accept that each individual evolves a set of meanings for his fantasy world which are unique to him, so that it is not possible to make general interpretations that apply to more than one person.

Most of the writers involved in guided fantasy go even further and suggest that the only person who can make a meaningful interpretation is the person who is directly
involved in the fantasy. He would probably have to be trained in attending to and developing aspects of his fantasy, before he could recognize that they had any meaning. Paradoxically, • most of these writers go on to suggest general forms of interpretation. The writer can well understand the need to be • interpretative, as, in his experience, the process of guiding a person through a fantasy, involves the experience of a parallel fantasy based on the same material. This is accompanied by a strong need on the part of the guide to share his experience and interpretation of the experience. This is obviously not a legitimate activity, as the guide is almost certainly having a totally different experience, with different emotional associations.

Jung (1961) provides the most extreme example of a writer who advocates allowing the person who experiences the fantasy to analyse it in his own terms, using 'active imagination'. Then he goes on to sescribe a set of archetypal images which, he suggests, have developed through the experiences of the race in the past. This obviously implies a genetic basis for certain forms of imagery. Parallel to the archetypal images are those images that have developed as a result of the individual's personal experience during his lifetime. It is all very well for a Jungian analyst to deny that he gives interpretations in the sessions with a patient, but many people read about the theoretical basis for the method that is being applied to them and may be producing images to suit the theory.

The archetypal images include the 'Shadow', which represents aspects of the unconscious within a person; the

\footnotetext{
'Anima' which is the personification of the female psychological
}

\begin{abstract}
tendencies in a man, both good and bad; the 'Animus', which represents the male aspects of \(a\) woman and the 'Self, representing the fully developed psyche, which may even encompass the whole cosmos. Obviously, archetypal elements in imagery could also be explained in terms of the common experience of the human condition, rather than in terms of Jung's collective unconscious.
\end{abstract}

Assagioli (1955) suggests that interpretations can be made in terms of conflicts within the individual. He suggests that some images represent inertia, laziness, a tendency to preservation on the one hand, as opposed to growth, self-assertion and adventure on the other. This is possibly an extremely important dimension, as considerable support for'this particular polarity as a dimension of fantasy was found in the studies completed by the writer and reported in this thesis.

Other conflicts relate to times of change in the individual, such as adolescence or the awaking of spiritua.? interests in middle age. Perls' (1969a) idea of 'top-dog' and 'underdog', described above, represents a form of conflict, which may be expressed symbolically in imagery.

The standard themes of both Desoille (1966) and Leuner (1969) described in the historical background have explic:t interpretations concerning the nature of the material that is likely to be produced by those themes.

Most of the theoretical statements made regarding process of guided fantasy and the nature of the imagery produced, tends to be highly speculative and based largely on the clinical insights of the theoretician concerned. Unfortunately these
clinical insights might be distorted by the theoretical stance taken by the clinician. With such a labile phenomenon it would be easy for a clinician to be unaware that he is making suggestions that produce effects that support his particular point of view.

\section*{CHAPTER FIVE}

\section*{AIMS OF THE STUDIES}

All of the studies to be described in the later sections . are attempting to provide an answer to one main question. That is, to what extent are the various elements generated from a variety of guided fantasy situations, perceived by the person experiencing the fantasies, to be similar to or different from each other.

Some form of evaluation is necessary to establish degrees of similarity or dissimilarity. The phenomena to be evaluated are often fleeting, ephemeral and unique to the individual concerned. It could well be argued that most of the conventional psychometric techniques cannot convey the quality of personal fantasy. Even where forms of quantification are being used, there is no way of 'nowing how the estimate of one person compares with another, as there is no external criteria against which any form of standardization can take place. Using estimates of the vividness of imagery (see Betts, 1909), it is possible that a person who gives a maximum rating for vividness is, in fact, having a less vivid experience than a person who gives a minimum rating.

One approach to the evaluation of personal experience which involves a degree of quantification and at the same time leaves intact the phenomenal world of the individual is the use of personal constructs and their evaluation using the repertory grid technique (Kelly 1955).

One of the main assumptions of personal construct theory is that a person has a limited repertoire of bi-polar constructs
that he uses fairly consistently to order his perceptions of other people. In spite of the rich vocabulary available for describing people, few individuals operate with more than twenty five of these bi-polar constructs and these are often closely interrelated.

The techniques for eliciting amd evaluating personal
constricts (Fransella and Bannister, 1977) have been applied to a variety of different human situations. This application of constructs to external events has proved to be a productive way of demonstrating the coherence and structure of the person's perception of the external world. There is no reason why the same procedure should not be applied to the individual's internal world. This has been done in the evaluation of Rorschach responses by Salmon et al (1972), who found an internal structure in the organization of responses, but not the same as the one described in the handbook for the Rorschah Test.

Kelly (1955) himself suggests that his á, proach is a
projective technique, in that it demonstrates how a person
uses internal structures to organize external experience. He
goes on t 2 argue that, being projective, his approach is more
objective than the conventional objective techniques. This is turning the traditional argument upside down:-
```

"Indeed, we see this approach to the clients
as being more objective than that of the
old-fashioned psychometrician. It is more
objective, not because it is more legalistic -
a feature which is often confused with
objectivity - but because it is more object
orientated. It recognizes that it is the
client who is the primary object of the
psychologist's investigation and not the
test. Thus we would agree that the psychology
of personal constructs is more objective
because it is more projective."

```
    (Kelly, 1955 PP. 207-6)

The products of famtasy as elicited by guided fantasy techniques provides projective material par excellence, in that, contrary to the use of standardized projective tests, such as Rorshach plates or the T.A.T. test, all of the imaginal elements have come from the person himself. If these are not just random chance associations, then they probably reflect psychological structures that represent important aspects of that person.

Salmon (1976) extends Kelly's argument:-

> "Although repertory grid technique shares with projective techniques, the focus on the subject's unique subjectivity world and though, again like these techniques, it is a variable assessment procedure rather than a standardized test, here the similarity ends. Because the technique consists essentially of a sorting task of one kind or another, the results lend themselves to statistical amalysis. Data yielded by the test are therefore 'hard' amd, though making proper sense of the results will depend on the good judgement and imaginativeness of the investigator, the nature of the data will prevent the technique from being merely a projective test for the tester - a charge which has been levelled at certain other assessment procedures."

In order to make an evaluation of an experience, the person has to be clear as to what the experience was. It has already been mentioned that fantasy experiences can be fleeting amd ephemeral phenomena. One approach which is specifically organized to make the person more aware of his experience is Gestalt therapy and in fact these techniques have been applied to more extended forms of guided fantasy (Crampton, 1969). The mode of questioning developed in Gestalt therapy provides a means of keeping the fantasy going, particularly when the person doing the fantasy gets stuck.
a neutral way of exploring what is going on and helps the person to extend the fantasy without the introduction of content by the guide. The question 'What is happening to you now?' is a good' way of coping with a pause and 'How do you feel about climbing the mountain?' makes the person examine the emotional aspects of the imaginal situation more closely.

A more detailed exploration of seemingly important elemenls can be effected by using the Gestalt technique of asking the individual to take on the role of the element concerned. "Be the mountain and say what it is like to be the mountain. Say I am the mountain and ...". Initially this may appear to be a somewhat bizarre procedure and a gross intrusion into the fantasy and yet. most people seem to slip into it quite easily and seem to have no difficulty in personalyzing inanimate and abstract elements. The elements can be explored even further by setting up conversations between the elements, such as between the 'wind' amd the 'snow' in the example given in the introduction, or between the person and the elements.

This approach aims to use only matorial that is provided by the person undergoing the fantasy and not to allow the guide to influence the fantasy by imposing what he feels is, or ought to be, going on. Obviously, the fantasy can be affected in more subtle ways, such as by the tone of voice, the points at which interruptions are made; or the exact elements that are chosen for amplification. On the other hand, the Gestalt mode of questioning could be seen as an ideal manner for a guide to take a person through a guided fantasy, since it does set out deliberately to minimize the potential distortion of the fantasy experience by the guide.

The following studies all involve guiding a number of subjects through a series of guided fantasies, using Gestalt modes of questioning to amplify the experience. The elements generated by the fantasies, that is, those elements that were amplified, are evaluated either by the subject's own personal constructs, or by supplied constructs.

Study 1

Twelve subjects were guided through a series of seven fantasy situations; four standard guided famtasies, an examination of fantasy elements taiken from a drawing of a tree, an exploration of a dream and an exploration of 'parts of the person' as it is traditionally used in Gestalt therapy.

After each fantasy, the amplified elements were checked against the separated poles of personal constructs generated by the subject, who is free to use one, both, or if he so chooses, neither of the poles of each construct. This is a violation of Kelly's (1955) 'Range of Convenience Corollary', producing problams of quantification which will be described below. On the other hand, a useful visual representation of the relationship between the fantasy elements is developed, using a rearrangement of the construct poles and elements that have been checked.

In this study, all the subjects necessarily had a completely different experience, making it difficult to generalize across subjects.

Study 2
This study attempts to examine the structure of fantasy elements generated from groups of subjects who have had a shared ersperience.
```

(a) Twenty four adults were 'talked through' five guided fantasies that had been scripted. In each of the scripts, four elements were emphasized. These elements were rated against what could be seen as universal constructs, namely the bi-polar descriptions of Catell's (1965) Sixteen Personality Factor Scale. From this, an evaluation of both individual amd shared experience could be obtained as they were using the same elements and constructs.

```
(b) Twenty nine adolescents were given the same fantasy experiences that were used for Study 2(a). However, the common elements were evaluated individual:y, using the unique personal constructs generated from each subject.

A crule comparison of the adult and adolescent data was made. Although the constructs used to evaluate the elements were different for each group, a comparison can be made cf the relationships between the elements which were common to both studies.

Study 3
This study involved a return to the free, individual guided fantasy of the first study, but with a reduction of choice in the evaluation of the elements. This was done by using personal constructs in the conventional manner, which permits a
quantitative evaluation of the structure of the relationships between the elements. Eight subjects were led through five guided fantasies, which they evaluated against their own self-generated personal constructs.

In this first study, twelve subjects were guided through a series of situations involving the extended use of fantasy, in order to see if the varied images produced by the different themes and situations were perceived by subjects in similar ways. This was examined in terms of the way in which their personal constructs were applied to those elements produced.

Groups of students enrolled in courses at the School of Education, Nottingham University, (were asked if they were interested in taking part in a research project on fantasy. It was explained to them that the project would involve talcing part in nine sessions on their own with the writer, each lasting up to one hour.

There were twelve volunteers who came to the writer's office once a week, at a mutually convenient time. The sessions were planned to involve them in a different experience each week, and they are described as follows:-
1. In the first session, the subject was asked to generate personal constructs using the conventional triadic technique (Kelly 1955). They were asked to produce a list of people who were important in their lives. These names were written on cards and presented randomly in threes using Kelly's standard question, "In what important way are two of them alike, but different from the third?". By repeating this procedure, a series of bi-polar constructs were generated. The procedure was stopped when the subject dried up, or the constructs kept repeatinf; themselves.

Then the elements, in this case the people who were used in the triads, were written across the top of a sheet of squared paper and the constructs were written down the left-hand side with the implicit pole written below the emergent pole. (The emergent pole is the term used for the pole of the construct that is produced first and the implicit pole is the term used for the opposite pole which is produced next.) The subject was then asked to tick any poles of the constructs which could be meaningfully applied to any of the elements written along the top.

The following diagram shov/s the top left-hand corner of one of the matrices so produced:-


In this way, the subject could choose to tick one, both or neither of the poles of each construct. As suggested, this is a violation of Kelly's 'Range of Convenience Corollary', which states that the constructs should be within the range of
convenience of all the elements, so that a subject should be able to apply one or other pole of each construct to every element.

It was felt that this assumption could not be borne out when applying personal constructs to aspects of fantasy and that the subject should have the choice as to whether a construct was applied to a particular fantasy element. In order not to confuse the subject in later sessions it was decided to use a similar procedure to check that the constructs had different meanings, to that used to evaluate the fantasy elements in later sessions.

The grids were inspected visually, using Kelly's (1955) sliding paper technique. For this, a blank sheet of paper is placed under the first construct pole and any ticks are marked on the paper. These marks are then compared with the ticks for each of the other construct poles to see if they are being used in an identical way. In this way, the tick for every construct pole is compared against every other one.

If constructs were being used similarly, or there were other anomalies in the grids, the subjects were approached during the week to ask them what they thought about their use of the constructs. If they wished to retain both constructs, this was accepted, and if they wished to remove one, they were allowed to choose which one was retained.

A large, squared sheet was then prepared with the constructs typed down one side, with the emergent poles placed above the implicit poles and spaces were left along the top to write in the fantasy elements, to be generated later.
2. At the second session, the subject was seated in a comfortable arm-chair. It was suggested that the most relaxed way of sitting was probably to have a straight back, with the head hanging slightly forward, the feet slightly apart, resting on the floor and the hands laid gently in the lap. If the subject did not feel comfortable in this position, he was allowed to sit in any way he wished.

He was then informed that the procedure would be that he would be asked to relax and close his eyes. Then he would be given a theme which would be used as a starting point for a fantasy. He would be asked to describe the fantasy aloud, as it happened, in the first person present. He was told that he would be asked to take on the roles of people, objects and ideas in the fantasy. He was assured that although these activities may seem unusual, most subjects found it an easy task to do and soon became involved.

He was then given the following instructions:-
"Make yourself as comfortable as you can - relax - take three deep breaths (pause). Relax. I wsmt you to use, as a theme for this famtasy, the idea of climbing a mountain, starting in the foothills and going to the summit, and if there is time, of finding a way down into the mountain. Take the first image of a mountain that comes amd describe what you can see and what you feel about being there,"

The subject was next led through the fantasy using the Gestalt techniques described earlier. At points where it was appropriate, the subject was asked to take on the role of parts of the fantasy. These were aspects of the fantasy that seemed, intuitively, to be important. Invariably, this included
elements such as wind, snow, ledges, jagged rocks amd paths. Dialogues were set up between the subject and the elements and sometimes between the elements themselves.

If the subject got himself into a difficult or dangerous situation and appeared to be stuck, he was asked to become the obstacle, such as an overhang. If he remained stuck, he was asked to find an easy way round or to use fantasy to find a way of overcoming the obstacle.

The famtasy was allowed to continue until at least four elements had been experienced amd worked with. The fantasy was brought to a conclusion when the subject was having what appeared to be a positive experience, or when the fantasy seemed to reach a natural end-point. This was done with the phrase, "When it seems right for you, come out of the famtasy".

The elements which had been worked with were written across the top of the squared paper and the subject was asked to tick any of the construct poles which could be used meaningfully to describe these elements.

The following diagram shows part of the sheet for the first subject:-

3. In the third session, the subject was told that he would be asked to go through a similar experience to that of the previous week except that a different theme would be used.
- Again he was asked to relax, breath deeply, and close his eyes. He was given the following instructions. "I want you to use the theme of exploring a river from its source in the mountains down to where it joins the ocean. Take the first image that comes to you of the source of a river and describe what you can see, and how you feel about about being there,"

The same form of questioning was used. One licence which was taken with most subjects was to ask them to forget the problem of breathing and to submerge themselves in the river. This seemed to have an important 'letting go' effect and appeared to encourage a freer flow of fantasy.

Elements that occurred frequently include the stream, the larger river, waterfalls, pools, fish and often forms of pollution.

At the end of the fantasy, the elements that had been worked with were written on a continuation of the squared paper, with the previous week's ticks folded over, so that the subject could not see how he had used the constructs at the end of the previous session. Again, he was asked to tick amy of the construct poles that could meaningfully be applied to the new elements.
4. In the fourth session, the subject was seated at a table. A large sheet of white paper and a box of wax crayons were placed in front of him. He was given the following instructions:"Use the paper in any way you wemt amd draw a picture of a tree. Artistic ability doesn't matter, just draw the tree you want to draw - your tree. Take as long as you like."

Most of the subjects completed the task with apparent pleasure. When the drawing was finished, the subject sat with his drawing in front of him and was given the following instructions:- "In fantasy, I want you to try and become the tree and describe yourself in as much detail as you can describe what it feels like to be the tree."

When the subject had finished, he was asked about parts of the tree that seemed to have been ignored, using questions such as, "What is this part?" and "What happened here?" This was often done in the case of sawn-off branches and parts of the tree that were dying.

Moving from this initial description, the writer asked the subject to take on the role of the various parts of the tree. For example, "Be the trunk and see what it feels like to be the trunk. Describe yourself in as much detail as you
can." Four elements would be chosen, and conversations set up between the various parts of the tree. The most usual elements were the trunk, the branches, the foliage amd the roots. If the roots were mentioned, but were not visible in the drawing, the volunteer was asked to close his eyes amd imagine what it was like to be the roots. Other elements might be holes in the tree, sawn-off branches, the sap, the bark, knot-holes, buds and occasionally a comparison between the inside and the outside of the trunk. Again, the subject was asked to tick the constructs which could be applied to these new elements amd, similarly, the early responses were folded over to avoid comparisons with the previous week.

There is no way of describing the degree of involvement with the trees in a written report of this nature. Most of the subjects were extremely keen to take their trees away and several said that they were going to put them up on their walls at home. There seemed to be a high degree of identification with the drawings.
5. In the fifth session, the normal procedure for a guided fantasy was used, with the theme 'Into the Body', adapted from Schutz (1967).

The following instruction was given:- "I want you to imagine that you are becoming very small. So small that you could go into your own mouth and explore your own body. Let yourself become very small and imagine that you are just outside your own mouth and begin your journey. What you know about the physiology of the body does not matter, just go along with what happens,"

The elements that were developed during the course of the fantasies were usually, but not exclusively, known parts of the body. These often included the stomach, because it was the first part of the body to be reached. The heart and the brain were included in a high proportion of these 'journeys into the body',

To conclude the fantasy, the subject was asked to find an easy way out of the body. Then he was asked to tick appropriate construct poles, for the new elements, in the usual way,

6, The sixth session consisted of a conversation between parts of his own personality which the subject had identified for himself. This type of structure is often described in the transcripts of Gestalt therapy in action (Perls 1969).

First the subject is asked to identify two conflicting parts of himself. Having suggested two opposing aspects of his nature, he was asked to label them. One, for exaunple, was 'accepting Keith' and 'rejecting Keith'. Two chairs were placed opposite each other, one for each of these parts amd he sat in the chair representing the part he most closely identified with at that time. He was asked to describe himself in detail and the writer used the Gestalt mode of questioning to elicit more detailed information. Then he was asked to physically move to the other chair and the process was repeated. Next a conversation was set up between the two parts and they were asked what they thought of each other. Invariably, during this latter part, other aspects of the person would emerge and these would be labelled and given a chair, setting up a complex conversation. In the exaunple
already quoted, 'reactive Keith' and 'guilty Keith' also
emerged. Only one subject failed to go beyond two aspects of herself. When the conversation had reached its natural conclusion, the volunteer was asked to tick construct poles that applied to the 'parts of the person' that he had generated.
7. At the end of the previous session, the subject was asked to try to remember a snippet from a dream, that he had had during the week and to have it ready for this session. If they failed to remember a dream, they were asked to use part of an old dream or a recurrent dream.

The subject was asked to close his eyes and relax in the usual way. Then he was told, "I want you to retell the dream as if it were happening now, in the first person present". The volunteer was allowed to finish his description and then, still keeping his eyes closed, he was asked to take on the roles of elements in the dream and again, engage them in conversation. Often this would involve an extension of the dream. This is identical to the procedures in the 'Dreamwork Seminars' described by Perls (1969).

At the end of the session, the subject was asked to tick the appropriate construct poles for the new elements.
8. In this session the subject was prepared for a guided fantasy in the mamner that has already been described.

The following instruction was used:- "The theme I wamt you to use in this fantasy is that of searching for and finding a rose." The elements generated were worked on in the usual way and often included the rose itself and parts
of the rose. Leuner (1969) suggests that this theme brings out unconscious attitudes to sexuality in males, but there was no evidence for such a claim, in this series of sessions.

The constructs were ticked to evaluate the elements.
9. In a final session, the subject was shown a tentative analysis of what he had done. The aims of the study were explained to him and any queries that he may have had were answered.

Results
With the completion of all the procedures described above, all of the twelve subjects had each produced a pattern of ticks which represented the construct poles that they considered could be meaningfully applied to each element.

The next stage in analysis involved establishing which fantasy elements were perceived to be similar to each other, and which were perceived to be dissimilar. Had all the squares in the matrix been completed in some way, then a measure of similarity could easily have been established by using a form of correlation analysis. Since, however, the subjects were allowed to choose whether they ticked either fend of a construct pole or not, there is a high proportion of 'missing data' for conventional forms of statistical analysis. The number of ticks in each column varies considerably.

For the purpose of this particular study, a form of cluster analysis was developed, which would provide a clear visual representation of the relationship between the elements, by resorting them, so that those which had the largest number
of construct poles ticked in the same way, were placed together. The same process was applied to the constructs, using the rows of ticks and establishing which constructs were applied similarly to the elements.

A simple formula was devised to provide a crude computed estimate of the degree of similarity of any two elements by comparing the columns of ticks and then the degree of similarity of any two construct poles, using the rows of ticks. This formula was the number of similar ticks minus the number of dissimilar ticks. Using this simple counting procedure, the higher the number produced by comparing amy pair of elements or any pair of constructs, the more they were seen to be similar. Obviously this will not be a consistent estimate, as a comparison of a row with twelve ticks against a row with only four ticks produces a set of relationships different from a comparison of em equal number of ticks.

This form of comparison was used to redraw the matrix so that the elements which were most similair were placed together and then redrawn again so that the construct poles which were most similar were placed together.

This procedure produced groupings of ticks on a redesigned matrix and yet the raw data remains exactly the same. On the other hand, the underlying relationships can be seen much more clearly in the new matrix. Because of the inadequacy of the initial measure of similarity, several of the rows and columns were still not in the optimal positions for showing the closest concentrations of ticks. The columns of elements and rows of construct poles were then successively redrawn to try and find the 'best fit', which showed the closest concentration of ticks.

The criteria for 'best fit' was to first establish the largest grouping of ticks and then the second largest and then the third and so on. Often this involved a subjective judgement on the part of the writer, where a row or a column could have been used as a part of more than one grouping.

Some of the matrices were redrawn up to seven times to produce what appeared to be the optimal arrangement, and usually had to be left with several anomalies. If there were only one or two ticks in a row or column, then they were usually placed at the sides.

In principle, this procedure produces results that are not unlike the focussed grid described by Shaw (1978), which involves a computed reconstruction of grids which do not involve missing data and are combinations of cluster analyses of both elements and constructs. The approach used here has an advantage, from the point of view of visual inspection, in that the unticked areas make the clusters of related ticks stand out more clearly. Possibly this is removing some of the 'noise' inherent in a grid that has adhered unnecessarily to the 'Range of Convenience Corollary'.

The rearranged matrices are shown in diagrams 1-12 on the following pages. The names of the construct poles are written down the sides of the matrices and the names of the elements are written along the tops. The situations from which each element was drawn is identified below the name with the following letters:-
\[
\begin{aligned}
& \text { M - mountain } \\
& \text { S - stream } \\
& \text { T - tree } \\
& \text { B - body } \\
& \text { G - gestalt } \\
& \text { D - dream } \\
& \text { R - rose }
\end{aligned}
\]

Thus, a cluster can be identified by reading up the columns for the names of the elements that have been ticked and along the rows to obtain the construct descriptions for those elements..

\section*{Discussion}

In the diagrams 1-12, all the data is presented as it was provided by the subjects except that the rows and columns have been rearranged. The only analysis of the data is in terms of its geographical position on the grid.

It could be argued that the relationships between the elements and hence the structure underlying the famtasy experiences is revealed in the shaded areas in the diagrams. It is as if the related aspects of the famtasy appear like clouds of crosses on the matrix.

The groupings appear in varying degrees of clarity. One source of confusion occurs where one pole of a construct has been ticked consistently for most of the elements. These are obviously not discriminating between elements, amd could have been omitted from the diagrams.

Another complication which occurs several times is where there is an L-shaped cluster of ticks. This is clearly demonstrated in diagram 1, which consists almost entirely of



Diagram 3. JRearranged Matrix: ior Subject c


Diagram 4. Rearranged Matrix for Subject D

\[
\text { Diagram 5. Rearranged Matrix for Subject } E
\]


\section*{Diagram 6. Rearranged Matrix for Subject F}


Diagram 7. Rearranged Matrix for Subject G



Diagram 9. Rearranged Matrix for Subject I


Diagram 10. Rearranged Matrix for Subject J.


Diagram 11. Rearranged Matrix for Subject \(K\)


Dịagram 12. Rearranged Matrix for Subject L

\(\qquad\)
\(\qquad\)
\(\qquad\)
\(\qquad\)
two L-shapes. It is possible that there are two underlying structures in an L-shape, and that the elements of one structure also contribute to the second. This could be explained in terms of Freud's (1900) idea of condensation, described above, which implies that the elements of dreams can relate to more than one psychological function. In the case of the hypothetical L-shape drawn in the following diagram, two overlapping, but possibly distinct clusterings have been outlined and the elements 5, 6 and 7 involve condensation as they relate to both.

\section*{ELEMENTS}

CONSTRUCTS


All of the matrices produce clustering, but inevitably there were a number of isolated crosses. Each individual cross may be psychologically significant to the person who produced the matrix. Indeed, it seems likely that the emotional
charge of a single element is best described by one of the construct poles.

This relates to the problem of significance in the statistical sense. To what extent does the distribution of crosses in the matrices differ from a random distribution? The 'missing data', that precludes the calculation of a correlation between any two rows or columns, also precludes the use of the conventional measures of significance. On the other hand, a visual inspection of the matrices would suggest that none of them are chance distributions using the conventional criteria for significance.

Each of the subjects' matrices will be discussed briefly in turn:-
A. The elements in this matrix appear to be in two main clusters (1, 10, 6, 7, 16; 12, 15) and (3, 11, 8, 14, 18, 4,5). They could be identified by the gestalt personalities they include. In the former grouping, 'Confident P' is perceived as similar to the surrounding elements and is described as not-likeable, male, emotional, demanding, dogmatic, cussed and cold. In the latter grouping, 'Happy PI and her surrounding elements are seen as likeable, female, warm, placid and easy going. It is interesting that these clusters could also be identified respectively by the element, 'life as it is now' and 'memory of the past".

There are reasons for suggesting that these two clusters represent the male and female aspects of the subject. This emerged from a later discussion of the results with the subject.

Also twice, during separate fantasy trips, she made the strong statement, 'the problem is with the man', which on both occasions seemed to be out of context.

A closer inspection suggests that there are two smaller clusters, made up of different parts of the other clusters in terms of the construct poles used. (13, 17, 19) consist of -Shy \(P^{\prime}\) and 'Confused \(P^{\prime}\) who seem to be perceived as similar to each other and also to the 'dress-maker's dummy' from the dream. (2, 9), the 'cave' and the 'roots' are similar to each other, but described by different construct poles from the previous small grouping.

These smaller groups would probably emerge as third and fourth principle components, if such a calculation could be made.

The subject was unable to complete the series and has a smaller matrix than the other subjects.
B. This matrix also contains two main groupings of elements, which can, again, be identified by the gestalt personalities. The top left-hand grouping includes 'Stay at home J' and 'J who lives in the present'. The bottom right-hand grouping includes
'Career woman J'. The descriptive construct poles fits these differences in an appropriate manner. A possible third grouping could be taken from the middle overlapping area and would consist of \((20,10,12)\) and is labelled by 'Dreamy J' and is described as idealistic, relaxed, drop-out, unpredictable, ambitious and volatile.
C. This is a different pattern, as the subject has used the construct poles sparingly. Four groupings catch the eye, but they don't readily fit the gestalt personalities. An examination of the construct poles applied to these groupings suggests that they are meaningful combinations. These are; firstly, light, unrealistic, self-involved and creative; secondly, blocked, negative and unoriginal; thirdly, approving, concerned for others, honest, receptive, deep; and fourthly, independent, efficient, intense, positive, strong willed and authoritative.

These groupings are a little rough at the edges and for some elements it could be argued that there are not enough parallel crosses for them to be included in the groupings. Also, by combining some of the 'stray' crosses, (7, 3 and 18) could be seen as a fifth grouping, which is disciplined, practical, concerned for others and dependent,
D. This matrix probably presents the clearest separation in terms of the combinations of both elements and construct poles. It appears to consist of four, possibly five distinct clusters.

These are; (8, 1, 20) identified by 'Lonely G' which is passive, humble and shy; (7» \(2 k\), 19) identified by 'Logical G' which is concerned, settled, logical, cautious and reserved; \((17,4,14,12)\) identified by 'Passive \(G\) ' which is patient, tolerant, caring, friendly and concerned. The larger grouping in the top right-hand corner is more confusing. Possibly it could separate into a group which is illogical, disinterested and ignorant and would include \((11,13,26)\) and a second group
which is intolerant, forceful, hauty and ambitious, including (27, 18, 6) and could be identified by 'Forceful G'. However, 23, 25 and 15 contribute to both of these groupings.

Curiously, this subject, having produced the most clearly separated groupings, could not see any point in what he was doing. He thought he was behaving in a fairly random manner and did not experience much emotional involvement in the fantasies.
E. Here, there are, proportionally, many more crosses and the groupings tend to overlap. \((9,11,23,21,8,28,4,6\), 18, 19) seem to represent a softer positive grouping, identified by 'Social T' and 'Guilty T'. This can be compared with \((10,17,13,5,15,26)\) which is a stronger positive grouping, identified by 'Independent \(\mathrm{T}^{\prime}\) and is described as strong, confident, reliable, leader. \((25,16,24,22,1,14,7,2)\) are seen as unfeeling, unemotional and distant, merging into boring, difficult to communicate with and unpredictable. (27, 20) are on their own to a certain extent and appear to be particularly unpleasant.

This matrix provides a possible example of condensation. Elements 10 and 17 seem to play an important part in two clusters and as such may each represent more than one set of psychological processes.
F. This matrix is different from the others in that almost a third of the construct poles have hardly been used. The main grouping in the top right hand corner merges from a grouping (18, 1, 8, 4, 16, 9) which is sympathetic, secure, accepting, honest, open and independent, to elements that are also
artistic and anarchic such as (15, 22, 11, 3, 6, 25, 18). Both of these groupings can be identified by 'Risky C'. This larger grouping is clearly separate from the left hand section, which can be identified by 'Hurt C' and merges from vunerable, troubled, confused, insecure, self-obsessed and rejecting to dependent, armoured and rigid,
G. The overlap in this matrix is particularly interesting. The construct poles strong and well defended are applied to two large clusters. Firstly (15, 1, 27, 26, 6, 17, 8, k, 11, 9, 24,2 ) which is constant, earthy, thoughtful, emotionally stable, intimate, plays safe, responsible, attractive and nonmanipulative, and could be identified with 'Giving C'. Secondly, (13, 19, \(5,22,28,25,18)\) which is aggressive, ugly, manipulative, egocentric, mean, irresponsible, winner, and could be identified by 'Possessive \(C\) and possibly 'Selfish C'. These clusters merge down into (10, 20,21 ) who are moody, non-conformist, volatile, charming, highly strung, not welldefended, generous and could be identified by 'Funny C. This finally merges into \((21,12,14,23)\) which, among other things is a weak, meek, loser.

Possible examples of condensed elements are 18 and 21 as they each contribute to two of the clusters that have been described.
H. A higher proportion of crosses have been used in this matrix. The main grouping in the bottom left-hand corner could be identified by 'Accepting \(K^{\prime}\) and could be seen as a softer female grouping. The top right-hand grouping could be seen as
two overlapping groups; one identified by 'Reactive \(K\) ' and is defended in an aggressive manner, compared with one identified by 'Rejecting K' and 'Guilty K', and could be seen as defended in a withdrawn sense. The construct poles fit these groupings extremely well.
I. This matrix also demonstrates a high degree of overlap of related elements, because the subject has often used construct poles for more than fifty per cent of the elements.

There are still three distinct clusters. (18, 28, 3, 6, 14, 26, 23, 25, 12) can be identified by 'Submissive \(S\) ' and has all the appropriate construct poles. This merges into (7, 16, 20, \(9,2 k, 1)\) which is passive, calculated, conformer, mature, stays calm and independent. This is more clearly separable from \((21,10,11,15,27,19,8)\) which is active, forward, spontaneous, ambitious, intellectual and can be identified by 'Bossy S'.

The top left-hand quadrant of the matrix contains a large L-shape, which raay involve aspects of condensation.
J. This was a difficult matrix to rearrange, but it is still possible to identify a pattern running through the overlapping groups.

Starting in the top right-hand corner ( \(8,21,25,2, k\) ) are unsupportive, disagreeable, unfriendly, distant and identified by 'Angry R'. This merges into (18, 6, 26, 15, 17) identified by 'Independent \(\mathrm{R}^{\prime}\), with mainly positive qualities, but also unfriendly and distant. (The use of the word positive is an intrusion of the writer's constructs.) This then merges into (19, 3, 28, 7, 20) identified by 'Considerate R' and 'Insecure R' with positive but passive qualities. This grouping probably
continues to the left, but there are more gaps in the grouping of crosses.

The matrix is further complicated by the two pairs of elements \((20,18)\) and \((8,21)\). The latter pair invite interpretation since it involves a high correlation between the deep side of a river and 'Angry R'.
K. This was another difficult matrix to rearrange and the groupings are vague and overlap. Possibly (2, 21, 1, 29, 9) make the larger cluster and could be identified by 'Ideal B'. However, 'Ideal B' also contributes to a vaguer cluster, with many gaps, moving to the right and including 'Accepting B'. (17, \(26,8,4,19\) ) appear to make up a further cluster and include 'Angry B'. (3, 22, 27) make up a further cluster and are conventional, safe, stable and rigid.
L. This matrix is confusing and was the most difficult one to rearrange. Much of the difficulty comes from the fact that several construct poles have been ticked for more than fifty per cent of the elements.

The main cluster includes \((21,18,19,20)\) which were all images developed from a recurrent nightmare. The distinguishing construct poles are; doesn't need physical contact, determined to get what they want, successful, cold and tense. This includes 'Teacher A' and the subject suggested that she had to become like this in order to survive as a teacher.
\((3,7,2 k, 23)\) seems to be a highly negative set of images and includes 'FearfulA' and 'Worthless A'. (12, 14, 17, 16, 11, 25, 13, 26) are a positive group and include 'Changing A'
and 'Little A', (1, 10, 9, 15) using less of the construct poles and also including rigid.

Thus, in spite of the confusion, there does seem to be a raeajiingful set of relationships underlying the matrix.

This subject was the only one who reported having a difficult time emotionally and this occurred when she was working on the nightmare. She was, however, glad to have gone through the whole series.

Much of the interpretation in the above analysis is highly speculative, but the important feature revealed by the matrices is that the elements do cluster, which supports the main hypothesis for these studies. If the matrices represented scatter plots of correlation coefficients, a visual inspection would suggest that they were highly significant.

Groupings can be seen clearly in matrices \(A, B, C, D\), and E. In matrices \(F, G, H, I, J\) the clusterings merge and yet the groupings are still fairly clear. Matrices \(K\) and \(L\) are more confused. It is clear that there are relationships, but difficult to define clear cut structures.

The loose edges do, in fact, give a more accurate representation of the underlying reality, than would a simple statement regarding principal components or clusters taken from a computer analysis. Analyses of this nature usually involve a similar vagueness and yet the presentation in a quantitative form implies that clear-cut structures are being identified, when often this is not warranted.

It is surprising that so few clusters are produced, considering the disparate nature of the situations that were
used and the idiosyncracity of the elements that were produced. Indeed, matrices \(A\) and \(B\) seem to have divided all the elements into two large clusters. In most of the matrices, there are few isolated crosses which could be seen as a measure of randomness. If these limited, tight clusters genuinely represent the psychological processes underlying fantasy experiences, it would suggest that fantasy is a much more highly structured phenomenon than is usually supposed.

Some speculation was made regarding the process of
condensation. The fact that elements are perceived similarly would suggest the process of overdetermination. As is implied in the previous paragraph, it could be that overdetermination occurs much more than is appreciated with merely a casual experience of fantasy.

All of the subjects enjoyed going through this series of experiences and some were disappointed that it came to an end. It is unfortunate that their reports of the experiences were not collected systematically. Several subjects described the fantasy journeys as a relaxing experience. Some said that they felt they were saying important things about themselves and that the sessions were an important learning experience. Unfortunately, they found it difficult to state exactly what they felt they had learned.

The form of the diagrams seemed to be a useful one for giving feedback to the subject, since it was merely a rearrangement of what he had done. This is, of course, all that is done in a more complex statistical analysis, but it tends to be much more difficult to explain what is implied in a principal component or a cluster. Possibly, this form of representation could be a means of giving a person information in a clinical situation,
though the procedures leading up to the production of the matrix are lengthy and cumbersome. On the other hand, if Kosbad's (1972) conclusions are accepted, then the procedures could be of therapeutic value in their own right. Certainly all of the subjects in this series were glad that they had acted as volunteers.

\section*{CHAPTER 7}

STUDY 2

In the previous study, the emphasis was on the individuality of experience, in that each subject was allowed to generate fantasy elements spontaneously and to evaluate them, using their own self-generated personal constructs. In this second study, every effort was made to give two groups of subjects a similar experience, so that comparisons could be made between individuals to see if there were any common structural features emerging from the group consensus.

\section*{Study \(2(a)\)}

Procedure

Seven men and seventeen women, all students on the Postgraduate Certificate in Education course at the School of Education, Nottingham University, volunteered to take part in a series of sessions designed to investigate aspects of fantasy. A much larger sample began the series, but only those students who completed all the sessions are included in this study.

The volunteers had been asked if they were willing to take part in an experiment on fantasy and that they would be expected to attend five weekly meetings of half an hour. Two meetings were arranged for each week so that the subjects could choose which was the most convenient.

Scripts were prepared for five fantasy journeys. The content of the scripts was based on ideas and themes taken from the literature or from the writer's experience in workshops.

At this point, the reader may choose to experience one or more of these fantasy journeys in the same manner as the subjects. This would be the best way to obtain the flavour of the experiential nature of these procedures. This would involve asking another person to read the scripts while the listener was relaxed and with his eyes closed. The fourth script, 'The Tree', requires the participant to produce a drawing of a tree, preferably using coloured crayons on white paper.

The scripts are given, verbatim, as follows. The gaps in the scripts represent pauses.

\section*{Bird in a Cage}

I want you to take the first image that comes into your mind of a bird in a cage and take a good look at it. - - - try and hang on to that image, unless something forces you to change - - - - take a good look at the bird and look at its shape and its colouring - -__ take a good look at the cage and see what that is like_see how you feel about the bird and the cage - - - - even though it may seem strange, I want you to try and become the bird__be the bird and see what it feels like to be the bird_what does it feel like to be in that cage? and now, which may seem even stranger, become the cage, see what it feels like to be the cage \(\qquad\) what is it like to have that bird inside you? - \(\qquad\) and now become the bird again and see if, in imagination, you have anything to say to the cage. Say, "Cage _ _ _ - - and go along with whatever comes - - - - now become the cage again and reply to the bird. "Bird anything that comes into your head. - - \(\qquad\) change again and
become the bird and reply to the cage. "Cage \(-{ }^{\text {b }}\) - - change again and become the cage and reply to the bird. "Bird - - - - Now become the bird again and in imagination, find a way out of the cage, and in imagination see where the fantasy takes you. Go wherever you want to go - - - - - (long pause). Now, in imagination, find your way back to the cage - - - - See how you feel about being back in the cage.

\section*{The Mountain}

I want you to imagine that you are going to go up a mountain. It doesn't have to be a mountain you know. Take the image of the sort of mountain you would like to go up and imagine you are at the bottom of it. Take a good look at the mountain - - - - now set off on your journey. Be aware of what you are wearing and what the surrounding scenery is like - - - - be aware of how easy, or how difficult it is to go up. - - - - have a good look at what the ground or rock is like and the view \(-\quad-\quad-\) carry on in the way that suits you best until you find a place to sit down and rest - - - - - sit down and look around \(-\quad-\quad-\quad\) and now, become the mountain, see what it feels like to be the mountain - - - - - as the mountain see what you think of the person sitting there - - - - see if you have anything to say to that person. Address that person and go along with whatever comes - - - - now become yourself again and talk to the mountain. "Mountain - - - - now become the mountain again and reply - - - - - In imagination, continue up to the top of the mountain, where there is snow under your feet and you can feel the wind. Look at the view _ _ _ _ - now become the wind and see what it is like to be the

\begin{abstract}
wind -_what do you think of the person there and the snow - - - - now become the snow and see what it feels like to be the snow_what do you think about that person and the wind -_- become the wind again and see if you have anything to say to the person and the snow. Address them - - - - try and get them all to talk to each other - - \(\qquad\) now I want you to imagine that there is fire in the centre of the mountain and that you can find a way down into the centre of the mountain and approach the fire - - - - become the fire and see what it is like to be the fire - - - - See if you have anything to say to the mountain. "Mountain \(-{ }^{-}\)- go along with anything that comes into your head - - - - become the mountain again and reply. "Fire - - - - become the fire again and talk back to the mountain. "Mountain \(-{ }^{-}\)- now become yourself again and imagine that you can find a way out through the foot of the mountain.
\end{abstract}

\section*{The River}

In this fantasy, \(I\) want to take you on a journey down a river, from its source in the mountains, down to the ocean. Take the first image that comes of the source of the river, the place where it begins - - - - - take a good look around you and see how you feel about being at the source of the river - - - - now start to follow the stream and see where it goes and what it is like. Look at the country it is going through - - - - - for a moment, become the stream and see what it is like to be the stream - - - - what do you think of that person on the bank - - - - see if you have anything to say to the person on the bank: say whatever comes into your
head - - - - change and become yourself again and talk to the stream. "Stream - - - - change again to become the stream and talk back - - - - now become yourself again and, in fantasy, without worrying about the problem of breathing, let yourself submerge in the stream and allow yourself to be carried along with the current - - - - keep on going downstream until the stream joins a large river - - - - now come out of the water and walk along the side of the river - - - - see what the river is like and the scenery it passes through - - - - .now become the river and see what it is like to be the river. Describe yourself. "I am the river and I - - - - - now see if you have anything to say to the person on the bank - - - now change back to yourself and reply to the river. "River - - - - now become the river again and talk back - - - - become yourself again and find a way of submerging yourself in the river and allow yourself to float along with the current - - - - - imagine that you are floating out into the ocean and that you are floating on the surface with the sun above you - - - - - feel the sun and the breeze on your face, and listen to the sounds of the ocean - - - - slowly allow yourself to sink into the depths of the ocean - - - - - now become the ocean - - - - See if you have anything to say to the sun. "Sun - - - - - change and become the sun and see if you have anything to say to the ocean. "Ocean - - - - change again and talk to the sun. "Sun - - - - change again and talk to the ocean. "Ocean -__ - become yourself again and slowly come up to the surface of the ocean.

\section*{The Tree}

Take a good look at the tree you have drawn - - - . now close your eyes and take three deep breaths - - - - and become the tree - - - - silently describe yourself as that tree, "I am the tree and I__describe yourself in as much detail as you can, how do you feel about being that tree in that place now I would like you to become the trunk of the tree and describe yourself in more detail. "I am the trunk and I - - - - - What does it feel like to be the trunk. - - -___ what is it like inside you, trunk - - - - how do you get on with the roots below you and the branches above - . . - now become the branches - - - - describe yourself. "I am the branches and I - - - - .. What does it feel like to be the branches. - - - - How do you get on with the trunk and the leaves of the tree - - - - now go right down into the earth and become the roots - - - - describe yourself. "I am the roots and I - - - - - What does it feel like to be the roots - - - - see if you have anything to say to the rest of the tree, "Tree - - - - - Now become the leaves and if there are no leaves on your tree, become the leaves that could be there - - - - describe yourself. "I am the leaves and I - - - - - What does it feel like to be the leaves. - - - - how do you relate to the rest of the tree _ _ _ _ - imagine a conversation between the different parts of the tree - - - - (long pause) now become the whole tree and see how you feel about your various parts and how they get on with each other - - - - Now what do you think about the place you are in and perhaps how you would like to change.

\section*{The Body}

In this fantasy I want you to imagine that you are getting very very small. So small that you are tiny enough to go into your mouth and explore your own body. In a moment, I am going to ask you to go inside your body, but I don't want you to worry about what the body is really like inside - just go along with the images that come.

Now imagine that you are the small person in front of the mouth of your own body and find a way inside the mouth - - - see how you feel about being there - - - - - take a good look around - - - - What is the throat like - - - - how do you feel about going down the throat - - - - and for a moment become the throat - - - - see what it feels like to be the throat - - - - - what do you think of that tiny person who wants to get past you - - - - talk to the person - - - - become yourself and talk back. "Throat - - - - become the throat again and reply - - - - now become yourself and stand at the top of the way down to the stomach - - - - let yourself go down and see what happens - - - - have a good look around to see where you are - - - - how do you feel about being where you are - - - - now in fantasy start to explore the body and see if you can find a way to the heart - - - - what is the heart like - - - - what do you think of the heart - - - - become the heart and see what that feels like - - - - describe yourself "I am the heart and I - - - - - Now become yourself and carry on exploring the body and see if you can find a way to the brain - - - - have a good look at the brain and see what it is like - - - - now become the brain and see what it feels like to be the brain - - - - describe yourself, "I am the brain and

I
- - - - as the brain, see if you have anything to say to the heart, "Heart - - - - change and become the heart again and see if you have anything to say to the brain, "Brain - - - - keep the conversation going and see where it goes - - - - - now become yourself again and continue exploring your body until you can find your way to the centre of the belly - - - - as the small person find your way right into the centre of the belly \(\qquad\) see what it is like
become the centre of the belly and see what it feels like - - - - talk to the tiny person inside you - - - - - change and become yourself and talk to the centre of the belly, "Belly - - - - - change and become the belly amd reply - - - - now become yourself and in imagination, find a way out through your navel.

The first fantasy journey in the scripts included two elements that were worked with in detail - 'the bird' and 'the cage'. The subsequent four fantasy journeys each had four elements which were emphasized. This emphasis is made by asking the subject to identify with the element and engage in fantasy conversations between the elements.

In order to provide common constructs, the subjects were supplied with sixteen pairs of adjectives taken from Cattell's (1965) 16 P.F. Scale. The writer is somewhat abashed at using this device, as he is emotionally committed to the phenomenological advantages of Kelly's (1955) theory outlined in the Psychology of Personal Constructs. The sixteen personality factors could be seen, with a stretch of the imagination, as universal, superordinate personal constructs.

A small booklet was prepared for each subject, with a page for each element, so that he could rate each element on a seven point scale between the opposing adjectives of the sixteen personality factors. The first page is reproduced with hypothetical ratings as follows:-

RESERVED
LESS INTELLIGENT
EMOTIONAL
HUMBLE
SOBER
EXPEDIENT
SHY
TOUGH-MINDED
TRUSTING
PRACTICAL
FORTHRIGHT
CONFIDENT
CONSERVATIVE
GROUP-TIED
RELAXED
CASUAL

BIRD


OUTGOING
MORE INTELLIGENT
STABLE
ASSERTIVE
HAPPY-GO-LUCKY
CONSCIENTIOUS
VENTURESOME
TENDER MINDED
SUSPICIOUS
IMAGINATIVE
SHREWD
APPREHENSIVE

EX PERIMENTING
SELF-SUFFICIENT
TENSE
CONTROLLED

After the sixth page, there was a page for 'myself and after the fifteenth page, there was a page for 'myself as I would like to be'. This gave a total of twenty elements, which are given as follows in the order in which they were rated.
\begin{tabular}{clll} 
1. & BIRD & 11. & SUN \\
2. & CAGE & 12. & TRUNK \\
3. & MOUNTAIN & 13. & BRANCHES \\
k. & WIND & 14. & ROOTS \\
5. SNOW & 15. & LEAVES \\
6. FIRE & 16. & MYSELF AS I WOUL \\
7. MYSELF & 17. & THROAT \\
8. STREAM & 18. & HEART \\
9. & RIVER & OCEAN & BRAIN \\
10. & & BELLY
\end{tabular}

The subjects were seated on upright chairs, at tables, with the booklets in front of them. They were asked to make themselves comfortable, which they did in a variety of different ways. They were then asked to close their eyes, take three deep breaths and relax as completely as possible. Then the first script was slowly read to them. Afterwards, they were asked to make the appropriate ratings for the two elements emphasized in the script, namely 'the bird' and 'the cage'.

A similar procedure was used with each fantasy, with the exception of 'The Tree'. In this latter case, the subjects were provided with a large sheet of paper and crayons, and then given instructions similar to those for 'The Tree' in the first study. "I want you to use the paper in any way you wish and draw a picture of a tree. Artistic quality does not matter, just draw the tree you want to draw - your tree. You have ten minutes to draw the tree."

The subjects were asked to rate 'myself after completing 'The Mountain' and 'myself as I would like to be' after working on 'The Tree'.

The subjects were told at the end of the series that they could come to visit the writer individually to look at a preliminary analysis of their results and to discuss the experience.

\section*{Results}

When individual subjects had completed the booklets, the ticks were converted into ratings from one to seven. Then twenty-four grids were compiled with identical elements, which were the elements identified with in the fantasy journeys and identical constructs which are the descriptive adjectives of the 16 P.F. Scale.

These were analysed with two programmes taken from the Grid Analysis Package (G.A.P.) compiled by Slater (see Slater, 1977). First the programme SERIES was used, which averages the ratings in each equivalent cell of the matrix for all of the subjects involved. This produced a composite grid for the whole group, which was then analysed by INGRID 72.

INGRID 72 is a principal components analysis designed for the analysis of grids of elements and constructs. The array of data is analysed both in terms of the relationship between the elements as defined by the constructs and the relationship between the constructs in terms of how they are applied to the elements.

The programme first extracts the main set of relationships in terms of both constructs and elements to provide the first principal component. From the variation that remains, a second principal component is extracted, and then a third and so on.

This approach has been criticized because the components have not been rotated. Slater (1977) argues that the unrotated approach provides an ordered series of components clearly separated in terms of the variation they account for. There is, however, still an ongoing debate as to which is the most appropriate analysis.

In theory, the programme could produce as many components as the number of constructs used in the grid. However, when the amount of variance accounted for by a single component drops to below \(2 \%\) it becomes relatively meaningless. In many grid analyses, the first three components account for more than \(80 \%\) of the variance in the grid.

Using an application of the Bartlett Test (Slater 1977), INGRID 72 also gives an approximation of how many of the principal components are statistically significant in terms of the degree to which they differ from a randomly generated grid. There are still methodological problems associated with a calculation of this nature and Slater himself admits (Slater 1977) that it sometimes produces results that are difficult to explain. Often, a surprisingly high number of principal components are shown to be statistically significant,

A further problem, which has already been raised in relation to Study 1 refers to the difference between psychological significance and statistical significance. A single tick on a sheet can have important implications in terms of what it reflects in psychological terms and yet play a minimal part in determining the significance of a principal component.

The analysis of the combined grids produced in this study, using SERIES, followed by INGRID 72 suggests that there are six significant principal components, whose latent roots and percentage variance are given below.
\begin{tabular}{lcc} 
Component & Root & As per cent \\
1 & 7.19 & 44.94 \\
2 & 3.74 & 23.39 \\
3 & 2.02 & 12.60 \\
4 & 1.34 & 8.40 \\
5 & 0.59 & 3.72 \\
6 & 0.45 & 2.79
\end{tabular}

This would suggest a definite structure underlying the composite grid; the significant components accounting for almost \(96 \%\) of the variance in the grid. This high percentage would suggest that most of the data fits into some form of structure.

A useful way of illustrating the information provided in this analysis is to plot the elements and constructs onto a two dimensional graph, in which the horizontal axis represents the first principal component and the vertical axis represents the second principal component. This is done by using the loadings for each construct and element for both of the first two components.

This diagrammatic representation is shown on the next page, followed by tables showing the loadings for all of the six significant components.

The diagram accurately reflects the geographical position of the elements in relation to each other as projected into two-dimensional space, in terms of the first two components. The same is true of the constructs, but constructs cannot be directly related to elements in the same manner. This is true

Components One and Twंo from the Principal Components Analysis of the Group Data from Study 2(a)


Table 1.
Factor Loadlings for Components One, Two and Three from the Principal Components Analysis of the Group Data

\section*{from Study 2(a)}
\begin{tabular}{ccccl} 
& Component 1 & Component 2 & Component 3 & \\
Element & Loading & Loading & Loading & \\
1 & -0.07 & -0.17 & 0.08 & BIRD \\
2 & 0.79 & -0.25 & 0.00 & CAGE \\
3 & 0.51 & 0.72 & -0.14 & MOUNTAIN \\
A & -1.07 & 0.30 & 0.50 & WIND \\
5 & 0.74 & -0.93 & 0.26 & SNOW \\
6 & -0.36 & 0.29 & 0.91 & FIRE \\
7 & -0.15 & -0.29 & -0.23 & MYSELF \\
8 & -1.15 & 0.11 & -0.32 & STREAM \\
9 & 0.66 & 0.34 & -0.04 & RIVER \\
10 & 0.08 & 0.40 & 0.16 & OCEAN \\
11 & -0.25 & 0.43 & -0.13 & SUN \\
12 & 0.69 & 0.16 & -0.26 & TRUNK \\
13 & 0.60 & -0.46 & -0.13 & BRANCHES \\
14 & 0.57 & 0.03 & -0.10 & ROOTS \\
15 & -0.90 & -0.85 & -0.09 & LEAVES \\
16 & -0.51 & 0.29 & -0.62 & IDEAL SELF \\
17 & 0.55 & -0.16 & 0.26 & THROAT \\
18 & 0.16 & 0.35 & -0.20 & HEART \\
19 & 0.06 & 0.22 & 0.19 & BRAIN \\
20 & 0.28 & -0.53 & -0.10 & BELLY
\end{tabular}

Construct
\begin{tabular}{rrrrl}
1 & -0.95 & 0.11 & -0.01 & RESERVED \\
2 & 0.11 & 0.80 & -0.18 & LESS INTELLIGENT \\
3 & 0.86 & 0.32 & -0.31 & EMOTINNAL \\
4 & -0.61 & 0.67 & 0.24 & HUMBLE \\
5 & -0.97 & -0.20 & -0.03 & SOBER \\
6 & 0.71 & 0.25 & -0.52 & EXPEDIENT \\
7 & -0.92 & 0.32 & 0.02 & SHY \\
8 & -0.15 & -0.76 & -0.50 & TOUGH MINDED \\
9 & 0.37 & 0.10 & 0.88 & TRUSTING \\
10 & -0.88 & -0.21 & -0.02 & PRACTICAL \\
11 & 0.27 & -0.18 & 0.29 & FORTHRIGHT \\
12 & 0.38 & -0.82 & 0.13 & CONFIDENT \\
13 & -0.90 & -0.13 & 0.08 & CONSERVATIVE \\
14 & -0.22 & 0.83 & 0.12 & GROUP TIED \\
15 & 0.47 & -0.36 & 0.64 & RELAED \\
16 & 0.80 & 0.43 & 0.05 & CASUAL
\end{tabular}

Table 2.
Factor Loadings for Components Three Four and Five from
the Principal Components Analysis of the Group Data from Study 2(a)

Component 4 Component 5 Component 6
\begin{tabular}{ccccl} 
Element & Loading & Loading & Loading & \\
1 & -0.19 & -0.25 & \(-0,24\) & BIRD \\
2 & -0.01 & -0.10 & 0.01 & CAGE \\
3 & 0.35 & -0.09 & \(-0,24\) & MOUNTAIN \\
4 & 0.22 & 0.15 & -0.04 & WIND \\
5 & -0.10 & 0.03 & -0.12 & SNOW \\
6 & -0.15 & -0.09 & 0.10 & FIRE \\
7 & -0.31 & -0.43 & -0.00 & MYSELF \\
8 & 0.28 & -0.05 & -0.11 & STREAM \\
9 & -0.29 & 0.36 & -0.17 & RIVER \\
10 & -0.01 & 0.09 & -0.08 & OCEAN \\
11 & 0.02 & -0.08 & -0.04 & SUN \\
12 & 0.09 & 0.11 & 0.22 & TRUNK \\
13 & 0.13 & 0.08 & 0.16 & BRANCHES \\
14 & 0.28 & -0.14 & 0.16 & ROOTS \\
15 & 0.06 & 0,11 & 0.04 & LEAVES \\
16 & -0.44 & 0.08 & -0.05 & IDEAL SELF \\
17 & 0.36 & -0.10 & -0.02 & THROAT \\
18 & 0.15 & -0.03 & 0.33 & HEART \\
19 & -0.60 & 0.05 & 0.18 & BRAIN \\
20 & 0.14 & 0.29 & -0.08 & BELLY
\end{tabular}

\section*{Construct}
\begin{tabular}{rrrrl}
1 & 0.02 & -0.01 & 0.19 & RESERVED \\
2 & -0.48 & -0.23 & -0.03 & LESS INTELLIGENT \\
3 & 0.06 & 0.14 & -0.07 & EMOTIONAL \\
4 & 0.08 & 0.03 & 0.21 & HUMBLE \\
5 & -0.08 & 0.01 & -0.01 & SOBER \\
6 & -0.28 & -0.11 & 0.22 & EXPEDIENT \\
7 & -0.09 & 0,05 & 0.07 & SHY \\
8 & -0.28 & 0.02 & -0.08 & TOUGH MINDED \\
9 & -0.01 & 0.14 & -0.13 & TRUSTING \\
10 & -0.34 & -0.10 & -0.05 & PRACTICAL \\
11 & -0.75 & 0.47 & 0.10 & FORTHRIGHT \\
12 & -0.21 & -0.22 & -0.19 & CONFIDENT \\
13 & -0.31 & -0.14 & -0.02 & CONSERVATIVE \\
14 & -0.19 & -0.11 & -0.41 & GROUP TIED \\
15 & -0.10 & -0.39 & 0.24 & RELAXED \\
16 & -0.27 & -0.13 & 0.10 & CASUAL
\end{tabular}
of all of the diagrams of this nature that appear later in the text.

The difference between the dispersion of elements or constructs within component space varies according to the number of constructs or elements (Slater 1977). Hence the distance between any construct and any element will vary according to the number of constructs and elements. On the other hand, the angular distance remains the same. For the purpose of examining the aims of these studies it is probably most meaningful to first look at the organization of the elements in the diagrams and then identify the constructs that are applied to the elements in terms of a line from the centre of the diagram passing through the position of the construct.

This problem is often solved by placing all the constructs around the outsides of the diagram. The writer has chosen not to do this and has plotted the positions of the constructs according to their factor loadings, as this gives an indication of which constructs have been applied in a more extreme way.

The constructs that have been written into the diagrams tend to be the poles written down the right-hand side of the list of 16 personality factors given in the earlier section, going from outgoing to controlled. The opposite poles, going from reserved to casual could be placed in the diametrically opposite part of the diagrams. These were not put in to avoid cluttering up the diagrams.

Similarly, in the discussions of individual components, if
one construct pole or personality factor is used to describe one end of the component, the opposite pole automatically applies to the other end.

\section*{Discussion}

The first principal component sorts out the fantasy elements along a dimension which is described by the construct poles, venturesome, outgoing, experimenting, imaginative, ' happy-go-lucky, assertive, casual, emotional and expedient at one end. These are generally applied to elements, 'the wind', 'the stream', 'the leaves' and to a less extent, 'the branches' and 'myself as I would like to be'. (M.W.L.T.B. as it appears in all of the diagraims. )

The other end of the dimension is described by the constructs controlled, stable, conscientious, shy, reserved, conservative, practical, sober and humble, which are used to describe 'the mountain', 'the river', 'the trunk', 'the roots', 'the throat', 'the cage' and 'the snow'.

This would suggest that the main set of differences among the fantasy elements as they are perceived by the whole group of subjects is between those that involve change, growth and being undefended. These are best represented by 'the wind' amd 'the stream'. The opposite elements are those which are heavily defended, perhaps best represented by 'the river', 'the trunk', 'the roots', 'the throat' and 'the cage'.

Intuitively, this would seem to be appropriate and lends support to the suggestion by Assagioli (1965) that this is one of the major dimensions of the structure of fantasy.

The second principal component sorts out the imagery element: along a dimension which is described by the construct poles, less intelligent, humble, tender-minded, apprehensive and group tied and are aplied to 'the belly', 'the leaves' and 'the snow'.

The other end of the dimension is described by the construct poles intelligent, assertive, tough-minded, confident and self-sufficient and are applied to 'the mountain', 'the sun', 'the ocean' and 'the heart'.

This would suggest that the main set of differences implied by this component is between fantasy elements that are generally fearful and are best represented by 'the belly' and those that are strong and are best represented by 'the mountain'.

The third component separates out the fantasy elements along a dimension that, at one end, is described by the constructs, conscientious and tenderminded and is most clearly represented by 'myself as I would like to be'.

The other end of this dimension is described by the construct poles, suspicious and tense, which are used to describe 'the fire' and 'the wind'.
'Myself as I would like to be' has the highest loading on this component and it is interesting to note how this element fits into the overall structure of fantasy elements. It would appear that this group did not particularly want to be like 'the fire' and 'the wind'. 'Myself as I would like to be' is most like the stream (INGRID 72 expresses the inter-element relationships as cosiness, which Slater (1977) states are mathematically equivalent to correlations. This gives a correlation of 0.56 between these two elements.) The writer suspects that the stream represents aspects of childhood which have been lost and that many individuals would like to regain aspects of this state.

The fourth component sorts out the elements along a dimension that is described as shrewd and more intelligent at one end and best represented by 'the brain' and to a less extent by 'myself as I would like to be'. This is not a surprising result from a group of academics.

The other end of this dimension is described as forthright and less intelligent, referring to 'the mountain' and 'the throat'.

None of the component loadings for components five and six are greater than 0.5. (The component loadings are derived from rating scales that have been normalized and range from 0,0 to \(\pm 1.0\) with a small minority of loadings above \(\pm 1\) where extreme ratings have been given.)

The clearest difference in component five suggests that 'myself (loading 0.43) is tense (0.39) as opposed to 'the river' (0.35) which is shrewd (0.47). The nearest element to myself is 'the bird'. There is, in fact, a correlation of 0.62 between 'the bird' and 'the river'. The writer noted with interest that the average member of this group might see themselves as tense and like a bird that is in a cage. The writer has often used this fantasy trip in a variety of workshop situations and it invariably produces a great deal of discussion from the participants about themselves.

In the sixth component, 'the heart' (0.33) is seen as group-tied (0.41).

Loadings at a lower level could be important, but they could reflect the extreme ratings of a single subject and will not be considered in this examination of group data.

So, it would appear that the combined results of these 24 subjects presents a definite structure in terms of the groupings of elements and also in terms of the descriptive labels that the subjects have applied to these groupings. The degree of separation demonstrated in the diagram for the first two components is all the more surprising, considering that there are marked individual differences between the subjects, which will be described later.

Another way of looking at the structure of the relationships between the elements is to examine the matrix of correlations between the elements, which is taken from the 'Inter-element relations expressed as cosines' produced by INGRID 72. This will give a measure of the degree to which individual pairs of elements are seen to be similar to or different from each other. This table is given on the following page.

There is some evidence within this structure supporting Freud's ideas on overdetermination and condensation. Heavily defended images such as 'the river', 'the trunk', 'the roots', 'the throat' and 'the cage' seem to be representing the same underlying structure. The intercorrelations of these elements are given as follows:-
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline & & 1 & 2 & 3 & 4 & 5 \\
\hline CAGE & 1. & & & & & \\
\hline RIVER & 2. & 0.51 & & & & \\
\hline TRUNK & 3. & 0.67 & 0.67 & & & \\
\hline ROOTS & 4. & 0.66 & 0.36 & 0.83 & & \\
\hline THROAT & 5. & 0.76 & 0.23 & 0.47 & 0.73 & \\
\hline
\end{tabular}
\(\stackrel{\sim}{N}\)
\begin{tabular}{|c|c|}
\hline 9 & \({ }_{\text {co }}\) \\
\hline \(\stackrel{00}{\sim}\) & \[
\begin{array}{r}
\text { - } \\
0 \\
0
\end{array}
\] \\
\hline \(\stackrel{\text { rv．}}{\sim}\) &  \\
\hline \(\stackrel{\sim}{\square}\) & oonn o \\
\hline \(\stackrel{n}{\sim}\) & \[
\stackrel{00}{-1} \text { 오co cm }
\] \\
\hline \(\pm\) & ํํำc NกN \\
\hline \(\cdots\) &  \\
\hline \(\xrightarrow[\sim]{\sim}\) & \(\sim_{n}^{\infty} \times \infty \times \sim\) \\
\hline \(\cdots\) & のmonNNmのง \\
\hline \(\bigcirc\) &  \\
\hline \(\sigma\) &  \\
\hline 00 & \begin{tabular}{l}
のレ \(0 \infty \infty\) ○－ \(0 \infty\) ○ N N \\

\end{tabular} \\
\hline \(N\) &  \\
\hline \(\bigcirc\) & \begin{tabular}{l}
 \\

\end{tabular} \\
\hline n &  \\
\hline \(ナ\) &  \\
\hline co & \begin{tabular}{l}
 \\

\end{tabular} \\
\hline N &  \\
\hline \(\cdots\) &  \\
\hline
\end{tabular}



Possibly this hypothesized psychological structure has to be overdetermined to counteract the extremes of the other end of this component such as 'the wind' and 'the stream'. (The ratings for 'the wind' and 'the stream' correlate 0.74.)

Some fantasy elements play an important part in more than one principal component. 'The leaves' are perceived as free and fearful. The snow is perceived as fearful and defended. The mountain is seen as defended and strong. It is possible that more than one underlying psychological structure has been condensed into a single fantasy element.

Many of the descriptions of the elements appear to fit common sense as the writer sees it. It may seem strange that the river is seen as a defended element, but in the context that it is used, it is compared with the stream at its source. Intuitively, the writer feels that 'the stream' in some way represents childhood and youth, whereas 'the river' represents adulthood.

The identification of the throat with tension is interesting, as some of the radical psychiatrists who have developed

Reich's (1949) work, such as Lowen (1975) and Kelley (1974) suggest that the blocking of emotional tension is often effected by tension in the throat. These writers also see the belly as the locus for the experience of fear and 'the belly' contributes strongly to the fearful end of the second component.

Another connection between the physical body and fantasy experience came out of 'The Bird in the Cage' fantasy. The cage appears in the defended grouping and three of the subjects reported that they could actually feel 'the cage' as tension within their own bodies. 'The bird' emerges as being similar
to 'myself with regard to both components one and two, and also component five, as has already been mentioned. This could be interpreted as part of the self represented by 'the bird', being trapped inside another highly defended part of the self represented by 'the cage'.

The natural progression of this idea might be that the defended images are preventing the individual becoming like 'the stream' (previously described as correlating 0.56 with 'myself as I would like to be' and 0.52 with 'the sun').

\section*{Individual Results}

The composite structure described in the previous section is made up of twenty-four individual grids. These were each computed separately, using the INGRID 72 program.

In terms of the number of significant principal components produced by each subject, the following results were obtained:-
\begin{tabular}{rl} 
No. of Sig. Com. & No. of Subjects \\
& \\
11 & 1 \\
7 & 1 \\
5 & 2 \\
4 & 7 \\
3 & 6 \\
2 & 5 \\
NEGATIVE & 2
\end{tabular}

A 'negative' result means that there is not more than one significant component but does not mean that there is no underlying structure.

Slater (1977) states that the use of the Bartlett Test as a measure of the significance of components produces occasional results that are difficult to explain. The analysis which produced eleven significant components is probably an example of this. It is, of course, a possible result as there are more constructs or elements than the number of components extracted.

Thus, using the analysis provided by INGRID 72, every individual grid has a structure of its own, underlying the group structure. The individual results vary in terms of the number of significant components produced, though the majority have between three and five.

The diagrams on the following pages have been constructed from the results of three subjects: C.H., who had a negative result from the test of significance, S.L., with four significant components and M.K., with eleven significant components. These diagrams will not be discussed in great detail, but will be related to the consensus grid for the complete group of subjects.

The internal structure of these three grids differs considerably, and yet marked similarities appear between these diagrams and the combined group diagram in terms of the first two significant components.

The faintasy elements 'the wind' and 'the stream' appear to be consistently placed at one end of the dimension for the first principal component. 'The cage', 'the river', 'the trunk', and in two of the examples, 'the mountain', are placed at the other end. Both C.H. and S.L. appear to have a strong-fearful
```

dimension as the basis of the second component, which is also
true to a lesser extent of M.K.
Thus these diagrams appear to match the combined diagram
in terms of the first two components, even though individual
elements are placed differently. In C.H., 'the sun' and 'the
snow' are placed close together. In S.L., 'the heart' has moved
to the undefended end of the first component. In C, 'the roots'
have moved to the undefended end of the first component.

```




These individual results show clear, individual differences in both internal structure and in the placing of elements and yet they also relate closely to the combined structure of the group.

Study 2 (b)
Procedure
This study is an attempt to provide a similar experience to that of Study \(2(a)\) for a group of thirteen to fourteen year old children. The only difference is that the children used their own personal constructs for rating purposes, rather than Cattell's sixteen personality factors. It was felt that there would be confusion over the meaning of several cf the words.

The procedures for this group were carried out by their English teacher, Carol Hopkins, who knew them well and maintained a good relationship with them. This sort of relationship is probably necessary to provide the trust and co-operation needed in a task of this nature (see Hall 1977).

The group consisted of fourteen boys and fifteen girls, aged between thirteen and fourteen who were in the top band of a comprehensive school. This means that they were in the top twenty per cent of a cross-section of the local population in terms of ability and possibly in terms of intelligence.

In order to generate individual sets of constructs, they were given a group form of the repertory test (Kelly 1955). They were talked through the test, using the following procedure (see Hall 1978), "Think of your father". "Now think of Mr. Bullock" (a teacher they knew well). "How are they different
from your cousin?" It was then explained how they were to write down the two poles of the construct.

The questioning continued in the same way. "Think of your mother". "Think of me." "How are both of us different from the headmaster?" Kelly describes the list of people used for this purpose as the 'role title list'. Subsequent role titles included suggestions such as 'someone you really fancy', - your best friend', 'someone you dislike intensely', 'someone you have respect for', 'someone you are jealous of and so on.

Alternative role titles were supplied for individuals to whom the initial role title did not apply. When they complained that they could not think of anything, they were prompted with questions like "What is the first thing that comes into your mind when you think of. .. . ?"

The children found this an involving task and generated meaningful lists of bi-polar constructs ranging from seventeen to eleven constructs. Any anomalies in the list were checked with the person concerned. In particular, there was a tendency to use the same pole twice, with different opposite poles. In cases like this, the individual was asked to choose which of the conflicting poles they preferred.

Using the constructs they had generated, individual booklets were prepared with pages similar to the one illustrated in Study \(2(a)\). Thus each child had his own personalized rating booklet, with his own constructs typed down the side.

There were five weekly sessions. The teacher used exactly the same procedure as used in the previous study - relaxation, the reading of the script and the rating of the elements.

\section*{Results}

As each subject had used his own set of personal constructs, the grids produced by the ratings could only be aligned by elements and not by constructs. From this, a consensus can only be obtained of the relationships between the elements.

This was done using the programme PREFAN, from the Grid Analysis Package (see Slater 1977) which is specifically designed for this purpose. This programme amounts to a principal components analysis of the correlations between the subjects. As Slater describes it, "The constructs are centered and standardardized and the resulting array of deviations is premultiplied by its transpose to form an 'm' by 'm' product matrix, to which the analysis is applied" (Slater 1977 p. 147).

The analysis of the data from this study suggests that there are eleven significant principal components. The amount of variance contributing to each of these components is given in the following table:-
\begin{tabular}{rr} 
Component & As per cent \\
1 & 18.88 \\
2 & 8.64 \\
3 & 7.59 \\
4 & 6.67 \\
5 & 6.36 \\
6 & 5.43 \\
7 & 5.24 \\
8 & 4.78 \\
9 & 4.58 \\
10 & 4.25 \\
11 & 4.10
\end{tabular}

There is a definite structure underlying the ratings of fantasy elements obtained in this study. It is, however, a much more complex structure compared with the results of Study \(2(a)\) with a much smaller first component, whereas the fifth and subsequent components account for a larger share of
the variance. It could be that several of the lower components are accounted for by the results of one or two subjects.

A diagram showing the combined results for components one and three is given on the next page. The reason for using the third component rather than the second is that the third component of this study appears to be most lilce the second component of Study \(2(a)\) and this helps to illustrate the possible comparisons between the two studies. It must be remembered that the two components shown in this diagram account for only \(26.4 \%\) of the variance of the analysis of this group. The diagram is followed by a list of the component loadings for the elements from the first three components.

It has already been suggested that some of the smaller significant components can be accounted for in the results of one or two subjects. Since the following discussion is concerned with group structure, it will be limited to the first three components.

Discussion
The results suggest that there is a definite structure underlying the combined ratings of the elements as they were experienced bỳ this group of adolescents. It is, however, a much more complex structure, as the first three components only account for \(35.1 \%\) of the total variance compared with 80.9\% in Study \(2(a)\). Chetwynd (1977) suggests that complexity can be seen as an inverse measure to the amount of variation accounted for by the first component. The significant components account for \(72.5 \%\) of the total variance.


\section*{Study \(2(\mathrm{~b})\)}
\begin{tabular}{rrrl}
\multicolumn{1}{l}{ 1st } & \multicolumn{1}{l}{ 2nd } & 3rd & Element \\
-8.20 & 4.46 & -9.43 & BIRD \\
14.04 & -4.81 & -0.05 & CAGE \\
6.80 & -1.76 & 4.92 & MOUNTAIN \\
7.39 & 8,52 & 4.77 & WIND \\
3,32 & 2.43 & -6.59 & SNOW \\
9.73 & 8.24 & -0.86 & FIRE \\
-9.84 & -2.73 & 0.02 & MYSELF \\
-6.13 & 4,55 & 4.69 & STREAM \\
7.63 & 0.67 & 7.65 & RIVER \\
5.71 & -1.08 & 7.20 & OCEAN \\
-4.56 & 2.88 & -2.33 & SUN \\
11.62 & -9.48 & 0.07 & TRUNK \\
-2.50 & 5.20 & -6.79 & BRANCHES \\
9.49 & -6.07 & -5.94 & ROOTS \\
-6.53 & 14.28 & 7.00 & LDAVES \\
-21.62 & -7.60 & -7.49 & THROAT \\
1.15 & \(-3,70\) & -2.09 & HEART \\
-7.10 & \(-4,27\) & 5.20 & BRAIN \\
-9.20 & -6.49 & -7.68 & BELLY \\
-1.20 & -3.24 & &
\end{tabular}

There are a high number of significant components, but Slater (1977) suggests that the assumptions of the Bartlett Test axe more appropriate to this form of analysis than for a grid analysed individually by INGRID.

It is not surprising that a more complex structure was obtained in this study as the constraints placed on the subjects were much less, since they were allowed to use their own individually generated personal constructs to evaluate the fantasy elements.

Having given this freedom, it is then difficult to ascribe meaning to the structures because there are no common identifying labels. An attempt will be made to do this by showing similarities between the relationships between the elements in this study and those in the previous study and to extrapolate meaning from one to the other.

Support for taking this procedure is obtained by calculating a measure of similarity in the organization of the elements. The elements being common to both studies. The programmes SERIES and PREFAN each provide a measure of the distance between each of the elements as they are situated in relation to each other in a multi-dimensional space, With twenty elements, this allows one hundred and ninety possible comparisons of each element with all the rest, within one group, in terms of distance. Using Pearson's \(\underline{\underline{x}}\) a correlation of 0.28 was obtained between the two sets of measures of distance, which is significant at the 0,01 level.

This reflects a mere \(7.84 \%\) of the variance common to the two sets of differences. A low correlation is not surprising, considering the nature of the task and the differences in the
two groups. The group diagrams for these two studies reveal clear differences in the placing of certain elements, such as 'the wind'. Since the comparison of some elements would contribute towards a negative correlation, then the relationship between the remaining elements must involve a higher correlation. The correlation obtained does suggest that there is a common core to the structure of the experience of fantasy in these two groups. The following discussion of the structure obtained in this study will be related to the similarities between the two groups.

The diagram on the following page consists of the distributions of elements from both studies, superimposed on each other. An exact comparison of the two sets of elements cannot be made as the two sets of calculations use different scales. The relationships are best seen in terms of the direction from the intersection of the axes.

The first component obtained in Study \(2(\mathrm{~b})\) makes a similar separation to that obtained in the previous study, between 'the roots', 'the trunk', 'the cage', 'the river' and 'the mountain' on the one hand and 'the stream', 'the leaves' and 'myself as I would like to be' on the other. The grouping including 'the roots' has been joined by 'the ocean', 'the fire' and 'the wind'. 'The wind' has made the most obvious move from one end of the dimension to the other. The group including 'the stream' has been joined by 'the brain', 'myself, 'the heart' and 'the bird'.

\author{
Study \(2(a)\) based on the Factor Loadings for Components One and Two, and the Elements of Study \(2(\mathrm{~b})\) based on the Factor Loadings for Components One and Three
}


The third component, which is shown on the vertical axis of the diagrams separates out 'the sun', 'the fire', and 'the ocean' from 'the bird', 'the leaves', 'the belly', 'the throat', 'the snow' and 'the roots'.

This is similar to the second component in study \(2(a)\), with 'the sun' and 'the ocean' separated from 'the leaves', 'the belly' and 'the snow'.

The second component separates out 'the fire', 'the wind' amd 'the leaves' from 'myself as I would like to be', 'the brain', 'the trunk' and 'the roots'. This is similar to the third component of Study \(2(a)\), which separates out 'the fire' and. 'the wind' from 'myself as I would like to be'.

The main differences between the two sets of data would seem to be that 'the wind' and 'the fire' have changed dramatically in terms of the horizontal axis of the combined diagram and 'the heart' has changed to a lesser extent in terms of both.

Some similarities are striking, as in the case of 'the cage', 'the sun', 'the ocean' and 'the trunk'. Other elements, such as 'myself as I would like to be', 'the stream', 'the leaves', 'the bird', 'the belly', 'the snow', 'the roots', 'the river' and 'the mountain', are similar in terms of the angle produced by lines drawn to the intersection of the two axes.

So, it would seem, this study has produced a significant, but looser structure in terms of the relationships among the fantasy elements. Also, it is possible that there is a similar underlying psychological meaning to the structure obtained in Study \(2(a)\), since there is a similar pattern of relationships among the elements. These parallels are outlined in the following way:-
\begin{tabular}{lll} 
Study 2 (a) & Study 2 (b) & \\
1st component & 1st component & \begin{tabular}{l} 
stable, defended - free, \\
undefended
\end{tabular} \\
2nd component & 3rd component & \begin{tabular}{l} 
strong - fearful
\end{tabular} \\
3rd component & 2nd component & \begin{tabular}{l} 
conscientious, trusting, \\
relaxed - expedient, suspicious, \\
tense
\end{tabular}
\end{tabular}

Evidence regarding condensation and overdetermination can be extracted from this study. In particular, the close grouping of 'the ocean', 'the fire', 'the mountain', 'the wind' and 'the river'. This would suggest that this adolescent group produces many images that are both strong and stable and hence overdetermine this form of experience in imagery.

Individual Results
The individual grids for all twenty-nine subjects were analyzed using the INGRID program. They produced a variety of differing structures, which are summed up in the following list :-
\begin{tabular}{ll} 
No. of Significant Components & No. of Subjects \\
\hline 14 & \\
12 & 1 \\
11 & 1 \\
8 & 1 \\
6 & 1 \\
5 & 1 \\
4 & 2 \\
3 & 4 \\
2 & 4 \\
NEGATIVE & 9 \\
\end{tabular}

As has already been stated, a 'negative' result implies that there is not more than one significant component. The writer would guess that results with a high number of significamt components, say above six, do not mean very much. These could provide examples of where the application of the Bartlett Test provide results that are difficult to explain (slater 1977). On the other hand, they could imply an extremely diffuse, but meaningful organization of fantasy experience.

Again, the individual grids would appear to have unique structures of their ovm. Three of these have been chosen to illustrate the differences and potential similarities. The twodimensional diagrams for K.B., L.D. and G.L. given on the following pages, could be interpreted in many different ways and only tentative suggestions will be made,
K.B. produced four significant components. The first component distinguishes between generally pleasant images such as 'the leaves' and 'the stream', which are like 'myself and 'myself as I would like to be' and unpleasant ones such as 'the roots', 'the trunk', 'the sun', 'cage', 'river', 'ocean', 'fire', 'wind' and 'throat'.




The second component distinguishes between the modest, soft 'snow' and the intelligent, clever 'brain'. The first two components partly reflect the consensus results.

However, the first two components, which account for \(52 \%\) of the total variance in the grid separate out the negative images into 'roots', 'trunk', 'cage' and 'river', which are passively unpleasant, and 'sun', 'wind', 'throat' and 'fire' which are actively unpleasant. These two clusters of images suggest two overdetermined aspects of fantasy experience, and each cluster may possibly represent a single area of psychological meaning.

On the other hand, 'brain', with high loadings on both components possibly encapsulates the condensation of at least two sets of meanings.

This subject is unusual in his evaluation of 'the belly', which is seen in such glowing terms that it is placed in an extreme position, well beyond the other positive images.
L.D. produced three significant components. She also makes a distinction between the less favoured 'throat', 'mountain', 'river' and 'trunk' and the more idealized 'stream', 'bird', 'heart' and 'branches'. Similarly, the latter grouping also includes 'myself' and 'myself as I would like to be'.

The second component seems to make a more unusual distinction between the more extroverted 'belly', 'wind', 'fire' and 'leaves', compared with the more introverted 'sun', 'roots', 'snow' and 'cage'. It could be that this is similar to the 'strong-fearful' dimension of the second component in Study \(2(a)\),

The first two components account for \(59 \%\) of the total variance and appears to separate out the elements clearly. It is interesting that 'myself as I would like to be' is short and thin, whereas she is tall and well above average in weight. It could be that some of the fantasy images are fitting in with this particular personal problem.
G.L. produced a 'negative' result from the test of significance and only \(41 \%\) of the total variance is accounted for by the first two components.

The first component, however, still separates out the positive images of 'heart', 'snow', 'stream' and 'bird', which also include 'myself and 'myself as I would like to be', from the negatively rated 'throat', 'cage', 'fire' and 'mountain'. It is interesting that this is, for her, a male-female split. She was described as having a somewhat masculine appearance and was interested in martial arts.

In the diagrams for these three subjects, only one pole of each construct has been included. The opposite poles are given with the raw data in the Appendix and these could be placed in the diametrically opposed part of the diagram. This was not done, in order to avoid cluttering the diagrams.

\section*{CHAPTER 8}

STUDY 3

This final study involves a return to the individual use of fantasy. The subject generated his own fantasy elements and evaluated them using his own personal constructs. There were more constraints placed on the subjects .than in Study 1 in that they were asked to rate the elements using all of the constructs they produced. Thus the freedom to generate fantasy used in Study 1 was combined with the rating techniques from Study \(2(b)\), to generate individual grids which could be analysed with conventional statistical procedures.

Students from the various courses in the School of Education, Nottingham University, were asked to volunteer as subjects for research into fantasy. It was explained to them that the time requirement for the research project would involve seven weekly sessions, each lasting up to an hour, alone with the writer. From the students who volunteered, eight v/ere

\section*{chosen.}

In the first session, the subjects were asked to generate a list of people who were important in their lives. These were used to generate personal constructs in the manner described in Study 1. They were then asked to rate all of the constructs against all of the elements or people on a seven-point scale. The elements 'myself and 'myself as I would like to be' were included in the list of elements. The grid produced by the rating was analysed using the INGRID programme. As there were no anomalies in the application of constructs to elements, all
of the constructs for each of the subjects were used in the next part of the study.

In the intervening week, small booklets were prepared in the same way as for Study 2 (b) . This involved a separate page for each fantasy element. The personal constructs were written down the sides of the pages, with spaces in between each pole of the construct for a rating on a seven-point scale. The following diagram is the first page from the first subject.

\section*{SCREE}

\section*{CAN TRUST}

EXCEPTIONAL
WEARY
CHALLENGING MAKE ME ACCOUNT FOR MYSELF

INQUISITIVE
UNDERSTANDING
LIVELY
INTERESTING
AGGRESSIVE
OVERBEARING
COMPETITIVE

DEMANDING
ATTRACTIVE


CAN'T TRUST
ORDINARY
ENERGETIC
SAFE
DOUBT
NOT INQUISITIVE
INSENSITIVE
DOCILE
UNINTERESTING
PASSIVE
UNASSUMING
NON-COMPETITIVE
EASY GOING
NOT ATTRACTIVE

In the subsequent five weekly meetings, the subjects were guided through five guided fantasies in the manner described in
study 1. The first four fantasies used similar themes, namely (1) C limbing a mountain, (2) Exploring a river from its source to the ocean, (3) Drawing a tree and (4) Into the body. The fifth session used the theme of 'A bird in a cage' and started with the following statement:- "As a theme for this fantasy, I want you to use the image of a bird in a cage. Take the first image that comes and describe it as fully as you can".

Invariably, the bird and the cage were used as elements to be experienced more fully and at some point the subject was asked, as the bird, to try and find a way out of the cage, if he had not already done so.

In the same mamner as for Study 1, subjects were asked to take on the roles of the main elements in the fantasy and conversations were set up between the subject and the elements, and between the elem.ents. Four elements were worked on, in this manner, within each guided fantasy and the fantasy was ended at what seemed to be an appropriate point.

These elements were written separately at the top of pages in the booklet and the subject was asked to rate them using his own constructs.

In a final session, the subjects were given an analysis of what they had done and the aim of the Study was explained to them.

Results
Each of the individual grids of fantasy elements and personal constructs were analysed using the INGRID programme. 'Myself and 'myself as I would like to be' were included in the analysis.

Composite diagraims of the first two principal components for each of the subjects are given on the next eight pages. On these diagrams only one pole of each construct has been given. The opposite poles, together with the raw data are given in the Appendix.

The fantasy journeys that include the elements are identified on the diagrams by numbers in brackets next to the elements, as follows:-
Climbing a mountain (1)
Exploring a river (2)
Drawing a tree
Into the body
Bird in a cage

\section*{Discussion}

The results of each subject involves a unique set of personal constructs and famtasy elements. This means that there will be a number of idiosyncratic elements included in each grid. On the other hand, the constraints of the themes tends to produce a number of similar fantasy elements.

The individual grids could be discussed in a variety of different ways. The discussion here will be limited to the nature of clusterings of elements and how the individual structures relate to the group structures from Studies \(2(a)\) and 2 (b) .

All eight subjects produced a definite structure in terms of the measure of significance obtained by the application of the Bartlett Test in the INGRID programme. Within most of these structures are aspects which can be compared to the group
ENERGETIC


STRAIGH \({ }^{-}\)



\(+1.0\)



study 3




\section*{Diagram 29. Composite Diagram based on the Factor Loadingis of \\ Components One and Two for Subject A.M. from \\ Study 3}

structures of Studies \(2(\mathrm{a})\) and \(2(\mathrm{~b})\). Each grid will now be discussed individually.
J.M. The analysis of this subject's grid produced four significant components, with the variance distributed as follows:-
\begin{tabular}{ll} 
Component & As per cent \\
1 & 36.7 \\
2 & 25.7 \\
3 & 10.4 \\
4 & 7.8
\end{tabular}

Total 80.6

The first component divides the elements into those that are relaxed and undemanding as opposed to those that are unpleasant and challenging.

The second component divides the elements into those that are energetic and aggressive and those that are passive and weary.

The interaction between these two components presents two interesting, opposing groupings of elements. These are 'light' (5), 'stream' (2) and 'myself as I would like to be', which are energetic and relaxed. These are opposed to 'mist' (1), 'people' (5), 'inside of trunk' (3), 'solid wall' (4), 'river' (2) and 'cage' (5) which are passive and unpleasant.

These combinations could represent examples of condensation and overdetermination. Certainly the long line of elements down the right-hand side of the diagram provide a good example of possible overdetermination of the right-hand side of the dimension describing the first component.
R.B. The analysis of this subject's grid produced two significant components, with the variance distributed as follows:-
\begin{tabular}{ll} 
Component & As per cent \\
1 & 38.9 \\
2 & 16.7
\end{tabular}

Total 55.6

The first component makes a clear distinction between images that are generally negative such as 'heart' (4), 'cage' (5), 'the people' (5), 'little animal' (2) and 'blood' (4) compared with a large number of images that are generally positive. This large grouping is split into two by the second component into those that are positive in a stable, motherly way and those that are positive in a creative, sensitive way. This forms two clear, close groupings.

The second component appears to separate out the stable 'self from the unstable 'full moon' (1) and 'stream' (2).
J.P. The analysis of this subject's grid produced six significant components, with the variance distributed as follows:-

Component As per cent
1
2

3

4

5

6
39.4
17.2
6.1
4.8

The first two components, illustrated in the diagram, account for \(57 \%\) of the variance and the interaction between these two produce several interesting, neat groupings.
'Eye' (4), 'brain' (4), 'forest' (2) and 'myself as I would like to be' form a serious, intelligent, productive grouping. 'Sun' (3), 'stream' (2), 'myself', 'young leaf (3) and 'sparrow' (5) are more adventurous.
'Roots' (3), 'heart' (4), 'strong punter' (2) and 'deep pool' are tidy, worldly wise and academic. These constructs probably do not represent the true impact of these images on the subject. 'Strong punter' was mentioned earlier in the text as an image that had a profound effect on the subject and that it seemed to reflect a strength that was not normally part of his experience.
-Waste land' (2), 'crumbly rock' (1) and 'stream' (1) are haphazard and irresponsible.
'Weathercock' (5), 'cage' (5), 'trunk' (3) and 'moss' (1) appear to represent an extreme of negativity.

The third component distinguishes the tidy academic 'young leaf (3) from the wordly wise, content, 'sun' (3) and 'sparrow' (5).

This subject was already a highly successful academic, who placed a high value on the intellect and was intolerant of anything that was loose and disorganized. This is reflected in the diagram of the data he generated.
S.B. The analysis of this subject's grid produced four significant components, with the variance distributed as
\begin{tabular}{ll} 
Component & As per cent \\
1 & 47.5 \\
2 & 14.2 \\
3 & 10.8 \\
4 & 7.4
\end{tabular}

\section*{Total 79.9}

The first two components account for \(62 \%\) of the variance. The diagram based on these two components has a large grouping near the middle, which probably should not be seen as a grouping, as individual elements have high loadings on subsequent components, which sets them apart. There are, however, small, neat groupings outside the larger grouping.
'Waterfall' (1), 'waterfall' (3) and 'cliff' (3) are labelled as smooth-talking, clever-clogs and are generally unpleasant.

This can be contrasted with 'bird' (5), 'bridge' (5) and 'myself as I would like to be' who are generally warm and emotional.
'Quiet place' (3), 'trunk' (2) and 'brain' (4) accept their own mistakes and are not argumentative.
'Mountain' (1), 'flower' (2) and 'stream' (3) are confident but not affectionate.
J.B. The analysis of this subject's grid produced three significant components, with the variance distributed as follows:-
\begin{tabular}{lc} 
Component & As per cent \\
\(\mathbf{1}\) & 35.5 \\
2 & 17.7 \\
3 & 15.1 \\
& Total 68.3
\end{tabular}

This analysis produced a significant structure, with the first three components accounting for \(68.3 \%\) of the variance, but the composite diagram for the first two components does not illustrate clear groupings in the same way as the previous subjects.

There are three pairs of elements which have been given similar, relatively extreme ratings. These are 'trunk' (3) and 'cage' (5); 'heart' (4) and 'canoe' (2); and 'upper river' (2) and 'water' (3).

There are similarities between this grid and the consensus grid of Study 2(a). The first component distinguishes between stable images such as 'mountain' (1), 'trunk' (3) and 'cage' (5), and unstable images which are all watery such as 'stream' (1), 'upper river' (2), 'water' (3). This subject, however, does not view the unstable images favourably and 'myselfas I would like to be' is placed with the stable images.
M.C. The analysis of this subject's grid produced three significant components, with the variance distributed as follows:-

Component

1

2

3

As per cent
18.1
14.0

Once again, the first component seems to separate out stable, defended images from impulsive, free images, though it is not clear which is seen as the positive side. Typically, the 'fast moving stream' (2) is seen as a free image, together with 'high flying cloud' (1) and 'foliage' (3). The defended images are similar to the defended images of study \(2(a)\) such as 'slow moving river' (2), 'roots' (3), 'bark' (3) and 'heartwood' (3). These are joined by 'bank' (2) and 'low cloud' (1) to form one of the largest, closest groupings of these eight subjects.

The second component sorts out two successful, warm images, 'leader of the group' (1) and 'myself as I would like to be' from the unfriendly and unsuccessful images such as 'cage' (5) and 'left arm' (4). Creativity is an aspect of this dimension and it is curious that 'left arm' (4) is seen as uncreative and 'right arm' (4) is seen as creative. This subject described himself as a practical, unimaginative person, and yet he had no difficulty in completing the sessions.

The third component separates the unfriendly, dissatisfied, reserved 'brain' (4) from the non-creative, not authority figure, 'high flying cloud' (1) 'waterflea' (2) and 'bark' (3).

Almost \(44 \%\) of the variance is not accounted for by the three significant components in this grid and this random variance probably accounts for the placing of a number of fantasy images around the centre of the diagram. However, there is still a clear structure and the large, defended grouping probably provide a good example of overdetermination.
C.J. The analysis of this subject's grid produced three significant components, with the variance distributed as

\section*{follows:-}
\begin{tabular}{lc} 
Component & As per cent \\
1 & 40.9 \\
2 & 25.2 \\
3 & 9.7
\end{tabular}

Total 75.8

The first component separates out a group of images, 'pressure' (4), 'maze' (4), 'shale' (1) and 'rock' (2) which axe generally seen to be unpleasant, from a much larger grouping, 'vastness' (4), 'ledge' (1), 'sun' (5), 'light'
(4), 'myself as I would like to be' and 'fresh air' (1) which is seen in positive terms.

The second component resembles the first component of Study \(2(a)\). At one end, 'mountain' (1), 'roots' (3), 'trunk' (3) and 'cage' (5) are stable, independent images which hide their emotions. At the other end, 'foliage' (3), 'sap' and 'bird' (5) are flexible, uncontrolled and dependent.

The third component largely separates out the dependent 'bird' (5) from the extroverted, insensitive 'rock' (2).

This subject appears to have rated the elements clearly in that there are few elements in the middle of the diagram and the significant components account for \(76 \%\) of the variance in the original grid.

Some of the elements, such as 'roots' (3), 'lake' (2)
and 'bird' (5) provide examples of condensation in that they have relatively high loadings on both of the first two components.
A.M. The analysis of this subject's grid produced six significant components and the variance was distributed among them as follows:-
\begin{tabular}{lc} 
Component & As per cent \\
1 & 29.4 \\
2 & 17.9 \\
3 & 13.1 \\
4 & 8.8 \\
5 & 6.4 \\
6 &.
\end{tabular}

Total 80.8

This is the second most loosely construed set of elements in the series of eight and yet a clear, statistically significant structure is contained within this loose construeing.

The first component strongly resembles the first component of Study \(2(a)\). This is particularly true of the negative defended end of the dimension, which includes 'cage' (5), 'mountain' (1), 'throat' (4), 'trunk' (5), with 'river' (2) near to this closer grouping. The other end of the dimension includes 'stream' and a large grouping of up to nine, possibly overdetermined images that are seen as positive and flexible. The positive end would seem to be feminine and the negative end would seem to be masculine.

The second component separates out the elements that are warm and stable and are well represented by 'stickiness' (2), -roots' (3) and 'red wooly fluff (3), from those that are cold and unstable such as 'bud' (3) and 'stream' (2). 'Stream' (2) is probably a good example of a condensed image as it has high loadings on both of the first two components.

The third component sepairates the manipulating materialistic 'cat' (1) from the accepting 'cage' (5) with no plans.

Much of the discussion of these individual grids has been limited to the first two and sometimes the third principal components. Generally these involve the more extreme ratings made by the subject and bring out the clearer aspects of the grids.

The loadings on the subsequent components tend to be smaller and often only provide a clear description of one element' and one construct. This is not to say that these results are not necessarily phenomenologically important to the person concerned, but this information does not add much to the current discussion.

Indeed, the descriptions of the individual grids described above may appear to be an inconsequential series of sets of relationships which will have little meaning to the reader who has not shared the experience. On the other hand, the individual discussions with the subject at the end of the series of fantasy journeys was highly involved and the subjects often had clear memories of images they had experienced as much as six weeks earlier.

For the purpose of this discussion, which is concerned with the structure of fantasy, the important finding is that every subject produced a structure that involved statistically significant groupings. The complexity of these structures is reflected in the number of significant components and the size of the first component. The idiosyncratic nature of the elements involved reflects the unique content of individual
faintasy experience and it is surprising that apparently disparate elements from different fantasy trips are shown by the analysis to have been perceived similarly.

The largest groupings are bound to be involved in the first two principal components and will tend to appear on the two-dimensional diagrams based on the loadings for these components. The geographical position on the two-dimensional graph gives an indication of how the fantasy elements fit into the overall structure, certainly in relation to the first two components.

A clustering of elements close to the axis of a component, but a good distance from the centre of the axis probably reflects a simple, clear underlying psychological structure. Perhaps the tightest structure of this nature is on the diagram for J.P. where 'eye' (4), 'brain' (4), 'forest' (2) and 'myself as I would like to be' are described as serious, intelligent, capable, religious and loveable.

Predictably, the groupings relating to second components are less clear. Perhaps the clearest is illustrated on the diagram for S.B. and involves 'trunk' (2), 'brain' (4) and -quiet place' (3), which are not argumentative and accept their own mistakes. Other groupings relating directly to second components are limited to two elements, though some involve high loadings such as 'leader of the group' and 'myself as I would like to be' in the diagram for M.C.

Other groupings reflect aspects of more than one component: A clear example of this is illustrated in the diagram for J.M.

\footnotetext{
'Stream' (2) , 'light' (5) and 'myself as I would like to be'
}
play a part in both the relaxed end of the first component and the energetic end of the second component.

Another example, taken from R.B. includes 'old wood' (3), 'dark place' (3), 'pinky orangy stuff (2), 'green moss' (3), 'pine tree' (5) and 'myself as I would like to be'. These are involved in both the warmth of the first component and the stability of the second.

It has already been suggested that this form of grouping could represent the process of condensation, where more than two underlying pschological structures are involved in the understanding of a grouping of fantasy elements. This is, of course, also true of individual fantasy elements that have high loadings on more than one component, A good example is 'bridge' (1) on the diagram for S.B. A grouping that involves condensation must, since it is a grouping, also involve overdetermination. It is as if, some forms of condensation are overdetermined and there is no reason why these two processes cannot be operating at the same time.

The numbers in brackets next to the element names in the diagrams and in the text show that the groupings include elements that were experienced between one and five weeks apart, though some groupings involve elements from the same fantasy journey. The time factor, combined with the different nature of each theme given for the fantasy journeys and the idiosyncracity of the elements produced, suggest that there are underlying structures that are common to a diversity of fantasy experiences.

Another aspect of these individual grids is that it was easy to make comparisons from four of the individual grids
with the first two components of the concensus grid from Study \(2(a)\). Certainly the defended-undefended dimension of the first component of Study \(2(a)\) appears to play an important part in the structures of the individual fantasies. This is not to say that the same dimension does not play a part in the individual structures of the remaining four subjects, though the possibility was not obvious from the names of the constructs and elements that were used.

The experience of these eight subjects is most similar of all the studies to the experience of the subjects in Kosbad's (1972) research which suggests that a series of experiences of this nature can be therapeutic amd provide useful insight regarding personal understanding. All of the subjects stated that they were glad to be taking part in the series, both during and at the end of the series. No systematic attempt was made to analyze the subjects' reaction to participating in the experience, but several said that it had taught them a great deal about themselves and seemed to guess that the imagery might be saying something about aspects of their personalities that they had not looked at before. One subject said that she enjoyed coming to the sessions because she felt relaxed for several days afterwards and was sorry that the project had ended.

In spite of the small number of subjects used in this study, every subject produced a significant structure which accounted for a good proportion of the total variance in the individual grid. (These totals were 80.6\%, 55.6\%, 84.7\%, \(79.9 \%, 63.8 \%, 56.1 \%, 75.8 \%, 80.8 \%\).\() It is probable that\) aspects of the random variation was of psychological
importance to the individual subjects. None of the subjects produced the large numbers of components obtained by some of the subjects in Study 2, which were difficult to explain. Nor were there examples of negative results which suggest that all of the significant structure is contained in one principal component.

This would suggest that the procedures used in this study are highly suitable for gaining insight into the underlying structure of guided fantasy, which is still in a form that can be quantified.

\section*{CHAPTER 9}

CRITIQUE. CONCLUSIONS, IMPLICATIONS AND APPLICATIONS

\section*{Critique}

Before drawing any general conclusions, a statement needs to be made regarding the limitations of the research which was undertaken. It is significant that the word 'study' was chosen, rather than 'experiment', for the four different approaches that were used. This was done deliberately, in that the procedures do not involve the rigorous controls of the classical forms of experimentation. It could be argued that a degree of looseness is necessary to capture the quality of a transient phenomenon, such as fantasy experience, and that a highly controlled situation would either diminish or suppress the true nature of the experience.

Probably the most salient criticism that could be made about the research is that the writer, himself, led all of the subjects through the guided fantasies described in Studies 1 and 3. In dealing with such 0. fleeting phenomena, the possibility of influencing the material produced by the subject may be considerable.

It has already been described how the Gestalt mode of questioning aims to neutralize the effect of the person in the guiding role by not intruding any of his own personal values or judgements into the situation. Unfortunately, it is still possible to influence the subject despite the rigorous framework of the Gestalt technique. This could be done in various ways. For example the subject may be affected by subliminal cues,
such as the tone of the experimenter's voice when giving instructions. The choice-points at which the interventions are made reflect the values and judgements of the experimenter. Pauses, which can suggest that there is more to be said, may encourage the subject to think of something to fill in the gap. There may be many other subtle ways in which the powers of suggestion can be at work.

This criticism has less force in relation to Studies \(2(a)\) and \(2(b)\), where scripts were used and a different person was involved in each study. Even so, the scripted situation is still one which could be inadvertantly influenced by the person reading the script to the group.

The main reason for the writer conducting all of the individual guided fantasies himself was that no one else was available who had the necessary skills and training to use the Gestalt form of questioning, as well as the time spent in the many hours required to complete the research programme.

No attempt was made to use conventional sampling procedures to control variables related to the subjects that were used. For the sake of expediency the subjects who were chosen were those who were available at the appropriate times. In the writer's experience, there seemed to be more resistance to taking part in research on fantasy than when asking for volunteers to take part in more conventional forms of psychological research. It appeared that a large number of people did not want to have their fantasy worlds examined, for fear of what might be revealed. Thus the students who volunteered are atypical in that they were willing to expose their fantasy lives. The class of children were not given the same choice.

The problem of sampling is not too important in that the main findings regairding the structure of fantasy relates to all of the subjects and does not involve the comparison of groups. It seems reasonable to assume that these findings are not limited to a student population and could also apply to individuals from different backgrounds and different situations. At least, the results from these studies provide information about the structure of fantasy for this particular population.

Countering the criticism of lack of experimental control, it could well be argued that any form of controlled observation is bound to interfere with such a labile phenomenon as fantasy. It has already been suggested that people were often reluctant to volunteer to take part in an examination of their fantasy processes. The mere presence of an observer could inhibit the free flow of fantasy both at conscious and unconscious levels. The subjects were told that they were free to censor any experiences that they did not wish to admit to openly, but were asked to report when they were censoring. Only one subject reported that she did not wish to admit to a particular fantasy experience.

Indeed, there is no way of knowing what has happened between the experience of fantasy and the verbal report of the subject. Horowitz (1970) sums up this problem in detail:

> "An image is such a private experience that there is only one primary source of information about it: the introspective report. Such subjective reports have been found, in scientific investigations, to be quite fragile. People fabricate events that have not occurred in order to please, do not report events to escape censure, change their thinking to suit a variety of motives, use terms that do not have shared meanings, forget, contradict themselves, distort experiences, and vary experiences with changes in the interpersonal and non-human environment.

> While more will be said of this later, the reader is warned at this point neither to be dismayed, nor to accept any image report uncritically."

In all the studies, fantasy as it is normally experienced was controlled to some degree. This was done by the initial themes given in Studies 1 and 3 and by the scripts in Studies \(2(\mathrm{a})\) and \(2(\mathrm{~b})\). The use of the Gestalt mode of questioning is also controlling and altering the normal free flow of fantasy. If the earlier criticism concerning lack of experimental control are accepted, this could lead to the conclusion that fantasy experience is not amenable to controlled observation. The fact that an aspect of human behaviour is difficult to investigate empirically is insufficient reason for avoiding the attempt. Fantasy is not often referred to, particularly the detailed contents of personal fantasy and yet it is a process that dominates the 'streaun of consciousness' of most human beings. It is as if the more important aspects of human behaviour are the most difficult to investigate and consequently tend to be ignored by research psychologists.

If perfect control were a necessary condition for
psychological experiment, then nothing would ever be done. The looseness of an investigation will depend on the degree to which a phenomenon can be controlled.

The writer has attempted to steer a course between the Scylla of restricting control and the Charybdis of introspectios

A further criticism relates to the degree to which ratings made after a fantasy experience accurately reflect the nature of the materials being rated. This criticism applies to most forms of psychological investigation involving rating scales. The rating scale appears to have been accepted as an appropriat
tool, which provides a means of quantifying experience in a way that is rarely questioned.

A surprising aspect of this particular investigation is the apparent ease with which most of the subjects cairried out the ratings. In the writer's experience of giving materials which require the use of rating scales, individuals often complain regarding the task of using numbers to evaluate psychological experience. None of the subjects who did individual fantasies complained about the rating process and seemed to find it easy to apply the constructs to the fantasy elements. There was not the same contact with the subjects in the group studies, but again, there were no complaints. It could be argued that the use of dichotomous personal constructs for evaluating fantasy experience is distorting the experience to fit a particular form. Much of the discussion of the structure of the data obtad.ned in the studies is in terms of opposing clusters of elements. It is possible that the use of dichotomous constructs predetermines results in this form. Kelly (1955) states that experience can only be construed in terms of similarity and contrast. If this is accepted, then fantasy experience will also be construed in this way and the contrasting nature of the elements would be expected. Certainly many people do not perceive their fantasy experience in such an organized manner, but rather as random chains of associations that emerge spontaneously and possibly randomly. The form of analysis used in these studies produces an organization that is not normally ascribed to fantasy experience.

Another objection to the use of personal constructs is that the subjects may not have considered the fantasy elements in
personal terms until they were directed to do so, and that this was done after the experience was over. It is probable that the subjects did see the elements in personal terms by the end of the fantasy journey, because they had already been asked to take on the roles of the elements that were rated and examined them in detail using the Gestalt mode of questioning. The Gestalt mode of questioning and the process of identification with the elements is a considerable intrusion into the subject's experience of his fantasy. All of the subjects slipped into the process very quickly during the first fantasy journey and had no difficulties with the subsequent fantasy journeys. Only on one isolated occasion did a subject state that he could not possibly identify with a particular element in personal terms. This was abandoned and the subject continued on his journey. Certainly, the process of identificat: seemed to be an easy, natural task, for all of the subjects for the individual fantasy journeys, most of the time.

Again, the process of setting up a conversation between two elements could be encouraging the perception of these elements in terms of opposites, which may not have happened if the conversation had not been encouraged. It is possible that the experience of the elements are being artificially distorted to fit conventionalized pairs of opposites which then form the basis of the principal components produced by the amalysis for that person.

A further objection could be made that it is impossible to convey the emotional quality of the fantasy material that was generated in the quantified forms that are used in the various studies. This is self-evident and for the reader who has not
been able to experience a guided faintasy, much of the material described so far may appeair to be a random collection of nonsens This is particularly true of the names of some of the elements in some of the individual studies.

To give an extreme example of the unique quality of the sessions, one of the subjects experienced the element 'wind' as a breeze passing through her lower ribs. Other subjects reported physical sensation that went with the fantasy experienc particularly constriction of the shoulders and chest when identifying with the cage. One subject experienced being physically crushed when she descended into her mountain. This provides useful anecdotal evidence for theorists who associate physical symptoms with psychological problems, such as Reich (1949) and Lowen (1975), but makes it difficult to report the experiences in a full and coherent manner.

\section*{Conclusions}

Bearing in mind the limitations that have been outlined in the previous section, the following general conclusions are drawn from the three studies taken together:-
1. Definite structures were demonstrated in the analyses of all of the situations that were examined. It is the writer's view that these structures are surprisingly simple considering the apparent randomness of the elements that were generated by the subjects. It could be argued that it is surprising that any structure was obtained at all.
(a) In the first study, no attempt was made to estimate the significance of the groupings that were produced by the cluster
of ticks on the diagrams. It was suggested earlier that the conventional forms of statistical analysis could not be used for this particular study, as there was too much 'missing data' in the form of construct poles that had not been used.

Possibly a parallel could be drawn between the diagrauns for this study and a scatter-plot for a correlation. If this were a valid procedure, then the overall groupings would be seen to be highly significant just by visual inspection. It is a matter of opinion as to exactly where the clusters begin and end and perhaps this is a meaningless consideration. A better way of looking at the clusters within the diagram, is to see them as clouds of crosses, approximating to a meaningful structure and the core of that structure represented by the clouds. The possible meaning of the clusters can be read off from the construct poles to the left-hand side of the clouds of crosses.

Aft important aspect of the clusters produced in this analysis is that they are derived from several different types of fantasy experience such as guided fantasy, dreams, drawings and Gestalt work. The majority of the situations were guided fantasies, but it is interesting that the other forms of experience have produced elements which readily merge in with the elements from the guided fantasies. These cam be identifie by the letters at the top of the diagrams. Elements from the same experience often appear in the same cluster.

This would suggest that the phenomenon that is being investigated is produced by a variety of different experiential situations. This is probably a result of the fact that the various situations all demand directed attention to their 'fantastic' elements. This is an idea that will be developed

It is worth repeating the statement made in the discussion on this section, that any single cross on these diagrams might represent an experience that is psychologically extremely important to the individual concerned. This might be an isolated cross or a cross in the middle of a structure which cannot be differentiated because of the limitations of the construct poles available.

This study was subject to less control than any of the subsequent studies. The fantasies were allowed to develop in the direction that suited each subject and they were free to use construct poles as they felt that they were appropriate. An accurate statistical analysis cannot be made because of the degree of freedom given to the subjects and yet individual structures stand out clearly in the diagrams. These diagrams were understood much more easily by the subjects than the diagrams that involve the combined results of the first two components of a principal components analysis.
(b) In the second study, 2(a), the twenty-four adult subjects were all subjected to the same conditions. The fantasies were read to them from scripts and they all used the same constructs namely Cattell's sixteen personality factors, to evaluate the fantasy elements that were emphasized. The structure of both the group grid and the individual grids are shown by the principal components analysis produced by the SERIES and INGRID programmes respectively.

The combined data for the whole group produced six significant components and the relationships between the elements are plotted in relation to the first two components,
which account for \(68 \%\) of the variance. The significant components account for a surprising \(96 \%\) of the total variance.

Only two of the individual grids failed to produce more than one significant component and even these two grids produced one large grouping.

Thus, the data from this study produced a clear group structure and clear individual structures,
(c) In the second group study, 2(b), twenty-nine thirteen to fourteen year-old adolescents were given the same scripted famtasy journeys as in the previous study. This group evaluated the elements against their own self-generated personal constructs

A much looser, but statistically significant structure, with eleven significant components, was obtained from the group data using the PREFAN programme. The diagram showing the elements plotted against the first and third principal components is less clear than for Study \(2(a)\) as these components only account for \(26.4 \%\) of the variance. It is suspected that some of the smaller significant components represent a part of the data of a single subject.

Five of the twenty-nine subjects failed to produce more than one significant component, but this still means that there is at least one large significant grouping.

The looser structure could be due either to the relative youth of the subjects or to the fact that the subjects were all using different constructs to evaluate the fantasy elements. Also, there is more random variance, which is not accounted for by the significant components; \(27,5 \%\) compared to \(4 \%\) in Study 2 (a:

2, A visual inspection of the two sets of group data suggests that there are similarities between them. The INGRID programme produces a measure of distance between each element projected into a multi-dimensional space, A comparison of the distances between the elements of Studies \(2(\mathrm{a})\) and \(2(\mathrm{~b})\) produced a correlation \(r=0.28\) which is significant at the 0.01 level. This is a low correlation, but it does suggest that there is a structure which is common to both group grids.

The possible labelling of this structure based on the descriptive terms used in Study \(2(a)\) is repeated here.
\begin{tabular}{llll} 
Study 2(a) & Study 2(b) & Possible interpretation \\
1st Component & 1st Component & stable, defended- free, undefend \\
2nd " " & 3rd & strong - fearful \\
\(3 r d\) & 2nd & conscientious, trusting, relaxed \\
& & &
\end{tabular}
3. The eight subjects in Study 3 were led through individual guided fantasies, which they evaluated against their own selfgenerated personal constructs. Every subject produced a clearly defined statistically significant structure. The series brings out the range of individual differences in the organization of fantasy experience.

Although these subjects were given considerable individual freedom in the generation of fantasy, which is reflected in the idiosyncratic nature of their fantasy elements, they still produced aspects of the group structure that came out of the combined grids of Study \(2(a)\).

\section*{Implications}

It would appear that aspects of structure have been established, given the qualifications regarding problems of experimental control outlined in the earlier critique.

The implications of these findings are now discussed in relation to the issues that were raised under the heading of 'Theoretical Considerations'.
1. Probably the most important implication of the presence of a clearly defined structure is that it lends support to the possibility of making interpretations concerning the psychologica importance of the images to the individual. The process of interpretation implies that the images are, in some way, acting as a metaphor for conscious or unconscious psychological processes that reflect aspects of that person. Without a structure, the wealth of images in fantasy life would be far too complex to provide a coherent basis for making interpretations.)

An organized structure which is expressed in the form of bi-polar constructs provides a dimension which can be identified as a conflict that can be applied to that individual's personal life. These conflicts necessarily appear in the amalysis of the studies and provide material that can be discussed with the subject to see if he is willing to own them as part of his experience of the world.

There are many problems involved in making interpretations for an individual and these problems are increased when interpretations are made that apply to several people. Certainly the traditional psychoanalytical approach suggests that certain
images cam be interpreted in specific ways. Many of the writers discussed in the review of the literature, who claim to be noninterpretive go on to offer broad general interpretations.

Evidence regarding the possibility of interpretation comes from Study \(2(a)\), since all the subjects are involved with the same elements and constructs. The group consensus shows that there is a vague underlying structure, but an examination of the individual grids shows that individual subjects experience specific elements in ways that are cleairly different from each other.

In the individual grid for M.K. in Study \(2(a)\), the roots have moved to join the adventurous, free images of 'wind' and 'stream'. For C.H. 'ocean' is seen as similar to 'snow', whereas they are perceived as opposites in the consensus grid, a more predictable juxtaposition. For S.L., 'heart' has moved to join the less-defended images such as 'stream', 'wind' and 'leaves'. The consensus grid was obtained in spite of these individual differences.

Another atypical result is for \(D\) from Study \(2(b)\) in that 'belly' is seen in such highly positive terms that it had the highest factor loading of all the studies. In Study 3, R.B. perceives 'heart' as being defended and negative, a similar rating to 'cage'. An examination of all the individual grids from all of the subjects suggests that every element is seen differently by at least one subject. Even where the overall structure of the relationship between the elements is similar to the consensus grid in Study \(2(a)\), the manner in which the clements are perceived may be different as in the case of J.B. in Study 3.

This lends support to the views of Jung (1961) and Perls (1973) that the only person who can meaningfully make an interpretation is the person who experiences the fantasy or dream. These writers imply that the images in dreams and fantasies are a message from the person to himself and reflect his own ontological experience. They are a reflection of the individual's 'being in the world' in the manner of the existential analysis of Binswanger (1946) amd Boss (1963).

The argument regarding interpretation is neatly summed up by Dublin (1976) who suggests that Gestalt therapy as developed by Perls provides a technology for the existential analysis of Binswanger. This technology provides a means of clarifying experience for the person who has had the experience. Certainly the individual differences in the structure and meaning of fantasies obtained in these studies would suggest that any generalised interpretation could easily be wrong and may, in fact, be opposite to the appropriate interpretation for the individual.

On the other hand, there is a degree of consensus in the evaluation of fantasy experience which is best illustrated by the results for Study \(2(a)\). This is partly reproduced in Study \(2(\mathrm{~b})\) and appears in limited forms in many of the individual grids. Using this consensus, it may be possible to make some general statements about fantasy experience.

On the basis of his clinical experience, Assagioli (1965) suggests that we all have a number of differing and conflicting tendencies within ourselves. These conflicts could well be represented by the separation of elements by the principal components. He describes one of these conflicting tendencies as follows;

> "Another basic conflict is that between inertia, laziness, tendency to preservation, craving for security (which expresses itself in conformity) on the one hand, amd the tendency towards growth, self-assertion and adventure on the other." p. 36 ,

This is an extremely close description of the first principal component produced by the analysis of Study \(2(a)\) and partly reproduced in the first component of Study \(2(\mathrm{~b})\). The remaining components probably represent other different conflicting tendencies. The polarity described by Assagioli and supported by the data in these studies imply that a form of common interpretation is possible. A large number of fantasy elements would seem to be stable and defended and another large number would seem to be free, impulsive, flexible and undefended. It is, indeed, surprising that so many elements are at one end or the other of this dimension.

An interpretation of this nature is highly general and of a different order from the specific, classical interpretations of psychoanalysis.

No support was found for Jung's archetypal images, though it could be argued that the controlled conditions under which the images were explored might have precluded the emergence of really important material. Many of the fantasy elements could be interpreted in terras of 'animus', 'anima' and 'shadow', but this form of interpretation would be based entirely on intuition. Similarly, some of the dimensions representing the principal components could be interpreted in terms of Perls (1969a) 'top-dog' and 'underdog'. No support was found for the implicit interpretations in the systems of Desville (1966) and Leuner (1969).

Most systems of interpretation are based on clinical experience, which is open to the distortions produced by the theoretical predelictions of the clinician. Salmon, Arnold and Collyer (1972) showed that there was a structure underlying responses to the Rorschach Test, but not the structure that is suggested in the handbook for the test. Similarly, this study has established an underlying structure to the experience of guided fantasy, but different from the structures hypothesized by many of the theorists who write about the subject.

By and large, the results of this study support the use of an existential, phenomenological approach to obtain an understanding of the potential meaning contained in the structur of fantasy.

However, the possibility still exists that the traditional psychoanalyst might point out that the evaluation of fantasy elements was effected from the view of the person's consciousnes: and that the fantasy elements may have other meanings which reflect the person's unconscious. This is often expressed in terms of the manifest and latent content of the images.

The approach taken in these studies does, however, take account of both manifest content and a possible latent content, without recourse to ideas of murky meanings locked away in inaccessible places. The specific images obviously provide a latent content. The structure as provided by the principal components analysis and the groupings of elements perceived as similair were not obvious to the subjects until they were given feedback about what they had done. Since this is material which is not immediately accessible to the subject, it could be described as latent content.
2. Several comments have already been made concerning Freud's idea of overdetermination, which has importamt implications for the process of interpretation. It seems reasonable to suggest that if a conflict within the individual plays an important part in his life, then images relating to that conflict will appear again and again in his fantasy and dream life.

Relationships within the grids in all of the studies suggest that groupings of elements are perceived by the subjects in similar ways and that they probably represent similar psychological processes. If the process of overdetermination were not taking place, then famtasy experiences would be complex agglomerations of unique images and any form of interpretation, even by the fantasizer, would be extremely difficult.

One of the tightest groupings of elements appears on the diagram for subject S.L. in Study \(2(a)\), which consists of
'trunk', 'river', 'roots', 'cage' and 'mountain'. These elements are perceived as stable, conscientious and tense. Apart from 'trunk' and 'roots' each of these elements occurred in a separate fantasy journey, so the experiences are all separated in time by at least a week and yet the subject reports each element in an almost identical manner.

The process of overdetermination would appeair to be reducing fantasy experience to a much simpler and coherent structure than is normally expected. In the discussions with subjects after the series, they often expressed surprise that they had rated certain elements similarly.
3. It has been suggested that the process of condensation, where a single fantasy element involves more than one psychological dimension is adding to the complexity of the underlying structure of these fantasy situations.

This process may be involved in the L-shaped clusters of crosses in the diagrams for study 1. The same process may be involved in the principal components analyses where a single element has a high loading on two, or more, components. Again, subject S.L. from Study \(2(a)\) provides a good example, 'brain' in the top left-hand corner has a high loading on the stable first component and the tough-minded, assertive second component.

The process is made more complicated where there is a grouping of elements with high loadings on more than one component. It is as if the processes of overdetermination and condensation can operate at the same time.

The data from these studies does not prove that either of these processes are operating within the fantasy experience, but they do illustrate a structure which could well be explained by the operation of these processes.
4. Several of the writers discussed in the review of the literature and the theoretical section suggest that the elements of fantasy represent parts of the individual of which he is not consciously aware. This implies that a person is made up of several sub-personalities that, individually, have a life relatively distinct from other parts of the personality.

During the Gestalt sessions of Study 1, the subjects were admitting to at least two 'parts' of themselves, though this was suggested in the instructions that were given. These 'parts of
the person' rated as elements were seen to be similar to groups of fantasy elements, so the Gestalt element, could be seen as a clue for labelling the grouping of fantasy elements as a part of the person.

Examples of clustering appear in the diagrams for Study 1 and in all of the individual two dimensional diagrams based on principal components analysis. These latter diagrams, of course, exclude potential clusterings that involve third, fourth and subsequent significant components. It is possible that a single fantasy element represents a sub-personality on its own and that it just happened that another related image just did not occur during the series.

One of the best examples of clusterings of elements which could be used as a basis for interpretation in terms of subpersonalities is the diagram for J. P. from Study 3, which was described in the discussion for that study. The four clear groupings which stand out in the diagram are only based on the first two components. There may be further groupings hidden in the interaction of the remaining components.

It is a considerable inferential leap from the clusters of crosses and groupings of fantasy elements to imply that they represent sub-personalities or aspects of the person that have been disowned. Certainly the clusterings are unique to the subjects who produced the elements and it seems reasonable to suggest that they represent, in some way, the uniqueness of that individual. Since elements that are perceived similarly keep recurring, it can be said that the studies support the idea of underlying sources of coherent psychic functioning.

To label these coherent structures sub-personalities is to give them a status which is perhaps not warranted. In the writer's experience of using fantasy in workshop situations it is quite meaningful to consider elements of fantasy in terms of parts of the personality that are unconscious or disowned. Certainly the concept of sub-personality would appear to be a useful metaphor for encouraging awareness of a person's own behaviour. It is the view of the writer that the only person who can meaningfully judge that an aspect of fantasy is a part of his personality is the person who has experienced the

\section*{fantasy.}

Further support for the idea of sub-personalities is provided by the fact that the subjects were willing to apply personal constructs to the elements of fantasy. The elements came from the individual amd he was able to label them as if they were people. It could be argued that they did this because they were asked to. On the other hand, the constructs were applied with little trouble and with no complaint. In Study 1 the subjects were permitted to choose whether the constructs were applied or not and yet most of the constructs were used. In Studies 2 and 3, many subjects were consistently using extreme ratings, which suggests that the elements could clearly be seen in personal terms.
5. Implicit in the idea of sub-personalities is the idea that the fantasy material is a projection of underlying psychological processes in the individual. The procedures which have been used in these studies have obvious parallels with the convention: projective tests.

These studies were not designed with a view to prove that projection is involved in fantasy experiences. On the other hand, the structure which has been established does provide a basis for explaining the experiences in terms of projection. Certainly there are few clinicians who would deny that the subjects were saying things about themselves through the fantasy elements that they would not be willing to admit to in a normal interview. Many of the subjects reported that they felt they were talking about themselves and admitted to being surprised by the thoughts and feelings that emerged. This was particularly true of the sessions that were based on a drawing of a tree, whick seemed to be a uniquely potent image.

\section*{Implications}

This section will be divided into two. Firstly the implications of this study for the understanding of the nature of fantasy experiences, with particular reference to those labelled guided fantasy. Secondly the implications for the applied areas in which these techniques are used, such as psychotherapy and education.
1. It must be made clear that this study is dealing with different phenomena to those of everyday daydreaming. None of the conventional themes of everyday fantasy, such as sex, aggression, ambition and heroism (Singer 1966) occurred in the guided fantasies. There may have been elements of ambition in the 'climbing a mountain' fantasy, but for many subjects, there did not seem to be ambitious motives involved.

Possibly the main difference between the guided fantasy experiences and normal daydreaming is that an ongoing focussed awareness is maintained during guided fantasy. Much daydreaming goes on while other tasks are being performed. Often the daydream begins without the conscious awareness of the dreamer and whole sections of the daydream go on without the intention of the person concerned. The presence of the guide and the demand that the experience be described aloud maintains a clear awareness of the whole experience from beginning to end. /

It is probably the use of focussed awareness that draws together the disparate procedures of Study 1, to produce a common experience. This included four guided fantasies, the use of a drawing, a 'Gestalt exchange' and the extension of a dream. The quality of the dialogue between the writer and each subject appeared to be the saime in all of these situations.

It was as if the process of focussed awareness on fantasy experience produced a quality of consciousness which is not common in everyday experience. This could be described as a new way of experiencing reality. This is similar to the experiences that Tart (1969) describes as 'altered states of consciousness'. Indeed, one of the contributors to Tart's book, is describing therapeutic procedures that are similar to guided fantasy (Kretschmer 1969).

It has already been suggested that the groupings of elements which provide the structure of fantasy, relate to underlying processes which operate, in some way, within the individual. It is as if the groupings represent major themes and that the real experiences which provide the material for the content of the fantasies have been changed in an emotional sense to fit these major themes. The term 'valorization' used
by Bachelard (see Kaplan 1972) is a description of a similar process as it is applied to the effect of imagination in the work of the creative artist.

There is no way of knowing if the emotional charge attached to a specific image such as a stream is a chance experience, or based on meaningful events in the past. The demonstration of a consensus grid in which most of the subjects perceived the stream in similar terms, suggests that there is something implicit in the nature of \(a\) stream and the human experience of it, for it to be perceived in this manner. This could even be explained in terms of racial experience which is effecting the organization of fantasy in a way which is common to all of us.

It seems probable that there are two separate processes unfolding during the development of a guided fantasy. One is the maintenance of the theme of the fantasy, which is usually outside the normal experience of the subject. This tends to
follow a logical sequence although there are discontinuities and often images suddenly intrude. A parallel development is the experience of emotion associated with the elements as they emerge. These could be either based on experiences in the past, relying on memory processes, or emotional associations that develop as the images arise to fit in with the theme of the fantasy journey.

Using the evidence from the studies described above, it seems strange that the guided fantasy procedures have produced such a limited and organized number of themes. Fantasy is normally seen as a vehicle for going beyond the bounds of ordinary experience, giving the individual an infinite number of possibilities. The studies suggest that fantasy experience
is constrained in similar ways to rational thinking, but in ways that have a logic that is unique to the individual. The extent to which there is a common structure lends support to Fromm's (1951) idea of 'the forgotten language' or Tauber and Green's (1959) ideas of 'prelogical experience'.

If these themes do, in fact, represent disowned or cut-off parts of the personality, then presumably guided fantasy is a way of permitting expression to these disowned parts and bringing them to the conscious awareness of the fantasizer. One feature of the series of fantasies described in these studies is their relative ordinariness. The subjects found them to be vivid, emotional and illuminating, but not transcendental, mystical or archetypal as suggested by Jung (1961) and Assagioli (1965). Nor did the subjects experience horrendous 'unbidden images' such as those described by Horowitz (1970). This could be due to the fact that there was no suggestion that images of this nature would occur and that the subjects had no awareness of any of the theoretical background of the area the writer was trying to investigate. Also the subjects came from a relatively non-neurotic population, whereas much of the literature describes experiences of individuals who are undergoing therapy, or have been hospitalized.

Some of the examples of guided fantasy transcripts given in the literature, such as Riha (1972) suggests that the content is likely to be of the nature of a surrealistic children's fairy tale, such as the work of Tolkien (1954) or Le Guin (1971). None of the fantasy journeys in this series were of that nature.
2. The principal applied fields in which guided fantasy is used are education and psychotherapy. These two activities
tend to be considered to be very different and take place in different institutions. Education is a process that is seen to be carried out in schools and colleges, whereas psychotherapy is an activity that goes on in hospitals. Perhaps the difference between these two activities is not so clear cut.

The writer would agree with the statement by Crampton
(1969) which she makes in a discussion of guided fantasy.
"If education were more concerned with its true function, that of "drawing out" the highest potentials of the human being (which include the emotional, interpersonal, sensory, physical, creative, intuitive, and "depth" or spiritual potentials as well as traditional intellectual ones), it would have a great deal to learn from psychotherapy, and undoubtedly could do much to prevent psychic imbalance in later life as well as be more involving and fulfilling for the child".

The assumption is made in this statement that guided fantasy does contribute to the "drawing out of the highest potentials of the human being". Certainly an increasing number of adults are being involved in this type of experience and intuitively judge it to be an important contribution to their own personal development. This process takes place in workshop situations which are led by people who are influenced by Jung or Assagioli, or by individuals who take an eclectic approach using techniques for developing awareness.

The implications of these studies for work of this nature is that the structure which has been generated provides the possibility of a basis of meaning for the experiences which are being generated. The structure also provides a meaningful basis for the task of talking about sub-personalities. The
results of the studies also suggest that practitioners should be more aware of the difficulties involved with making
interpretations on the basis of the material produced and it could be suggested that there is no need for making interpretation at all.

At a broader educational level, it was suggested earlier. that aspects of guided fantasy have always been used as a stimulus for creative writing in school situations. The results of this study suggest that the writing produced could be revealing important information about the psychological processes of the child in that he may be projecting aspects of himself into his compositions. Obviously, at an intuitive level, it has always been known that this is what the creative writer is doing.

Murdoch (1978) makes a distinction between imagination and fantasy, in which fantasy is seen as a sort of private consolation and imagination as a good creative power. It is imagination that is seen as necessary in creative art and fantasy as an excessive intrusion of the individual's personal needs. It is difficult to know if the products of guided fantasy are examples of famtasy or imagination as Murdoch sees them. Probably there are considerable differences from person to person, and one subject raay be creatively constructing the content of his fantasy, whereas another subject may be giving in to the images as they arise spontaneously.

The writer (Hall 1977) has experimented with the use of guided fantasy as am aid to personal learning in secondary school situations. Discussions that developed out of the drawings of trees, a structure used in all of the studies described in this thesis, seemed to be particularly important.

There was general agreement in the group concerned, that individuals had put important parts of themselves into the drawing of a tree.

The writer would suggest that teachers should exercise a great deal of caution concerning the introduction of these techniques as part of the curriculum, with a view to helping the students to understand themselves. Certainly the teacher should have considerable experience of the sort of situation that he expects his pupils to take part in. It is possible that the person in charge of a group may experience difficulty in coping with the material and emotions that can be generated by use of guided fantasy techniques such as those described in these studies. Brown (1971) provides some useful examples and guidelines for the introduction of experiential techniques into school situations.

Techniques can, indeed, be modified to suit the group concerned and to quote Crampton (1969) again,
"Many of the more structured imagery techniques could be adapted to the classroom and it would not be impossible for a generation of children to learn again what fromm has called "the forgotten language" of images and symbols," (Fromm 1951)

The educational establishment has always accepted that the development of imagination is an important aspect of personal education, but does not acknowledge the existence of guided fantasy. In a scholarly review of the place of imagination in education, Sutherland (1971) does not mention it, even in passing. It is as if imagination is acceptable so long as it is being used to produce material external to the person, but is not acceptable as a means of understanding the self. This probably reflects a fear on the part of the administrators of education to look into their own personalities.

Similar inferences can be drawn regarding the importance of these techniques to the process of psychotherapy. The presence of structure suggested by these studies implies that the client's fantasy world can be used as a meaningful source of information both for the therapist and the client. Several of the subjects reported that the sessions were producing material which they would not normally admit to. Others felt that they had produced material which was important, and even material which completely surprised them by its content. This could be unconscious material.

The exact nature of the meaning of this material is another question and perhaps the most important implication of these studies for the clinician relates to the problem of interpretatio: Interpretation, at various levels seems to be a common activity in psychotherapy. Again, these studies suggest that interpretation of fantasy experience should only take place at a general level and possibly should not be made at all.

There does seem to be some support for the two psychoanalytic notions of overdetermination amd condensation which play am important part in the process of interpretation. The process of overdetermination as it is reflected in these studies suggests that there is a surprisingly small number of broad themes running through the experience of fantasy, a point that has already been made. These themes are often made up of images that could be seen as being very different from each other. It is almost as if the chaotic imagery is being thrown up to confuse both the imager and any other person that is likely to come into contact with the imagery, such as a therapist.

An understanding of these simple themes may help to put the client's personal world into a much clearer perspective. Similar simple themes may underly real-life problems, which are confused by the wealth of daily experience and the emotional associations of a disturbed existence.

The writer spent a minimum of seven hours with each of the individual subjects. It would be difficult to suggest that the procedures used in the studies could be seen as a model for the N.H.S. clinician in his dealings with a client. It would be a more enlightened view of mental health for the clinician to be allowed to spend this amount of time examining the fantasies of one client. The total procedure is time consuming and the process of rating, by its very nature, must distort the real experience of the fantasy. The discussions with the subject at the end of the series seemed to be profitable, but would probably have been more meaningful if they had taken place at the end of each session, when the experience was fresh.

On the other hand, several of the writers who have been discussed suggest that to go through a series of guided fantasies can be therapeutic in its own right, without the addition of analysis and interpretation. If this assumption is correct, then to go through the procedures described in Study 3 would provide an extended experience of this type. It would also provide a relatively objective analysis of the fantasy experience, together with a repertory grid of the client's personal constructs There may even be connections between the analysis of fantasy experience and the repertory grid that are worth exploring.

The key issue for the clinician is whether guided fantasy is a tool that can meaningfully be used as part of a client's
therapy. The work described in this thesis suggests that the content of guided fantasy is meaningful, but did not set out to provide evidence that it is therapeutic in its own right. The literature supporting guided fantasy as a therapeutic device relies entirely on the clinical evaluations of practitioners, but with no experimental support in terms of controlled studies. The writer can add to these intuitive evaluations, both in terms of his own appraisal of the sessions and the comments of the subjects. These comments, however, are largely of the nature of "I felt that did me good", "I think I have learned something about myself", "It has made me feel much more relaxed". Certainly nothing emerges from these studies to suggest that guided fantasy should not be a technique available to the eclectic psychotherapist.

Historically, the dream has been the 'royal road' to the unconscious. Possibly guided fantasy is providing material of a similar nature which is much more available to both the client and the psychotherapist, providing an experience that can be shared, as it happens.

The work presented in this thesis may appear to be a dry psychometric exercise, considering the nature of the material that is being examined. One point of view concerning the investigation of human behaviour is that quantification always distorts the observed behaviour and consequently distorts the underlying reality. Another point of view is that an attempt at quantification should be made, in spite of any difficulties such as those that are inherent in the investigation of fantasy,
and that with experience methods will be refined until more appropriate quantitative techniques can be evolved.

The writer holds the view that forms of quantification can be a means to illustrate broad patterns that underlie aspects of behaviour, bearing in mind that the patterns do not have the clear-cut edges that is implied when the data is presented in the form of numbers. This is well illustrated in the diagrams used for Study 1, which demonstrate definite patterns, but with loose edges. The composite diagrams in Studies 2 and 3 also show definite patterns. These are not as clear as the bald statements regarding the number of significant components and the percentage variance accounted for by each component. It has to be remembered that a statement regarding significance merely refers to a patterning in the data that is unlikely to have occurred by chance.

It has been suggested at several points in the text that the presentation of the data in a psychometric form removes the involved and emotional quality of the experience. One qualitative aspect which the writer would suggest provides support for the use of the different types of fantasy situation and the methods of rating, is the ease with which the subjects participated in the fantasy journeys and performed the rating tasks. Several of the subjects seemed somewhat bemused when they were given the instructions for the first session, but very quickly became totally immersed in the fantasy journey and easily coped with the task of identifying with elements from the fantasy.

The involvement of the subjects in the individual sessions became clearer as the subjects reported their feelings directly
to the writer. The following anecdote concerning one of the subjects in the adolescent group suggests that some of the group subjects may have experienced the same degree of involvement as the individual subjects, Joanne asked for instructions on how to guide another person through the repertory test and went home and generated a list of constructs from her mother. She then asked for both the booklet and the scripts for the guided fantasies that had been used. She came back with a complete set of ratings, having taken her mother through the same procedure that she had experienced. These were analyzed on the computer.

It is clear that the child became so involved in this activity that she was prepared to spend a great deal of her own time repeating the task with her mother. This degree of involvement seems atypical of thirteen to fourteen-year old adolescents in comprehensive schools and indicates the depth of the identification with the task.

From one point of view, the whole of human experience is seen as illusion or 'maya'. Another common view is that there is no 'ultimate reality' and that reality is a subjective phenomenon depending on the experience or culture of the individual. This is in direct contrast to the idea that the only meaningful reality is that obtained from the observations of natural science and therefore, by implication, all other views of the world are illusory. Yet another view, based on the research on 'altered states of consciousness' (Tart 1969) suggests the individuail himself may experience differing perceptions of reality.

Guided fantasy is a technique which brings the individual in contact with a form of reality or illusion which is outside his normal experience. Nevertheless, reality or illusion, this world would appeair to have a coherence and meaning unique to itself, which may provide the fantasizer with important information about his inner experience.

\section*{BIBLIOGRAPHY}

ALEXANDER, E. D. (1971)

ANDERSON, M. S. and SAVORY, L. M. (1974)

ASSAGIOLI, R. (1965)

BACHÉLARD, G. (1964)

BACHÉLARD, G. (1969)

BACHÉLARD, G. (1971)

BERNE, E. (1964)

BETTS, G. H. (1909)

BINSWANGER, L. (1946)

BLEULER, E. (1951)

BLOFELD, J. (1970)

BOSS, M. (1963)

BROWN, G. I. (1971)

CASLANT, E. (1921)

In-the-body travel - a growth experience with fantasy.
Psychotherapy; Theory, Research and Practice. 8, 4, Winter, 319-32.

Passages: A Guide for Pilgrims of the Mind. London: Turnstone.
\(\frac{\text { Psychosynthesis: A Manual of }}{\text { Principles and Techniques. }}\) New York; Hobbs, Dorman.

The Psychoanalysis of Fire.
Boston, Beacon.
The Poetics of Reverie. Boston: Beacon.

On Poetic Imagination and Reverie.
New York: Bobbs-Merrill.
Games People Play. New York, Grove 1964.

The Distribution and Function of Mental Imagery. Teachers' College Columbia University.
"
Uber die daseinanalytiche
Forschungsrichtung in der Psychiatrie. Schweizer Archiv fur Naurologie und Psychiatrie, 57, 209-225.

Autistic Thinking, In D, Rapaport (ed,). Organization and Pathology of Thought. New York: Columbia University Press.

The Tantric Mysticism of Tibet, New York: Dutton.

Psychoanlysis amd Daseinanalysis
(trans. L. B. Lefebre). New York: Basic Books.

Human Teaching for Human Learning. New York: Viking.

Méthode de Développement des Faculté supranormales. Paris Edition Rhea.
\begin{tabular}{|c|c|}
\hline CATTELL, R. B. (1965) & The Scientific Analysis of Personality. Harmondsworth: Penguin Books. \\
\hline CHETWYND, J. (1977) & The psychological meaning of structural measures derived from grids. In P. Slater (ed.). Dimensions of Intrapersonal Space Vol. 2. London: Wiley. \\
\hline CLARK, P. (1925) & The phantasy method of analysing narcissistic neuroses. Psychoanalytic Review. 13. 225-232, \\
\hline CRAMPTON, M. (1969) & The use of mental imagery in psychosynthesis. Journal of Humanistic Psychology. 9, 2, 139-153. \\
\hline DESOILLE, R. (1966) & The Directed Daydream. New York: Psychosynthesis Foundation. \\
\hline DESOILLE, R. (1938) & Exploration de l'Affectivité Subconscient par la Methode du Rêve Eveille. Paris: D'Autrey. \\
\hline DUBLIN, J. E. (1976) & The demise of the traditional dream symbol in psychotherapy: goodbye and good riddance. International Journal of Symbology, 7, 11-21, \\
\hline ECCLES, J. C. (1964) & The Neurophysiological Basis of Mind. Oxford: Oxford University Press, \\
\hline ELLENBERGER, H. F. (1970) & The Discovery of the Unconscious, New York: Basic Books, \\
\hline FRANK, L. (1910) & Die Psychoanalyse. Munich: Reinhart. \\
\hline FRANSELLA, F. and BANNISTER, D, (1977) & A Manual for Repertory Grid Techniques, London: Academic Press, \\
\hline FRÉTIGNY, R. and VIREL, A. (1968) & L'Imagerie Mentale. Geneva: Mont Blanc. \\
\hline FREUD, S. (1900) & The Interpretation of Dreams. In J. Strachey (ed.) (1962), The standard edition. Vols, 4, 5. London: Hogarth. \\
\hline FREUD, S. (1927) & The Ego and the Id. London: Hogarth, \\
\hline FREUD, S. (1955) & \begin{tabular}{l}
Studies on Hysteria. (Breuer, J, and Freud, S.) In J. Strachey (ed.). \\
The standard edition. Vol. 2. \\
London: Hogarth.
\end{tabular} \\
\hline FROMM, E. (1951) & The Forgotten Language. New York \\
\hline
\end{tabular}
\begin{tabular}{|c|c|}
\hline GALTON, F. (1880) & Statistics of mental imagery. Mind. .5, 300-318. \\
\hline GALTON, F. (1883) & Inquiries into Human Faculty and its Development. London: Dent, \\
\hline GERARD, R. (1964) & \[
\begin{aligned}
& \text { Psychosynthesis; A Psychotherapy for } \\
& \text { the V;hole Man. Psychosynthesis } \\
& \text { Research Foundation. Issue No. } 14 .
\end{aligned}
\] \\
\hline GERARD, R. (1967) & Symbolic identification: a technique of psychosynthesis. Acta Medica Psychosomatica, 710-711. \\
\hline GORDON, J. J. (1961) & Synectics. New York: Harper and Row. \\
\hline , GGORDON, R, (1972) & A very private world. In P. Sheehan (ed.). The Function and Nature of Imagery. New York: Basic Books. \\
\hline HALL, E. (1977) & Human relations training in a comprehensive school, British Journal of Guidance and Counselling. July, \\
\hline HALL, E. (1978) & Using Personal Constructs: Rediguide 9: Guides in Educational Research, University of Nottingham School of Education. \\
\hline HAMMER, M. (1967) & The directed daydream technique. Psychotherapy, 1967, 4, 173-181. \\
\hline Q \({ }^{\text {HANNAY, A. (1971) }}\) & \(\frac{\text { Mental Images: A Defence. }}{\text { George Allen }}\) London: George Allen \& Unwin. \\
\hline HAPPICH, C. (1932) & Das Bildewusstein als ansatzstelle psychischer Behandlung. Zentreblatt Psychotherapie, 5. \\
\hline \% HOLT, R. R. (1964) & Imagery: The return of the ostracised. Amer. Psychologist. 19, 4, 254-264. \\
\hline HOROWITZ, M, J. (1970) & Image Formation and Cognition. New York: Appleton. \\
\hline HUME, D. (1809) & Essays and Treatises; Vol. 2, An Enquiry Concerning: Human Understanding, Bell and Blackwood: Edinburgh. \\
\hline HUXLEY, L. (1963) & You Are Not the Target. Hollywood: Wiltshire Book Co. \\
\hline JAMES, W, (1885) & Automatic writing. Proceedings of
the. American Society for Psychical Research, I. 548-564. \\
\hline
\end{tabular}
\begin{tabular}{|c|c|}
\hline JEANSCH, E. R. (1930) & Eidetic Imagery. London: Kegan Paul \\
\hline JOHNSGARD, K. W. (1969) & Symbol confrontation in a recurrent nightmare. Psychotherapy. 6, 177-187. \\
\hline JUNG, C. G. (1954) & The Practice of Psychotherapy. The Collected Works of C. G. Jung. Vol. 16." London: Routledge and Kegan Paul. \\
\hline JUNG, C. G. (1959) & Archetypes and the Collective Unconscious. The Collected Works of C. G. Jung. Vol. 9. London: Routledge and Kegam Paul, \\
\hline JUNG, C. G. (1960) & 'The transcendent function' x n The Collected Works of C. \(\mathrm{G}_{\mathrm{p}}\) Jung Vol. 8', London: Routledge and Kegan Paul. \\
\hline JUNG, C. G. (1961) & Memories, Dreams and Reflections, Aniela Jaffe (ed.). New York: Random House. \\
\hline KAPLAN, E. K. (1972) & Gaston Bachelard's philosophy of imagination; an introduction, Phonomenological Research, 33, 1-24, \\
\hline KELLEY, C. R. (1974) & Education in Feeling and Purpose. Santa Monica, California: The Radix Institute. \\
\hline KELLY, G. A. (1955) & The Psychology of Personal Constructs Vol. I. New York: Norton. \\
\hline KLEIN, G. (1967) & Peremptory ideation: structure and force in motivated ideas. In Holt, R. R. (ed. ). Motives and thought: psychoanalytic essays in honour of David Rapaport. Psychological Issues, 5 (No. 2-3, monograph 18/19). \\
\hline KLINGER, E. (1971) & Structure and Functions of Fantasy. New York: Wiley Interscience. \\
\hline KOSBAD, F. P. (1972) & Symbolism, self-experience and the deductic use of affective imagery in psychiatric training, Zeitschrift fur Psychotherapie und Medizinische Psychologie. 22, 210-224, \\
\hline KRETSCHMER, W. (1969) & Meditative techniques in psychotherapy. In C. Tart (ed.) Altered States of Consciousness. New York: Wiley, \\
\hline KUBIE, L. (1943) & The use of induced hypnotic reveries in the recovery of repressed amnesic data. Bulletin of the Menninger Clinic. 7, 172-183. \\
\hline
\end{tabular}
\begin{tabular}{|c|c|}
\hline LE GUIN, U. K. (1971) & A Wizard of Earthsea. Harmondsworth: Penguin Books. \\
\hline LEUNER, H. (1969) & Guided affected imagery (GAI): a method of intensive therapy. Amer. J. Psychotherapy. 23, 1, 4-22, \\
\hline LOWEN, A. (1975) & BioenergeticB. New York: Coward. \\
\hline McKELLAR, P, (1957) & Imagination and Thinking; A Psychologica Analysis. London: Cohen \& West. \\
\hline MacINTYRE, A. C. (1958) & The Unconscious. London: Routledge and Kegan Paul. \\
\hline MASTERS, R. and HOUSTON, J. (1973) & Mind Games. New York: Viking. \\
\hline MORENO, J. L. (1967) & Reflections on my method of group psychotherapy and psychodrama. In H. Greenwald (ed.) Active Psychotherapy. New York; Atherton. \\
\hline MORGAN, J. I. and SKOVHOLD, J. I. (1977) & Using inner experience; famtasy and daydreams in career counselling. Journal of Counselling Psychology. 24, 5, 391-397. \\
\hline MURDOCH, I. (1978) & On Natural Novelists and Unnatural Philosophers. The Listener. 27th April. \\
\hline MYERS, F. (1885-7) & Automatic writing. Proceedings of
the Society for Psychical Research
3, 1-63, \(4,209-261\), \\
\hline OSBORNE, A. F. (1953) & Applied Imagination: Principles and Procedures of Creative Thinking. New York: Charles Scribner and Sons. \\
\hline PAIVIO, A. (1971) & \begin{tabular}{l}
Imagery and Verbal Processes. \\
New York: Holt, Rinehart and Winston,
\end{tabular} \\
\hline PEAR, T. H. (1937) & The place of imagery in mental processes. Bull, John Rylands Lib. 21, 193-214, \\
\hline PENFIELD, W. and ROBERTS, L. (1959) & \begin{tabular}{l}
Speech and Brain Mechanisms, \\
Princetown: Princetown University Press,
\end{tabular} \\
\hline
\end{tabular}
\begin{tabular}{|c|c|}
\hline PERLS, F. S. (1947) & Ego, Hunger and Aggression. London: George Allen and Unwin. \\
\hline \begin{tabular}{l}
PERLS, F. S., \\
HEFFERLINE, R. F. and GOODMAN, P. (1951)
\end{tabular} & Gestalt Therapy. New York; Julian Press. \\
\hline PERLS, F. S. (1969) & Gestalt Therapy Verbatim. Lafayette, California: Real People Press. \\
\hline PERLS, F. S. (1969a) & \begin{tabular}{l}
In and Out of the Garbage Pail. \\
Lafayette, California: Real People Press.
\end{tabular} \\
\hline PERLS, F. S. (1973) & \[
\begin{aligned}
& \text { The Gestalt Approach and Eye } \\
& \text { Witness to Therapy. New York: } \\
& \text { Science and Behaviour Books. }
\end{aligned}
\] \\
\hline PERKY, C. W. (1910) & An experimental study of imagination. Amer, J. Psychol, 21, 422-452. \\
\hline PROGOFF, I. (1963) & \[
\frac{\text { The Symbolic and the Real, }}{\text { Julian Press, }} \text { New York: }
\] \\
\hline RAPAPORT, D. (1951) & \[
\begin{aligned}
& \text { Organization and Pathology of } \\
& \text { Thought. New York: Columbia } \\
& \text { University Press. }
\end{aligned}
\] \\
\hline REICH, W. (1949) & Character Analysis. New York:Noonday. \\
\hline REYHER, J. (1965) & ```
Free imagery: an uncovering
procedure. Journal of Clinical
Psychology, 19,454-459.
``` \\
\hline RICHARDSON, A. (1969) & Mental Imagery. London; Routledge and Kegam Paul. \\
\hline RIHA, S. A. (1972) & \begin{tabular}{l}
The Unconscious and Symbolic \\
Imagery. Unpublished Ph.D. \\
dissertation. California School of Professional Psychology, Los Angeles.
\end{tabular} \\
\hline ROE, A. (1951) & A study of imagery in reseairch scientists. Journal of Personality 19, 459-470. \\
\hline RYLE, G. (1955) & The Concept of Mind. Hutchinson's University Library: London. \\
\hline SALMON, P. (1976) & \begin{tabular}{l}
Grid measures with child subjects. \\
In P. Slater, (ed.) Explorations of \\
Intrapersonal space. London: Wiley.
\end{tabular} \\
\hline
\end{tabular}

SALMON, P., ARNOLD, J. M, and COLLYER, Y. M. (1972)

SEGAL, S. J. and
NATHAN, S. (1964)

What do the determinants determine;
the internal validity of the
Rorschach. Journal of Personality
Assessment, 36, 33-38.
The Perky effect: incorporation of an external stimulus into an imagery experience under placebo and control conditions. Percept. mot. skills, 18, 385-395.

SCHAUB, A. de Vries (1911) On the intensity of images. Amer, J. Psychol. 22, 346-368.

Autogenic Methods, New York: Grune and Stratton.

Joy: Expanding Human Awareness. New York: Grove Press.

Imagery; Current Cognitive Approaches. New York; Academic Press.

A theory of ego pathology and ego therapy. The Journal of Psychology. 53, 81-90,

Interactive computer programs for eliciting personal models of 'the world. In F, Framsella (ed.). Personal Construct Psychology 1977. Academic Press; London.

The Nature and Function of Imagery. New York; Basic Books.

Psycho-Imagination Therapy.
New York; International Medical Book Corporation.

The objective study of mental imagery, British Journal of Psychology, 44, 38-51.

On symbol formation. In D. Rapaport (ed.). Organization and Pathology of Thought. New York: Columbia Univ. Press.

Daydreaming. New York: Random House..
Imagery and Daydream Methods in
Psychotherapy and Behaviour Modification. New York: Academic Press.
\begin{tabular}{|c|c|}
\hline SINGER, J. L, (1976) & Daydreaming and Fantasy. London; George Allen \& Ünwin. \\
\hline SINGER, J. L, and ANTROBUS, J. S, (1963) & \begin{tabular}{l}
A factor-analytic study of daydream and conceptually-related cognitive and personality variables. \\
Perceptual and Motor Skills, Monograph Supplement, 3, V. 17 .
\end{tabular} \\
\hline SLATER, P. (197?) & Dimensions of Intrapersonal Space Vol. 2. The measurement of intrapersonal space by grid technique. Wiley: London. \\
\hline STEVENS, J. O. (1971) & Awareness: Exploring. Experimenting and Experiencing. Lafayette, California; Real People Press. \\
\hline SUTHERLAND, M, B. (1971) & Everyday Imagining and Education. London; Routledge and Kegsm Paul. \\
\hline TARTHANG TULKU (1977) & \[
\frac{\text { Time, Space, and Knowledge; A New }}{\frac{\text { Eision of Reality }}{\text { Emeryville, }}}
\] \\
\hline TAUBER, E. S. and GREEN, M. G. (1959) & \[
\frac{\text { Prelogical Experience, }}{\text { Basic Books. }} \text { New York: }
\] \\
\hline TART, C. (ed.) (1969) & Altered States of Consciousness. New York; Wiley. \\
\hline THIGPEN, C. H. and CLECKLEY, H. M. (1957) & The Three Faces of Eve. London: Secker and Warburg. \\
\hline TOLKIEN, J. R. R. (1954) & The Lord of the Rings. London; George Allen \& Unwin. \\
\hline UNGERSMA, J. A. (1976) & Famtasy, creativity, conformity. Humanitas . 12, 1, February, 73-88. \\
\hline VARENDONCK (1921) & The Psychology of Daydreeuns. New York: Macmillan. \\
\hline WATKINS, M. M. (1976) & Waking Dreauns. New York; Interface. \\
\hline WILSON, W. & \begin{tabular}{l}
Empathy as a Function of Guided \\
Daydreams in Counsellor Education. \\
Unpublished Ph.D. thesis. University of Southern California.
\end{tabular} \\
\hline WOLPE, J. (1969) & The Practice of Behaviour Therapy. New York: Pergamon. \\
\hline
\end{tabular}

\section*{APPENDIX}

Raw Data for Study 2 (a)
The tables on the following pages provide the ratings given by each of the subjects in Study \(\boldsymbol{2}\) (a).

The subjects are identified by initials and their sex, (M) male and ( \(F\) ) female.

The columns give the ratings for the elements as follows:1. BIRD 2. CAGE 3 MOUNTAIN 4. WIND 5.SNOW 6. FIRE 7, MYSELF 8. STREAM 9. RIVER 10. OCEAN 11. SUN 12. TRUNK 13. BRANCHES 14. ROOTS 15. LEAVES 16. MYSELF AS I WOULD LIKE TO BE 17. THROAT 18. HEART 19. BRAIN 20. BELLY.

The rows identify the personality factors that have been applied to the elements. A rating of one is an extreme rating for the left-hand factor and a rating of seven is an extreme rating for the right-hand factors. The 16 personality factors are given as follows;-

RESERVED
LESS INTELLIGENT
EMOTIONAL
HUMBLE
SOBER
EXPEDIENT
SHY
TOUGH MINDED
TRUSTING
PRACTICAL
FORTHRIGHT
CONFIDENT
CONSERVATIVE
GROUP-TIED
RELAXED
CASUAL

OUTGOING
MORE INTELLIGENT
STABLE
ASSERTIVE
HAPPY-GO-LUCKY
CONSCIENTIOUS
VENTURESOME
TENDER MINDED
SUSPICIOUS
IMAGINATIVE
SHREWD
APPREHENSIVE
EXPERIMENTING
SELF-SUFFICIENT
TENSE
CONTROLLED
E.G . (M)
\begin{tabular}{llllllllllllllllllll}
\(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{2}\) \\
\(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{2}\) \\
\(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{5}\) \\
\(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) \\
\(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{2}\) \\
\(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{6}\) \\
\(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{3}\) \\
\(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) \\
\(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) &, & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) \\
\(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{3}\) \\
\(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) \\
\(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{3}\) \\
\(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{7}\) \\
\(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{4}\) \\
\(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{1}\) \\
& & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{6}\)
\end{tabular}
c.H. (M)
\begin{tabular}{llllllllllllllllllll}
\(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) \\
\(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) \\
\(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{4}\) \\
\(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{6}\) \\
\(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{5}\) \\
\(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) \\
\(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) \\
\(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) \\
\(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) \\
\(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) \\
\(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) \\
\(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) \\
\(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) \\
\(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) \\
\(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) \\
\(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\)
\end{tabular}
R.L.(M)

P.M. (M)
\(\left.\begin{array}{llllllllllllllllllll}\mathbf{2} & \mathbf{1} & \mathbf{4} & \mathbf{7} & \mathbf{2} & \mathbf{7} & \mathbf{5} & \mathbf{7} & \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{7} & \mathbf{4} & \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{7} & \mathbf{2} & \mathbf{3} \\ \mathbf{6} & \mathbf{2} & \mathbf{3} & \mathbf{7} & \mathbf{3} & \mathbf{7} & \mathbf{5} & \mathbf{7} & \mathbf{5} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{5} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{7} & \mathbf{3} & \mathbf{5} \\ \mathbf{3} & \mathbf{7} & \mathbf{2} & \mathbf{6} & \mathbf{2} & \mathbf{1} & \mathbf{3} & \mathbf{2} & \mathbf{7} & \mathbf{6} & \mathbf{3} & \mathbf{3} & \mathbf{1} & \mathbf{5} & \mathbf{2} & \mathbf{4} & \mathbf{7} & \mathbf{1} & \mathbf{6} & \mathbf{6} \\ \mathbf{4} & \mathbf{1} & \mathbf{6} & \mathbf{7} & \mathbf{1} & \mathbf{7} & \mathbf{4} & \mathbf{4} & \mathbf{7} & \mathbf{6} & \mathbf{5} & \mathbf{3} & \mathbf{6} & \mathbf{2} & \mathbf{3} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{3} & \mathbf{5} \\ \mathbf{4} & \mathbf{1} & \mathbf{2} & \mathbf{3} & \mathbf{3} & \mathbf{5} & \mathbf{6} & \mathbf{7} & \mathbf{2} & \mathbf{2} & \mathbf{3} & \mathbf{1} & \mathbf{7} & \mathbf{1} & \mathbf{6} & \mathbf{5} & \mathbf{2} & \mathbf{6} & \mathbf{2} & \mathbf{6} \\ \mathbf{3} & \mathbf{7} & \mathbf{4} & \mathbf{2} & \mathbf{7} & \mathbf{1} & \mathbf{4} & \mathbf{4} & \mathbf{3} & \mathbf{1} & \mathbf{3} & \mathbf{4} & \mathbf{3} & \mathbf{3} & \mathbf{4} & \mathbf{3} & \mathbf{6} & \mathbf{1} & \mathbf{6} & \mathbf{6} \\ \mathbf{5} & \mathbf{2} & \mathbf{4} & \mathbf{6} & \mathbf{1} & \mathbf{7} & \mathbf{5} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{5} & \mathbf{3} & \mathbf{6} & \mathbf{2} & \mathbf{5} & \mathbf{5} & \mathbf{4} & \mathbf{7} & \mathbf{3} & \mathbf{4} \\ \mathbf{5} & \mathbf{7} & \mathbf{2} & \mathbf{1} & \mathbf{7} & \mathbf{1} & \mathbf{6} & \mathbf{6} & \mathbf{2} & \mathbf{1} & \mathbf{3} & \mathbf{1} & \mathbf{6} & \mathbf{1} & \mathbf{6} & \mathbf{4} & \mathbf{2} & \mathbf{1} & \mathbf{5} & \mathbf{6} \\ \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{7} & \mathbf{4} & \mathbf{5} & \mathbf{2} & \mathbf{3} & \mathbf{3} & \mathbf{6} & \mathbf{3} & \mathbf{5} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{2} & \mathbf{3} & \mathbf{6} & \mathbf{3} & \mathbf{2} \\ \mathbf{6} & \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{5} & \mathbf{1} & \mathbf{6} & \mathbf{5} & \mathbf{2} & \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{6} & \mathbf{2} & \mathbf{6} & \mathbf{6} & \mathbf{1} & \mathbf{3} & \mathbf{1} & \mathbf{5} \\ \mathbf{2} & \mathbf{1} & \mathbf{1} & \mathbf{1} & \mathbf{4} & \mathbf{1} & \mathbf{2} & \mathbf{2} & \mathbf{4} & \mathbf{2} & \mathbf{2} & \mathbf{1} & \mathbf{2} & \mathbf{2} & \mathbf{3} & \mathbf{4} & \mathbf{2} & \mathbf{1} & \mathbf{4} & \mathbf{4} \\ \mathbf{3} & \mathbf{6} & \mathbf{3} & \mathbf{1} & \mathbf{6} & \mathbf{1} & \mathbf{2} & \mathbf{2} & \mathbf{1} & \mathbf{2} & \mathbf{4} & \mathbf{5} & \mathbf{3} & \mathbf{7} & \mathbf{5} & \mathbf{2} & \mathbf{3} & \mathbf{1} & \mathbf{5} & \mathbf{2} \\ \mathbf{6} & \mathbf{2} & \mathbf{1} & \mathbf{4} & \mathbf{3} & \mathbf{3} & \mathbf{5} & \mathbf{4} & \mathbf{2} & \mathbf{4} & \mathbf{3} & \mathbf{1} & \mathbf{5} & \mathbf{1} & \mathbf{3} & \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{2} & \mathbf{3} \\ \mathbf{5} & \mathbf{1} & \mathbf{7} & \mathbf{7} & \mathbf{1} & \mathbf{7} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{4} & \mathbf{6} & \mathbf{1} & \mathbf{7} & \mathbf{1} & \mathbf{3} & \mathbf{6} & \mathbf{3} & \mathbf{7} & \mathbf{2} & \mathbf{6} \\ \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{5} & \mathbf{6} & \mathbf{5} & \mathbf{1} & \mathbf{6} & \mathbf{5} & \mathbf{2} & \mathbf{3} & \mathbf{5} & \mathbf{6} \\ \mathbf{2}\end{array}\right]\)
M.S. (M)

C.S. (M)

D.W. (M)
\begin{tabular}{llllllllllllllllllll}
\(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{5}\) \\
\(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{4}\) \\
\(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{2}\) \\
\(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) \\
\(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) \\
\(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{5}\) \\
\(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{4}\) \\
\(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) \\
5 & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{3}\) \\
\(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{3}\) \\
\(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{4}\) \\
\(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) \\
\(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{4}\) \\
\(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) \\
\(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{4}\) \\
\(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{5}\)
\end{tabular}
A.B. (F)
\(\left.\begin{array}{lllllllllllllllllllll}\mathbf{1} & \mathbf{5} & \mathbf{5} & \mathbf{7} & \mathbf{1} & \mathbf{7} & \mathbf{3} & \mathbf{7} & \mathbf{3} & \mathbf{3} & \mathbf{5} & \mathbf{5} & \mathbf{5} & \mathbf{6} & \mathbf{7} & \mathbf{5} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{2} \\ \mathbf{3} & \mathbf{7} & \mathbf{7} & \mathbf{4} & \mathbf{2} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{3} & \mathbf{6} & \mathbf{6} & \mathbf{6} & \mathbf{7} & \mathbf{4} \\ \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{1} & \mathbf{1} & \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{7} & \mathbf{6} & \mathbf{4} & \mathbf{2} & \mathbf{2} & \mathbf{4} & \mathbf{1} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{3} & \mathbf{7} \\ \mathbf{2} & \mathbf{6} & \mathbf{4} & \mathbf{7} & \mathbf{1} & \mathbf{2} & \mathbf{5} & \mathbf{6} & \mathbf{3} & \mathbf{4} & \mathbf{5} & \mathbf{5} & \mathbf{6} & \mathbf{5} & \mathbf{3} & \mathbf{1} & \mathbf{6} & \mathbf{6} & \mathbf{7} & \mathbf{3} \\ \mathbf{4} & \mathbf{1} & \mathbf{1} & \mathbf{7} & \mathbf{1} & \mathbf{2} & \mathbf{5} & \mathbf{7} & \mathbf{1} & \mathbf{2} & \mathbf{3} & \mathbf{1} & \mathbf{5} & \mathbf{1} & \mathbf{6} & \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{2} & \mathbf{1} \\ \mathbf{5} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{7} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{6} & \mathbf{7} & \mathbf{4} & \mathbf{6} & \mathbf{6} & \mathbf{4} \\ \mathbf{3} & \mathbf{4} & \mathbf{5} & \mathbf{7} & \mathbf{1} & \mathbf{3} & \mathbf{2} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{7} & \mathbf{3} \\ \mathbf{4} & \mathbf{1} & \mathbf{4} & \mathbf{2} & \mathbf{4} & \mathbf{1} & \mathbf{1} & \mathbf{2} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{2} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{1} & \mathbf{2} & \mathbf{7} & \mathbf{1} & \mathbf{4} \\ \mathbf{5} & \mathbf{5} & \mathbf{2} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{2} & \mathbf{1} & \mathbf{2} & \mathbf{4} & \mathbf{4} & \mathbf{1} & \mathbf{3} & \mathbf{1} & \mathbf{1} & \mathbf{6} & \mathbf{5} & \mathbf{4} & \mathbf{5} \\ \mathbf{2} & \mathbf{2} & \mathbf{1} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{2} & \mathbf{1} & \mathbf{5} & \mathbf{4} & \mathbf{6} & \mathbf{5} & \mathbf{4} & \mathbf{7} & \mathbf{3} & \mathbf{2} & \mathbf{2} & \mathbf{6} & \mathbf{4} \\ \mathbf{4} & \mathbf{7} & \mathbf{6} & \mathbf{1} & \mathbf{4} & \mathbf{7} & \mathbf{5} & \mathbf{6} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{3} & \mathbf{3} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{6} & \mathbf{4} \\ \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{1} & \mathbf{7} & \mathbf{2} & \mathbf{4} & \mathbf{2} & \mathbf{4} & \mathbf{2} & \mathbf{4} & \mathbf{5} & \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{1} & \mathbf{6} & \mathbf{1} & \mathbf{1} & \mathbf{5} \\ \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{4} & \mathbf{4} & \mathbf{1} & \mathbf{6} & \mathbf{7} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{6} & \mathbf{6} & \mathbf{3} & \mathbf{4} & \mathbf{5} & \mathbf{3} \\ \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{2} & \mathbf{4} & \mathbf{7} & \mathbf{4} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{3} & \mathbf{2} & \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{3} & \mathbf{5} & \mathbf{7} & \mathbf{2} \\ \mathbf{3} & \mathbf{5} & \mathbf{1} & \mathbf{5} & \mathbf{7} & \mathbf{6} & \mathbf{5} & \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{3} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{2} & \mathbf{1} & \mathbf{6} & \mathbf{5} & \mathbf{3} & \mathbf{2} \\ & \mathbf{7} & \mathbf{3} & \mathbf{6} & \mathbf{7} & \mathbf{5} & \mathbf{2} & \mathbf{7} & \mathbf{4} & \mathbf{4} & \mathbf{7} & \mathbf{4} & \mathbf{6} & \mathbf{3} & \mathbf{5} & \mathbf{4} & \mathbf{7} & \mathbf{7} & \mathbf{4}\end{array}\right]\)

CO. (F)
\begin{tabular}{llllllllllllllllllll}
\(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) \\
\(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) \\
\(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{3}\) \\
\(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{6}\) \\
\(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{7}\) \\
\(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{3}\) \\
\(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{4}\) \\
\(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{6}\) \\
\(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{3}\) \\
\(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) \\
\(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{3}\) \\
\(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) \\
\(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & 2 & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{4}\) \\
\(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{1}\) \\
\(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{1}\) \\
\(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{1}\)
\end{tabular}

\section*{K.E . (F)}


\author{
S．H．（F）
}
\begin{tabular}{llllllllllllllllllll}
\(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{2}\) \\
\(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) \\
\(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) \\
\(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{5}\) \\
\(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{1}\) \\
\(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) \\
\(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) \\
\(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{2}\) \\
\(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) \\
\(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{2}\) \\
\(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) \\
\(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) \\
\(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{2}\) \\
\(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{6}\) \\
\(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{1}\) \\
\(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{1}\)
\end{tabular}
P.J. (F)
\begin{tabular}{|c|}
\hline \begin{tabular}{l}
 \\

\end{tabular} \\
\hline  \\
\hline  \\
\hline agaumsnv－anmamnn \\
\hline  \\
\hline  \\
\hline  \\
\hline  \\
\hline  \\
\hline  \\
\hline  \\
\hline auneranaoamnamnner \\
\hline  \\
\hline いのwerv \\
\hline  \\
\hline O\＆w のinaun Nw \\
\hline  \\
\hline ソNerw \\
\hline の1ーNせNNOCV \\
\hline
\end{tabular}
M.K. (F)
\(\left.\begin{array}{llllllllllllllllllll}\mathbf{3} & \mathbf{4} & \mathbf{1} & \mathbf{7} & \mathbf{1} & \mathbf{7} & \mathbf{5} & \mathbf{7} & \mathbf{2} & \mathbf{7} & \mathbf{7} & \mathbf{3} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{1} & \mathbf{5} \\ \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{3} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{5} & \mathbf{6} & \mathbf{7} & \mathbf{3} & \mathbf{7} & \mathbf{4} & \mathbf{6} & \mathbf{7} & \mathbf{2} \\ \mathbf{2} & \mathbf{3} & \mathbf{1} & \mathbf{1} & \mathbf{6} & \mathbf{1} & \mathbf{4} & \mathbf{1} & \mathbf{7} & \mathbf{1} & \mathbf{7} & \mathbf{7} & \mathbf{2} & \mathbf{1} & \mathbf{1} & \mathbf{4} & \mathbf{3} & \mathbf{3} & \mathbf{7} & \mathbf{2} \\ \mathbf{6} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{2} & \mathbf{7} & \mathbf{5} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{4} & \mathbf{7} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{7} & \mathbf{2} \\ \mathbf{4} & \mathbf{1} & \mathbf{1} & \mathbf{7} & \mathbf{2} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{3} & \mathbf{7} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{3} & \mathbf{4} \\ \mathbf{4} & \mathbf{7} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{1} & \mathbf{5} & \mathbf{3} & \mathbf{2} & \mathbf{3} & \mathbf{7} & \mathbf{7} & \mathbf{6} & \mathbf{3} & \mathbf{1} & \mathbf{6} & \mathbf{7} & \mathbf{6} & \mathbf{5} & \mathbf{7} \\ \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{7} & \mathbf{3} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{4} & \mathbf{6} & \mathbf{3} & \mathbf{4} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{7} & \mathbf{3} \\ \mathbf{7} & \mathbf{7} & \mathbf{1} & \mathbf{1} & \mathbf{6} & \mathbf{1} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{1} & \mathbf{6} & \mathbf{3} & \mathbf{5} & \mathbf{1} & \mathbf{6} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{3} & \mathbf{6} \\ \mathbf{3} & \mathbf{1} & \mathbf{7} & \mathbf{5} & \mathbf{2} & \mathbf{4} & \mathbf{2} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{3} & \mathbf{1} & \mathbf{3} & \mathbf{5} & \mathbf{1} & \mathbf{4} & \mathbf{2} & \mathbf{4} & \mathbf{6} & \mathbf{2} \\ \mathbf{7} & \mathbf{5} & \mathbf{5} & \mathbf{5} & \mathbf{5} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{2} & \mathbf{5} & \mathbf{6} & \mathbf{6} & \mathbf{6} & \mathbf{3} & \mathbf{7} & \mathbf{7} & \mathbf{2} & \mathbf{6} & \mathbf{7} & \mathbf{3} \\ \mathbf{2} & \mathbf{1} & \mathbf{6} & \mathbf{5} & \mathbf{2} & \mathbf{7} & \mathbf{2} & \mathbf{2} & \mathbf{1} & \mathbf{6} & \mathbf{2} & \mathbf{1} & \mathbf{2} & \mathbf{6} & \mathbf{1} & \mathbf{2} & \mathbf{1} & \mathbf{2} & \mathbf{6} & \mathbf{3} \\ \mathbf{6} & \mathbf{2} & \mathbf{1} & \mathbf{1} & \mathbf{5} & \mathbf{1} & \mathbf{6} & \mathbf{1} & \mathbf{1} & \mathbf{1} & \mathbf{1} & \mathbf{2} & \mathbf{1} & \mathbf{1} & \mathbf{2} & \mathbf{3} & \mathbf{6} & \mathbf{1} & \mathbf{2} & \mathbf{3} \\ \mathbf{7} & \mathbf{4} & \mathbf{4} & \mathbf{7} & \mathbf{4} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{6} & \mathbf{5} & \mathbf{6} & \mathbf{6} & \mathbf{6} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{3} \\ \mathbf{6} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{2} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{1} & \mathbf{2} & \mathbf{7} & \mathbf{6} & \mathbf{5} & \mathbf{3} & \mathbf{7} & \mathbf{3} & \mathbf{3} \\ \mathbf{5} & \mathbf{2} & \mathbf{1} & \mathbf{6} & \mathbf{3} & \mathbf{5} & \mathbf{5} & \mathbf{1} & \mathbf{1} & \mathbf{7} & \mathbf{1} & \mathbf{1} & \mathbf{2} & \mathbf{7} & \mathbf{6} & \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{3} & \mathbf{5} \\ \mathbf{5} & \mathbf{3} & \mathbf{5} & \mathbf{2} & \mathbf{2} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{7} & \mathbf{1} & \mathbf{6} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{1} & \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{6} & \mathbf{5}\end{array}\right]\)
S.I. (F)

S.S. (F)
\(\begin{array}{llllllllllllllllllll}\mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{7} & \mathbf{3} & \mathbf{4} & \mathbf{6} & \mathbf{3} & \mathbf{7} & \mathbf{2} & \mathbf{7} & \mathbf{5} & \mathbf{4} & \mathbf{7} & \mathbf{2} & \mathbf{4} \\ \mathbf{5} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{3} & \mathbf{7} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{3} & \mathbf{5} & \mathbf{5} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{7} & \mathbf{4} \\ \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{2} & \mathbf{6} & \mathbf{5} & \mathbf{3} & \mathbf{7} & \mathbf{3} & \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{6} & \mathbf{1} & \mathbf{7} & \mathbf{4} \\ \mathbf{3} & \mathbf{3} & \mathbf{4} & \mathbf{5} & \mathbf{2} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{3} & \mathbf{5} & \mathbf{3} & \mathbf{5} & \mathbf{3} & \mathbf{4} & \mathbf{5} & \mathbf{6} & \mathbf{4} \\ \mathbf{3} & \mathbf{2} & \mathbf{3} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{7} & \mathbf{3} & \mathbf{3} & \mathbf{5} & \mathbf{2} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{5} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{4} \\ \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{3} & \mathbf{5} & \mathbf{4} & \mathbf{2} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{5} & \mathbf{4} & \mathbf{3} & \mathbf{7} & \mathbf{4} \\ \mathbf{6} & \mathbf{4} & \mathbf{3} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{6} & \mathbf{5} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{4} \\ \mathbf{6} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{2} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{5} & \mathbf{5} & \mathbf{3} & \mathbf{4} \\ \mathbf{5} & \mathbf{3} & \mathbf{2} & \mathbf{4} & \mathbf{3} & \mathbf{4} & \mathbf{1} & \mathbf{2} & \mathbf{4} & \mathbf{4} & \mathbf{2} & \mathbf{3} & \mathbf{3} & \mathbf{3} & \mathbf{3} & \mathbf{3} & \mathbf{3} & \mathbf{2} & \mathbf{5} & \mathbf{4} \\ \mathbf{7} & \mathbf{2} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{5} & \mathbf{6} & \mathbf{2} & \mathbf{3} & \mathbf{3} & \mathbf{1} & \mathbf{6} & \mathbf{2} & \mathbf{5} & \mathbf{4} & \mathbf{3} & \mathbf{6} & \mathbf{2} & \mathbf{4} \\ \mathbf{3} & \mathbf{2} & \mathbf{4} & \mathbf{3} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{2} & \mathbf{5} & \mathbf{6} & \mathbf{3} & \mathbf{4} & \mathbf{3} & \mathbf{4} & \mathbf{3} & \mathbf{4} & \mathbf{3} & \mathbf{3} & \mathbf{5} & \mathbf{4} \\ \mathbf{5} & \mathbf{3} & \mathbf{4} & \mathbf{3} & \mathbf{4} & \mathbf{1} & \mathbf{3} & \mathbf{1} & \mathbf{3} & \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{3} & \mathbf{1} & \mathbf{4} \\ \mathbf{5} & \mathbf{3} & \mathbf{2} & \mathbf{5} & \mathbf{3} & \mathbf{6} & \mathbf{5} & \mathbf{5} & \mathbf{3} & \mathbf{3} & \mathbf{4} & \mathbf{1} & \mathbf{5} & \mathbf{3} & \mathbf{6} & \mathbf{5} & \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{4} \\ \mathbf{3} & \mathbf{6} & \mathbf{7} & \mathbf{5} & \mathbf{4} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{6} & \mathbf{6} & \mathbf{5} & \mathbf{5} & \mathbf{3} & \mathbf{7} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{7} & \mathbf{4} \\ \mathbf{5} & \mathbf{6} & \mathbf{5} & \mathbf{2} & \mathbf{4} & \mathbf{4} & \mathbf{2} & \mathbf{2} & \mathbf{4} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{4} & \mathbf{4} \\ \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{3} & \mathbf{5} & \mathbf{6} & \mathbf{3} & \mathbf{5} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{4}\end{array}\)
A.M. (F)
\begin{tabular}{llllllllllllllllllll}
\(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) \\
\(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) \\
\(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) \\
\(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{1}\) \\
\(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{7}\) \\
\(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{3}\) \\
\(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{7}\) \\
\(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) \\
\(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) \\
\(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) \\
\(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) \\
\(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) \\
\(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{7}\) \\
\(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) \\
\(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) \\
\(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\)
\end{tabular}
K.M. (F)
\begin{tabular}{llllllllllllllllllll}
\(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) \\
\(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{5}\) \\
\(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) \\
\(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) \\
\(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) \\
\(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{3}\) \\
\(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{5}\) \\
\(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{5}\) \\
\(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{3}\) \\
\(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) \\
\(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) \\
\(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{3}\) \\
\(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{4}\) \\
\(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{5}\) \\
\(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{3}\) \\
\(\mathbf{4}\) & \(\mathbf{6}\) & 5 & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & 2 & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{3}\)
\end{tabular}
G.N. (F)

J.0. (F)
\(\left.\begin{array}{llllllllllllllllllll}\mathbf{6} & \mathbf{3} & \mathbf{4} & \mathbf{7} & \mathbf{2} & \mathbf{6} & \mathbf{5} & \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{6} & \mathbf{2} & \mathbf{7} & \mathbf{7} & \mathbf{2} & \mathbf{5} & \mathbf{6} & \mathbf{2} \\ \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{5} & \mathbf{5} & \mathbf{5} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{4} & \mathbf{6} & \mathbf{3} & \mathbf{2} & \mathbf{5} & \mathbf{5} & \mathbf{6} & \mathbf{6} & \mathbf{2} \\ \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{1} & \mathbf{4} & \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{5} & \mathbf{3} & \mathbf{6} & \mathbf{6} & \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{4} & \mathbf{5} & \mathbf{6} & \mathbf{2} & \mathbf{6} \\ \mathbf{4} & \mathbf{2} & \mathbf{6} & \mathbf{7} & \mathbf{3} & \mathbf{7} & \mathbf{5} & \mathbf{4} & \mathbf{7} & \mathbf{3} & \mathbf{6} & \mathbf{6} & \mathbf{5} & \mathbf{2} & \mathbf{6} & \mathbf{6} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{1} \\ \mathbf{5} & \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{2} & \mathbf{5} & \mathbf{5} & \mathbf{7} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{1} & \mathbf{5} & \mathbf{2} & \mathbf{6} & \mathbf{6} & \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{1} \\ \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{7} & \mathbf{5} & \mathbf{6} & \mathbf{6} & \mathbf{6} \\ \mathbf{6} & \mathbf{3} & \mathbf{5} & \mathbf{7} & \mathbf{3} & \mathbf{7} & \mathbf{4} & \mathbf{6} & \mathbf{5} & \mathbf{5} & \mathbf{5} & \mathbf{5} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{6} & \mathbf{6} & \mathbf{5} & \mathbf{5} & \mathbf{2} \\ \mathbf{5} & \mathbf{6} & \mathbf{3} & \mathbf{1} & \mathbf{4} & \mathbf{1} & \mathbf{5} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{5} & \mathbf{3} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{4} & \mathbf{4} \\ \mathbf{5} & \mathbf{3} & \mathbf{6} & \mathbf{7} & \mathbf{4} & \mathbf{7} & \mathbf{6} & \mathbf{2} & \mathbf{7} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{6} & \mathbf{2} & \mathbf{5} & \mathbf{6} & \mathbf{5} & \mathbf{6} & \mathbf{6} \\ \mathbf{5} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{3} & \mathbf{3} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{5} & \mathbf{1} & \mathbf{6} & \mathbf{2} & \mathbf{6} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{2} \\ \mathbf{4} & \mathbf{4} & \mathbf{2} & \mathbf{1} & \mathbf{4} & \mathbf{2} & \mathbf{5} & \mathbf{4} & \mathbf{6} & \mathbf{5} & \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{3} & \mathbf{5} & \mathbf{1} & \mathbf{2} & \mathbf{2} & \mathbf{5} \\ \mathbf{3} & \mathbf{5} & \mathbf{2} & \mathbf{1} & \mathbf{6} & \mathbf{1} & \mathbf{4} & \mathbf{2} & \mathbf{3} & \mathbf{4} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{6} & \mathbf{3} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{1} & \mathbf{6} \\ \mathbf{5} & \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{3} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{3} & \mathbf{4} & \mathbf{1} & \mathbf{6} & \mathbf{2} & \mathbf{6} & \mathbf{6} & \mathbf{1} & \mathbf{3} & \mathbf{2} & \mathbf{2} \\ \mathbf{6} & \mathbf{4} & \mathbf{7} & \mathbf{7} & \mathbf{4} & \mathbf{7} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{7} & \mathbf{3} & \mathbf{5} & \mathbf{2} & \mathbf{2} & \mathbf{7} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{2} \\ \mathbf{3} & \mathbf{5} & \mathbf{1} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{5} & \mathbf{5} & \mathbf{3} & \mathbf{5} & \mathbf{1} & \mathbf{5} & \mathbf{2} & \mathbf{5} & \mathbf{3} & \mathbf{1} & \mathbf{6} & \mathbf{5} & \mathbf{1} & \mathbf{5} \\ \mathbf{5} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{3} & \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{6} & \mathbf{2} & \mathbf{5} & \mathbf{3} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{1} & \mathbf{5}\end{array}\right]\)

> S.P. (F)
\[
\begin{aligned}
& \begin{array}{l}
7 \\
2 \\
1 \\
7 \\
7 \\
3 \\
7 \\
2 \\
2 \\
6 \\
2 \\
2 \\
1 \\
6 \\
6 \\
1 \\
2
\end{array} \\
& \begin{array}{l}
2 \\
6 \\
7 \\
3 \\
1 \\
7 \\
4 \\
3 \\
3 \\
2 \\
5 \\
3 \\
2 \\
7 \\
2 \\
6
\end{array} \\
& \begin{array}{l}
2 \\
6 \\
7 \\
6 \\
2 \\
7 \\
3 \\
2 \\
5 \\
2 \\
6 \\
3 \\
2 \\
6 \\
3 \\
6
\end{array} \\
& \begin{array}{l}
7 \\
5 \\
6 \\
6 \\
3 \\
\hline 6 \\
\hline 5 \\
2 \\
\hline 6 \\
2 \\
2 \\
\hline 1 \\
2 \\
\hline
\end{array} \\
& \begin{array}{l}
1 \\
2 \\
6 \\
5 \\
2 \\
6 \\
3 \\
2 \\
5 \\
2 \\
5 \\
2 \\
1 \\
7 \\
6 \\
6
\end{array} \\
& \begin{array}{l}
5 \\
3 \\
2 \\
6 \\
5 \\
2 \\
6 \\
2 \\
6 \\
2 \\
2 \\
2 \\
5 \\
2 \\
3 \\
3
\end{array} \\
& \begin{array}{l}
1 \\
7 \\
7 \\
3 \\
1 \\
7 \\
3 \\
2 \\
3 \\
2 \\
2 \\
2 \\
1 \\
2 \\
6 \\
2
\end{array} \\
& \begin{array}{l}
7 \\
1 \\
1 \\
7 \\
7 \\
2 \\
7 \\
2 \\
6 \\
3 \\
2 \\
1 \\
1 \\
2 \\
2 \\
1 \\
1
\end{array} \\
& \begin{array}{l}
6 \\
6 \\
2 \\
5 \\
6 \\
6 \\
6 \\
6 \\
2 \\
7 \\
3 \\
2 \\
5 \\
6 \\
1 \\
1
\end{array}
\end{aligned}
\]
\[
\begin{aligned}
& \begin{array}{l}
6 \\
3 \\
1 \\
3 \\
3 \\
6 \\
4 \\
7 \\
2 \\
6 \\
6 \\
3 \\
\hline
\end{array}
\end{aligned}
\]
\[
\begin{aligned}
& \begin{array}{l}
2 \\
2 \\
6 \\
2 \\
2 \\
6 \\
2 \\
6 \\
2 \\
5 \\
5 \\
5 \\
3 \\
2 \\
5 \\
5
\end{array}
\end{aligned}
\]
M. P. (F)
\(\left.\begin{array}{llllllllllllllllllll}\mathbf{5} & \mathbf{2} & \mathbf{1} & \mathbf{7} & \mathbf{1} & \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{1} & \mathbf{1} & \mathbf{7} & \mathbf{2} & \mathbf{5} & \mathbf{1} & \mathbf{7} & \mathbf{6} & \mathbf{4} & \mathbf{4} & \mathbf{2} & \mathbf{7} \\ \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{6} & \mathbf{5} & \mathbf{6} & \mathbf{3} & \mathbf{6} & \mathbf{1} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{7} & \mathbf{1} \\ \mathbf{5} & \mathbf{2} & \mathbf{7} & \mathbf{1} & \mathbf{6} & \mathbf{1} & \mathbf{3} & \mathbf{1} & \mathbf{7} & \mathbf{7} & \mathbf{3} & \mathbf{6} & \mathbf{2} & \mathbf{6} & \mathbf{1} & \mathbf{6} & \mathbf{7} & \mathbf{2} & \mathbf{1} & \mathbf{2} \\ \mathbf{4} & \mathbf{7} & \mathbf{5} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{5} & \mathbf{2} & \mathbf{6} & \mathbf{7} & \mathbf{6} & \mathbf{7} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{6} & \mathbf{7} & \mathbf{2} \\ \mathbf{2} & \mathbf{4} & \mathbf{2} & \mathbf{7} & \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{7} & \mathbf{1} & \mathbf{1} & \mathbf{6} & \mathbf{2} & \mathbf{5} & \mathbf{1} & \mathbf{7} & \mathbf{3} & \mathbf{2} & \mathbf{4} & \mathbf{5} & \mathbf{6} \\ \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{1} & \mathbf{4} & \mathbf{2} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{2} & \mathbf{7} & \mathbf{2} & \mathbf{7} & \mathbf{3} & \mathbf{2} \\ \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{7} & \mathbf{4} & \mathbf{6} & \mathbf{5} & \mathbf{7} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{5} & \mathbf{4} & \mathbf{3} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{5} \\ \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{4} & \mathbf{1} & \mathbf{1} & \mathbf{4} & \mathbf{5} & \mathbf{3} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{1} & \mathbf{5} & \mathbf{5} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{6} \\ \mathbf{3} & \mathbf{4} & \mathbf{4} & \mathbf{4} & \mathbf{6} & \mathbf{6} & \mathbf{3} & \mathbf{2} & \mathbf{3} & \mathbf{3} & \mathbf{3} & \mathbf{2} & \mathbf{3} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{4} & \mathbf{5} & \mathbf{6} & \mathbf{2} \\ \mathbf{1} & \mathbf{6} & \mathbf{2} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{3} & \mathbf{6} & \mathbf{3} & \mathbf{5} & \mathbf{6} & \mathbf{2} & \mathbf{6} & \mathbf{1} & \mathbf{6} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{6} & \mathbf{2} \\ \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{2} & \mathbf{4} & \mathbf{7} & \mathbf{3} & \mathbf{4} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{1} & \mathbf{3} & \mathbf{2} & \mathbf{3} & \mathbf{1} & \mathbf{1} & \mathbf{3} & \mathbf{5} & \mathbf{4} \\ \mathbf{5} & \mathbf{2} & \mathbf{1} & \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{3} & \mathbf{2} & \mathbf{1} & \mathbf{1} & \mathbf{2} & \mathbf{1} & \mathbf{3} & \mathbf{3} & \mathbf{4} & \mathbf{1} & \mathbf{4} & \mathbf{1} & \mathbf{2} & \mathbf{2} \\ \mathbf{5} & \mathbf{1} & \mathbf{1} & \mathbf{4} & \mathbf{2} & \mathbf{7} & \mathbf{5} & \mathbf{5} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{5} & \mathbf{2} & \mathbf{4} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{6} & \mathbf{2} \\ \mathbf{6} & \mathbf{4} & \mathbf{7} & \mathbf{7} & \mathbf{2} & \mathbf{7} & \mathbf{6} & \mathbf{6} & \mathbf{7} & \mathbf{7} & \mathbf{7} & \mathbf{1} & \mathbf{2} & \mathbf{2} & \mathbf{2} & \mathbf{6} & \mathbf{6} & \mathbf{6} & \mathbf{7} & \mathbf{6} \\ \mathbf{3} & \mathbf{6} & \mathbf{1} & \mathbf{3} & \mathbf{6} & \mathbf{6} & \mathbf{2} & \mathbf{2} & \mathbf{1} & \mathbf{2} & \mathbf{3} & \mathbf{3} & \mathbf{2} & \mathbf{4} & \mathbf{2} & \mathbf{2} & \mathbf{4} & \mathbf{6} & \mathbf{6} & \mathbf{1} \\ \mathbf{7} & \mathbf{6} & \mathbf{2} & \mathbf{4} & \mathbf{4} & \mathbf{3} & \mathbf{1} & \mathbf{7} & \mathbf{6} & \mathbf{4} & \mathbf{6} & \mathbf{4} & \mathbf{5} & \mathbf{2} & \mathbf{5} & \mathbf{5} & \mathbf{6} & \mathbf{5} & \mathbf{1}\end{array}\right]\)

\section*{H.S. (F)}
\begin{tabular}{llllllllllllllllllll}
\(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) \\
\(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{2}\) \\
\(\mathbf{7} \prime \prime\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{6}\) \\
\(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{1}\) \\
\(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{1}\) \\
\(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{6}\) \\
\(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{2}\) \\
\(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{6}\) \\
\(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{1}\) \\
\(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{4}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{3}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) \\
\(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{4}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{4}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{3}\) \\
\(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{2}\) \\
\(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{4}\) & \(\mathbf{1}\) \\
\(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{6}\) & \(\mathbf{1}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{1}\) \\
\(\mathbf{1}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{6}\) & \(\mathbf{3}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{6}\) & \(\mathbf{2}\) \\
\(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{5}\) & \(\mathbf{7}\) & \(\mathbf{1}\) & \(\mathbf{2}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{5}\) & \(\mathbf{2}\) & \(\mathbf{3}\) & \(\mathbf{2}\) & \(\mathbf{1}\) & \(\mathbf{3}\) & \(\mathbf{6}\) & \(\mathbf{7}\) & \(\mathbf{5}\) & \(\mathbf{2}\)
\end{tabular}
L.S . (F)
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 7 & 2 & 2 & 5 & 1 & 6 & 6 & 6 & 2 & 6 & 2 & 6 & 5 & 1 & 5 & 5 & 6 & 2 & 3 & 1 \\
\hline 4 & 7 & 6 & 5 & 2 & 7 & 5 & 2 & 3 & 7 & 4 & 7 & 1 & 4 & 3 & 7 & 5 & 6 & 3 & 5 \\
\hline 2 & 6 & 6 & 2 & 2 & 2 & 6 & 3 & 5 & 3 & 2 & 7 & 2 & 5 & 3 & 5 & 5 & 6 & 1 & 6 \\
\hline 6 & 6 & 7 & 6 & 4 & 6 & 4 & 6 & 2 & 6 & 2 & 4 & 4 & 7 & 6 & 4 & 3 & 7 & 5 & 5 \\
\hline 2 & 2 & 2 & 4 & 3 & 3 & 3 & 7 & 3 & 4 & 4 & 3 & 6 & 2 & 6 & 5 & 2 & 3 & 6 & 2 \\
\hline 3 & 6 & 3 & 1 & 6 & 4 & 6 & 2 & 6 & 2 & 6 & 6 & 2 & 5 & 2 & 6 & 4 & 6 & 2 & 7 \\
\hline 6 & 2 & 5 & 6 & 2 & 6 & 6 & 6 & 4 & 7 & 1 & 4 & 6 & 3 & 7 & 4 & 3 & 4 & 4 & 4 \\
\hline 3 & 2 & 2 & 3 & 7 & 2 & 1 & 6 & 6 & 4 & 7 & 5 & 6 & 2 & 5 & 3 & 6 & 2 & 5 & 2 \\
\hline 6 & 6 & 4 & 2 & 3 & 6 & 5 & 2 & 7 & 6 & 2 & 4 & 2 & 5 & 1 & 2 & 2 & 6 & 3 & 6 \\
\hline 4 & 3 & 4 & 6 & 4 & 6 & 3 & 6 & 4 & 5 & 4 & 3 & 5 & 4 & 6 & 7 & 4 & 2 & 6 & 2 \\
\hline 2 & 2 & 1 & 2 & 6 & 5 & 3 & 2 & 6 & 1 & 4 & 5 & 4 & 2 & 4 & 4 & 6 & 1 & 4 & 2 \\
\hline 5 & 4 & 2 & 1 & 6 & 5 & 2 & 1 & 4 & 2 & 6 & 2 & 3 & 4 & 6 & 2 & 5 & 2 & 5 & 3 \\
\hline 5 & 2 & 2 & 6 & 2 & 6 & 3 & 7 & 3 & 6 & 2 & 1 & 6 & 1 & 5 & 6 & 3 & 3 & 6 & 1 \\
\hline 2 & 4 & 6 & 6 & 1 & 5 & 2 & 6 & 5 & 5 & 3 & 6 & 1 & 1 & 3 & 6 & 3 & 6 & 1 & 7 \\
\hline 6 & 6 & 6 & 2 & 7 & 6 & 4 & 2 & 4 & 6 & 7 & 6 & 2 & 7 & & 2 & 3 & 4 & 5 & 5 \\
\hline 6 & 6 & 6 & 2 & 4 & 5 & 5 & 3 & 5 & 4 & 6 & 5 & 1 & 2 & 3 & 2 & 1 & 6 & 6 & \\
\hline
\end{tabular}
M.W. (F)

\section*{Raw Data for Study 2 (b)}

The tables on the following pages provide the ratings given by each of the subjects in Study \(2(\mathrm{~b})\).

The subjects are identified by their initials and their sex (M) male and (F) female.

The columns give the ratings for the elements as follows:1. BIRD 2. CAGE 3. MOUNTAIN 4. WIND 5. SNOW 6. FIRE
7. MYSELF 8. STREAM 9. RIVER 10. OCEAN 11. SUN 12. TRUNK 13. BRANCHES 14. ROOTS 15. LEAVES 16. MYSELF AS I WOULD LIKE TO BE 17. THROAT 18. HEART 19. BRAIN 20. BELLY.

Each subject is given with their personal constructs down the sides. A rating of 1 is an extreme rating for the left-hand construct and a rating of 7 is an extreme rating for the right-hand construct.


\section*{A.A. (M)}


\section*{dull \\ 号}

rrnrnnrnnrrnrrnn
rrrranrrymrrnran



N～6～6ルMnrrNinnto ojos






J－minmbabarmamnin
matombintminnoymun rrrnへrermbNtonにr






M．C．（M）
\[
\begin{aligned}
& \text { rAminran mmra-d- NmrArAnn } \\
& \text { M~ルMヘMmmy~ルM~6o } \\
& \text { NMa mNGMminminmun } \\
& \text { ナナ minへminnininmininm } \\
& \text { Nrへrnへrrrarran } \\
& \text { OJ N Un mánmmmmamminn }
\end{aligned}
\]
OJ OJ6 mささMm」oJIArAOJVDVD
mJ－nrA－d－－d－m」にM」rArALArA



\section*{R．C．（M）}
\[
\begin{aligned}
& \text { Mmnmrmmormmatnnt }
\end{aligned}
\]
\[
\begin{aligned}
& \text { Mmmat nmrannmmura } \\
& \text { rrへrrホrnrrronena }
\end{aligned}
\]
\[
\begin{aligned}
& \text { NrNrレーrrrnintaramm }
\end{aligned}
\]
\[
\begin{aligned}
& \text { vDrmmanmrrincmanmn } \\
& \text {-nへmースmrmmnamano }
\end{aligned}
\]
\[
\begin{aligned}
& \text { Mmintodrad- in rmmbmnom }
\end{aligned}
\]
\[
\begin{aligned}
& \text { mminmimmromnruñin }
\end{aligned}
\]
\[
\begin{aligned}
& \text { 6MMNMNNN } \\
& \text { ヘnmbNatomininmo6m }
\end{aligned}
\]

> D.D. (M)

A.F. (M)
\[
\begin{aligned}
& \text { rmrrrnnraminmoon }
\end{aligned}
\]
\[
\begin{aligned}
& \text { ryNNNNArrinntmbm } \\
& \text { rrarn土nrrrrnn土の } \\
& \text { rrarennmamnob~o }
\end{aligned}
\]
\[
\begin{aligned}
& \text { minntumanNininrrnt }
\end{aligned}
\]
\[
\begin{aligned}
& \text { Natomnntrnrmmnra }
\end{aligned}
\]



\section*{M.S. (M)}



\section*{diumb}

 NM」MN～MMLnMLnM＋rA－d－－d－ rA－d－d－MNMMMナ in in Nナナナナ
 rmbanNNJ6NRM6NM」 MJ LnMmNMmammmata犬 さナナMMMMJナN～RナMMA M6ささrArA－d MinN～Nささささ rA－d－d－N～MMMnMrNA～ーJ MNナナMNナナ寸さナーナM「コ さナナナ～NMNさrArArA－d－MNJ コナナMNNJNさNM「ナナNさ Mn」mmrmmamnryrAOJ－d－ NナナNMMNM6さM6ルMさに







\[
\begin{aligned}
& \text {-d-rnarmrrra }
\end{aligned}
\]
\[
\begin{aligned}
& \text { 66NMNJ6Nにも~ } \\
& \text { ~ナーロールの~~NM6 }
\end{aligned}
\]
\[
\begin{aligned}
& \text { mмைNへの~rrrn } \\
& \text { MNOM6 rMmNinm }
\end{aligned}
\]
\[
\begin{aligned}
& \text { O-d NonranMra }
\end{aligned}
\]
\[
\begin{aligned}
& \text {-d- } \ln \text { にNMース }
\end{aligned}
\]
\[
\begin{aligned}
& \text { コナヘナル「コ寸コ寸ー }
\end{aligned}
\]

\[
\begin{aligned}
& \text { rrannonnatinrnoyb }
\end{aligned}
\]
\[
\begin{aligned}
& \text { コココココナココココナコココココ } \\
& \text { rranrrrnnamrnuntin }
\end{aligned}
\]
\[
\begin{aligned}
& \text { rnrnbantotrnmynm }
\end{aligned}
\]
\[
\begin{aligned}
& \text { arranorabnanomam }
\end{aligned}
\]
\[
\begin{aligned}
& \text { ナ ローナ }
\end{aligned}
\]


CB．（F）
\[
\begin{aligned}
& \text { N6NNMMAUNJナNMJナNナ } \\
& \text { rincmbot momincotinno } \\
& \text { rNoNMNGNNMGM6MMF } \\
& \text { MNONME ONNO Oosvd osvovoos } \\
& \text { rNrmbown or innmowrn }
\end{aligned}
\]
\[
\begin{aligned}
& \text { rNint No66NinNmbonn r }
\end{aligned}
\]
\[
\begin{aligned}
& \text { MNNーNナナーナーナースN6Mn }
\end{aligned}
\]

D．B．（F）
\[
\begin{aligned}
& \text { へrrrrnrrrrrnrnnr } \\
& \text { へ「コートへースrrrnranr }
\end{aligned}
\]
\[
\begin{aligned}
& \text { へr土rrnrrrrrnarnn }
\end{aligned}
\]
\[
\begin{aligned}
& \text { へrrrratnonnarran }
\end{aligned}
\]
\[
\begin{aligned}
& \text { t oJvo r } \\
& \text {-d--d- rAOJ rin」にのささナーナ~rA-d- }
\end{aligned}
\]
\[
\begin{aligned}
& \text { rnrmbebr土mrinnton }
\end{aligned}
\]
\[
\begin{aligned}
& \text { ナ nNombナ Ninmomirma }
\end{aligned}
\]

L.C. (F)
\[
\begin{aligned}
& \text { flot }
\end{aligned}
\]


\section*{S.D. (F)}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline 5 & 7 & 1 & \(\bigcirc\) & 4 & 7 & 3 & 4 & 5 & 7 & 3 & \(\vdots\) & ! & 6 & & & & & & 4 & stwpid \\
\hline 4 & 7 & 4 & \(\stackrel{\square}{1}\) & 6 & 7 & 2 & 5 & 5 & 7 & 4 & 5 & \(\bigcirc\) & 7 & 3 & 1 & 6 & 4 & 7 & 2 & horriḃㅇ \\
\hline 7 & 1 & 7 & ઠ & 2 & 1 & 5 & 5 & 4 & 2 & 7 & 3 & 5 & 2 & 7 & 6 & 5 & 6 & 4 & 5 & nice \\
\hline 1 & 7 & 1 & 1 & 6 & 7 & 1 & 2 & 7 & 5 & 1 & 7 & 3 & 6 & 1 & 2 & 2 & 3 & 2 & 7 & bori \\
\hline 4 & 1 & 5 & 5 & 1 & 1 & 2 & 5 &  & 2 & 4 & 3 & 5 & 3 & 7 & 5 & 6 & 6 & 2 & 3 & fant \({ }_{\text {Oforor }}\) \\
\hline 1 & 7 & 1 & 1 & 6 & 6 & 1 & 2 & 7 & 5 & 1 & 6 & 2 & 6 & 1 & 2 & 4 & 2 & 3 & 4 & - \\
\hline 3 & 7 & 4 & 4 & 6 & 7 & 3 & 4 & \(\frac{1}{1}\) & 6 & 2 & 6 & 4 & 6 & 3 & 2 & 4 & 4 & 5 & 4 &  \\
\hline 7 & 1 & 7 & 7 & 2 & 2 & 7 & 5 & ס & 1 & 7 & 2 & 7 & 1 & 7 & 6 & 2 & 1 & 1 & 2 & pati \({ }^{-}\)t \\
\hline 3 & 7 & 3 & 2 & 7 & 6 & 2 & 2 & 3 & 7 & 2 & 4 & 2 & 7 & 1 & 3 & 3 & 4 & 4 & 4 & \(u_{\text {g }} \mathbf{l y}\) \\
\hline 1 & 7 & 1 & 1 & 4 & 1 & 4 & 2 & 3 & 5 & 1 & 6 & 2 & 6 & 1 & 1 & 2 & 2 & 4 & 4 & stingy \\
\hline 7 & 1 & 7 & 7 & 1 & 6 & 6 & 6 & 2 & 1 & 7 & 1 & 7 & 1 & 7 & 6 & 6 & 6 & 2 & 4 & enjoyablo \\
\hline 1 & 7 & 1 & 1 & 7 & 4 & 1 & 3 & 4 & 7 & 2 & 6 & 3 & 7 & 1 & 1 & 6 & 2 & 2 & \(\underset{ }{5}\) &  \\
\hline 7 & 5 & 2 & 3 & 7 & 6 & 1 & 4 & 2 & 7 & 1 & 7 & 1 & 7 & 1 & 2 & 2 & 3 & 7 & &  \\
\hline 4 & 7 & 4 & 3 & 6 & \(\stackrel{3}{5}\) & 4 & 3 & 4 & 1 & 4 & 7 & 4 & 1 & 4 & 4 & 4 & 3 & 2 & 2 & Stooge \\
\hline 7 & 4 & 7 & 6 & 4 & ర & 7 & 6 & 5 & 4 & 7 & 4 & 6 & 3 & 6 & 7 & 4 & 4 & 4 & 4 & ployful \\
\hline
\end{tabular}

\footnotetext{
dstio ge
}


年准 0
J.D. (F)

\section*{L.D. (F)}

S.G. (F)

\section*{『}



\section*{G．L．（F）}
\[
\begin{aligned}
& \text { LaLAVo inr tminconincam }
\end{aligned}
\]
\[
\begin{aligned}
& \text { MrmNrintrAvo nt nman } \\
& \text { a6へMrmintatnoron }
\end{aligned}
\]
\[
\begin{aligned}
& \text { nrminat N~6mJinninm }
\end{aligned}
\]
\[
\begin{aligned}
& \text { さNへMーMーNへさにへもさ6 } \\
& \text { ryourrnabotourmb } \\
& \text { LAVD NMのにへ」 LAVD 「6N6」 }
\end{aligned}
\]

\section*{J．L．（F）}
－d－LAJ－ninさにへさにささささにい
fravo NNintminmminmmat


K．M．（F）
\[
\begin{aligned}
& \text { minnominumrnambare }
\end{aligned}
\]
\[
\begin{aligned}
& \text { rnornnrnrrmarran } \\
& \text { NinmrinminmatomnNota }
\end{aligned}
\]
\[
\begin{aligned}
& \text {-d- N6M土 NomにMinconmy } \\
& \text {-d-minmronncaninminnm } \\
& \text { nMnMromrmrrabnto } \\
& \text { へranさmbmarbmramm }
\end{aligned}
\]
\[
\begin{aligned}
& \text { MNinmyrA-d MNMininかoto } \\
& \text { N6Nー6NNMーrmamren }
\end{aligned}
\]
\[
\begin{aligned}
& \text { へ 「6N」 }
\end{aligned}
\]
S.M. (F)

S.P. (F)


J.P. (F)

 Nmbo inmbNotNinNinN 6 MrAinrA－d－MNMJt 0 NOML
 MN6 Ninmatulotnmen
 N土


 InMNININMNNMMNTGNO


 －d－rALAVO rAOJvo \(r \pm \pm M \backsim \sim\) ォMn

 vo nmymatbNNホーNケ6Nホ
 ヘォーナーナ



\section*{S．W．（F）}
\[
\begin{aligned}
& \text { OJVOOJ OJ-d-~~さ OVO~~~Mへに }
\end{aligned}
\]
\[
\begin{aligned}
& \text {-d- N6 rA-d-VD NJ } \quad \text { MMint }
\end{aligned}
\]
\[
\begin{aligned}
& \text {-d- rArArA-d-mじさナ寸ナrAJ-IArArA } \\
& \text { J- rALAJ-MinmyさMmintintla }
\end{aligned}
\]
\[
\begin{aligned}
& \text { minmJさMにMmさにMさrAJ-M }
\end{aligned}
\]
\[
\begin{aligned}
& \text { rA rA LAJ. J- LAd- rAJ-minintuinin } \\
& \text { N6~MナNもさささいNさM「M } \\
& \text { OJ nmf frAJ-rAJminnさ~m~ }
\end{aligned}
\]


D．W．（F）
\[
\begin{aligned}
& \text {-NNNNMMFNFNNFNNN } \\
& \text { tNNR RMMーMrNNFNNN } \\
& \text { J. NrNMAJーNRNNTNNT } \\
& \text { AJMNMAJNMFNNFNNN } \\
& \text { NFRFFFNFFNFFRNNR } \\
& \text {-d- rArAJ- LALALAVO inco to in } N \sim \\
& J-r A-d-M M M+L A J-L A J-d-\ln O M N \\
& \text { J- r rNNMNMNホNMN心in } \\
& \text { MrNrFMNにMAMNFナ6に } \\
& \text { NFNMNAMJNMMMFナ6 } \\
& \text { - MNMMAォMrNMMNLDN } \\
& \text { MrNNNMMFrFNMNホ6N }
\end{aligned}
\]
\[
\begin{aligned}
& \text { - } \quad \text { MrrmmmrmnnNowo }
\end{aligned}
\]
\[
\begin{aligned}
& \text {-d- nナ }
\end{aligned}
\]
\[
\begin{aligned}
& \text { J-NJJMMANMRNNTNN6 } \\
& \text { ナナMrFrMmNJNr } \\
& \text { Un土NNMMNN6コMFNT6N }
\end{aligned}
\]

\section*{Raw Data for Study 3}

The tables on the following pages provide the ratings given by each of the subjects in Study 3.

The subjects are identified by their initials and their sex (M) male and (F) female.

Each set of ratings is given with the subject's personal constructs written down the sides. A rating of 1 is an extreme rating for the left-hand construct and a rating of 7 is an extreme rating for the right-hand construct.

The fantasy elements are given separately underneath the tables and these are identified by the numbers across the top of the tables.
J.M. (M)


R．B．（F）


へN Trrrrnrrmingrnrrr

Nrrnorr土nrrarbnrban

NrNorbmrNrNrrNNAr」r

rANFFRFRFFOMFNNANMN

人
nrrrrnrnarrnrnrrn ro

armrrbomranNanrarbr


NーNTーTrNTANNNMNATNT

MoNNrmrrenNyrrNinrrr
MoNNrmrrenNyrrNinrrr
rNowNrMNNrowrNNrNMए
rNowNrMNNrowrNNrNMए
NANr rnrrrranrbrnarnr

กnை
Frnminnrrrranrrarn

OFMMNFRNANFNFOFNNF
NFAFAFNFFFFAJFFAFA
rmomintorwsantNrnrn


NFAFANAFAFOFJFFNFA

inninnininmo LaOJJ--d-inminnt
Nin rantavovontobstot

NFAFANAFFFFNGNNFNN

\(N \sim M N A 1\) UMNFNNANA66N

(NJ OJ r 6 OJ OJVOVO rAVDrAVO-d--d-J- \(\sim\) -




Ninining LAVD int in mat in int
\[
\sim \text { rA-d-J- } \cap \cap \cap 66+r A-d-d-N \cap M
\]
\[
\text { - } \omega \text { LAJ-VDVD } \sim \text { n } \omega \sim \text { IALAVDJ. }
\]
\[
\sim \text { rArArA-d- N才MMMMJナ N N }
\]
rAJ--d-vo-d-J-J-vDVo-d-J--d- inff
ナナナナナナナMナナ N
nrrnrrrrinrnmntat
\[
\text { vovD } r \text { oninnrmatofrrat }
\]
nrrarrnnmulommmr
\[
\pm r \text { Norrombrab nnm }
\] f rA－d－LAJ－mbincano inmo N～NNMM土 ints NMMNM N No6inintind omincrarA ornarrnrynntomr



J.B. (M)

M.C. (M)


\section*{C.J. (F)}


ftM!3as:ixi<<MmS(i,0C3Ptig;W.ia:pqc5
ঢNint Nonto inmounmoninmo

 IARAVO rALALAVOMininininmmNNNNN

 טOONNMOMNGMUOMUMNMMN Mintuno IALAOJMmininNoNUnMm VOOMINMIUINNINMONMMO rArA NMNILNMNONANUUNURMA rA

 ONMNNNMNNOMMOMMMNNNN NoNUNFMNGNUMNOFALNN6 in To LArAvo uninonvowinnininm LNNGINNNAMMMONNLMNMM MrInUnNNNFMMNOFNNANNN

 VD F OMMMNONOMMMNNNMOInIn \(N N M F M F F F \sigma F A M M N O M M\) NOJJ-r innunminunomrmmm
```


[^0]:    Thesis submitted to the University of Nottingham for the degree of Doctor of Philosophy May 1979

