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A VALIDATION STUDY OF BODY IMAGE AS A PREDICTOR OF WEIGHT LOSS MAINTENANCE IN THE FORMERLY OBESE

Lynne Cornfield B A Hons (University of South Africa)

A dissertation submitted to the Faculty of Arts, University of the Witwatersrand, in partial fulfillment of the requirements for the degree of Master of Arts.

Johannesburg 1987

ABSTRACT

This research was undertaken because of the magnitude of the problem of obesity and the high failure rate, particularly of psychological intervention, in its treatment. The literature shows that the majority of people who lose weight regain it. The study investigates the role of body image in weight loss maintenance and seeks to ascertain whether body image can be used to predict weight loss maintenance in the formerly obese with the ultimate aim of improving the psychological treatment of obesity.

The concept of body image as a self-attitude was integrated into a theoretical framework based on Carl Rogers' theory of the self-concept and on Kelly's personal construct theory. The aspects of Rogers' theory considered most relevant dealt with a person's tendency to behave in accordance with the self-concept and the need to maintain consistency between self-perceptions and experience, e.g., a woman who sees herself as fat would tend to become fat.

Women were used as subjects because the literature indicated that obesity is primarily a woman's problem. Only white women were used to obviate the problem of cultural differences in attitude towards obesity within the sample. Forty four women who had reached their goal weights through weight reduction agencies on the Witwatersrand were recruited as subjects. Their attitudes towards obesity, and obesity as it related to themselves, were measured on scales derived from Kelly's personal construct pyramid anchored on the construct "overweight." Using this information the researcher constructed individual scales for each subject. The subjects then rated themselves on these qualitative scales in terms of their present body images and their ideal body images.

The discrepancy scores so derived were used as a measure of anxiety and of body dissatisfaction, the contention being that the more dissatisfied the person was the more likely she would be to regain weight in the six-month follow-up period. Forty one women were followed-up. To obtain more objective information a quantitative scale was also constructed from the collective information.

The results did not support the hypotheses that after weight loss those who had juvenile onset of obesity would have greater discrepancy scores between their present and ideal body images, that the faster they lost weight, and the greater their weight loss, the greater the discrepancy scores and, finally, the greater the discrepancy between present and ideal body images the more likely that the person would regain lost weight.

An analysis of the sample suggested that differential factors operating within the sample may have neutralized the results. The sample was split into four groups along the dimensions of initial weight loss and anxiety as expressed in the discrepancy scores. It emerged that there were differences between the hyperobese and those only slightly overweight. There was some indication that the hyperobese with a body image disturbance (as measured by discrepancy scores) regained more weight, on average, than those who were not so overweight originally and those who did not have a body image disturbance. This lent some support, within strict parameters, for using body image as a predictor of weight loss maintenance in the formerly obese.

DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted for the degree of Master of Arts in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

L. Cornfield

Lynne Cornfield

31st day of July 1987

To my parents who have stood by me not only thoughout the dissertation but also throughout life.

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I wish to thank :

Dr Di Shmukler, my supervisor, for her valuable direction and, especially, for the speed with which she handled the material.

Mr Charles Chemel for his specialist knowledge.

The lecturers of Weighless, Weight Watchers, P.E.T., and Dr J *Flaks* and Dr S E Sash for their help in *recruiting subjects*.

Anita Schlebusch for her unfailing support and encouragement.

Lucille McNamara for starting the ball rolling in the first place.

Brenda Schneiderman for painstakingly typing the manuscript.

And, finally, to the *subjects without whom* this research could *not have been* conducted.

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Chapter One

INTRODUCTION

This research investigates the relationship between weight related aspects of body image and obesity. More specifically, it seeks to ascertain whether body image can be used to predict weight loss maintenance in the formerly obese.

The research was undertaken because of the magnitude of the problem of obesity, the unhappiness it has caused, and the high failure rate in its treatment.

Obesity will be shown to be primarily a woman's problem. For this reason, and because the sample used in this research project was women only, the female pronoun will be used in this manuscript.

In chapter two it will be shown that about one in three people in the United States is considered to be "overfat" and that obesity is a health hazard of such proportions that one writer claimed that among the common causes of death the only one that did not strike earlier in the obese population than in the lean population was suicide. Obesity will also be shown to be a psychological health hazard for which psychological treatment has not had promising results.

In chapter two body image will be discussed. It will be shown

to be a multi-dimensional phenomena including perceptual, cognitive, and affective components. Its development will be traced to before birth and the roles in its development of touch, movement, and social interaction will be explored. The prevailing derogatory attitude of society towards obesity will be shown to have been to the detriment of the psychological health of the obese.

The issue of body image disturbance will be taken-up, particularly the work of Stunkard and Mendelson. They attributed the origins of body image disturbance in the obese to juvenile onset of obesity, the presence of emotional disturbance, and the internalisation of other people's derogatory attitudes towards obesity; three aspects that will be examined extensively.

Also in this chapter the phenomenon of the phantom limb will be looked at and related to the "fat person within" that many formerly obese people seem to carry with them. Related research will be presented.

The idea of a distorted body image as a psychological defence will be explored and it will be shown that several writers concur that people behave in accordance with a fantasized image of themselves.

In chapter four psychological theories relevant to this research project will be discussed. The first one to be presented will be Rogers' theory of the self-concept. His postulate that the individual behaves mostly in ways that are consistent with her self-concept will be presented as the pivotal point of this research.

This can be seen to tie-in with the fantasized image discussed in the previous paragraph.

The point will be made that a psychologically healthy person would be able to assimilate new information about the self and alter the self-concept accordingly. However, an emotionally disturbed person would not and would become threatened and anxious when she became aware of an incongruity between self-perception and reality, e.g. if she had a fat identity yet was confronted with evidence that she was now slim. If she behaved in accordance with the fantasized self she might then actualise a fat body image.

Other theories that lend support to Rogers' views will also be presented. Among them is Kelly's personal construct theory that maintains that things are as a person construes them to be. The research tool used in this study was derived from his theory.

The final section of this chapter links chapter three and chapter four in that it discusses the relationship between self-concept and body image.

In chapter five the concepts of the earlier chapters will be integrated to show how the hypotheses were generated from the theoretical basis. The aims of the study will be stated and the four hypotheses will be presented. The first three will deal separately with the relationships between body image and age of onset of obesity, weight loss, and speed of weight loss in a sample of successful dieters. The fourth hypothesis, which is the main hypothesis of this research,

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will deal with the relationship between body image and regaining weight.

In chapter six the way in which the project was executed will be discussed. It will elucidate who the subjects were and how they were recruited; what their original and goal weights were; how they lost weight; when and why a follow-up was done. The research tool will also be introduced and how it was constructed, used, and scored, will be discussed. The statistical tests to be used in the analysis of the data will also be presented.

In chapter seven the results of the statistical tests of the hypotheses will be formally stated by means of tables and figures with brief discussions where necessary.

In chapter eight the inferences and conclusions drawn from the statistical analysis will be discussed in the light of the literature reviewed.

Chapter nine will deal in retrospect with the weaknesses of this research project and with suggestions for further research emanating from it.

Finally, chapter ten will summarise the study.

Chapter Two

OUTLINE OF THE PROBLEM

2.1 Introduction

In our western industrialised society slimness, particularly in women, has become an exalted value that has caused great self-dissatisfaction to large numbers of people. People are forever seeking ways to get slim and stay slim as evidenced by the enrolment figures in weight reduction programmes and the popularity of fad diets. Yet few people are able to maintain their weight losses.

Ananth (1982) concluded that the treatment of obesity was extremely difficult and said that psychological treatment, in particular, had not had promising results. Garner, Garfinkel, and Moldofsky (1978, p. 249) commented on the "... overall dismal success rate recorded in outcome studies of obesity...," and, "... the chronicity which usually characterizes obesity problems ..."

2.2 Extent of the Problem

In his presidential address to the American Psychosomatic Society in March 1974, Stunkard made the following five points about the treatment of obesity prior to 1959 and before the advent of behavioural therapy in the sixties :

(1) Most people do not enter treatment for obesity.
(2) Of those who enter treatment most will not remain ... A survey of medical literature in 1959 revealed an attrition rate of from twenty per cent to eighty per cent in the outpatient treatment of obesity.
(3) Of those who remain, most will not lose much weight ...
(4) Of those who lose weight, most will regain it...
(5) Many will pay a high price for trying ...

(1975, p. 196)

The following research supports the last two points: Silverstone and Lascelles (1966), in a prospective study, found that one out of two of their subjects reported the start or worsening of depression while dieting and four out of ten said they were anxious. Some said they were both depressed and anxious. Stunkard and McLaren-Hume (1959) found that in a study of routine medical treatment of the obese only twelve per cent of the obese patients lost as much as nine kilograms and, after a year, only two per cent had *not regained* the lost weight.

Stunkard (1975) made the above five points about the treatment of obesity in the hope that that was the past and that behavioural techniques would revolutionize the treatment of obesity. However, six years after Stunkard's address the problem had not been beaten. Young and Reeve said :

> Obesity is a health problem of major proportions in the United States. Although estimates vary, some sources indicate that perhaps as many as half of all the adults in the United States are overweight and at least one third are 'over-fat'.
>
> (1980, p. 547)

They used the term 'over-fat' to distinguish between excess muscular weight and excess fat.

2.3 Physical Health Hazard

Stunkard, too, elaborated the health hazards of overweight :

> ... today cardiovascular disease accounts for well over one half of all deaths in this country. Any suggestion that a condition may contribute to cardiovascular disease must be given utmost consideration. The contribution of obesity to cardiovascular disease is more than suggestive.
>
> (1975, p. 227)

He said that the Framingham study, a famous prospective health study in Massachusetts, showed that the incidence of coronary heart disease and strokes increased with increasing weight and that women who were fifty per cent over their ideal weights increased their risk factor by 150 per cent and men that much overweight increased their risk by 100 per cent.

Gold (1976) concurred with the above estimate of the extent of the problem and the health risks. He said :

> Among the common causes of death, the only one that does not strike earlier in the obese population than in the lean population is suicide. It has been estimated that about one third of our population is overweight to an extent associated with diminished life expectancy.
>
> (1976, p. 87)

2.4 Psychological Health Hazard

Gold (1976, p. 87) also rated obesity as psychologically harmful : "Another tragedy is the expectation of rejection manifested by obese children". He said when a picture of a child walking towards a

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group of other children was shown to normal weight children and to obese children the normal weight children assumed the child *was joining the group while the* obese children felt he was being excluded.

Other studies suggest that this t_pe of experience was reality based for obese children. Allon (1979) reviewed the literature on obesity and stigma and concluded that the dynamics of the stigma reinforced the view, at least in America, of obesity as a handicap.

She said :

> The visible evidence of fatness in contemporary America often makes the discredited overweight person different from others and less desirable than he/she might be. Many onlookers lowered fat people from whole and usual people to tainted, discounted people. Stigmatising the overweight person includes the rejection and disgrace that are connected with a condition viewed both as a physical deformity and as a behavioural aberration. Many fat people are chastised for their lack of self-control. Overweight people are often held responsible for their voluntary, self-inflicted disability. Many mortified and ashamed fat people, full of self-disparagement and self-hatred, are trebly disadvantaged : (1) because they are discriminated against; (2) because they are made to feel that they deserve such discrimination; and (3) because they come to accept their treatment as just. Fatness overwhelms the person to the virtual exclusion of other traits.
>
> (1979, p. 470)

Two studies (Goodman, Richardson, Dornbusch and Hastorf, 1963; and Richardson, Hastorf, Goodman and Dornbusch, 1961) on reactions to physical disabilities support her comments. These reports on sample groups of adults and children who were given six drawings : a normal child; a child with a leg-brace and crutches; a child, with legs covered by a blanket, sitting in a wheelchair; a child

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with a scarred face; a child with a hand amputation; and a very fat child. The subjects were asked to rank the pictures from the person they liked most to the one they liked least. The fat child always came out worst.

From this it would seem that self-disparagement of the fat body goes hand-in-hand with social disparagement.

The importance of personal appearance and the pressure to conform to cultural stereotypes has been commented on by: (Schonbuch and Schell, 1967; Stunkard, 1975; Touyz, Beumont, Collins, McCabe and Jupp, 1984; Storz, 1982; Collins, McCabe and Jupp, 1983). Stunkard (1975, p. 204) said that women seemed to be more susceptible to social concern over obesity as evidenced by their becoming considerably thinner over the past twenty years while men continued to get fatter. In their study comparing the body perceptions of anorexics and normals, Touyz et al. (1984) found that, with very few exceptions in each group, the ideal body shape selected by the subjects, all of whom were women, was about twenty per cent smaller than their current shapes. This study highlights the current obsession with thinness among westernised women.

2.5 Summary

The above paragraphs have indicated the extent of the problem of obesity, and have pointed out some of the physical, social and psychological hazards of being overweight. There has also been some evidence that overweight is more particularly a woman's problem

when viewed from the social and psychological points of view. Yet, despite all the unhappiness and ill-health attendant upon obesity, it has proved to be highly resistent to treatment and extremely vulnerable to relapse. No single treatment has been effective.

Perhaps the reason for this is given by Leon and Roth who, after reviewing the literature exploring personality traits shared by the obese, concluded that :

> The search for a unitary explanation of obesity does not, at present, appear to be a fruitful avenue of exploration, and the evidence strongly suggests that obesity is not a unitary syndrome. It appears that research efforts would be more profitable if the type of obese person being studied were carefully studied.
>
> (1977, p. 136)

The search for factors influencing weight loss and weight loss maintenance would, however, seem to be crucial. The aim of this research is to explore the role of one variable : body image.

Chapter Three

BODY IMAGE

3.1 Definition of Body Image

The most often quoted definition of body image is that of Schilder (c1935, 1970) in his ground breaking work on body image which remains the most significant work on this topic to date. He said (1970, p. 11), "The image of the human body means the picture of our own body which we form in our mind, that is to say the way in which the body appears to ourselves".

From this it would seem that body image is purely perceptual. But Schilder did not stop here. He went on to elaborate body image to include tactile, thermal, and pain impressions; the postural model of Head (1920) which emphasizes the importance of movement; and the emotional component and personality needs in the construction of the body image.

3.1.1 Body image as a multi-facetted phenomena

Schilder concluded that there was a self-appearance of the body that came chiefly through the senses but that it was not merely a perception :

> The pattern of the body image consists of processes which construct and build up with the help of sensations and perception, but emotional processes are the force and source of energy of these constructive processes, and they direct them.
>
> (1970, p. 67)

He went on to say that sensory experiences could only be separated artificially from inner activities and libidinous strivings and that emotions and actions were inseparable from the body image.

Finally, he saw the body as a tri-dimensional unity comprising interpersonal, environmental and temporal factors. Both he and Szasz (1957) felt that the ego related to the body as an object : Schilder emphasizing it as an object towards which the ego has percepts, thoughts and feelings; and Szasz emphasizing body ego integration through the ego's mastery of the body.

Traub and Orbach are also of the opinion that body image is multi-facetted :

> In modern psychiatric parlance, body image appears to include both the surface, depth, and postural picture of the body on the one hand, and on the other, the attitudes, emotions, and personality reactions of the individual in relation to his body.
>
> (1964, p. 53)

They go on to say :

> Not infrequently, there is a confounding of direct perception of the physical appearance of the body

> with those thoughts, images, attitudes, and affects regarding the body.
>
> (1964, p. 54)

Here they seem to be agreeing with Schilder's contention that emotions and actions are inseparable from body image.

3.1.2 Definitions too broad

This confounding of direct perception with psychological processes in defining body image has led several writers to argue that the term body image is too broad.

Kolb, although in some of his own work he used a definition of body image that included both perceptual and psychological factors, was one of these. He (in Arieti, 1975, p. 813) suggested a break-down of the concept into different components : body percept - the accumulated sensory experience largely studied by neurologists; body concept - the thoughts, feelings, attitudes, and memories that are largely socially derived; body ego - the perceiving or viewing aspect of personality in relation to body image; and body ideal - the idealised image against which the person measures her perceptions and conceptions of her body. Kolb suggested that it was the job of the ego, with the help of its defence system, to deal with the pleasure or pain that might arise from discrepancies.

Bennett (1960, p. 56), on the other hand, defined body concept entirely differently to Kolb. He said, "We can ... define the body concept as the set of phenomena named by an individual

when asked to describe the body, reply to a questionnaire, or draw the human figure". He emphasized, however, that the concept obtained would depend on the questions asked.

Other writers on body image who drew specific attention to the relativity of definition were Fisher and Cleveland (1958). Their own approach was almost to take "body" out of body image by understanding it not as a mirror image of the actual body but rather as a projection of attitudes and expectations onto the body. In other words their focus was on the psychological experience of the body. In doing this they did not rule out the possibility of other definitions of body image including those as literal as a person's description of herself in a mirror.

Traub and Orbach (1964, p. 57) were against this approach and favoured the search for a more rigorous definition limiting their own definition to, "... the picture that the person has of the physical appearance of his body".

Definitions such as these have played a very important role in research. For example, wide use has been made almost exclusively of self-estimations of body widths in gauging body image disturbance in anorexia nervosa.

This has been acknowledged by Norris (1984, p. 840) as a very crude measure of body image in the light of the profound influence of the individual's emotional, and other internal states, on body image. Yet he points to the value of the measure because

of its highly objective and easily determined nature.

This type of definition, which lends itself to such precise measurement techniques, has been highly efficient in this field. But such a definition would not be adequate for research such as that of Zion (1965) in which she studied body concept as it relates to self-concept. For that project she defined body-concept as : "all possible body regarding attitudes, consisting of four primary facets : body description, body acceptance, ideal body, and body description-ideal discrepancy" (1965, p. 491).

So, despite appeals and attempts towards a more rigorous definition, no hard-and-fast definition of body image has evolved. It has remained for each researcher to define the concept in terms of the purposes of his or her own research.

3.1.3 Definition adopted for this project

This research deals more specifically with how the individual thinks and feels about her body. For this reason emotions and action cannot be separated from body image for the purposes of this research. The definition of Garner, Garfinkel and Moldofsky (1978, p. 249), who defined body image as, "the mental image that a person has of the physical appearance of his body", must therefore be expanded in the line of Cash and Green (1986) who see the self-image as a self-attitude.

3.2 The Development of the Body Image

3.2.1 Theorists

3.2.1.1 Kolb

Kolb (in Arieti, 1975) felt that body image, in the postural sense, started to develop even before birth with the early hand-to-mouth movement. Thereafter it was continually revised by the integration of multiple perceptions from all the senses but mainly through touch and movement. Kolb believed that the baby's exploration of his own body and the touch of others played an important part in the early differentiation of the body schema. As the body image became more developed and complex, in keeping with the individual's increasing capabilities, early images were stored as memory traces that sometimes re-appeared in neurological or emotional break-down.

Social influences, according to Kolb, were as important as the sensory-motor influences on the development of body image. He said :

> The attitudes of parents impart an indelible impression on the child's concept of himself, his body, and its function. Depending on the experience with the parents, the body and body parts may be conceived as good or bad, pleasing or repulsive, clean or dirty, loved or disliked.
>
> (In Arieti, 1975, p.815)

He went on to say that the individual's attitudes towards

his body were also formed by his perceptions of, and comparisons and identifications with, the bodies of others. A person with a body defect tended to adopt the rejecting attitudes of his family and society towards his body and manifest unhealthy attitudes and behaviour regarding his body.

3.2.1.2 Schilder

Schilder (1970), too, felt that the development of the body schema probably went hand in hand with sensory motor development. He believed that, through constant interaction with the environment, all the senses plus the vestibular apparatus were involved in building up the postural model of the body on a physiological level. But, he said (Schilder, 1970, p. 226), "We should not forget that the postural image of the body, although it is primarily an experience of the senses, provokes attitudes of an emotional type, and that these emotional attitudes are inseparable from the sensory experience".

According to Schilder other people played a prominent role in the formation of these attitudes. Not only were the interest, actions, words and attitudes of others significant in the development of body image but also their attitudes towards their own bodies, or parts of their bodies, which the child internalised and made part of his own body image.

Schilder vested great power in the influence of psychic

forces on body image even suggesting that the bodily self was built up according to the needs of the personality. He said (1970, p. 172), "the early history of the patient will very often determine how far the body image in its libidinous structure can influence the actual function and structure of the body".

3.2.1.3 Van der Velde

Van der Velde (1985), too, felt that body image was not simply a reflection of the physical self but was also tied up with *how* others judged and reacted to an individual's appearance and behaviour. As such, he saw body images as vital in the development of the self-image and as part and parcel of the person's social behaviour.

Further, it was his contention that a person could not form one complete body image because the limitations of *human perception made it possible only to see* part of the body at any one time; also, the variety of human movements, expressions etc., led to many different perceptions. He concluded :

> Consequently, our bodily perceptions result in a multitude of different, independently established body images. We cannot visualize or mnemonically retrieve all of our body images *in their entirety: we can only* conceptualize them in a unity. Therefore, our notion of our body as an entity represents a conceptual composite of innumerable body images.
>
> (Van der Velde, *1985*, p. 527)

Van der Velde differentiated a person's bodily experiences into two categories : internal perceptions such as pain, hunger, etc.; and external perceptions such as seeing the self on videotape. It was his contention that a person could only be aware of *internal sensations as they happened* and that they could not be mentally reproduced and, therefore, did not result in body images. However, they were mnemonically stored and could be recognised when they happened again.

Van der Velde said the same about emotional experiences. Only external percepts, derived from seeing and hearing, could be mentally reproduced, and they, therefore, resulted in body images. But, both internal and emotional percepts played a crucial role in the psychological meaning of other perceptions.

From the above it can be seen that Kolb, Schilder and Van der Velde placed great importance on the role of social factors in the development of a person's attitude towards her body. This interplay between society and ideas about self were areas of great concern to two early symbolic interactionist sociologists, Charles Horton Cooley and George Herbert Mead, whose theories are relevant here.

3.2.2 Sociological theorists

3.2.2.1 Cooley

To Cooley (1922) imagination played a significant role

in self-perception. His main postulate was that a person saw herself as if through the eyes of others. He referred to this as "*the looking-glass self*" which was made up of three elements : how the person imagined she looked to others; what she imagined their judgements of her appearance were; and her emotional reaction to those imagined judgements. In other words, people's views of themselves reflect how they imagine others see them.

3.2.2.2 Mead

Although Mead's (1934) basic standpoint was similar to that of Cooley, he went a step beyond imagination. He said that through three stages of play children learned to see themselves more and more objectively - as if through the eyes of others. In the preparatory stage of play, he said, the child imitated others; in the play stage she learned to take a series of single roles, for example by being a grocer and then switching to be the consumer; and thirdly, in the game stage she had to take on several roles simultaneously in order, for example, to play organised sport where it would be necessary to know the role of each player to play her own part.

What is common to these writers is that other people's opinions play a vital role in the development of the body image. The literature, as will be shown, indicates that this has been to the detriment of the obese.

3.3 Body Image Disturbance

Body image can be disturbed on a number of levels : perceptually, affecting the way the person sees her body; cognitively, affecting how she thinks about it; and affectively, affecting how she feels about it.

Kolb (in Arieti, 1975, p. 811) defined body image disturbance simply as a failure to perceive the body and its parts, and adapt to them as they actually exist. Stunkard and Mendelson (1967), however, said that body image disturbance could take the form of gross depersonalisation or distortions of thoughts, feelings and perceptions but they emphasized the affective elements in body image disturbance in the obese.

Stunkard and Mendelson (1967) found that obese people with a body image disturbance assessed their mirror-images highly critically passing comments such as, "I call myself a slob and a pig". Many found relationships with the opposite sex difficult because of self-consciousness of how others viewed their fatness.

The authors commented (Stunkard and Mendelson, 1967, p. 1297), "It sometimes seems as if they feel that nothing ever happens to them except in some kind of (usually derogatory) relationship to their weight". They gave an example of a young man who, if he missed a note in music class and was picked out about it, would think, "Maybe its because of my weight".

This type of thinking led them to conclude that the body image

disturbance in the obese was more an affective disturbance than a cognitive disturbance, which made it different from the disturbances suffered by those who were brain-damaged, under the influence of drugs, or schizophrenic, and similar to the disturbances suffered by those with certain deformities. More specifically they said (Stunkard and Mendelson, 1967, p. 1299), "The disturbance in body image is characterized by a feeling that one's body is grotesque and loathsome and that others view it with hostility and contempt. This feeling is associated with self-consciousness and with impaired social functioning".

The work of Cash and Green (1986) supports the view that body image disturbance in overweight people is chiefly an affective disturbance. They examined the relationships between body weight and perceptive, cognitive, and affective parameters of body image in a non-clinical example of twelve underweight, twelve normal weight, and twelve overweight college women. They concluded :

> Our study ... found overweight subjects not to differ significantly from either normal or underweight subjects in accuracy of perceptual self-estimations ...
> ... the overweight women accurately believed that they were larger than their peers without significant perceptual distortions of body size ...
> ... we observed clear weight-group differences in affective body image. Unlike normal and underweight women, those who were overweight were more critical of their appearance - feeling dissatisfied and unattractive.
> ... Here we see that being overweight carries self-stigma.
>
> (Cash and Green, 1986, pp.297 - 298)

Stunkard and Mendelson noted that body image disturbance fluctuated according to the obese person's mood : it was exacerbated by a negative mood and minimised by a good mood. But they went on to

say :

> Despite these short-term fluctuations in intensity, body image disturbances persist with remarkably little change over long periods of time and in the face of considerable variations of life circumstances. Weight reduction, *for example, appears to have little effect* on them, ...
>
> (1967, pp.1297 - 1298)

After conducting one-hour interviews with seventy-four randomly selected fat people from the medical and psychiatric clinics of a university hospital, Stunkard and Mendelson (1967, p. 1299) concluded that the factors that pre-disposed people to a disturbance in body image were, "age of onset of obesity, presence of emotional disturbance, and the negative evaluation of obesity by others in the formative years".

3.3.1 Age of onset of obesity

Several studies have suggested that age of onset of obesity is a critical factor in the formation and maintenance of a fat body image and perhaps, too, in the person's response to dieting and weight loss.

3.3.1.1 Age and body image perception

On a perceptual level five studies have shown that with increasing age youngsters tend to over-estimate their size to a lesser extent. Halmi, Goldberg and Cunningham (1977) studied height and width estimations in a group of normal adolescents. They found that their subjects over-estimated weight and under-estimated height and that the younger

the adolescent the greater the over-estimation. Eleven-year-olds showed the greatest decline in over-estimation and there was a gradual improvement in accuracy of estimation throughout the teenage years.

Using anorexic subjects, Button, Fransella and Slade (1977) also found an association between over-estimation and younger age. Wingate and Christie (1978) found that seventeen-year-old girls over-estimated their size but twenty-year-olds did not. Bentovim, Whitehead and Crisp (1979) found that both anorexics and normal teenage girls became less accurate in body-width estimations as their dimensions decreased with weight loss but that this trend was less evident in older women. Leon, Bemis, Meland and Nussbaum (1978) used groups of obese and normal weight children aged eight to nine years, and obese and normal weight adolescents aged twelve to thirteen years to investigate the perceptual and projective aspects of body image in youngsters not in psychological treatment. They concluded that perceptual distortions in self-estimations of body dimensions was a function of age rather than weight status.

3.3.1.2. Regression and immaturity

Slade and Russell (1973a) reported that as their anorexia nervosa patients gained weight so they reduced over-estimating their body size. The authors suggested that while their patients were emaciated they regressed perceptually. It

is interesting to note that Nathan (1973) found the figure drawings of obese youngsters to be less differentiated than those of normal weight youngsters which led him to suggest that the obese were functioning at a less mature level than the others. It may be, then, that obese individuals who over-estimate their size are functioning on an immature level which points in the direction not only of a link between age and body image distortion but also between emotional disturbance and body image distortion.

3.3.1.3 Adolescence as a 'critical period' in identity formation

Personality theorist, Erikson (1959, 1968), pinpointed adolescence as the critical period in the human life cycle for identity formation and he emphasized the impact that the physical changes of puberty had on the perception of self. His theory seems to have been borne out by subsequent research.

Gold said :

> Apparently, there is a critical period during adolescence when self-concepts are rigidified or imprinted. Long-term results for dieting in these juvenile-onset individuals are especially poor.
> For many of the adult-onset obese individuals whose *self-concepts essentially crystallized* prior to their weight gain, there tend to be less severe or no problems with body image.
>
> (1976, p. 88)

His comments were supported by earlier research. Stunkard and Mendelson (1967) reported that not one of their forty

subjects who had been fat only in adulthood suffered from a severe body image disturbance whereas one in two who had been fat from childhood had such a disturbance. They said :

> Our interviews suggested that adolescence was the period during which the disturbed body image was the most likely to begin. Again and again subjects reported bitter adolescent experiences which had colored their whole later evaluation of their obesity.
>
> (1967, p. 1298)

In their study of three inter-related investigations into the age at which body image disturbance was first manifested, Stunkard and Burt (1967), too, concluded that adolescence was the critical period. In their group of twenty obese girls aged between ten and thirteen years old, but who were mostly eleven and twelve-year-olds, they found little or no evidence of disturbed body images as expressed by adults despite that the girls were subject to derogation because of their fat. This seemed to indicate that body image disturbance did not occur prior to adolescence but three out of a group of ten who had been fat as children but had reduced to normal weight during late adolescence and had maintained normal weight for about twenty years still suffered from a mild body image disturbance.

After reviewing the literature, Leon and Roth (1977, p. 133) concluded that, "the research on body image and obesity appears to be consistent in showing that the greatest affective distortions of body image occurred in persons whose

obesity began during adolescence".

3.3.1.4 Inconsistent findings

Leon and Roth (1977) pointed out, however, that not everyone who had been fat from childhood suffered from an affective distortion of body image.

Commenting on earlier research by Leon and Chamberlain (1973) and Leon (1975), which had shown respectively that people who had been overweight for a long time showed no distortion of body image on a semantic differential and that subjects from a weight reduction club had changed their body image to suit their changing body. Leon and Roth (1977) said that, as age of onset of obesity had not been independently assessed, the results should be interpreted with caution. They made a further suggestion that perhaps people who attended weight reduction clubs were different from those in a hospital setting.

They also found that the results of studies in which age of onset of obesity was not recorded were inconsistent in demonstrating a link between emotional disturbance and weight loss. It seems that only where age of onset has been carefully monitored has a definite trend been found. For example, Grinker, Hirsch, and Levin (1973) found that while their juvenile-onset obese subjects were losing weight they showed symptoms of depression and anxiety whereas the adult-onset subjects did not.

3.3.1.5 Rigidity of the body image

The age of onset of obesity may also have an effect on the rigidity of the body image. Grinker (1973), using the distorting photograph technique, found that subjects with juvenile-onset of obesity continued to over-estimate their size even after checking their body size in a mirror, whereas those with adult-onset became more accurate in estimating their body size after looking in a mirror.

3.3.1.6 Summary

Studies investigating the link between age of onset of obesity and perceptual distortion of body size suggest that with increasing age there is a decreasing tendency to over-estimate body widths. Other research suggests that over-estimation indicates perceptual regression and studies using figure drawings suggest that obese youngsters are immature. It also seems that only those who were overweight from childhood, but by no means all of them, have a body image disturbance. Further it seems likely that those who were fat as children and who have a disturbed body image are unlikely to change their views of their bodies.

3.3.2 Emotional disturbance

Kolb said :

> Body image phenomena, as observed in the general clinic, may represent either a healthy psychophysiological reaction, or be evidence of psychological and emotional maladaption ... Where the consequence of disturbance of the body image does not follow the general expectations of the recognized healthy adaptation, the influence of neurotic or psychotic personality development or social factors will be found to be operative.
>
> (In Arieti, 1975, pp. 812 - 813)

However, he felt that anxiety was inevitable in a person who experienced a sudden change in body image, whether from surgery or from a metabolic disorder because he felt the distortion of the customary body image was experienced as a distortion of the self. This conforms with Rogers' theory (see next chapter).

It was Kolb's contention that the experience of a phantom limb after amputation was a healthy sign provided it disappeared over time. The phenomenon dealt with in this research is a "fat" phantom that does not disappear over time and which prevents the person from adjusting to a new, thin, reality. It seems to influence the person to act in ways to alleviate the anxiety generated by the new shape and to restore the old shape - even against the person's will. Bruch (1969) found this to be common among the obese. She found that obese people were compulsively driven to eat, against their wish not to gain more weight. Seen from Kolb's point of view, then, the "fat person within" indicates neurotic or psychotic personality adjustment or else social influence.

3.3.2.1 Neuroticism, obesity, and body image disturbance

After reviewing the literature, Stunkard (1975, p. 198)

said, "The question 'are obese persons more neurotic than nonobese persons?' can now be answered quite definitely - 'yes'. And the 'yes' can be immediately qualified with, 'but not much more neurotic'."

He re-analysed the Midtown Manhattan study, a comprehensive survey of the epidemiology of mental illness, and concluded that obesity had more to do with social factors than to do with psychological factors. Nonetheless, he did find fat people were more neurotic than thinner ones although not markedly so.

3.3.2.1.1 No specific psychological profile

Nevertheless, research has not been able to produce a psychological profile of a fat person as opposed to a normal weight person. Even single traits have been difficult to isolate although some adjustment problems have been indicated.

In an inter-disciplinary study of adolescent obesity, Hammar, Campbell, Campbell, Moores, Sareen, Gareis and Lucas (1972, p. 378) found, "the major differences between obese and nonobese boys and girls were in negative body image and low self-esteem, depression, and lack of confidence and experience in social interaction".

Using figure drawings, Nathan (1973) found that obese children were possibly less mature than their thinner

peers; Bruch (1973), based on her clinical experience, felt that fat people did not have a definite body identity; Garner, Garfinkel, Stancer, and Moldofsky (1976) found that both the anorexic and the obese subjects who over-estimated their size were more neurotic than those who under-estimated. They also found, on a modified version of Rotter's Locus of Control Scale, that the obese were more externally controlled than the normal weight comparison group. Furthermore, they found the anorexic and obese subjects who were external on this scale were also the ones who displayed body image disturbance.

In two separate studies, Leon refuted the finding of differences in locus of control between the obese and controls (Leon, 1975), and of severe body image disturbances in obese children (Leon, Bemis, Meland, and Nussbaum, (1978). Using two age groups, Leon et al, (1978) investigated perceptual and projective aspects of body image in obese and normal weight children. On a perceptual level they found that age, rather than weight status, determined how accurate the children were in estimating their body dimensions, with the older children being more accurate.

On an emotional level, using the Holtzman Inkblots and Fisher and Cleveland's barrier and penetration body image scoring system which indicates whether the person sees his body as a shield against the environment or

as extremely vulnerable, they found no significant differences between the obese children and the controls.

From this they concluded :

> Despite some of the reports in the literature of severe body image disturbances in obese children ... this finding was clearly not evident in this investigation of perceptual and projective aspects of one's own body image in obese youngsters who were not in psychological treatment. The results suggest that the perceptual image of oneself as grossly large and distorted is not evident in obese youngsters not in psychological treatment.
>
> (Leon et al, 1978, p. 370)

3.3.2.1.2 Relationship of neurosis to obesity requires careful description .

Stunkard and Burt (1967), too, concluded that body image disturbance in the obese was related to emotional disturbance. Discussing the aspect of emotional disturbance they said that while the obese who had become fat during adulthood displayed emotional disturbance this did not seem to be related to their fatness but that a disturbance in body image was usually a central feature of any emotional disorder found in those with juvenile-onset of obesity.

From the above it can be concluded that body image disturbance occurs mostly, if not always, in conjunction with emotional disturbance and that some, but not all

obese people, are emotionally disturbed.

It does not follow, however, that all emotionally disturbed obese people have a disturbed body image. Stunkard and Mendelson (1967, p. 1296) found, "Body image disturbances do not occur in emotionally healthy obese persons, and we have found them in only a minority of neurotic obese persons".

Furthermore, although it has been suggested (Garner, Garfinkel, Stancer and Moldofsky, 1976) that perceptual distortion of the body and body image disparagement occur together, this is not always the case. Garner and Garfinkel say :

> Body image disturbance may be manifest in ... patients who perceive their sizes relatively accurately according to objective clinical assessment, but who exhibit an extraordinary loathing for all or parts of their body. This goes well beyond the dissatisfaction with their appearance common for Western women ..., to the point of revulsion with one's shape. This body image disparagement has been described in obese individuals ... but is usually not associated with anorexia nervosa. Although it may coexist with a body estimation disorder, body image disparagement is fundamentally a conceptual disturbance.
>
> (1982, p. 126)

Stunkard and Mendelson insist that there is a great need to be more specific in linking neurosis and obesity:

> ... it is our clinical impression that the presence of neurosis in an obese person does not explain his obesity, nor is it

> necessarily relevant to it. Understanding the relationship of neurosis to obesity requires careful description of which neurotic features are and which are not specific to obesity. The disturbance in body image constitutes one such specific feature.
>
> (1967, p. 1299)

3.3.2.2 Body image disturbance and the eating disorders

While body image disturbance appears to be part of obesity-related neurosis, Traub and Orbach (1964) pointed out that psychiatric and neurological disorders are often accompanied by disorders in body image.

This, however, was not the conclusion of Garner et al, (1976). They investigated body size estimation and feelings of ineffectiveness in those suffering from eating disorders, i.e. anorexia nervosa and obesity. In the study they used five groups of subjects : those with anorexia nervosa; those with juvenile-onset obesity; those who weighed the same as the anorexics but had no history of eating disorders; those of normal weight who had never had psychiatric treatment; and those of normal weight who were non-psychotic psychiatric patients. Each subject had to estimate his or her body size using two different measures and had to complete two personality tests, the Eysenck Personality Inventory and a modified version of Rotter's Locus of Control Scale.

Discussing the results the researchers said :

> ... body image disturbance does not appear to be a function or psychiatric disturbance in general. The psychiatric patient group showed results similar to the other two control groups. However, neurosis and body image disturbance tend to be related in the eating disorder subjects tested in the current study.
>
> (Garner, Garfinkel, Stancer and Moldofsky, 1976, p. 334)

This concurs with the findings of Stunkard and Mendelson (1967), working with obese subjects, that body image disturbance may be a neurotic feature specific to people with eating disorders. It also tends to confirm Rogers' (Hjelle and Ziegler, 1976) belief that distortion and denial are defence mechanisms which, in his terms, are psychopathological which fits in with the link between body image disturbance and neurosis.

3.3.2.3 Need to maintain the symptom

These views were also held by Collins, McCabe, and Jupp (1983) who used an adjustable video-image to investigate the body size estimation of sixty-eight women before and after weight loss counselling. They found that errors in judgement were more pronounced among the drop-outs than the graduates; that the less obese were more accurate than the more obese in estimating their sizes; and as the subjects lost weight they became more accurate in their estimations. Discussing the study they said (1983, p. 510), "it might be that the incapacity to represent the real body is an index of general neuroticism. In this context it might be argued that the misrepresentation reflects

an unconscious need to maintain the symptom, which in these cases is obesity".

In line with what has been said earlier it seems, too, that the psycho-neurotic clings more rigidly to this type of defence than does the anorexic patient.

Norris (1984) asked four groups of subjects - anorexic, bulimic, emotionally disturbed, and normal young women - to estimate the widths of four of their body parts using an apparatus which beams a horizontal slit of light of variable length against which they could measure themselves. After they had made their first estimations they were told to look at themselves in a mirror and to re-estimate. He found (1984, p. 841), "Emotionally disturbed adolescent females would seem to overestimate to almost the same extent as anorexic subjects, but their estimations are relatively immune to change or self-correction following mirror confrontation". It would, therefore, seem that body image is more rigid and less susceptible to reality-based change in emotionally disturbed adolescents than in either normals or anorexics.

The studies cited tend to confirm the view that body image disturbance is a defence mechanism in some emotionally disturbed obese people and, when the weight is lost the body image disturbance remains to maintain the symptom, in this case obesity.

3.3.2.3.1 Weight Loss and emotional disturbance

Some studies have suggested that certain obese people have developed emotional disturbances concurrently with weight loss. Again this would be in keeping with the idea that fat is a defence mechanism and that when it is taken away disturbance results.

Silverstone and Lascelles (1966) reported that fifty per cent of the subjects they studied had experienced the start or the worsening of depression while they were on diet, and forty per cent said their anxiety had increased. Some said they had both symptoms.

Stunkard (1957), doing a post hoc investigation, questioned 100 people who attended a medical clinic to lose weight about previous attempts to diet. Seventy-two had tried seriously to lose weight before. Of these fifty-four per cent claimed to have had emotional problems while dieting. Twenty-one per cent reported nervousness; another twenty-one per cent weakness; eight per cent irritability; five per cent fatigue; and four per cent nausea.

Glucksman, Hirsch, McCully, Barron and Knittle (1968), using a small sample of only three severely overweight men and three women, all of whom had been fat since childhood, found different changes in behaviour during dieting and afterwards. The changes that took place

while the subjects were losing weight centred around hunger, hostility, aggression, ego boundaries, and concern about changes in body size. The changes that persisted after weight loss included increased depression, anxiety, and sexual psychopathology.

In contrast, Kurland (1967) found that depression increased as the subjects continued to diet but that it lifted again when the diet was about to stop. A possible difference between Kurland's study and that of Glucksman et al. is that Kurland did not record age of onset of obesity. An improvement in mood during weight loss was also noted by Graff (1965) but again in this study the age of onset of obesity among the subjects was unrecorded.

Reports on psychological response to jejunoileal bypass procedures in the massively obese have also been contradictory. For example, Solow, Silberfarb and Swift (1974) found that intestinal bypass surgery patients were better off both socially and psychologically following weight loss after the operation. On the other hand, Hallberg, Backman and Espmark (1975) reported "psychiatric morbidity" in seventy-four per cent of the sixty-six patients they studied.

In an attempt to resolve the contradictory findings Wampler, Lauer, Lantz, Wampler, Evens, Madura (1980) carried out two investigations with bypass subjects

who were massively obese originally. In the first experiment their subjects were twenty women from the same surgeon who were psychologically tested before the operation then again a year after the operation. The tests they were given were : the Minnesota Multiphasic Personality Inventory (MMPI), the Tennessee Self-Concept Scale (TSCS), Rotter's Internal-External Locus of Control Scale and the Marlowe-Crowne Social Desirability Scale. The same tests, though sometimes not all of them, were used in the second experiment in which subjects were tested [illegible] but at different times relative to the op[illegible] pre-operative, one year after surgery, two years after surgery.

They found that the results of the two experiments were consistent and concluded (Wampler et al, 1980, p. 497), "The results of both experiments do not support the view that weight loss in massively obese persons will set off deterioration of psychological functioning or result in symptom substitution. ... Overall, the experiments indicate improved, or at least unchanged, psychological functioning".

Furthermore, they found that, as a group, grossly overweight women were not as psychologically deviant as was popularly, and professionally, believed. What they did find in the first experiment was that on the MMPI pre-operatively the subjects scored higher than the norm values on the depression, hysteria, psychopathic

deviate, schizophrenia and hypomanic scales. At the second testing the elevated scores were retained only on the psychopathic deviate and hypomanic scales. On the TSCS, they scored lower than the norms on the physical self-concept scale and although this improved post-operatively it remained below the norms.

Commenting on this low physical self-concept, Wampler et al. said :

> The continued low physical self-concept in post-operative patients may be a function of the patient's failure to achieve normal or idealized appearance despite a thirty per cent to forty per cent weight loss, or it may be an indication of distortion of body image.
>
> (1980, p. 497)

They also found that although their subjects looked and felt better some still felt "different". They felt that perhaps this was because some of the subjects were still fat and were therefore treated differently by others but that it could also be that some had difficulty in adjusting to their new size.

3.3.2.3.2 Improvement with psychotherapy

Another study that seems to point to the link between neurosis, obesity, body image disturbance and defence, is that of Rand and Stunkard (1978). In this study seventy-two psychoanalysts presented information on eighty-

four obese patients and sixty-three of their normal weight patients who acted as controls. The presenting problem of nearly all the subjects and controls was depression or anxiety or both - only six per cent of the fat patients had sought treatment primarily for their obesity, yet weight loss seemed to be a consequence of treatment.

At the time of the first check the patients had been in therapy for a median period of thirty-one months. At that time fifty-three per cent of the obese patients had lost more than four-and-a-half kilograms, twenty-six per cent had lost more than nine kilograms and eight per cent had lost more than eighteen kilograms, a result that compared favourably with those usually obtained by medical doctors treating obesity. At the time of the second check, after a median period of forty-two months, sixty-four per cent had lost more than four kilograms, forty-seven per cent had lost more than nine kilograms, and nineteen per cent had lost more than eighteen kilograms, a result that compared favourably with behaviour therapy programmes. (Because the variable "time in treatment" was skewed the median was used rather than the mean).

More significant, from the authors' point of view, was the reduction in body image disparagement. They said :

> Body image disparagement is a chronic, intractable disorder, strongly resistent to change. ... It is therefore noteworthy that treatment substantially reduced its intensity, especially among patients with a severe form of this disorder. ... The most striking aspect of these findings is the reduction in the number of patients with severe body image disturbance from twenty-nine to ten.
>
> (Rand and Stunkard, 1978, p. 549)

These findings suggest that obesity, and the related body image disturbance in some obese individuals, may indeed be defensive and that psychotherapy can reduce this defensiveness and, therefore, the need to maintain the symptoms.

3.3.2.4 Summary

It appears that body image can represent a healthy psycho-physiological reaction or it can be a psychopathological adaptation. Stunkard (1975) concluded that the obese were more neurotic than those of normal weight but not markedly so. Stunkard and Mendelson (1967), however, cautioned that neurosis in an obese person does not explain his obesity and need not even be relevant to it. They suggested that there was a need to be more specific about which neurotic features were specific to obesity. They, and others, concluded that body image disturbance was one such feature. Stunkard and Mendelson (1967) suggested further that the factors that predisposed an obese person to body image disturbance were : emotional disturbance; age of onset of obesity; and the internalisation, during the formative

years, of other people's negative attitudes towards fat.

Collins, McCabe and Jupp (1983) also felt that body image distortion could be an indication of neuroticism. In this context they argued that the misrepresentation might reflect an unconscious desire to maintain the symptom i.e. obesity. Norris (1984) found that his obese subjects clung more rigidly than the others in his study to their original, distorted body perceptions even after mirror confrontation. It appears that they, too, maintained the original symptom if only in fantasy. This seems to suggest that obesity in the first place, and body image disturbance in the second place, are defensive.

Studies investigating psychological changes during and after weight loss, that might have been able to throw light on the defensive nature of these symptoms, have been contradictory some claiming psychological deterioration and others claiming improvement. The mixed results might be because age of onset of obesity was not taken into account in all the studies nor was body image disturbance. That body image and obesity might be defence mechanisms was also suggested by a study of obese people in psychoanalysis. As treatment progressed, and they presumably became less defensive, the majority lost a substantial amount of weight and improved their body images - although these were not the reasons for which they had sought treatment in the first place.

3.3.3 Stigma

A number of studies have revealed that there is a stigma attached to obesity.

3.3.3.1 Rejection of the endomorphic body type

The endomorphic body build is the least liked by both males and females from pre-school age to adulthood (Caskey and Felker, 1971; Clausen, 1975; Dwyer and Mayer, 1968; Gascaly and Borges, 1979; Grinder, 1975; Lerner, 1969; Lerner and Gellert, 1969; McCandless, 1960; Staffieri, 1967; Yates and Taylor, 1978).

Already quoted in this manuscript is the research of Goodman, Richardson, Dornbusch and Hastorf (1963) and Richardson, Hastorf, Goodman and Dornbusch (1961) in which adults and children were asked to state whom they would like the least in drawings of six children with different physical disabilities. The fat child was the most rejected.

It was Lerner and Gellert (1969) who found that as early as kindergarten children already expressed dislike for the endomorphic body type. Prior to that Staffieri (1967) had found that boys between six and ten years old rejected this body type. Caskey and Felker (1971) replicated Staffieri's study using girls from the second to fifth grades. They found that all three body type girls, i.e. ectomorphs, mesomorphs and endomorphs, rejected the endomorphic body-

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build even if this meant they were rejecting their own body shapes.

3.3.3.2 Self-perception of the stigma of obesity

Using participant observation and open-ended interviews, Allon (1979) conducted two exploratory studies, one with overweight high school teenagers, the other with overweight children at a clinic, to examine self-perception of the stigma of obesity as related to weight loss among children and adolescents of both sexes.

From self-initiated comments, which illustrate Mead's concept of taking-the-role-of-the-other, eight different themes related to stigma emerged and recurred (Allon, 1979, pp. 472 - 474) :

"Overweight as an exclusive focus in social interaction" - many subjects felt that normal thins often tried to disguise their preoccupation with the subject's overweight but their efforts were transparent;

"Overweight as a reflection of a negative body image" - many felt that others responded to them negatively because of their overweight and they became preoccupied by their fat to the exclusion of other traits and many either defensively hid or flaunted their bodies;

"Overweight as overwhelming others with many mixed emotions" - several subjects felt that normal thins were repulsed by them and felt pity for them but hid this with feigned warmth;

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"Overweight as overwhelming others with many mixed emotions" - several subjects felt that normal thins were repulsed by them and felt pity for them but hid this with feigned warmth;

"Overweight as clashing with other qualities of the person" - normal thins appeared to be condescending and made remarks such as "you have a lovely face even if you are fat"; "Overweight as an equivocal and uncertain predictor of joint activity of overweight and normal weight persons" - some subjects felt that normals viewed them as too sick, too awkward, or too ugly to take part in activities with them;

"Overweight viewed as one's own responsibility which deserves punishment by others as well as oneself" - the fat youth felt they should blame themselves for their self-indulgence in eating too much and exercising too little;

"Overweight as an illness and not one's own responsibility, which merits treatment and help given by others, especially parents and professional experts" - the sick fat person should co-operate with others to get well;

"Overweight viewed as one's responsibility and as an illness that requires the joint efforts of oneself and others, especially parents and professional experts" - the fat youth felt they should take joint responsibility with others to cure their fat and, while they deserved punishment for breaking a diet, they also deserved rewards for success.

3.3.3.2.1 Escape from stigmatisation

Further evidence that people tend to see and evaluate themselves as they think others see them comes from Stunkard and Mendelson :

> The almost universal devaluation of obesity in our society today might make it redundant to mention this factor as significant in the development of a disturbed body image. The occasional instance in which an obese youth did not face such censure, however, reminds us of the force of these attitudes.
>
> (1967, p. 1298)

In their study there were two young men, both from disturbed backgrounds and both of whom had been fat since childhood, who had been brought up to believe that largeness was a sign of health and strength and who were popular as football players among their peers. Despite their neuroticism and the early onset of obesity, they did not have disturbed body images, apparently because they had internalised positive rather than negative evaluations of themselves from others.

3.3.3.3 Sex differences

Allon (1979) found that there were differences in the frequency with which different age and sex groups made comments relevant to the themes quoted under 3.2.3.2, but one definite trend was that :

> All female youth in the two studies made at least moderate references to a negative body image, with females between the ages of seven and seventeen who lost little weight or gained weight making frequent references.
>
> (1979, p. 476)

It would seem from this that among young girls a negative body image impedes rather than helps weight loss which

suggests that people may tend to preserve their self-images rather than change even if change is for the better in their view.

Girls may be particularly sensitive to social attitudes towards their bodies and, therefore, to the stigma of obesity. Davies and Furnham (1986) also found that girls may be particularly sensitive to social attitudes towards their bodies and, therefore, to the stigma of obesity. After reviewing the literature and conducting their own investigation into body satisfaction in adolescent girls, they suggested that the female self-concept was more inter- than intra-personally determined.

3.3.3.4 Unrecognised minority group

Few escape the stigmatisation of obesity. After specifically investigating the age of onset of disturbances in body image Stunkard and Burt said :

> The preadolescents whom we interviewed, obese and nonobese alike, reported heartbreaking accounts of the pervasive derogation of obese girls by both peers and parents. These pressures grow even more severe during adolescence, with its emphasis on highly complex and competitive dating patterns.
>
> (1976, p. 1446)

Monello and Mayer (1963) went as far as to identify obese adolescents as an "unrecognised minority group" because of the intensity and pervasiveness of the discrimination against them.

3.3.4 The phantom limb and the fat person within

3.3.4.1 Introduction

Birtchnell, Lacey and Harte (1985) concur with the conclusion drawn by Garner, Garfinkel, and Moldofsky (1978) that the work done with people reporting a phantom limb indicates that body image does not necessarily coincide with actual physical appearance.

That people can see themselves differently to what they are lends support to Bruch's (1981) concept of the fat person within. In discussing body image disturbance in anorexia nervosa she said :

> In obesity, too, patients who have been severely obese will not "see" themselves as thinner, even after weight reduction of considerable proportion. They carry the image of their former size like a phantom with them.
>
> (Bruch, 1981, p. 216)

The present study seeks to investigate this within the context of obesity and weight loss maintenance. It seems likely that the persistence of a fat body image in a now-slim, but formerly obese, person could be similar to the perseveration of the phantom limb image.

3.3.4.2 The phantom limb phenomena

As already quoted, Kolb said :

> The concept of disturbances in body image derives from observations of the affected individual's failure to perceive his body and its parts, and adapt to them as they actually exist.... The outstanding examples of acute disturbances occur as a result of traumatic or surgical dismemberment, where the basic body image persists, despite the visible or apparent loss of a body part.
>
> (In Arieti, 1975, p. 811)

The sudden loss of a body part seems to be a necessary condition for the appearance of a phantom limb. Simmel (1956) compared subjects who had had an amputation with others who were victims of leprosy and had lost digits through absorption. She found those who lost body parts slowly did not experience phantom images and she concluded that where the body schema can keep up with changes, no phantom results. It also seems necessary to have had the limb to experience its phantom. Simmel (1956) found that children born without arms or legs do not develop phantoms. Kolb (in Arieti, 1975, p. 816) concludes from this that a phantom is of a different quality to wish-fulfillment : "There is a basic physiological substratum imposed upon the cerebral cortex as the result of perceptual experience which allows development of quality of experience over and beyond that observed in the case of ego-adaptive wish-fulfillments".

Schilder (1970), too, felt that the body image and phantom were based upon a complicated cerebral mechanism and that a sudden loss was necessary for the appearance of a phantom. He commented (1970, p. [illegible] most investigators found that the phantom was largely made up by tactile and kinaesthetic sensations, but he had found that optic images were

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Schilder (1970), too, felt that the body image and phantom were based upon a complicated cerebral mechanism and that a sudden loss was necessary for the appearance of a phantom. He commented (1970, p. 63) that most investigators found that the phantom was largely made up by tactile and kinaesthetic sensations, but he had found that optic images were

usually also present.

He took the point further :

> The pattern of the body image consists of processes which construct and build up with the help of sensations and perception, but emotional processes are the force and source of energy of these constructive processes, and they direct them. We are accustomed to have a complete body. The phantom of an amputated person is therefore the reactivation of a given perceptive pattern by emotional forces. The great variety in phantoms is only to be understood when we consider the emotional reactions of individuals towards their own body.
>
> (Schilder, 1970, p. 67)

In other words, he firmly placed body image in the psychological realm and saw the phantom largely as an emotional construct.

He continued :

> Our own body and the image of our own body is, of course, the object of the strongest emotions. After the amputation, the individual has to face a new situation, but since he is reluctant to do so he tries to maintain the integrity of his own body.
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3.3.4.3 The Fat Person Within

In the literature there is considerable suggestion that the formerly obese continue to experience "a fat person within", i.e. many people who have been overweight continue to experience themselves as fat. There seems to be a striking resemblance between the phantom limb phenomena and the body image of many formerly obese people.

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Crisp and Kalucy (1974, p. 358) concluded that the meaning of perceived fatness reported by anorexics probably included, "previous experience of weight and shape - often the premorbid weight which is imprinted in the memory both in a cellular biological and experiential sense".

Discussing their findings in a study of self-estimations of body widths by a group of anorexia nervosa patients, they suggested (1974, p. 356) the over-estimations might, "in some way reflect a surviving perception of maximum ever weight and size".

In their study they found that not only the anorexic patients but also the normals in the control group had over-estimated their body widths. This was contrary to the finding of Slade and Russell (1973a) that normals were accurate in their estimations. Crisp and Kalucy offered two explanations for the discrepancy : one, that age might have been a consideration, their own controls were much younger than Slade and Russell's twenty-five-year-olds; two, the surviving perception of maximum-ever weight and size.

The second explanation was prompted by their discovery, on examination of their controls, that most of them had been considerably fatter in the past than they were at the time of the research and the five who had shown the greatest error in estimation had recently lost ten kilograms. In other words, they had recently been overweight. They

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also noted (1974, p. 357) that the anorexia nervosa patients who did well, nonetheless still over-estimated their size by about ten per cent which more-or-less corresponded to how overweight they had been before their illness.

Other studies have also suggested that lost fat lives on as a "phantom" in the minds of the formerly obese just as a phantom limb exists after amputation.

Using a very small sample of massively obese subjects who had been fat since childhood, Glucksman and Hirsch (1969) found that during and after weight loss the formerly obese saw themselves as if they had not lost weight, i.e. their over-estimations increased as their size decreased, whereas the controls who were of normal weight under-estimated their size during weight loss maintenance.

Pearlson, Flournoy, Simonson and Slavney (1981, p. 149) examined accuracy of perception of body zone widths as well as attitudes about body size with a group of obese men and women and normal weight controls. They, too, found that a number of their controls had a prior history of obesity and they decided to look at the differences between the previously fat controls and those who had never been fat.

They found that both groups were about equally accurate in body width estimation but more men and women with a

past history of fat than those without, felt themselves to be overweight and disliked the widths of their waists. Six out of ten men who had been overweight previously, and about five out of ten women, felt themselves to be currently overweight whereas only slightly more than one out of ten women and fewer than one out of ten men, who had not been fat previously, felt that they were currently overweight.

The above investigations seem to suggest that "the fat person within" can persist on a perceptual level, a cognitive level, an emotional level, or all three.

3.3.4.4 Perceptual malleability

Not all the evidence, however, points towards an inflexible and fixed body image. With regard to perceptual malleability, Traub and Orbach (1964) reported on experiments using a distorting mirror in which subjects had to adjust the mirror until they had the most accurate possible reflection of themselves. They found :

> After some minutes of adjustment, many subjects declare, often quite sheepishly, that they have forgotten precisely what they look like. Some subjects urgently request that they be permitted to examine themselves in a normal mirror before they proceed. Not infrequently, the subject will turn to examine his trunk and limbs to remind himself of their appearance.
>
> (1964, p. 65)

These authors also commented on the effects of wearing

inverting prisms over the eyes for long periods. Although they state that there has been a great deal of controversy over the interpretation of the data, Traub and Orbach comment that (1964, p. 59), "it is generally conceded that the subject revises his concept of the relationship between what he sees and what he feels and does, and he becomes comfortable with the new relationship.

They also commented that athletes and ballet dancers are more accurate in their estimations of the widths of the body parts used in movement than are those of the less agile. Held (1961) found that a person needed to move or to manipulate actively in order to regain visual accuracy where the usual visual field has been interfered with i.e. a person who could walk would have better chance to regain accurate perception than one in a wheelchair. Both Federn (1952) and Schilder (1970) found that changes occurred in body size estimation depending on the time of day and the activity.

Savage (1955) found that body perception can also be distorted in hypnotic states or by certain drugs.

3.3.4.5 Affective malleability

There is also research to show that the more plastic nature of body image is not restricted to the perceptual level but that attitudes, too, can change in relation to a changing

body.

Solow, Silberfarb and Swift (1974) studied the psychological consequences of intestinal bypass surgery and weight loss using twenty-nine massively obese subjects. They found that body image - defined by them on an attitudinal-emotional level rather than a perceptual level - improved from self-loathing to realistic acceptance in twenty-three of the subjects although some of .em were still somewhat overweight. Using semi-structured psychiatric interviews and a number of self-administered questionnaires they also found that most of the subjects experienced an improvement in mood, self-esteem, inter-personal relationships and vocational effectiveness, as well as a decrease in denial. Furthermore the amount of improvement was positively related to the amount of weight lost.

They conceded that six subjects suffered psychiatric illness, two severely enough to be hospitalised, but they claimed that, with one exception, the illnesses were not related to the weight loss or the surgery but rather to environmental stress or a pre-existing disorder.

Crisp and Kalucy (1974) investigated body width perception in hospitalised anorexia nervosa patients. The subjects were told, in the first instance, that the study was about their self-estimations of body widths. Immediately after the first assessment they were told that, because both

they and the experimenters knew they were thin, it would not be held against them if they dropped their guard and estimated more accurately. Although they still over-estimated, there was a substantial decrease in their error of estimation the second time round. It must be borne in mind, however, that compliance, except in the area of food, is part of the anorexic syndrome.

3.3.4.6 Defence mechanism

This research seems to highlight that body image can be used as a psychological defence mechanism. Solow, Silberfarb and Swift (1974), too, mentioned a decrease in denial among their subjects whose self-esteem and body image improved with weight loss. Taking this into account together with the research findings of both fixed and changeable body images, the question arises as to whether the "fat person within" is a defence? This ties in with Rogers' theory (to be discussed) in that the "fat person within" would be a denial or distortion of reality. The conclusion that could be drawn in terms of this theory would be that an intractable body image in the face of physical change is defensive and constitutes psychopathology.

The problem, then, seems to revolve around a distortion of the body image. Beck (1970), Allon (1979), and Stunkard and Mendelson (1967) concur that the person behaves in accordance with the fantasized image of themselves. Beck

said :

> The visual fantasies of neurotic patients are often derivatives of a distorted or peculiar conception of reality. The plausibility of the fantasies to the neurotic patient indicates that his belief system is temporarily enmeshed by the fantasy. At peak strength the fantasy can temporarily direct the patient's affective reactions, motivations, mood, and overt behaviour.
>
> (1970, p. 15)

Allon (1979) suggested that a distorted body image might play a role in the development and maintenance of fatness. And, Stunkard and Mendelson (1967, p. 1298) noted that an improvement in body image distortion in five patients, occasioned by long term psychotherapy, preceded successful weight control. They quoted one young man who, before he lost sixty-four kilograms, which loss he had maintained for five years at the time of their writing, said : "It's strange to see myself in the mirror looking so fat, because I feel so differently about it now. I feel thin". This suggests that the fantasy, or phantom, must change before the real body changes.

3.3.4.7 Summary

In the above paragraphs the phantom limb phenomena has been used to illustrate that the body image does not necessarily coincide with actual physical appearance. In Schilder's view, it is a psychological attempt on the part of the amputee to preserve the integrity of the body after a sudden loss. This is in keeping with Rogers' concepts of denial

and distortion as defence mechanisms to preserve a preconceived self-concept. (See Rogers' theory in the next chapter). A link was also made between the phantom limb phenomena and the "fat person within" many formerly obese people although it was also shown that body image is not always so rigid.

Chapter Four

PSYCHOLOGICAL THEORIES

In this chapter two major psychological theories, that of Carl Rogers and George Kelly, supported by statements from Festinger's cognitive dissonance theory and the writings of Gergen, will be presented. The purpose is to give a background into the theories against which the relationship of body image and weight loss maintenance is to be tested.

4.1 Rogers' Theory

4.1.1 Consistency among self-perceptions and experience

That body image may be relevant to weight control is suggested by Carl Rogers' theory of the self-concept. According to Hjelle and Ziegler :

> Rogers has argued that most ways of behaving that an individual adopts are those which are consistent with his or her self-concept. In other words, the individual seeks to maintain a state of consistency among self-perceptions and experience.
>
> (1976, p. 302)

They go on to say (1976, p. 317) that Rogers believed that psychological maladjustments resulted from an incongruence between the self and experience; in other words, a psychologically

disturbed person perceives herself and her relations to people and things in her environment in ways that fit some preconceived self-structure. She is therefore prone to deny or distort any experience which conflicts with her existing self-image because awareness of it would leave her vulnerable to anxiety, threat, and disorganisation.

From this it can be concluded that when there is a contradiction between self-perception and experience an individual has the choice to: (a) resort to psychological defence mechanisms, which in Rogers' framework means to distort or deny so as to fit experience to the self-concept; (b) change the experience by acting on the environment; (c) change the self-concept.

Rogers (in Koch, 1959) sees the last option i.e. to change the self-concept as the domain of psychotherapy and he claims some success in this regard. Reviewing the literature he found (1959, p. 202), "In general the various investigations have agreed in indicating that the self-concept is an important variable in personality dynamics and that change in the self is one of the most marked and significant changes occurring in therapy.

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Rogers (in Koch, 1959) sees the last option i.e. to change the self-concept as the domain of psychotherapy and he claims some success in this regard. Reviewing the literature he found (1959, p. 202), "In general the various investigations have agreed in indicating that the self-concept is an important variable in personality dynamics and that change in the self is one of the most marked and significant changes occurring in therapy.

Rogers' alternative according to Hjelle and Ziegler (1976) would be psychological maladjustment in the form of, at best, anxiety; at worst, personality disorganisation. These authors state :

> According to Rogers if there is a significant degree of incongruence between the individual's self-concept and his evaluation of experience, then his defences may become inoperable. In his "defenceless" state, with the incongruent experience accurately symbolized in awareness the self-concept becomes shattered. Thus, personality disorganization and psychopathology occur when the self is unable to defend itself against threatening experiences. Persons undergoing such disorganization are commonly tagged "psychotic".
>
> (Hjelle and Ziegler, 1976, p. 304)

Translated into the terms of this thesis, a formerly obese person who retains a fat body image would be vulnerable to this type of threat as the now slim person receives feed-back from the environment confirming the weight loss and contradicting the fat body image. Such a person would also have recourse to the choices listed, namely : (a) to distort or deny the experience perhaps by rationalisation, e.g. "it's just that black makes me look thinner", or, "I'm much too fat for my height (as an anorexic may constantly proclaim); (b) change the experience to fit the self-concept, in other words, become fat again; (c) change the self-concept to integrate the new reality, i.e. come to see herself as slim.

Otherwise, said Patterson (1980, p. 483), where the discrepancy between experience and self was so great that the defences could not cope, the experience would be accurately perceived by the person and personality disorganisation would result. With reference to weight loss, it is interesting to speculate at this point that this could be a possible psychological explanation for the observation of Abram, Meixel, Webb and Scott (1976) that nine patients (twenty-four per cent of the sample) who had had a jejunoileal bypass had suffered psychiatric difficulties,

some becoming psychotic, after the operation. Of greater significance, he noted that subjects with the greatest weight loss were significantly more likely to have psychiatric complications.

It was Rogers' contention that the self was threatened not necessarily only by negative experiences but that a person with a poor self-image would be equally threatened by positive experiences :

> The conventional concept of regression as having to do with forbidden or socially taboo impulses had been recognised as inadequate to fit the facts. Often the most deeply denied impulses and feelings were positive feelings of love, or tenderness, or confidence in self ... Gradually it was recognised that the important principle was one of consistency with the self.
>
> (In Koch, 1959, p. 202)

That is to say, not even positive feed-back from the environment is necessarily easily assimilated; it can even threaten the personality with disorganisation. Applied to a fat person, it may be that she denies her sexual attractiveness and sexuality by hiding it under layers of fat.

There has been research which upholds Rogers' hypothesis that both positive and negative experiences are equally likely to be denied or distorted if they contradict the self-concept.

Suinn, Osborne and Winfree (1962, pp. 473 - 474) administered a self-report rating scale consisting of 100 adjectives derived from the Gough Adjective Check List to thirty psychology students at Whitman College. Five days later these subjects were given faked ratings of themselves that they believed to be true.

The faked ratings consisted of fifty items consistent with the subjects rating of themselves; twenty-five items one degree out; and twenty-five items two degrees out. Both consistent and inconsistent items were randomly chosen as were their ratings. Two days later the subjects had to complete the rating scale again, this time as they remembered the raters' scoring of themselves. The degree of accuracy of recall was found to be related to the degree of consistency between the self-concept and the contrived information. That is, the subjects remembered more accurately those judgements that were consistent with their self-judgements than those that were not.

Rogers explains it as follows :

> ... a discrepancy frequently develops between the self as perceived, and the actual experience of the organism. Thus the individual may perceive himself as having characteristics a, b, c, and experiencing feelings x, y, and z. An accurate symbolization of his experience would, however, indicate characteristics c, d, and e, and feelings v, w, and x. When such a discrepancy exists, the state is one of incongruence between self and experience.
>
> (In Koch, 1959, p. 203)

"Experience" in Rogers terms appears to mean external events and behaviour as well as the person's internal organismic experience. In other words, incongruence can exist between the self-concept and behaviour or environmental feed-back; or, between the self-concept and the "true", organismic self.

He goes on to say that when this happens part of the person's behaviour is in accordance with her true self and part is in

accordance with her self-concept so that her behaviour is at times contradictory and incomprehensible even to herself. In the context of this research an apt example would be a dieter who binges in spite of consciously wanting to be slim.

4.1.2 Self-concept as a social product and the organismic valuing process

Interpreting Rogers' theory, Hjelle and Ziegler (1976, p. 299) say that the self-concept, and this would include body concept, is to a large extent a social product; and, as will be shown later, so is the current pre-occupation with slimness. Hjelle and Ziegler (1976, p. 298) say that Rogers is not interested in developmental theory as such but rather with the ways in which interactions with significant others, particularly parents, either positively or negatively influence the self-concept which incorporates body image. In a previous chapter, however, it was shown that these interactions are central to the development of the self-concept.

As Hjelle and Ziegler (1976) see it, Rogers believes that at birth a baby evaluates all events according to the organismic valuing process (similar to the above reference to the "true self"). This means that a baby evaluates experiences according to whether they were pleasant or unpleasant and as such either did, or did not, enhance and maintain the organism.

Theoretically, if this organismic valuing process were to be trusted and followed throughout life, the person would naturally

become what she was genetically programmed to be (Rogers' actualising tendency), and would be an undefensive, fully-functioning person. In its task to maintain and enhance the organism, the organismic valuing process would presumably also regulate the person's intake of food to the optimal amount for that person so that she would be neither too fat nor too thin but would be her own right weight. Seen in this light, being over the body's own "natural" weight - the weight that would be maintained if the person were eating only the amount necessary to maintain and enhance the organism - would be an indication that something was wrong, i.e. overweight would be an indication of defensive behaviour.

How can this be explained in terms of Rogers' theory and in terms of the overall statement of this thesis? As has been stated already, the self is largely socially defined. Rogers said :

> As the awareness of self emerges, the individual develops a need for positive regard ... the expression of positive regard by a significant social other can become more compelling than the organismic valuing process ...
>
> (In Koch, 1959, p. 223 - 224)

From this need for positive regard, a need for positive self-regard develops as the person becomes her own "significant other". If this positive regard is given conditionally by significant others then the individual begins to seek this approval rather than trust her own valuing process and these conditions of worth prepare the ground for alienation from

the self and for defensive behaviour. In a sense she becomes her own, critical, "significant other" and is at war with herself : she cannot approve of herself nor be approved of by others.

4.1.3 A hypothetical case

Consider a hypothetical case based on the previous example of a young woman who is denying her physical attractiveness and her own sexuality. Suppose as a little girl this young woman was brought up to believe that sex was dirty and that her parents strongly disapproved of her interest in it but they valued, instead, her purity and would withdraw their love if she let them down.

The safest thing this little girl could do to maintain her parents' positive regard would be to deny her own sexuality and to be "unsexy". However, if she were constantly reminded of her sexual nature by people who told her how attractive she was, her derived self-concept of an unsexy person would be constantly threatened. A solution would be to behave in a way that would confirm her self-concept of being unsexy by, for instance, becoming fat so that outer reality and her self-concept would coincide.

But her difficulties would not yet be over. She would not be aware of this unconscious conflict and would be aware only that she was an overweight person in a slimness-obsessed society. Her already negative self-concept, based on the unconscious conflict between being sexual and her parents' concept of "nice

girls are not like that", would become increasingly poor because, in addition, she would not be meeting the conditions of worth, i.e. to be slim, set by her society, probably including her parents. She might go on a diet. But as the weight dropped off so the compliments implying her sexual attractiveness would increase and the young woman would once again be threatened with recognising her denied sexuality which contradicts her unsexy self-concept. To preserve her integrity she would have to resort to behaviour that would keep her self-image in tact : she might eat to get fat and thereby regain her safe but unattractive body.

4.1.4 Rogers' concepts relevant to this research

Arising from the above some of Rogers' concepts need to be explained.

4.1.4.1 Threat

Byrne (1974, p. 302) says, "In Rogers' theory ... experiences incongruent with the self-concept are perceived as threatening". But, he goes on to say, this incongruity need not be perceived at a conscious level. Rogers himself (in Koch, 1959, p. 204) says threat exists when an experience is either perceived or subceived as being contrary to the self.

4.1.4.2 Anxiety

Anxiety (Byrne, 1974, p. 302; Rogers in Koch, 1959, p. 204)

is an emotional response to threat by a person who only dimly perceives that an incongruence between experience and self-concept, drastic enough to precipitate a change in her self-image, is about to force itself into her conscious awareness.

4.1.4.3 Defence

To maintain consistency between experience and self-perception the organism adopts strategies to prevent the symbolisation of the incongruity in awareness. This is known as defence. Rogers recognizes only two defence mechanisms : denial, whereby the person totally denies the existence of the experience; and distortion, whereby the meaning of the experience is twisted to make it accord with the self-concept.

4.1.5 Concepts relevant to this research

The above do not constitute all Rogers' concepts but only those most relevant to this research.

The preceding paragraphs have dealt with Rogers' theory of the self-concept and have emphasised those aspects of the theory that deal with a person's tendency to behave in accordance with the self-concept and the need to maintain consistency between self-perceptions and experiences. When an incongruity between the two threatens to force its way into awareness where it might cause personality disorganisation the person becomes

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defensive and either distorts or denies the experience. On the other hand, the psychologically healthy person would be able to assimilate the new information about the self and alter the self-concept accordingly.

Related to body image (which has been shown to be an integral part of the self-concept) and weight loss maintenance, this would seem to mean that if a person has a fat body image but loses weight she will be threatened by the contradiction between how she sees herself and her actual experience. Her alternatives would be to alter the self-image, deny or distort the experience, create an experience in line with the self-image, or become psychologically disorganised. The overall hypothesis of this thesis is that such a person will tend to regain the lost weight not only to maintain consistency between self-perceptions and experience but also to behave in accordance with the self-concept.

4.2 Kenneth J Gergen

The writing of Gergen (1971) seems to support Rogers' contention that a person selectively picks up environmental cues to fulfil some inner need.

4.2.1 Biased Scanning

Gergen spoke of motivation and biased scanning and believed that a person scanned both the environment and the memory in search of confirmation or disconfirmation that his behaviour

was acceptable. He said :

> When the circumstances for confirming one's identity are ambiguous, one's motives may have a strong impact on which cues are selected for consideration. Specifically, there is a strong tendency to select out those cues that provide positive confirmation - that is, gratify one's aspirations.
>
> (Gergen, 1971, p. 53)

However, he went on to say :

> One note of caution is necessary in the interpretation of the research findings in this domain. While the research illustrates that biases occur, the precise processes underlying this tendency are not clearly understood.
>
> (Gergen, 1971, p. 54)

In considering Gergen's point of view, it is necessary to look closely at his words. He clearly postulates that motives are the driving force behind the selection of environmental cues then he goes on to talk about "positive confirmation" and "gratifying aspirations". It seems necessary to point out that these could also be negative aspirations.

There has been a substantial amount of research to support Gergen's contention that perceptual scanning is biased : Levine and Murphy (1943), Pepitone (1950), Rosen (1954), Taft (1954), and Eriksen and Browne (1956).

4.3 Festinger's Theory of Cognitive Dissonance

Similarities can also be drawn between Rogers' arguments, Gergen's arguments, and Festinger's theory of cognitive dissonance. Festinger

(1958) argued that wherever cognitive dissonance (inconsistency) occurred the person would try to reduce it.

4.3.1 Sources of dissonance

Discussing the concept of cognitive dissonance, Freedman, Carlsmith and Sears (1974, p. 344) said there were three important sources of cognitive dissonance : logical inconsistencies; inconsistency in the same individual between an attitude and a behaviour or between two behaviours; and the disconfirmation of a firmly held expectation. They also named three ways to reduce the dissonance (1974, p. 346); by making the dissonant elements seem less important; by adding consonant elements; or by changing one of the elements so that it was no longer dissonant with the other.

4.3.2 Dissonance and defence

Interpreting Festinger's theory, Maddi said :

> Festinger's emphasis is not ... exclusively on rationality and on fitting cognition to the actual dimensions of a real world of events. Instead, Festinger contends that the person will change one or other of the cognitions involved in the dissonance, or, for that matter, the nature of the relationship between them, without regard to the niceties of the real world. According to Festinger, the persons are as likely to distort reality as anything else in their attempt to avoid dissonance.
>
> (1980, p. 174)

He (1980, p. 175) then drew a parallel between Festinger's argument and Rogers' "... notion of defence as a distortion of reality".

The once fat, now thin, person who still sees herself as fat despite the contrary evidence of her clothes, the mirror and other people's appraisals, may well be seen in this context.

4.3.3 Rogers and Festinger

Maddi (1980) pointed out an important difference between the theories of Rogers and Festinger : he said that Rogers placed greater emphasis on the inherent nature of man whereas Festinger placed greater emphasis on environmental feedback. He classified Rogers as a fulfillment theorist concerned with the unfolding of man's inherent nature; and Festinger as a consistency theorist concerned with the match and mismatch among cognitive elements.

Earlier, however, it was pointed out that there are elements of consistency theory in Rogers' approach : he postulated that the individual sought out events that tended to confirm his self-concept and was threatened by those which did not.

4.4 George Kelly's Personal Construct Theory

Another personality theorist, classified by Maddi under his consistency model, whose theory is relevant to this research, is George Kelly, commonly considered to be a cognitive theorist. In considering his theory, Maddi's thoughts about the "consistency model" should be kept in mind.

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4.4.1 The process of construing

Kelly (1955) saw man as a scientist in that he formulated working hypotheses about reality with which he continually tested reality in an attempt to predict and control the events of his life.

Maddi (1980, p. 160) said, "According to Kelly, the person's first step in attempting to predict and control experience is to engage in the construing of events".

Kelly (1955) made it clear that construing is an interpretive process, whereby the person classifies events according to their similarities and differences. He then uses these abstractions and generalisations to make sense of the world. Kelly said :

> Man looks at his world through transparent patterns or templets which he creates and then attempts to fit over the realities of which the world is composed. The fit is not always very good. Yet without such patterns the world appears to be such an undifferentiated homogeneity that man is unable to make any sense out of it.
>
> (1955, pp. 8 - 9)

4.4.1.1 Constructs

These "transparent patterns or templets", which were the results of the process of construing, he named constructs. According to Kelly these constructs were bi-polar and dichotomous in nature, e.g. fat - thin, reflecting the person's tendency to make sense of reality in terms of similarities

and contrasts. Many different constructs could be developed about any one event but rather than remaining separate these would be organised into hierarchical construct systems.

These systems had a pyramidal structure; that is, constructs are either superordinate or subordinate in relation to other parts of the system. This means that some constructs include others, whereas others are included. Bjelle and Ziegler (1976, p. 224) give the example : a person may have a superordinate construct good - bad which subsumes the construct sexy - unsexy, which is to say sexy - unsexy is subordinate to the superordinate good - bad for that person.

Kelly designated constructs as permeable, preemptive, constellatory, and propositional. By permeable he meant the construct could admit new events whereas if the construct were impermeable it could not be used to interpret new events. By preemptive he meant the construct pigeon-holed events so that they were classified in one way and not in any other. By constellatory he meant the construct necessarily implied other constructs in the manner of stereotyping, e.g. if this person is fat, then she is also lazy, dirty, and weak. By propositional he meant the construct, contrary to a constellatory construct, allowed for alternatives and modifications, e.g. construing a person as fat did not mean that other fixed characteristics necessarily followed.

4.4.2 The elaborative choice

A difficulty with Kelly's theory is that he does not adequately explain how the person will select a particular construct or particular pole of a construct, and how this will be translated into action. The closest he comes to this is in his explanation of what he called the elaborative choice :

> A person chooses for himself that alternative in a dichotomized construct through which he anticipates the greater possibility for extension and definition of his system.
>
> (Kelly, 1955, p. 64)

This leaves two possibilities open to the person : to choose adventurously in the hope of broadening his understanding and construct system; or to choose conservatively in the hope of confirming the already existing construct system. Either way the aim is to be accurate in his prediction. Two types of people might emerge who could correctly predict their world most of the time : those who so constrict their experience that anticipation is not difficult; and those who so expand their construct systems that almost any event can be correctly anticipated.

4.4.3 Constructs, the elaborative choice and personality

Although Kelly never explicitly defined the term "personality", the significance he attributed to constructs in personality development and in behaviour is evident in his writings. He said (1955, p. 46), "A person's processes are psychologically

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channelized by the ways in which he anticipates events".

Presumably he meant by this that people behave in terms of their expectations about events. Maddi (1980, p. 169) favoured this explanation.

4.4.4 Change and anxiety

The last questions to be dealt with under Kelly's theory are those of change and anxiety. It seems that a person's construct systems are made up of the results of rational, ongoing, trial-and-error experimentation. When a construct can no longer accurately predict events within its range, that is, when events disconfirm an expectation, then anxiety is aroused by the inconsistency. It is likely, then, that the construct will be changed and the consequent predictions will be tested. But it is not always as simple as that. Change is in the first place dependent on the permeability of the construct and, secondly, on whether the person has the necessary constructs for construing change. In other words, it is possible for the person to be psychologically rigid and, therefore, anxious.

4.4.5 Constructions of reality and objective reality

The important message in Kelly's theory is that people do not see and react to the world as an objective reality but rather in terms of their own interpretation of reality - and interpretations are subject to revision. Commenting on this doctrine

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of "constructive alternativism", Hjelle and Ziegler said (1976, p. 214), "All could be changed if people could only learn to see them differently".

Related to Rogers' theory of the self-concept, this would mean if a person changed the way in which she construed herself she would be able to change her life. Such ability to change would be dependent on how permeable, preemptive, constellatory, or propositional her constructs were and, whether or not she possessed constructs for change.

Suppose she saw herself as fat and she understood this to mean that she was also greedy and weak-willed. One might predict that at a banquet she would expect to over-eat. If, as Maddi suggested, a person is likely to act in accordance with her expectations, then she would indeed behave as a glutton, gain more weight, and so confirm her constructs and her self-concept.

4.4.6 Rogers and Kelly

This goes hand-in-hand with Rogers' theory of maintaining and enhancing the self-concept. Again it must be pointed out that this is equally relevant to a negative concept as it is to a positive concept.

Maddi's (1980) comments about what he termed "consistency theory" are highly relevant here to Rogers' theory of the self-concept, although he did not classify Rogers as a consistency theorist.

They also capture the essence of what this chapter has been about :

> ... the consistency model emphasizes the importance of the information or emotional experience the person gets out of interacting with the external world. The model assumes that there is a particular kind of information or emotional experience that is best for the persons, and hence, they will develop personalities which increase the likelihood of interaction with the world such as to get this kind of information or emotional experience.
>
> (Maddi, 1980, p. 156)

4.5 The Relationship between Self-Image and Body Image

Arising from the discussion of Rogers' theory, and other related theories, which are the pivotal point of this research, it is necessary to establish the link between self-image and body image so that its relevance to this research can be demonstrated.

Van der Velde (1985) saw the body as cardinal in both personality development and in human relationships. He said :

> ... body images are fundamental dynamisms in the development of self concept; they contribute to the characteristics of personality; they are our mental blueprints for the organization of our social behaviour.
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> (1985, p. 527)

4.5.1 Research findings

Research seems to have borne out a positive relationship between body concept and self-concept, body esteem and self-esteem.

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Secord and Jourard (1953, p. 343) stated their position strongly, "It is the thesis of the present writers that the individual's attitudes towards his body are of crucial importance to any comprehensive theory of personality; yet little attention has been given to this subject by psychologists".

They looked at one variable : body cathexis, by which they meant the degree of satisfaction or dissatisfaction that the individual felt with his or her body. The authors felt that if body cathexis were to be seen as important for personality theory, it would be necessary to show that it was related to important personality variables. Their main hypothesis, that feelings about the body were commensurate with feelings about the self when both were measured by similar scales, was supported and they concluded that valuation of body and self did tend to be commensurate.

Their findings were later refined by Rosen and Ross (1968) who, when reviewing the work of Secord and Jourard, felt that :

> these authors did not take into account that certain parts or processes in evaluating his body and self-concepts. If the score taken from a list of items is to be an accurate reflection of an S's attitudes toward his body and self, that score should take the relative subjective importance of the aspects being rated into consideration.
>
> (1968, p. 100)

To do this they slightly modified the methodology of Secord and Jourard to allow for the inclusion of subjective importance. Their results showed (1968, p. 100), "satisfaction with body

image and satisfaction with self-concept are positively related and that their measurement can be refined if the subjective importance of component aspects is given consideration".

Using a sample of 200 college freshman women in a correlation study, Z [illegible] (1965) investigated a number of relationships between self-concept and body concept. She concluded :

> The results of this study indicate that there is a significant linear relationship between self-concept and body concept in most of the dimensions measured. It appears that the security one has in one's body is related to the security with which one faces one's self and the world.
>
> (1965, p. 494)

Other researchers such as Lerner, Karabenick, and Stuart (1973) also found, in a group of adolescents, that feelings about the body were correlated with feelings about the self. Garner and Garfinkel (1982, p. 146) found that self-esteem was positively correlated with body satisfaction and ideal body size in a group of anorexics.

A similar link emerged in the research of Hammer, Campbell, Campbell, Moores, Sareen, Gareis and Lucas (1972) who compared certain personality variables of obese and nonobese subjects. Referring to the obese subjects, they said (1972, p. 378), "The major differences between obese and nonobese groups were in negative body image and low self-esteem, depression, and lack of confidence and experience in social interaction".

Mendelson and White (1982) made similar findings in their investi-

gation into the relationship between body esteem and self-esteem in thirty-six children of differing weights and whose ages ranged from seven-and-a-half years old to twelve years old. They found that body esteem and self-esteem were significantly correlated both in the group of sixteen who were fifteen per cent and more overweight and in the group of twenty who were less than fifteen per cent overweight. Furthermore, they found that body esteem was correlated with relative weight; the fatter children viewed their bodies and personal appearance more poorly than did those of more normal weight.

4.5.2 Summary

From this it appears that not only is there a link between self-concept and body concept but there is also a consistent difference in the self-body-concepts of the obese and the nonobese from childhood to adulthood.

Chapter Five

THEORETICAL RATIONALE, AIMS, AND HYPOTHESES

In this chapter the concepts presented in the earlier chapters will be integrated to show how the hypotheses were generated from the theoretical basis. The aims of the study and the hypotheses will follow.

5.1 Theoretical Rationale

5.1.1 Theoretical psychological basis

Central to this study is Rogers' contention that an individual seeks to maintain a state of consistency among her self-perceptions and her experience. Incongruence between the two can lead to psychological maladjustment in that the person may deny or distort reality in order to fit some preconceived self-structure which might be either positive or negative.

This line of thinking is supported by Festinger's theory of cognitive dissonance. Festinger (1958) postulates that whenever cognitive dissonance (inconsistency) occurs the person will try to reduce it. Maddi (1980) pointed out that Festinger placed no emphasis on the rationality of the fit achieved : reality was as likely as anything else to be distorted.

Kelly (1955), too, placed great emphasis on the way in which the person construed, that is, interpreted, her world. He postulated that a person approached the world as a scientist trying to predict and control the events of her life. To do this, from experience, she developed bi-polar dichotomous constructs, e.g. good - bad, which she used to make sense of the world. Some constructs are more general or ordinating than others and so subsume more experience, as well as other constructs, within them.

As was stated earlier, a core concept for Kelly was :

> A person chooses for himself that alternative in a dichotomized construct through which he anticipates the greater possibility for extension and definition of his system.
>
> (1955, p. 64)

This was seen to imply that the person might choose adventurously to extend the construct system or conservatively to confirm it, so long as the choice was felt to be predictive.

Although Kelly's theory emphasizes more the ability to change, he includes the possibility of rigid, stereotypic, thinking in his description of impermeable constructs and constellatory constructs. It is also possible that a person may not have the constructs with which to construe change and may constrict his experience through the conservative elaborative choice.

5.1.2 Research on obesity and on body image

In the literature reviewed in the previous chapters there was evidence that some overweight individuals, although not all, tended to see themselves almost exclusively in terms of their obesity. It seemed, too, that this obese body image - or construct - was often intractible even after considerable weight loss.

In line with the psychological theories discussed above, Cash and Green's (1986) definition of body image as a self-attitude was chosen for the purposes of this research. It suggests, and this was confirmed in the literature, that body image and self-image are closely linked.

That body image does not necessarily coincide with actual appearance was illustrated in the discussion of the phantom limb. This indicated that in the face of a sudden loss of a body part the person attempted to preserve the integrity of the body image through the phantom. This was seen to be a healthy adjustment in traumatic loss provided the phantom disappeared over time, plus-minus two years.

Similarly to the phantom limb, it was suggested that some formerly obese, but now slim, people carried with them a "fat person within", particularly if they had lost weight very quickly, and continued to see themselves as they always had done. Instead of this phantom disappearing over time, however, it acted as the self-concept which the person sought to actualise. That

is, the person would regain the weight so as to avoid the threat of inconsistency between self and experience or, stated differently, to reduce cognitive dissonance or to continue to predict and control events as before.

The likelihood of carrying the fat person within seemed to be related to the age of onset of obesity. Those who had been fat since childhood were more likely to have a rigid body concept. A possible explanation was that adolescence was a critical period for identity formation (Erikson, 1959, 1968).

5.2 Aims of this Study

This study has been undertaken in the light of the extent and importance of the problem of obesity among women and the dismal success rate in treating the problem because of the high relapse rate. It is known, as was discussed earlier, that the majority of women who lose weight regain it.

The aim of this research was to find out, in terms of the above theoretical rationale, if body image had a direct bearing on whether or not a formerly obese woman who had dieted and reached her goal weight would maintain the weight loss. The purpose of this was to see if body image could be used as a predictor of success or failure in weight loss maintenance. If body image is able to predict weight loss maintenance this would have significant implications in the treatment of obesity.

5.3 Hypotheses

In the light of the above, the author contends that weight loss and current weight have very little to do with how a person thinks and feels about herself; this it is, in fact, difficult to detach from a previous body image. If this were not so then present body image and ideal body image, when viewed from the point of view of weight, would correspond in those who had reached goal weight. Any discrepancy between the two would indicate a difference between actual and perceived self. The thrust of this research is : the greater the disparity between the perceived body image and actual body image after weight loss the more the person would be inclined to regain lost weight. This would be compounded by a sudden, large, weight loss because the faster and more drastic the change, the less likely it would have time to be incorporated into the body image. This would be most pronounced in those with juvenile onset obesity.

Hypothesis 1 : Those with juvenile onset of obesity will have greater discrepancy scores between present and ideal body images than those with adult onset of obesity.

Hypothesis 2 : The greater the weight loss the greater the difference between the present body image and the ideal body image.

Hypothesis 3 : The faster the weight loss the greater the difference between present body image and ideal body image.

Hypothesis 4 : The greater the discrepancy between the present body image and the ideal body image the more likely the subject will regain lost weight in a six-month follow-up period.

Chapter Six

METHODOLOGY

6.1 Introduction

This study took place between April 1986 and November 1986. The subjects were all formerly overweight women who had dieted and had just reached, or very nearly reached, their goal weights. In line with Kelly's personal construct theory, they were required to construct their own scale - related to obesity for the purposes of this study - and to rate themselves on it twice : firstly, in terms of their current assessments of themselves; secondly, in ideal terms. Their weights were also recorded. Six months later the subjects were weighed again.

6.2 The Subjects

The sample of forty-four subjects were all adult, white women who had formally sought assistance to lose weight and who had just reached, or almost reached, their goal weights.

The sample was restricted to white subjects because of cultural differences between the races with regard to obesity, i.e. in westernised society great value is placed on slimness whereas fatness, particularly in women, is regarded as beautiful in many black cultures

in South Africa. Only adult subjects were recruited because, as has been discussed, body image is presumed to crystalize during adolescence.

Forty-four subjects were in the original sample. Three were excluded from the final sample because one had moved overseas, one was pregnant, and the third refused to be reweighed. She was prepared to give her weight over the telephone but this was considered to be unreliable and was discarded.

Dieters who had formally sought outside help in losing weight were chosen as subjects because the agencies would have reliable, documented, data concerning original weight, amount of weight lost, and length of time taken to lose the weight.

6.2.1 Women only

Only women were used in the study because it appears that obesity is more a woman's problem than a man's - which is reflected in the practical problem of finding men subjects should a researcher need them - and that women are generally more concerned with their bodies and their appearance than men.

Research has borne out that women are more likely to be overweight than men (Hall and Havassy, 1981) and that it is psychologically more important for them (Berscheid, Walster and Bohrnstedt, 1973; Cash, 1985; Fallon and Rozin, 1985; Gray, 1977) probably because excessive slimness has become an idealised standard

for women in western society (Garner, Garfinkel, Schwartz and Thompson, 1980; Guy, Rankin and Norvell, 1980; Orbach, 1978).

Hammer et al., in their study on adolescent obesity, said :

> The obese girls, particularly, could site few positive attributes about their bodies; they were very dissatisfied with their physical characteristics and intensely disliked their figures ... As well as being concerned about their adiposity, they were extremely self-deprecating ... In general, the girls were more obsessed with their obesity.
>
> (1972, pp. 377 - 378)

Using the Draw-a-Person test and Secord and Jourard's body cathexis scale, Hunt and Feldman (1960) found that women showed greater variability in reporting satisfaction and dissatisfaction with their bodies which indicated that they cathected their bodies more highly than men did.

6.3 Goal Weights

The goal weights were set by agreement between the dieter and her doctor or her lecturer at the weight-reducing club she attended. They were set at the start of her dieting programme before either she or her lecturer had been approached in connection with this study. The goals were in accordance with the weight for height, age and sex charts used by these agencies. The different charts were closely matched and an example of the one used by the agency from which most of the subjects were obtained for this study appears in the Appendix A.

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6.4 Original Weights

The subjects had to have been ten per cent overweight when they started to diet. This was determined as either ten per cent over the weight which was originally agreed upon as the goal weight or as ten per cent over the weight they had reached on the first day of testing - two subjects had readjusted their original goal weights to make them lower which made them eligible as subjects.

Although the literature on weight loss indicates that different researchers use different percentages in their definitions of overweight, ten per cent is commonly used and was recently used by Cash and Green (1986). Also, the weight reducing populations at formal institutions for weight loss appear to be about ten per cent and more overweight. In other words, in practice, it seems that around ten per cent overweight is a critical point at which women seek help to lose weight.

6.5 Methods of Weight Loss

Dieting was chosen as the only method of weight loss because methods which involve exercise or machine massage could have effects, uncontrolled for, on body image. The present sample was recruited from Weightless, Weight Watchers, and Proper Eating Training (P.E.T.), groups on the Witwatersrand, and a private Johannesburg doctor who specialises in weight loss. The vast majority of the final sample were members of Weightless, nine were from Weight Watchers, one from P.E.T. and two from the doctor. The sample was made up

in this way because of the differing responses from the agencies approached e.g. originally three doctors were approached.

6.6 Follow-Up Time

Follow-up times that have been too short to be meaningful in outcome studies of the treatment of obesity have been severely criticized. Wilson said :

> A major shortcoming in research on the treatment of obesity is the relative lack of long-term follow-up evaluations of the therapeutic efficacy ... The significance of this striking deficiency is high-lighted by the fact that obesity is a clinical disorder that has been characterized by consistently high relapse rates; that is, clients who lose weight during treatment usually regain it.
>
> (1978, p. 698)

A follow-up period as short as four weeks was used by Harmatz and Lapuc (1968) in assessing the relative merits of contingency contracting versus group therapy in weight loss and weight loss maintenance.

It must be stressed that the present study is not a study validating treatment outcomes but rather a study seeking to predict a defensive weight gain immediately after weight loss because of the threat that slimness holds to the self-concept. Therefore, it was felt that a relatively short follow-up period would be the most effective.

A six-months period was chosen because it was felt to be long enough for a meaningful amount of weight to have been gained and short enough to minimise the dangers of the subjects reverting to dieting or resorting to other methods of weight loss that would create

problems in interpreting the data.

Nutritionists (Davidson, Passmore, Brock, Truswell, 1979) consider a ten kilogram gain a year a "rapid gain" but a daily fluctuation of about one kilogram, which is not cumulative, is considered to be within normal limits. Theoretically speaking, then, anything over one kilogram could be considered a weight gain.

6.7 Test Materials

The test materials used in this study were a bathroom scale and an assessment scale which consisted of a biographical sheet, a personal construct pyramid and a personal construct rating scale both based on Kelly's personal construct theory. See Appendix B.

This form of assessment was selected because it had been used successfully by Leitner and Grant (1982) to relate personal construct change to weight reduction. More particularly, it elicits the idiosyncratic significance of overweight for each individual and shows how, for that person, overweight is related to self-concept; also, flowing from the theory, it lends itself to measuring change and is therefore suited to a study interested primarily in discrepancy scores.

Leitner and Grant said :

> Since, within construct theory, the system evolves by relating different dimensions to one another, change on certain dimensions can imply change on other constructions ... Thus, change on a dimension involving the

self as overweight could have implications for change on other constructs.

(1982, p. 492)

6.7.1 Scale construction

Essentially the subject constructs her own scale. The researcher, with the aim of eliciting seven bi-polar weight-related constructs, starts by giving the subject the first pole of the first construct : in this case "overweight". The subject is asked to give what is to her the opposite of this pole. She might say, "thin", which would then constitute the opposite pole. The researcher then asks, "What is an overweight person like?" She writes down the response under the "overweight" construct and asks again for the contrast. The same procedure is followed with "thin" and so on to a third tier which completes the seven constructs. These constructs are used to make a thirteen-point bi-polar scale, ranging from six on the one pole through a mid-point of zero to six on the opposite pole, on which the subject must rate herself. The subject, herself, names the positive, negative or neutral poles. In this study, as in Leitner and Grant (1982), the subjects had to rate themselves twice : firstly, on their present bodies; secondly, on their ideal bodies.

The total discrepancy score is calculated by determining the differences between the two ratings which has a minimum of zero and a maximum of eighty-four (zero to twelve on each construct multiplied by seven constructs). For example, if the subject scored a five on a particular construct on a particular pole

when evaluating her present body, and a three on the same construct on the same pole when evaluating her ideal body, she would have a change score of two, however, if her rating shifted to a three on the opposite pole her score would be eight.

6.7.2 Weakness in the scale and an attempt to strengthen it

While the positive aspects of the personal construct scale have been stressed, there is also a negative aspect as far as research is concerned. The scale is more qualitative than it is quantitative and, in trying to ensure that it captures the meaning of overweight for the individual, it loses in the generality of having the same set of constructs for all individuals. To compensate for this without sacrificing the richness of the scale, a rater studied all the adjective pairs (a list appears in the Appendix C) and classified them into seven major categories : weight (which was given and, therefore, common to all); happiness; relationships; appearance; self-esteem; fitness; and general.

The general category was used as catch-all category to classify all those adjective pairs that could not be meaningfully classified elsewhere. As there was no relationship between the constructs, e.g. intelligent - unintelligent, envious - pleased, reliable - shiftless, and they were basically used only one or twice in a small sample of thirteen, this category was jettsoned.

A second rater then independently assigned the adjective pairs to the major categories. There was a high degree of agreement

between the raters and the modified scale was used to quantify the data. This enabled the author to identify generally significant components of weight related body images and the contributing role these played in weight loss and gain.

6.7.3 Calculation of the scores on the scale

Because some people might have had four adjective pairs on their scale referring to one category, while others might have only one etc. an average score per unit was used. In other words if the person had four pairs in one category then the total discrepancy score was divided by four. This would then make it comparable to the scores of others who may have had more or fewer scores in the same category.

6.8 Statistical Procedures

Throughout, Pearson Product Moment Correlation Coefficients were used to determine the extent of relationships. To examine the hypothesis on age a one-way analysis of variance was used. In the later investigative analysis a two-way factorial design analysis of variance was employed.

6.9 Procedure

To reach the subjects, the author telephoned all the lecturers, about forty altogether, for the three above-mentioned weight reducing clubs on the Witwatersrand after first obtaining permission from their head-offices. The lecturers were briefed about the aim of

the study and about the kinds of subjects required. The lecturers then approached suitable candidates to ask them if they would like to participate in the study. If they were willing she passed on their names and telephone numbers to the author who then arranged to see each one individually to administer the personal construct scale. The subjects were weighed on the author's bathroom scale and their weights which were at, or close to, goal weight were recorded.

This initial part of the study was carried out throughout April 1986. It took an average of more than two hours per subject to collect the data, not counting the follow-up, because of the difficulty in finding suitable subjects and because they were scattered over such a wide area.

At that stage the subjects were told that there was a possibility that the author would have to see them again sometime in the future. The purpose of the follow-up visit, and when it would take place, was not disclosed so that the subjects would not diet just before the visit.

Six months later the author telephoned the subjects to say she needed to see them again very briefly. The subjects were not told of the reason for the visit, which was to weigh them, and a time was arranged for within two days of the call. The short notice and lack of explanation were both to ensure that the subject did not hastily diet to "please" the researcher. They were weighed on the same scale that had been used at the original contact.

The doctors were approached in a similar manner. Letters were written to three who were known to specialise in weight reduction (see Appendix D). The purpose of the study was explained to them and they were requested to help recruit subjects. The letters were followed-up telephonically. One doctor was unable to produce suitable candidates at the time; the second produced unsuitable candidates; the third invited the author to a group meeting he routinely held to give tips for weight loss maintenance to patients who had just reached goal weight. There were about thirty people at this meeting but only three responded to the doctor's request that they volunteer for the research. Subsequently one dropped out of the study. The same modus operandi was used with them as with the other subjects.

Chapter Seven

DATA ANALYSIS

The data will be presented so as first to show the construct validity of the derived constructs, then it will be structured according to the presentation of the hypotheses. Finally, additional analyses will be presented to elucidate certain points which arose from the earlier work.

7.1 A Correlation Matrix to Show the Construct Validity of the Derived Constructs

In the correlation approach to investigate construct validity - which is to be used here - it should be shown that the construct being validated has a high correlation with other conceptually similar constructs and low correlations with conceptually different constructs (Huysamen, 1978).

The derived constructs - weight, happiness, relationships, appearance, self-esteem, and fitness - have been abbreviated in the table.

Table 1

A Correlation Matrix to Show the Construct Validity of the Derived Constructs

	wt	hap	rel	ap	s-e	fit
wt	1.000					
ss	41					
hap	0.337*	1.000				
ss	33	33				
rel	0.219	0.464***	1.000			
ss	29	27	29			
ap	0.070	0.038	-0.290	1.000		
ss	24	19	14	24		
s-e	0.524***	0.256	0.653***	0.634**	1.000	
ss	18	16	14	10	22	
fit	0.225	-0.390	-0.237	-0.124	0.000	1.000
ss	12	12	8	10	8	16

* significant at ten per cent

** significant at five per cent

*** significant at two-and-a-half per cent

Where ss stands for pair-wise sample size.

The correlation between weight and self-esteem seems to confirm the findings in the literature that weight and body esteem, and body esteem and self-esteem, tend to be related. Indeed, self-esteem seems to be highly correlated with several other constructs that imply self-involvement e.g. appearance and relationships.

Other constructs that might be expected to be related e.g. happiness and relationships show a moderate correlation while conceptually different constructs such as happiness and appearance do not.

It is acknowledged that the sample sizes are very small, but within these limitations, it would seem that the constructs have meaning because the correlations are as would be expected.

7.2 Data Relevant to Testing the Hypotheses

As far as the hypotheses are concerned, only data relevant to testing the hypotheses will be presented here. Additional tables of means and standard deviations appear in the Appendix E.

7.2.1 Hypothesis 1

Those with juvenile onset of obesity will have greater discrepancy scores between present and ideal body images than those with adult onset obesity.

A one-way analysis of variance was used to examine this hypothesis.

Table 2

Means and Standard Deviations of Age of Onset of Obesity

	SS	Means	Sds
adult onset	21	1.571	0.954
child onset	20	1.243	0.705

Table 3

Analysis of Variance : Age of Onset

Source	Df	MS	F	P
Onset	1	1.106	1.56	0.219
Error	39	0.709		

If anything, the trend is in the opposite direction to that which was expected. Therefore, hypothesis one was not confirmed.

7.2.2 Hypothesis 2

The greater the weight loss the greater the difference between the present body image and the ideal body image.

Pearson Product Moment Correlation Coefficients were calculated to determine the extent of the relationship between the discrepancy scores on the derived constructs and both the absolute and relative weight losses.

Table 4

Correlations between Absolute Weight Loss, Relative Weight Loss and Derived Constructs

Constructs	N	r:O-A	r:(O-A)/O
Weight	41	0.060	0.074
Happiness	33	0.012	-0.061
Relationships	29	0.059	-0.070
Appearance	24	-0.226	0.202
Self-esteem	22	0.040	0.072
Fitness	16	-0.004	0.051
Total	41	-0.019	-0.008

An examination of the table indicates no significant result, the correlations are all close to zero. This means no relationship was established between the amount of weight the subjects lost and the dissatisfaction, as expressed in discrepancy scores, that they felt with their body images. Therefore, hypothesis one was not confirmed.

7.2.3 Hypothesis 3

The faster the weight loss the greater the difference between present body image and ideal body image.

Pearson Product Moment Correlation Coefficients were calculated to determine the extent of the relationship between body dissatis-

faction, as expressed in discrepancy scores, and the speed at which weight was lost.

Table 5

Correlations between Speed of Absolute and Relative Weight Losses and the Derived Constructs

Constructs	N	r:O-A/T	r:(O-A/O)/T
Weight	41	0.346	0.011
Happiness	33	-0.044	-0.093
Relationships	29	0.125	0.144
Appearance	24	-0.456***	-0.502***
Self-esteem	22	-0.025	-0.029
Fitness	16	0.065	0.121
Total	41	-0.185	-0.224

*** Significant at two-and-a-half per cent

An examination of the table shows that the correlations on all the constructs, except appearance, are close to zero. This means, except for the one variable, there appeared to be little relationship between the speed at which the subjects lost weight and their dissatisfaction with their body images. Therefore, hypothesis two was not confirmed.

In terms of the concept of significance at a ten per cent cut-off point, it may well be that among all the tests, one test, in this case, Appearance, may be significant purely by chance.

On the other hand, this might not be so. A possible explanation for the significant result with regard to Appearance will be explored in the discussion.

7.2.4 Hypothesis 4

The greater the discrepancy between the present body image and the ideal body image the more likely the subject will regain lost weight in a six-month period.

Pearson Product Moment Correlation Coefficients were calculated to determine the extent of the relationship between body dissatisfaction and weight gain six months after goal weights had been achieved.

Table 6

Correlations between Body Dissatisfaction and Weight Gain Six Months after Goal Weight was Attained

Constructs	N	r:F-A	r:(F-A)/O
Weight	41	0.020	0.017
Happiness	33	0.064	0.059
Relationships	29	0.211	0.202
Appearance	24	-0.106	-0.061
Self-esteem	22	-0.126	-0.131
Fitness	16	-0.053	0.115
Total	41	0.116	0.126

An examination of the table shows that the correlations for all the constructs were not significantly different from zero which means no significant relationship was established between body dissatisfaction and weight gain in the six-month period following the attainment of goal weight. Therefore, hypothesis four was not confirmed.

7.3 Hypotheses Not Confirmed

At this point none of the hypotheses have been confirmed. None of the tests with the possible exception of the correlation between speed of weight loss and appearance, produced significant results. Had the hypotheses been confirmed, it would be expected at this stage of a predictive study that the results would be subjected to a stepwise multiple regression or a discriminant analysis. However, because the relevant correlations were not significant and none of the hypotheses were confirmed, it would seem pointless to pursue this investigation further along these lines. But, because so many tests were done and only one was significant, it was necessary to extend the analysis to seek an explanation for these results.

7.4 Further Work to Investigate These Results

In the light of the above, the sample came under scrutiny. On the basis of subsequent weight gain, the sample was divided into four groups along the two dimensions relevant to this research : initial weight loss, and anxiety as expressed in discrepancy scores. The groups were : those who were anxious and who had had to lose

a large amount of weight to reach goal; those who were anxious who had had to lose a small amount of weight to reach goal; those who were not anxious who had had to lose a large amount of weight; those who were not anxious who had had to lose a small amount of weight. In absolute terms, high loss was defined as ten kilograms or more and, in relative terms, as fifteen per cent and more. Figure one shows how the groups were divided.

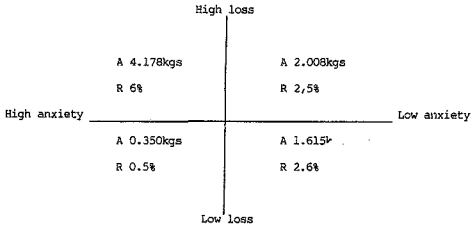


Figure 1. Weight gain groups divided along the dimensions of initial weight loss and anxiety.

Where A stands for absolute gain in kilograms.
Where R stands for relative gain i.e. percentage of total body weight.

A two-way analysis of variance was then carried out.

7.4.1 Means and standard deviations : absolute and relative weight gain

Table 7

Table of Means and Standard Deviations : Absolute and Relative Weight Gain

It must be noted that the cell sizes are small and, therefore, results are likely to be unstable.

		Av. wt. gain in kgs			Av. rel. wt. gain	
Loss	Anxiety	N	Means	Sds	Means	Sds
high	high	9	4.178	4.006	0.060	0.066
high	low	13	2.008	2.466	0.025	0.027
low	high	6	0.350	1.618	0.005	0.025
low	low	13	1.615	4.120	0.026	0.062

7.4.2 Analysis of variance

Table 8

Analysis of Variance Summary Table : Absolute Gain

Source	D.F.	M.S.	F	P
Anxiety	1	1.896	0.17	0.68
Loss	1	41.261	3.65	0.06
Interaction	1	27.344	2.42	0.12
Error	37	11.302		

The only significant effect is that of Loss, an effect which is a significant at six per cent. It appears that, in absolute terms, the people who initially had to lose a lot of weight tended to gain more in the follow-up period than those who had only a little to lose in the first place. In an attempt to clarify what was happening the analysis was extended to see what happened in relative gain.

Table 9

Analysis of Variance Summary Table : Relative Gain

Source	D.F.	M.S.	F	P
Anxiety	1	0.000491	0.20	0.660
Loss	1	0.006929	2.76	0.105
Interaction	1	0.007190	2.87	0.099
Error	37	0.00251		

Here again, a marginal Loss effect is seen, i.e. even in relative terms it would seem that those who initially had the most to lose tended to gain more in the follow-up period. In Table 9 the interaction effect, less obvious in Table 8, is enhanced.

With a sample size as small as forty-one, it is difficult to obtain a significant result. Therefore, at a significance level of ten per cent, although not very significant, it appears that something is happening.

Graphic representation of the interaction effects in absolute and relative gains follow :

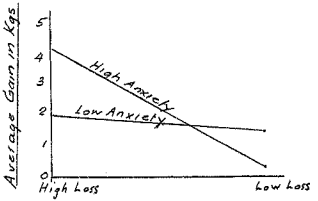


Figure 2. Graph of interaction effects in absolute gain.

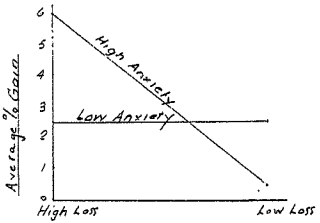


Figure 3. Graph of interaction effects in relative gain.

An examination of the tables and figures indicate :

1) Those with high anxiety who had to lose a lot of weight to reach their goals, gained the most weight;

2) Those with high anxiety who had to lose little weight to

reach their goals, gained the least weight;

3) Those with low anxiety gained a similar, moderate, amount of weight regardless of whether they initially had much or little to lose to reach their goal weights.

Chapter Eight

DISCUSSION

8.1 Discussion of the Hypotheses

Through this research the author set out to show that body image could be used as a predictor of weight loss maintenance in the formerly obese.

To do this four hypotheses were tested which will be discussed briefly below.

The data on body image, as it relates to weight, were obtained by means of a scale derived from Kelly's personal construct theory. The subjects rated themselves twice on their own personal scales which were anchored on overweight : firstly, on the basis of their present body image; and secondly, on the basis of their ideal body images. In terms of this research, the present rating represented how the person actually felt about herself in her own weight-related terms, and the ideal rating represented what she should have felt because she had, in fact, reached her ideal weight. The scale was then converted into a form that could be quantified. This made it possible to look at the constructs and to separate out elements that might show that people who predominantly associated one type of thing with overweight might react differently to those

who were concerned with other aspects.

A discussion of the hypotheses follow.

Hypothesis 1 : Those with juvenile onset of obesity will have greater discrepancy scores between present and ideal body images than those with adult onset of obesity.

This hypothesis was included because the literature suggested that adolescence was a critical period in the formation of identity (Erikson, 1959, 1968), and Stunkard and Mendelson (1967) suggested that body image disturbance originated in those with juvenile onset of obesity who were emotionally disturbed and had internalised the stigma of obesity. This suggested that those with juvenile onset of obesity would have a more entrenched negative body image than those with adult onset.

However, a one-way analysis of variance used to test this hypothesis, did not confirm that those in this sample with juvenile onset of obesity felt any greater dissatisfaction with their bodies than did those with adult onset obesity. In fact, the trend seemed to be in the opposite direction. This is at variance with the bulk of the literature. It is possible that the data on age of onset was unreliable as the author relied on self-report. Further factors related to the sample, still to emerge in the discussion, may also have contributed to this hypothesis not being confirmed. This will be taken up again later.

Hypothesis 2 : The greater the weight loss the greater the difference between the present body image and the ideal body image.

None of the correlations used to test hypothesis two were significant. In fact, all were close to zero. This suggests that no relationship exists between the amount of weight an obese person loses and the discrepancy between how she perceives herself in terms of weight and how she actually is.

Hypothesis 3 : The faster the weight loss the greater the difference between the present body image and the ideal body image.

Hypothesis three was a similar hypothesis to hypothesis two except that it incorporated the speed at which the weight was lost. With the exception of the weight related construct "Appearance", none of the correlations used to test hypothesis three were significant. This suggests that, with one possible exception, no relationship exists between the speed at which weight is lost and the discrepancy between how the person perceives herself in terms of weight and how she actually is.

In the data analysis it was suggested that in terms of the concept of significance it was possible that, because there were so many tests, one could have proved to be significant purely by chance. However, this may not have been so.

From the correlation matrix of the constructs it appeared that weight and appearance were relatively independent constructs. What they had in common was that they were the only two constructs with a concrete impact on others and, by the same token, on the self, i.e. change in both was visible. If it is true, as Kelly's theory suggested, that change on one construct implies change on the others, then what this correlation seems to suggest is that while the body image changed in reality the person's perception of it did not. This would suggest some support for Hypothesis three. However, it is possible that the implied change in appearance did not occur. While this study gives an objective measure of change in weight, there is no objective measure of the change in appearance. Therefore, this point cannot be pursued nor can the correlation be understood to support the hypothesis.

Hypothesis 4 : The greater the discrepancy between the present body image and the ideal body image, the more likely the subject will regain lost weight, in a six-month follow-up.

This is the main hypothesis of this research project. Again, none of the correlations used to test Hypothesis four were significant. This suggests that no relationship exists between body image and regaining lost weight.

At this stage none of the hypotheses have been confirmed and it would seem that body image, as related to weight, could not be used to predict weight loss maintenance in the formerly obese.

However, further work was done to see if there was an explanation for the negative results.

8.2 Further Analyses

8.2.1 Another look at the definition of obesity

Cognizance was taken of the suggestion made by Leon and Roth (1977) that :

> persons attending weight reduction clubs may be different on a number of dimensions from the hypercobese persons seen in hospital settings, even though both groups report an obesity problem of an extended duration.
>
> (1977, p. 133)

They continued :

> A precise definition of obesity may appear to be unimportant if one is choosing massively obese individuals for subjects in a psychological experiment. However, a large number of the studies reviewed ... used the cut-off point of fifteen per cent above ideal body weight as the criterion for obesity. Given the range of error possible in the ideal weight tables, this percentage may fall in the error variance of the table. Therefore it is crucial that the lower limit of obesity be defined and measured as accurately as possible.
>
> (1977, p. 136)

Taking this into account, it would mean that not everyone in the sample used in this study, in which a ten per cent above ideal body weight was the criterion for obesity, was obese. The ten per cent criteria was used in this study in an attempt to generalise the results to those who make up the majority

of the population at weight reduction clubs.

8.2.2 Split sample

Therefore, it was decided to split the sample into four groups. The variables of weight loss and anxiety were each divided into high gain and low gain categories.

Anxiety was defined in terms of the discrepancy scores. It will be remembered from the literature that the discrepancy score was a score of implied change and, in Rogers' terms that would mean anxiety. In point 4.1.4.2 it was stated that Rogers felt that a person would experience anxiety when she dimly perceived that an incongruity between experience and the self-concept, drastic enough to precipitate a change in self-image, was about to force itself into conscious awareness. In this context, the greater the discrepancy score the greater the anxiety.

8.2.3 Differential results

When the sample was split along the above mentioned dimensions an interesting pattern emerged. In the six-month follow-up period, the people who were anxious and who had had a large amount of weight to lose initially, gained a mean of approximately four kilograms in absolute terms, and six per cent in relative terms; those who had had to lose a large amount of weight initially but were not anxious gained a mean of about two kilograms

in absolute terms and two-and-a-half per cent in relative terms; those who were anxious and had little to lose gained a mean of about 0.35 kilograms in absolute terms and 0.5 per cent in relative terms; and those who had little to lose but were not anxious gained a mean of about 1.6 kilograms in absolute terms and 2.6 per cent in relative terms.

When subjected to a two-way analysis of variance a significant interaction effect between weight loss and anxiety was obtained at the ten per cent significance level. But, because of the small sample sizes, caution must be exercised in interpreting these results.

However, the marked differences between the two high anxiety groups in terms of the weight they regained in the follow up period is noteworthy. The high anxiety-high loss group gained the most weight and the high anxiety-low loss group gained the least. In this project the sample was treated as homogeneous as far as obesity was concerned which now it appears it was not. The above analysis suggests that differential factors were operating for high and low loss weight groups. It seems likely that these factors neutralised the results of this research.

8.2.4 Some support for hypothesis 4

Eliminating the low-loss groups, who perhaps cannot be regarded as obese, it can be seen that the high anxiety people did, indeed, gain more weight than the low anxiety people in the

high loss groups. This suggests some support for hypothesis four in that those with the higher discrepancy scores in the high loss group, on average, regained more weight than those with the lower discrepancy scores. However, it must be stressed again that because of the small sample sizes, too much must not be read into these results.

8.2.5 Body image disturbance present or absent

If the discrepancy score indicates a difference between how the subject actually feels about herself and how she imagined she would be at the ideal weight she had reached, then the discrepancy score also differentiates between those with a body image disturbance and those without. It can, therefore, be postulated that those with high anxiety probably had a body image disturbance and those with low anxiety did not. In line with the literature, then, this study suggests that some, but not all obese people have a body image disturbance. By the same token it suggests that it is not necessary to be obese to have a body image disturbance.

8.2.6 Results viewed against findings in research into anorexia nervosa

What remains a puzzle is the difference in average weight gain between the high and low losers who are now presumed to have had a body image disturbance. The high losers, on average, regained a considerable amount of weight whereas the low losers maintained their ideal. This is an interesting phenomena when

viewed against the findings of research into anorexia nervosa. The role of body image disturbance in anorexia nervosa appears to be the mirror image of that in obesity. In anorexia nervosa the person seems to have a phobic fear of actualising a fat body image and displays an avoidance reaction to it, whereas in obesity the person seems to be drawn towards actualising it. Perhaps those who have little to lose to reach goal weight and who maintain it once it has been achieved, form a middle group. While it may then seem that they have beaten the problem in terms of kilograms, the body image disturbance, as expressed in the discrepancy score, remains.

A disturbed body image has been found to be a poor prognostic sign in anorexia nervosa. Looking at the present sample it seems that this may be true, too, for the obese. It was the anxious group who had had to lose the most, who regained the most. However, this is a very tentative finding because of the small sample size. It is also feasible that those who were only slightly overweight did not have to make a drastic adjustment to a vastly different slim body, nor did they have a fat self to actualise. In the discussion on the phantom limb it was pointed out that it was necessary to have had a limb to experience its phantom.

To return to the discussion of the age related hypothesis : the same problem that beset the entire project probably also neutralised the results of this hypothesis. That is, the sample was not homogeneous. In other words, not all the subjects

with juvenile onset had a body image disturbance, nor were they all obese.

8.3 Conclusions

1) The hypotheses of this research were not confirmed. It would seem that differential factors operating within the sample neutralised the results. Because the sample sizes were small, the following conclusions are tentative and merely suggestive.
2) Obesity is not a unitary syndrome.
3) There are differences between the hyperobese and those who are only slightly overweight. Obesity should, therefore, be carefully defined.
4) Some, but not all, obese people have a body image disturbance.
5) Formerly obese people with a body image disturbance tend to regain more weight, on average, than those without such a disturbance.
6) This suggests some support for using body image as a predictor of weight loss maintenance.

Chapter Nine

CRITICISMS OF THIS STUDY AND IMPLICATIONS FOR FURTHER RESEARCH

9.1 Criticisms

Several of the weaknesses of this study have already emerged in the data analysis and in the discussion. However, they will be discussed again here.

The first criticism involves a cardinal concept of this study : obesity. In retrospect, this author realises that the concept was inadequately defined and this seems to have contributed in large measure to the hypotheses not being confirmed. In making the cut-off point to define obesity only ten per cent over goal weight so that the results could be generalised over the widest possible overweight population the concept of obesity was lost altogether. The point made by Leon and Roth (1977) that, given the range of error possible in the ideal weight tables, a fifteen per cent cut-off might fall within the error variance of the table. In other words, this author defined as obese those who may not have been obese at all. Yet, an examination of the literature indicates that a ten per cent cut-off is commonly used and was used recently by Cash and Green (1986). Nonetheless, in this study it proved to be inadequate.

The second criticism is of the sample size. It is difficult to derive significant results from a sample as small as forty-one. However, the difficulty in finding suitable subjects and the time spent reaching them and administering the test plus the follow-up visit, made it impractical to increase the sample size to the desired level. This criticism is even more true of the sample sizes on the derived constructs and in the later analysis. However, as both these were additional work, the study was not initially designed to meet those requirements.

The third criticism is of the research tool. The personal construct pyramid and the scale derived from it would make an excellent clinical tool because it is qualitative rather than quantitative. This has obvious weaknesses in research. As was discussed in the methodology, what it captured in the meaning of overweight for the individual it lost in the generality of having the same set of constructs for all individuals. Although an attempt was made to strengthen the scale to glean quantitative data without losing the richness of the qualitative data, the sample sizes were then too small to achieve really meaningful results.

In retrospect, the study might have been greatly improved had it been supplemented with another measuring scale such as the Secord and Jourard Body Cathexis Scale (Secord and Jourard, 1953) which taps the subject's satisfaction or dissatisfaction with a number of body parts.

It is relevant at this point to mention the paucity of suitable

measuring tools available for assessing the cognitive and emotional aspects of body image although there are several methods of measuring the perceptual aspects. This is a serious handicap in the research into body image.

The fourth criticism relates to the discrepancy score. While the present rating on the scale represented how the person currently perceived herself in terms of her weight related constructs, the ideal rating, which was taken as a reality rating because the person had reached her ideal weight, could be objectively assessed only on the construct of overweight. Although the person had presumed that for her change on that construct would bring about change on the others, there was no way of assessing whether it had or not. So, although the discrepancy score gave a body dissatisfaction rating, this could not be tested against reality.

The discrepancy score was also presumed to mean too many things without substantial evidence. While on the surface a discrepancy would seem to represent anxiety in Rogers' terms and, also, to indicate a body image disturbance because of dissatisfaction in spite of having attained the ideal, it would have been more convincing had evidence of the relationship been presented.

9.2 Implications for Further Research

In any future research it would be essential that obesity be very carefully defined; at least fifteen per cent above ideal weight would seem to be indicated as a cut-off point.

Then, research is needed to separate out the differences between the truly obese and the moderately overweight and to learn what the implications of these differences are in the treatment of excess weight. It was suggested earlier that obesity was not a single syndrome. It would, therefore, be useful if future research would address itself to the task of devising a questionnaire that would differentiate between the different dynamics underlying the different syndromes. Differential treatment programmes could then be planned.

Tentatively in this study, body image disturbance seemed to emerge as a poor prognostic sign in the treatment of obesity which was in line with some previous studies. The literature showed this to be true also of anorexia nervosa albeit in the opposite direction: the obese with a body image disturbance may tend to regain weight; the anorexics to lose even more weight. Further study is needed here to clarify the role of body image disturbance in the eating disorders and to determine more effective treatment.

The suggested "middle group" is of particular interest because it falls outside the two clinically acknowledged problem groups of obesity and anorexia nervosa. That overweight is nonetheless a problem in this group is attested to by the large number of women who join weight reduction clubs although they fall below the fifteen per cent overweight cut-off point now deemed necessary to define obesity. Some way of defining this group would appear to be a prerequisite to any further research concerned with overweight as opposed to obesity.

It is the author's experience, although not substantiated by this study, that slightly overweight people with a body image disturbance are also prone to the yo-yo syndrome of weight loss and gain. Research using a much larger sample than that which emerged in the analysis of the sample group in this study might clarify the tentative findings of this investigation that those who have little to lose but who appear to suffer from a body image disturbance tend to maintain their weight loss.

The personal construct scale used in this study elicited valuable information about how obese people perceive obesity and how their perceptions affect how they see themselves. It also showed that obesity meant different things to different people, i.e. in constructing their scales some people used several adjectives relating to one dimension whereas others emphasized a different dimension. For example, one person may have used the adjective pairs clean - dirty and kept - unkept both of which would have been classified as Appearance, whereas another may have used several adjectives related to health, etc.

Had the group sizes been bigger after the analysis of the sample in this study, interesting and useful information might have been elicited if another correlation study had been carried out between the individual dimensions and weight gain. Therefore a study similar to the present study, but using a tighter definition of obesity, and a much larger sample size, might be fruitful. (The difficulty of recruiting such a sample and following it up is acknowledged). Such information might be useful to determine differences in the

different syndromes of obesity.

In the previous section the paucity of research tools to measure the cognitive and affective aspects of body image was mentioned. In the opinion of this author the development of such instruments is crucial to further research in the field of body image and also of obesity.

Chapter Ten

CONCLUSION

This study was undertaken with the aim of finding out whether body image could be used to predict weight loss maintenance in the formerly obese.

The topic was chosen because of the high incidence of obesity, the enormity of its physical and psychological consequences, and the dismal success rate in its treatment to date. The search for factors influencing weight loss and weight loss maintenance seemed crucial and it was hoped that body image might be one of them.

Evidence was presented that from both a psychological and a social point of view, obesity was a woman's problem and, therefore, only women were included in the sample for this study.

Body image was seen to be a multi-dimensional phenomenon but for the purposes of this research it was defined as a self-attitude. Social influence was emphasized in its development. It emerged that the endomorphic body type was rejected by society and that body image disturbance in the obese originated in those who had juvenile onset of obesity, who were emotionally disturbed, and who had incorporated these derogatory attitudes into their self-concepts. Research indicated that body image did not necessarily

coincide with actual physical appearance and an analogy was drawn with the phantom limb phenomenon to explain the "fat person within" that seemed to exist in the minds of so many fat people. It was suggested that body image disturbance might be a psychological defence mechanism aimed at maintaining the symptom, in this case obesity. Emotional disturbance following weight loss was seen to support this. Several authors concurred that people behave in accordance with fantasized images of themselves.

That body image may be relevant to weight loss control was suggested by Carl Rogers' theory of the self-concept. The aspects of his theory that were emphasized dealt with a person's tendency to behave in accordance with the self-concept and her need to maintain consistency between self-perceptions and experience. This is in agreement with the sentiment expressed in the last paragraph. Rogers said that a healthy person would be able to assimilate new information about herself and change her self-concept accordingly, but an emotionally disturbed person would not. She would either distort or deny reality to fit some preconceived self-structure or, failing this, if reality was about to force itself upon her, she would suffer threat and anxiety and possibly personality disintegration - unless she could somehow actualise the preconceived self-structure and preserve the integrity of her self-concept. An example in the context of this research was a formerly obese woman who carried the phantom of her previous size within her. If reality became too threatening to her fat self-image an easy way out was to regain the lost weight. This was the pivotal point of this research.

Aspects of the work of Gergen, Festinger's theory of cognitive dissonance, and Kelly's personal construct theory were discussed to give support to the argument. Research was presented and discussed that formed the necessary link between self-concept and body image which was the variable in this study. The discussion of Kelly's work gave the basis from which the research tool used in this study was derived.

From this theoretical rationale the four hypotheses were derived. They were :

Hypothesis 1 : Those with juvenile onset of obesity will have greater discrepancy scores between present and ideal body images than those with adult onset of obesity.

Hypothesis 2 : The greater the weight loss the greater the difference between the present body image and the ideal body image.

Hypothesis 3 : The faster the weight loss the greater the difference between the present body image and the ideal body image.

Hypothesis 4 : The greater the discrepancy between the present body image and the ideal body image the more likely the subject will regain lost weight in a six-month follow up period.

The subjects recruited from weight reduction clubs and doctors on the Witwatersrand, had to have lost at least ten per cent of their original body weights and had to be at goal weight. They

constructed their own weight related scales anchored on the construct "overweight" and rated themselves on it in present and in ideal terms. This was done to determine how the subjects actually felt about themselves in their own, personal, weight related terms, and how they should have felt about themselves since they had, indeed, reached their ideal weights. This discrepancy score was used in testing the hypotheses.

To strengthen the scale the personal constructs were classified into dominant categories to make the data quantifiable. These scales were used additionally in testing the hypotheses because different people might have reacted differently to different things and this might have had a bearing on the results. Six months later the subjects were reweighed.

Pearson Product Moment Correlation Coefficients were used to test relationships and a one-way analysis of variance was used to test the age related hypothesis.

None of the hypotheses were confirmed.

Further analyses were done to see if a reason could be found. The sample was divided into four groups : the variables weight loss and anxiety were each arranged into high gain and low gain categories. Weight loss was defined as how much weight the subject had had to lose to reach goal with cut-off points between high and low losers at ten kilograms or fifteen per cent of body weight; anxiety was defined in terms of the discrepancy scores; high and

low gain were defined by how much weight the person regained in the follow-up.

A two-way factorial design analysis of variance was used to test the means. The results suggested that differential factors operated for the high loss and low loss weight groups. For the main study the sample had been treated as homogeneous as far as obesity was concerned, now it appeared it was not. It was concluded that this might have neutralized the results. A comparison of the high anxiety high loss group and the high anxiety low loss group showed that the first group on average had gained six per cent of their body weights, and the second group on average had gained two-and-a-half per cent. This suggested some support for hypothesis four, the main hypothesis of the study. However, caution was advised lest too much be read into these results because the sample sizes were very small.

Other tentative conclusions about this sample were that :

1) Obesity was not a unitary syndrome.
2) There appeared to be differences between those who initially were more than fifteen per cent above their goal weights and those who were below and, perhaps, could not be classified as obese.
3) Some, but not all the obese people had a body image disturbance and those with such a disturbance tended, on average, to regain more weight than those without. This, very tentatively, suggested some support for body image as a predictor of weight loss maintenance.

The study was criticized because the definition of obesity was too broad; the sample size made it difficult to obtain significant results even if differential factors had not been operating in it; the research tool was better suited to clinical work than to research; and finally, the discrepancy score was used to mean many things but not enough evidence was presented to support the assumptions.

The major implication for future research emanating from this study was that obesity must be clearly defined. It followed from this that research into the factors that differentiate those who are truly obese from those who are only moderately overweight would be profitable and would have implications for differential treatment. In the same vein, it appeared that more research was needed into the role of body image disturbance in the eating disorders. The study showed that obesity meant different things to different people and, therefore, more qualitative research is necessary. Finally, more effective tools for measuring the affective and cognitive aspects of obesity are necessary.

A GUIDELINE FOR YOUR IDEAL WEIGHT OR TARGET

N.B.: These goals may vary slightly as your frame takes shape

WOMEN

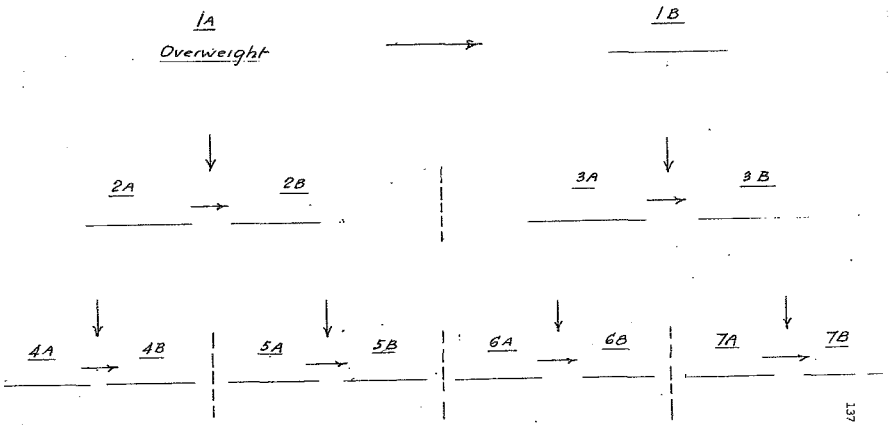
Height		Small		Medium		Large	
Imperial	Metric	Metric	*Imperial*	Metric	*Imperial*	Metric	*Imperial*
4' 8"	142cm	40 kg	*88 lbs*	44 kg	*97 lbs*	47 kg	*103 lbs*
4' 9"	145cm	42 kg	*93 lbs*	45 kg	*99 lbs*	48 kg	*106 lbs*
4' 10"	147cm	44 kg	*97 lbs*	46 kg	*101 lbs*	49 kg	*108 lbs*
4' 11"	150cm	45 kg	*99 lbs*	48 kg	*106 lbs*	50 kg	*110 lbs*
5' 0"	152cm	46 kg	*101 lbs*	50 kg	*110 lbs*	52 kg	*114 lbs*
5' 1"	155cm	47 kg	*103 lbs*	51 kg	*112 lbs*	53 kg	*117 lbs*
5' 2"	157cm	48 kg	*106 lbs*	52 kg	*114 lbs*	55 kg	*121 lbs*
5' 3"	160cm	49 kg	*108 lbs*	54 kg	*119 lbs*	56 kg	*123 lbs*
5' 4"	163cm	50 kg	*110 lbs*	56 kg	*123 lbs*	58 kg	*128 lbs*
5' 5"	165cm	52 kg	*114 lbs*	58 kg	*128 lbs*	60 kg	*132 lbs*
5' 6"	168cm	53 kg	*117 lbs*	60 kg	*132 lbs*	62 kg	*136 lbs*
5' 7"	170cm	56 kg	*123 lbs*	62 kg	*136 lbs*	64 kg	*141 lbs*
5' 8"	173cm	57 kg	*125 lbs*	63 kg	*139 lbs*	65 kg	*143 lbs*
5' 9"	175cm	58 kg	*128 lbs*	65 kg	*143 lbs*	67 kg	*147 lbs*
5' 10"	178cm	60 kg	*132 lbs*	67 kg	*147 lbs*	69 kg	*152 lbs*
5' 11"	180cm	62 kg	*136 lbs*	69 kg	*152 lbs*	70 kg	*154 lbs*
6' 0"	183cm	64 kg	*141 lbs*	71 kg	*156 lbs*	72 kg	*158 lbs*
6' 1"	185cm	66 kg	*145 lbs*	73 kg	*161 lbs*	74 kg	*163 lbs*
6' 2"	188cm	68 kg	*150 lbs*	75 kg	*165 lbs*	76 kg	*167 lbs*

BIOGRAPHICAL DETAILS.

Name		
Today's Date.		
Date of Enrolment		
Sex		
Age.		
Height		
Present Weight		
Original Weight		
Amount Lost		
Goal Weight		
Statistical Ideal Weight		
		YES OR NO
Were you overweight as a child (12 years and under)?		
Were you overweight as a teenager?		

Name
Date
Weight

KELLY PERSONAL CONSTRUCT PYRAMID.



KELLY CONSTRUCT RATING SCALE

Name. _____

MY PRESENT BODY

		Rating		Rating	
1	Overweight		6 5 4 3 2 1 0 1 2 3 4 5 6		
2			6 5 4 3 2 1 0 1 2 3 4 5 6		
3			6 5 4 3 2 1 0 1 2 3 4 5 6		
4			6 5 4 3 2 1 0 1 2 3 4 5 6		
5			6 5 4 3 2 1 0 1 2 3 4 5 6		
6			6 5 4 3 2 1 0 1 2 3 4 5 6		
7			6 5 4 3 2 1 0 1 2 3 4 5 6		

KELLY CONSTRUCT RATING SCALE

Name.

MY IDEAL BODY

		Rating			Rating	
1			6 5 4 3 2 1 0 1 2 3 4 5 6			
2			6 5 4 3 2 1 0 1 2 3 4 5 6			
3			6 5 4 3 2 1 0 1 2 3 4 5 6			
4			6 5 4 3 2 1 0 1 2 3 4 5 6			
5			6 5 4 3 2 1 0 1 2 3 4 5 6			
6			6 5 4 3 2 1 0 1 2 3 4 5 6			
7			6 5 4 3 2 1 0 1 2 3 4 5 6			

BIOGRAFIESE BESONDERHEDE.

Naam		
Datum Vandag.		
Aansluitings-datum.		
Geslag.		
Ouderdom.		
Lengte.		
Huidige Gewig.		
Oorspronklike Gewig.		
Hoeveelheid Verloop		
Doelwit		
Ideale Statistiese Gewig.		
		YA OF NEE
Was u Oorgewig as n kind (Jonger as 12?)		
Was u Oorgewig as n tiener?		

BIOGRAFIESE BESONDERHEDE.

Naam	
Datum Vandag.	
Aansluitingsdatum.	
Geslag.	
Ouderdom.	
Lengte.	
Huidige Gewig.	
Oorspronklike Gewig.	
Hoeveelheid Verloop	
Doelwit	
Ideale Statistiese Gewig.	

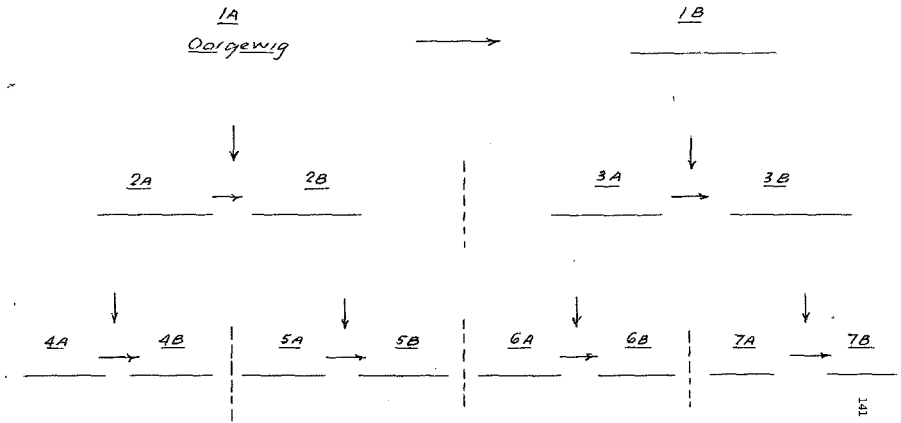
	JA	NEE
Was u Oorgewig as n kind (Jonger as 12?)		
Was u Oorgewig as n tiener?		

Naam _____

Datum, _____

Gewig _____

KELLY SE PIRAMIEDE



KELLY SE SKAAL

Naam. _____

MY HUIDIGE LIGGAAM

		Klas		Klas	
1	Oorgewig		6 5 4 3 2 1 0 1 2 3 4 5 6		
2			6 5 4 3 2 1 0 1 2 3 4 5 6		
3			6 5 4 3 2 1 0 1 2 3 4 5 6		
4			6 5 4 3 2 1 0 1 2 3 4 5 6		
5			6 5 4 3 2 1 0 1 2 3 4 5 6		
6			6 5 4 3 2 1 0 1 2 3 4 5 6		
7			6 5 4 3 2 1 0 1 2 3 4 5 6		

KELLY SE SKAAL

Naam. _____

MY IDEALE LIGGAAM

		Klas		Klas	
1			6 5 4 3 2 1 0 1 2 3 4 5 6		
2			6 5 4 3 2 1 0 1 2 3 4 5 6		
3			6 5 4 3 2 1 0 1 2 3 4 5 6		
4			6 5 4 3 2 1 0 1 2 3 4 5 6		
5			6 5 4 3 2 1 0 1 2 3 4 5 6		
6			6 5 4 3 2 1 0 1 2 3 4 5 6		
7			6 5 4 3 2 1 0 1 2 3 4 5 6		

APPENDIX C

LIST OF ADJECTIVE PAIRS AND THEIR FREQUENCIES

Adjective Pairs			Frequencies
Overweight	-	anorexic	5
	-	thin	11
	-	underweight	7
	-	normal	4
	-	very thin	2
	-	slim	7
	-	skinny	3
	-	goal-weight	1
Stout	-	trim	1
Gross	-	thin	1
	-	nice	1
Confident	-	miserable	1
	-	inferior	1
	-	anxious	1
	-	insecure	2
	-	withdrawn	1
	-	lacking confidence	2
	-	shy	2
	-	self-conscious	5
Good-self-image	-	no confidence	1
Self-assured	-	withdrawn	1
	-	complexed	1
Positive	-	negative	1
Secure	-	insecure	2
Casual	-	self-conscious	7
Self-accepting	-	self-derogating	1
Friendly	-	unfriendly	9
	-	depressed	1
	-	miserable	1
	-	sullen	1
	-	sour	1
Likeable	-	unlikeable	1
Extrovert	-	introvert	2
Sociable	-	unsociable	3
	-	withdrawn	1

Outgoing	-	moody	1
	-	withdrawn	2
Pleasant	-	lonely	1
	-	reserved	1
	-	miserable	1
	-	bitter	1
	-	nasty	1
Cheerful	-	sour	1
Happy	-	mean	1
Pleased	-	envious	1
Satisfied	-	restless	1
	-	comparing	1
Easy	-	hard	1
Good disposition	-	grumpy	1
Good natured	-	tense	1
Well-adjusted	-	misfit	1
Fun	-	reserved	1
Nice	-	horrible	1
Soft	-	hard	1
Patient	-	impatient	2
Placid	-	aggressive	1
	-	bad-tempered	1
Strong	-	finnicky	1
Helpful	-	unhelpful	1
Willing	-	unwilling	1
Giving	-	self-centred	1
Generous	-	tight	1
Loving	-	selfish	1
	-	hateful	1
	-	loveless	1
Relaxed	-	neurotic	1
	-	frustrated	1
	-	complex	1
	-	nervous	1
	-	energetic	1
	-	tense	1
Dependent	-	independent	1

Depressed	-	cheerful	6
	-	content	1
	-	happy	3
	-	feel good	1
	-	happy-go-lucky	1
	-	easy-going	1
	-	self-confident	1
	-	free	1
Miserable	-	cheerful	2
	-	enjoys life	1
	-	happy	2
Unhappy	-	happy	11
		content	1
		heerful	1
		jovial	1
Morbid	-	full-of-life	1
	-	nice disposition	1
	-	chirpy	1
Sadness	-	joy	1
Mournful	-	bright	1
Discontent	-	content	1
	-	happy	1
Glum	-	jovial	1
Sorrowful	-	gay	1
Worried	-	unworried	1
	-	relaxed	1
Worrier	-	difficult	1
Looks for better	-	*no worries*	1
Moody	-	relaxed	1
	-	jolly	1
	-	cheerful	1
Withdrawn	-	sparkling	1
Lethargic	-	busy	1
	-	energetic	2
Lazy	-	industrious	1
	-	hardworking	2
	-	agile	1

Energy	-	no energy	2
	-	unfit	1
Sluggish	-	vivacious	1
Tidy	-	untidy	5
	-	sloppy	2
	-	uncomfortable	1
	-	don't care	1
Untidy	-	self-pride	1
	-	attractive	1
Sloppy	-	interested	1
	-	attractive	1
	-	perfectionism	1
	-	smart	1
Slovenly	-	fastidious	1
	-	smart	1
Careless	-	meticulous	1
	-	particular	1
Uncaring	-	smart	1
Uncared for	-	Cared for	1
Disgusting	-	a lady	1
Attractive	-	unattractive	4
	-	repulsive	2
	-	dull	1
	-	ugly	1
Pretty	-	ugly	4
Elegant	-	dowdy	3
Chic	-	unattractive	1
Formless	-	good figure	1
Modern	-	take-what-can-get	1
Dowdy	-	charming	1
Dull	-	personality	1
Clumsy	-	active	1
Clean	-	dirty	3
	-	sweaty	1
Healthy	-	unhealthy	9
Fit	-	unfit	1
Early death	-	long-life	1

Eating	-	dieting	1
Over-eat	-	eat properly	3
	-	disciplined	1
Greedy	-	disciplined	1
Gorged	-	hungry	1
Compulsive eating	-	no appetite	1
Bloated	-	mobile	1
Guilty	-	satisfied	1
Ashamed	-	proud	1
Obsessed	-	controlled	1
	-	carefree	1
Controlled	-	let-go	1
Fanatic	-	moderate	1
Inflexible	-	flexible	1
Confused	-	clear-minded	1
Irrational	-	rational	1
Stable	-	unstable	1
	-	nervous	1
Reliable	-	shiftless	1
Fortunate	-	unfortunate	1
Lucky	-	unlucky	1

APPENDIX D

59 Second street
Greymont
JOHANNESBURG
2195

5 April 1986

Dr. J.A. Haggiyanes
1107 Lister Buildings
Jeppe Street
JOHANNESBURG
2001

Dear Sir

Re: Subjects for a Master of Arts thesis.

I am writing to you because I understand that you specialise in, and have considerable success in, helping people to lose weight.

I am a Masters' student in clinical psychology at the University of the Witwatersrand and at present am doing research for my thesis which deals with body image and weight loss maintenance. As subjects I need women who have very recently reached their goal weights or are within a few kilograms of doing so.

This is where I hope you will help me. I would appreciate it if you would ask your successful clints if they would volunteer to participate in this research which has been undertaken in the hope that it will help in the vexing problem of maintaining weight loss.

The volunteers would be asked to complete a number of short scales about body image at a time and place convenient to themselves. The entire operation should not take more than 30 minutes. The researcher may also need to contact each subject again after a few months and your record of the client's weight loss would be required. All information will, of course, be treated absolutely confidentially.

I hope that my thesis, once completed, will be of use to you, your clients, and to others interested in weight loss.

I will telephone you soon to discuss the matter further. Thank you for your time.

Yours faithfully

LYNNE CORNFIELD (MISS)

APPENDIX E

Table of Standard Deviations and Means of the Relative Discrepancy Scores between Present and Ideal Ratings on the Derived Constructs

Variable	N	Mean	Std Dev
Weight	41	-1.634146	2.213669
Fitness	16	-0.651042	0.481336
General	13	-0.525641	1.150375
Self-esteem	22	-1.340909	1.808619
Happiness	33	-1.212121	1.595634
Relationships	29	-0.968391	1.320326
Appearance	24	-1.062500	1.431877

Table of Standard Deviations and Means of the Absolute Discrepancy Scores between Present and Ideal Ratings on the Derived Constructs

Variable	N	Mean	Std Dev
Weight	41	2.024390	1.996720
Fitness	16	0.651042	0.481336
General	13	0.782051	0.979854
Self-esteem	22	1.484848	1.696486
Happiness	33	1.510101	1.409719
Relationships	29	1.313218	1.085542
Appearance	24	1.354167	1.183943

Table of Means and Standard Deviations of Weight Loss, Speed of Weight Loss, and Follow-Up Gain

Variable	N	Mean	Std Dev
Absolute weight loss	41	12.551220	9.003336
Relative weight loss	41	0.168898	0.077555
Absolute loss plus time	41	0.029156	0.015791
Relative loss plus time	41	2.115576	1.403175
Absolute follow-up weight gain	41	2.117073	3.458822
Relative follow-up weight gain	41	0.029986	0.051298

Table of Standard Deviations and Means of Relative Discrepancy Scores between Present and Ideal Ratings in the Derived Constructs for Those with Adult Onset of Obesity

Construct	N	Mean	Std Dev
Weight	21	-1.429	2.276
Fitness	8	-0.646	0.515
General	5	-0.633	1.356
Self-esteem	11	-2.182	2.136
Happiness	17	-1.368	1.919
Relationships	13	-1.506	1.561
Appearance	12	-0.889	1.531

Table of Standard Deviations and Means of Absolute Discrepancy Scores between Present and Ideal Ratings in the Derived Constructs for Those with Adult Onset of Obesity

Construct	N	Mean	Std Dev
Weight	21	2.048	2.006
Fitness	8	0.646	0.515
General	5	0.767	1.267
Self-esteem	11	2.242	2.077
Happiness	17	1.662	1.691
Relationships	13	1.968	1.133
Appearance	12	1.389	1.050

Table of Standard Deviations and Means of Relative Discrepancy Scores between Present and Ideal Ratings in the Derived Constructs for Those with Juvenile Onset of Obesity

Construct	N	Mean	Std Dev
Weight	20	-1.850	2.183
Fitness	8	-0.656	0.481
General	8	-0.458	1.097
Self-esteem	11	-0.500	0.866
Happiness	16	-1.047	1.203
Relationships	16	-0.531	0.921
Appearance	12	-1.236	1.370

Table of Standard Deviations and Means of Absolute Discrepancy Scores between Present and Ideal Ratings in the Derived Constructs for Those with Juvenile Onset of Obesity

Construct	N	Mean	Std Dev
Weight	20	2.000	2.039
Fitness	8	0.656	0.481
General	8	0.792	0.853
Self-esteem	11	0.727	0.684
Happiness	16	1.349	1.066
Relationships	16	0.781	0.706
Appearance	12	1.319	1.351

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