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The University of Hull

**Personality variables associated with the
use of Denial**

being a Thesis submitted for the Degree of Doctor of Philosophy

in the University of Hull

by

Irene Renata Manousos, BA (Deree)

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Abstract

As a broad framework, Lazarus and Folkman's (1984) model of coping was used to select factors which were considered likely to be related to Denial and reality distortions. These factors were used to develop the Coping With Life (CWL) questionnaire, a self-report personality trait instrument. The CWL had six factors: Pessimism, Social Support, Emotion Control, Esteem Concern, Anger and Self Mastery. Pessimism, Emotion Control, Anger and Esteem Concern were the variables expected to be positively associated with Denial. Each of the factors demonstrated good internal and test-retest reliability. Factors were validated successfully against existing scales: Brief COPE (Carver, 1997); STAI form Y2 trait anxiety scale (Spielberger, 1983); Rumination scale of the ECQ (Roger & Najarian, 1989).

Similar patterns of responses to the CWL were found in two groups of individuals that it was argued were exhibiting Denial (reality distorting behaviour): Offenders who were refusing their guilt and smokers who had low risk perception of their smoking compared to other smokers. Both groups were found to be higher in Self Mastery and Lower in Esteem Concern. Although the direction of the relationships was unexpected, the findings were coherent with the profile of an individual who engages in Denial to defend self-image.

To control for the possibility that these results were not simply due to image management or lying, the emotional Stroop paradigm was used to investigate responses made to threatening words without opportunity for consciously mediated strategies.

Higher Self Mastery was again associated with responding consistent with the use of Denial, i.e. lower delay in responding to emotional words vs. neutral words

Overall, CWL was found to be a reliable instrument across different samples, and Self Mastery was consistently found to be associated with responding consistent with the use of Denial. These studies provide evidence in support of a broad-based approach to studying Denial, founded upon stable personality variables associated with its use.

To Dousan, for waiting and waiting,

I am sorry for being so late.

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1 CHAPTER ONE

People tend to have a particular self image, a stable way of viewing themselves, that is in the most cases favourable (Baumeister, Dale & Sommer, 1998). How then is this image to be preserved when an individual is confronted by information that is opposite to, or threatening towards, their self-image? One method is to some extent ignore or reject the information itself, so that it is no longer perceived. If it is still perceived then a different approach would be to alter it in some way so it is no longer so contrary to the self-image. Another way would be less directed at altering the information but more directed at strengthening the self-image so that the information was comparatively less threatening. Additionally, some or all of these methods could be used at the same time. Either way, the threat to self is reduced.

Many researchers have addressed the way people manipulate information and self-image in these ways, under many different headings: Sigmund Freud (1894) and later Anna Freud (1936/1966) first talked of Defence Mechanisms (Cramer, 1991); Sackheim and Gur (1979) and Paulhus (1984) have used the term Self-Deceptive Enhancement (Paulhus & John, 1998); Coping research (e.g. Carver, Scheier & Weintraub, 1989; Lazarus, 1999) has addressed the topic, e.g. Cognitive Coping, Positive Reinterpretation. And these are just a few of the possible terms.

Further complicating the matter is that quite rigid ways of defining and distinguishing

these approaches have been adopted by different authors, e.g. trait vs. process, conscious vs. unconscious operation (Parker and Endler, 1996). Finally, the problem of actually measuring the action or effects of these self-image protective processes is full of confusion and difficulty (e.g. Davidson & MacGregor, 1998).

This study is an attempt to look at certain aspects of one of the most widely considered methods that is hypothesised to accomplish threat reduction, that of Denial. Specifically, stable personality measures that may be associated with greater use of Denial will be investigated.

Paulhus, Fridhandler and Hayes' words in the very first line of their 1997 chapter on defences are quite telling: "With some trepidation, we tackle the monumental task of reviewing the contemporary literature on psychological defense" (p.543). Taking Paulhus, Fridhandler and Hayes' (1997) fears into account, this thesis will not attempt to cover all aspects of the very broad and scattered field that researches into the ways in which people preserve their self image through threat reducing mechanisms.

Even within the narrower context of Denial this thesis will not attempt to be comprehensive. It will instead attempt to integrate parts of the various different approaches to understanding aspects of Denial and Denial-like processes, an approach that Norem (1998) suggests is overdue, and labels the "integration of processes within individuals" (p. 913).

Specifically, contributions from the psychoanalytic literature, coping research and

cognitive psychology will all be used. Combining diverse elements to tackle the same problem has been shown to maximise the validity of the findings of the research, as the weaknesses of one approach can be compensated for by the strengths of another (Shryane, Westerman, Crawshaw, Hockey and Sauer, 1998).

This present chapter will present a short review of the historical emergence and description of the concept of Denial in traditional psychodynamic terms and coping terms. Although certain authors argue strongly for the conceptual separation between defences and coping (e.g. Cramer, 1991; 1998) the goal here will be to appreciate their similarities rather than get stuck on their differences. The problems in measuring Denial will be discussed, and the benefits of adopting an indirect, trait-based approach for investigating Denial will be put forward.

Chapter two will put the trait approach to measuring Denial into practice, by constructing a self-report personality instrument designed to measure personality factors that may be related to Denial, using Lazarus and Folkman's (1984) model of coping as a conceptual framework. The remaining chapters will provide tests of whether the personality-based approach has actually been fruitful in identifying factors associated with Denial. These will cover less controlled but more ecologically valid tests of the approach in identifying Denial in people's daily lives (chapters three and four), and also a more controlled but more contrived experimental study (chapter five). Chapter six will attempt to reflect on what has been learned.

1.1 The background of the concept of Denial

"We also believe, to some degree, in personal immortality; Becker (1973) has argued that all are striving and products stem from a single, powerful psychological force - the denial of death."

(Lazarus, 1983; p.2)

The concept of Denial is undoubtedly one of the most controversial concepts in Psychology. When considered as an ego defence, Paulhus, Fridhandler and Hayes (1997), state that many psychologists are sceptical of the very existence of even the notion of defence, of which Denial is one of the cornerstones. On the other hand, Plutchik (1995) defends the concept of ego defence as being one of the most important contributions of the psychoanalytic tradition. A review by Baumeister, Dale and Sommer (1998) found that the existence of Denial, as a process that rejects or distorts information, is well supported by evidence from mainstream social psychology.

Denial has become a hugely popular term both in an extended scientific area -medicine, nursing, counselling- and also in everyday life where it is used often as a lay term, but there is often little consistency in its usage (Manousos and Williams, 1998).

All the dispute started with Sigmund Freud and defence mechanisms.

“Perhaps Freud’s most original contribution to human psychology was his inductive postulation that unconscious ‘defence mechanisms’ protect the individual from painful emotions, ideas and drives”

(Vaillant, 1992; p. 35)

The concept of psychic defence was introduced by Sigmund Freud in 1894, “as a means of preventing painful affects associated with traumas from entering awareness” (Cramer, 1991; p. 3). Initially Freud considered defence “to be a mental function, one of the several faculties of the mind”. Through this scope there were no specific defence mechanisms.

Freud assumed that the defensive process emerges during the early stage of mental development when young children face danger in the form of helplessness. It was related to anxiety, which acted as a trigger for defensive functioning. After Freud’s introduction of his three structure personality model (id, ego and superego) the concept of defence was reconsidered and re-conceptualised as an ego function, to defend the “weak or immature ego” (Freud 1915/1957; in Plutchik, 1995, p.13). At this point Freud started to differentiate different varieties of defence mechanisms, although it was his daughter Anna Freud (1936/1966) who first described Denial as a separate defence mechanism, directed at warding-off external reality (rather than internal thoughts or feelings, as for the other mechanisms; Buckley, 1995).

Ego defences were originally seen as "undesirable modes of mental functioning" (Plutchik, 1995; p.17), and indicative of psychopathology. Also, defence mechanisms are seen as being hierarchically organised, with Denial seen as a "primitive" or "immature" defence (e.g. Vaillant, 1994).

Although psychoanalytic theory in general has since been heavily criticised and modified, Plutchik (1995) defends the concept of ego defence as being one of the most important contributions of Freud.

According to Parker and Endler (1996; p.9) there emerged a conceptual differentiation of the mechanisms by which people sought to deal with anxiety. Defences were viewed as "rigid, compelled [and] reality distorting" processes that occurred in the subconscious. Much interest started to be paid to conscious ways in which people tried to deal with anxiety - 'adaptive defences' or coping behaviours that were "flexible, purposive [and] reality orientated". The research into conscious strategies for dealing with threatening situations is what is now known as coping research .

(Adding somewhat to the definitional confusion in the area, the term "coping", as well as being used to describe a broad field of research into how people deal with stress, is also used to describe exclusively those behaviours which are considered "adaptive".

Therefore, some researchers use the term "coping" to mean only behaviours that results in desirable outcomes, e.g. "that person is dealing well with his problems - he is coping".

Lazarus (1999) views this approach as unhelpful, as it confuses attempts to regulate anxiety with the outcomes of those attempts, which may be good in certain circumstances and bad in others. Here, coping will be viewed in its broadest sense, i.e. not just "adaptive" behaviours.)

Following on from work such as that by Pearlin and Schooler (1979) a broad distinction was made between so called "problem-focused" coping and "emotion-focused" coping. Problem focused responses are those that address the external manifestation of the source of anxiety. Emotion focused attempts are those that instead focus on reducing the internal anxiety and negative affect directly without necessarily changing the external situation.

“Coping can reduce stress reactions, sometimes by actions that change the actual relationship between the person and the environment (problem-focused coping), and sometimes merely by changing the meaning of that relationship (emotion-focused coping)”.

(Lazarus, 1999: p.77).

The dominant model of coping has come to be that of Lazarus and Folkman (e.g. 1984). Their model of coping is characterised by appraisals. Primary appraisal is the process by which stimuli from the environment are evaluated as to their level of threat; in essence, what relation does the stimulus have for a person's goals, well-being etc? Secondary appraisal is the process by which, when a stimulus is identified as threatening, the

person's resources for dealing with the threat are taken into account in deciding what action can be taken to cope with the situation.

Primary and secondary appraisal are used together and not necessarily in their titular order. A process of reappraisal is ongoing in any threatening situation, with primary and secondary appraisals being modified in response to changes in the stimulus, but also to changes in the appraisals themselves. If a stimulus is appraised as threatening (primary appraisal), and the person's resources are evaluated as being insufficient to deal with the threat (secondary appraisal) then stress and anxiety will be the result.

Although the whole area of coping research emerged from interest in flexible, conscious patterns of response to stressors, Lazarus (1999) states that the actual appraisal process can be made without awareness of the complex factors involved in the judgement. An appraisal can come about in two main contrasting ways, the process of appraising can be largely conscious and voluntary and it can also be unconscious, automatic and intuitive. (Lazarus, 1999).

1.2 Is Denial a Defence mechanism or a form of Coping?

Coping mechanisms, like defence mechanisms, function to protect individuals from the emotional consequences of adversity and they both have as a primary function the task of dealing with stress (Cramer, 1998; p.920). From this standpoint, there is a lot in common between the defence of Denial and certain emotion-focused coping strategies. For instance cognitive coping (Lazarus, 1999) and positive reappraisal (Lazarus and

Folkman, 1984) both describe the process of reducing the threat of a problem by re-conceptualising it - similar to the function of Denial as reducing threat by altering or rejecting information.

One area in which there used to be a big disagreement regarding defences and coping was adaptive utility. Although defences used to be viewed as primitive and maladaptive this is no longer the case (Cramer, 1998). Defences have their place-in-day to day behaviour and it is accepted that they are part of "normal" functioning. Their usefulness is dependent on the situation, however. For instance, using Denial to ignore signs of illness is considered maladaptive, as it may lead to delay in seeking medical attention. Using Denial to reject the implications of a major emotional upset (e.g. bereavement), may allow the individual to function without breakdown, however, and so be considered adaptive (unless its use is prolonged; Wheeler and Lord, 1999).

Regarding coping, although sometimes actual coping responses are labelled as adaptive or maladaptive (e.g.. emotion-focused strategies are often labelled as maladaptive) it is again recognised that any behaviour may be good or bad for the person depending on the situation (Lazarus, 1999; Zeidner & Saklofske, 1996). For instance, problem-focused coping (usually considered adaptive) in the face of a situation over which one has no control may lead to increased, not decreased distress. Similarly, although relying on emotion-focused strategies will not solve an external problem, they will (if effective) reduce distress and so have served their purpose. Again, though, too much of their use is considered maladaptive.

However, following A. Freud's suggestion in relation to just Denial (1936/1966, in Plutchik, 1995), Denial and extreme forms of emotion focused coping, while not maladaptive per se, are considered to be the most likely of the ways of dealing with stress to become maladaptive. This is usually seen as because they both have the same effect of removing a person's internal view of reality away from the "objective" external reality, and so make more "mature" or problem-focused attempts at coping more difficult or unlikely to succeed.

From the above it seems that both approaches, defences and coping, can plausibly talk about Denial in a sensible fashion. No distinction between defence mechanisms and coping strategies was seen by Carver, Scheier and Weintraub (1989) in their coping styles questionnaire COPE, as Denial was included as one of the scales. However, other researchers take a different view.

Weisman (1989), who researches the role of Denial in the medical context, attempted to differentiate Denial from coping, treating them as almost opposites, by stating for example that the aim of Denial is "to turn a problem into a non-problem, so that coping is unnecessary" (p.256). At the same time, he put under a heading of common coping strategies "Deny as much as possible", and under a heading of what do good copers do, "They find denial is a useful temporary distraction, and avoid self-pity, bitterness, or unwarranted optimism or pessimism" (p.258). Finally to confuse even more -or maybe to clarify- Weisman stated that "Good copers have more coping strategies at their disposal than denial"; a statement which implies that Denial is a coping strategy

although not a good one. (p.258).

This lack of consistency is quite widespread. On a more general level Cramer (1998) argues that defence mechanisms and coping mechanisms are clearly different things. Although defining both as being involved in the management of stress, she states that the function of coping is to "solve or manage a problem" (p.921, p.924). This seems at first glance to refute the existence of emotion-focused coping, which does not address the external "problem". However, she also states that coping can operate to "reduce negative affect" without necessarily changing the problem situation (p.924), which is exactly what emotion-focused strategies do and somewhat contradicts her earlier point.

She goes on to state that the defining difference between defence and coping is that of intentionality and conscious awareness. She contrasts coping mechanisms and defences as the former involving conscious, purposeful effort and the latter as being unconscious and without awareness of the purpose for which they are being used. If the goal of a defence is to keep threatening information out of conscious awareness then their operation *must* be unconscious, or their very purpose is defeated.

This apparent necessity has been criticised heavily in the past as "the paradox of Denial". Eyesenk and Keane (1995; p.439) report a particularly strong opinion by Howie (1952) on this matter. He was speaking of perceptual defence in general, but the comments apply equally well to Denial:

"To speak of perceptual defence is to use a mode of discourse which must make any precise or even intelligible meaning of perceptual defence impossible, for it is to speak of perceptual process as somehow being both a process of knowing and a process of avoiding knowing." (p.311).

In short, Denial cannot exist because it would involve the cognitive system having to know what not to know. This is not actually a paradox, however, because, as Eyesenk and Keane (1995) point out, perception is not a single event but involves various stages and processes, some which may "know" of the threat (i.e. unconscious processes), and some which may not (i.e. consciousness).

However, even the rigid distinction between conscious and unconscious experience is beginning to be appreciated as a simplistic way of viewing mental activity and awareness. For instance Schiffrin (1997) suggests that human behaviour is never either wholly conscious or unconscious, but is always accomplished by a mixture of automatic (unconscious) and attentive (conscious) processes. It is also useful to appreciate that conscious experience is not separate from, but is built upon, unconscious processes, i.e. unconscious processes can occur without consciousness, but not vice versa.

That there is a blurred distinction between conscious and unconscious processes in relation to defences and coping is recognised by Cramer (1998), but her resolution is to reclassify behaviours from one category to the other. For example, she suggests that coping behaviour such as cognitive "habits" that have become somewhat automatic should be classified as defences, and that "high level" defences, such as suppression of

disturbing thoughts, may involve an element of conscious triggering and therefore should be considered as coping mechanisms.

Lazarus and Folkman (1984) take a similar view. They observe that "The distinction between coping and automatized responses is not always clear" (p.131) but their solution is again to try and label behaviours into one of two categories based on their status as conscious and requiring effort (coping) or automatic (not coping).

This is surprising, as Lazarus recognises that the control of action can change from being conscious to becoming automatic, the same for coping behaviours as virtually any other human behaviour. Behaviours may initially be consciously directed, but with practice they can become learned and eventually become automatic in response to environmental cues (Lazarus and Folkman, 1984; p.132; cf. Rasmussen, 1983).

This struggle to fit all the ways that people deal with stress by distorting information into two rigidly defined categories, conscious vs. unconscious (e.g. coping vs. defence) does not fit well with current understanding on consciousness and learning as described above. In fact, it seems a bit reminiscent of the 19th Century biologists who tried to categorise fossils of extinct hominids as being either apes or modern humans (Shipman, 2001, in Palmer, 2001). In that case there was a continuous process, "evolution", that provided a better fit to the data than the "man or beast" approach. In the current case, theorists are apt to adopt a "defence or coping" approach that struggles to accommodate all observations. In the evolution example there certainly was separate "man" and "beast", but what explained this, and the in-between hominids too, was evolution. In the

current case there certainly is separate "defence" and "coping" but this does not explain the hybrid "consciously triggered defence" or "habit coping". Rather, the flexible and adaptive way that humans control their behaviour (including cognitions) seems the way forward.

So, it seems possible that when Lazarus (1999) talks of unconscious appraisals that serve emotion-focused coping he is talking about similar processes that Cramer (1998) may refer to as Denial. Any attempts by the person (note, not necessarily conscious "attempts") to deal with a threat are likely to involve an interplay between the initial, perhaps defensively moderated appraisal, coupled with consciously willed or moderated by attempts to, say, "not think about it". Over time some aspects of these consciously directed strategies may become learned and virtually automatic in response to certain threats from the environment.

So, it is suggested here that ways of dealing with undesirable reality by changing or distorting information can range from fully conscious attempts to avoid cognitions, through partially or semi-conscious cognitive "habits" that suppress or distort information, to fully unconscious perceptual processes that the person is unaware of. Conscious strategies may become learned and automatised, and processes at different levels of awareness can act together or in isolation. This is, of course, a speculative viewpoint at present, but it seems that some sort of integration between coping and defence is required (Norem, 1998).

If there is a blurred distinction between quite how the processes that reject or alter information operate, then perhaps it is appropriate to look at higher level issues, such as what may motivate the individual to wish to alter / distort incoming information in the first place. Important variables in this respect may be environmentally-orientated ones, to do with the stressor (i.e. situations that are so threatening that virtually everyone will use Denial), or person orientated ones, to do with individual differences (i.e. personality traits that are commonly associated with the use of Denial).

However, as well as the perceived differences between defences and coping in terms of their level of operation (unconscious / conscious) the two areas also have different traditions in terms of the relative importance they have placed on person vs. environmental variables.

Defence mechanisms have traditionally been assessed as stable, within person constructs. An important point made by A. Freud (1936/1966) was that individuals tend to habitually use a stable set of defence mechanisms when dealing with stress and anxiety, i.e. people tend to have a fairly limited but stable repertoire of defences (Parker and Endler, 1996). Gorzynski, Gregory, et-al (1980), for example, found stable patterns of defences over a ten-year time span. An example of the trait approach to defences is approach is Byrne's (1961) Repression-Sensitisation construct.

Much coping research (e.g. Lazarus and Folkman, 1984), on the other hand, has tended

to emphasise the importance of the particular situation and the transactional nature of the coping response - coping as a process. Lazarus and Folkman's (1984) model of coping described earlier (p.8) is based upon an individual's appraisals of the particulars of the situation, and so these environmental factors have been assumed to be the most important. However, there is much evidence to suggest that coping preferences can be stable over time, and these can be associated with stable personality traits.

Billingley, Waehler & Hardin (1993) measured dispositional optimism and coping responses at two times a month apart. They found that emotional coping strategies were stable over time, and tended to be associated negatively with optimism. In a study of workplace stress Long & Schutz (1995) measured coping responses in a sample of women managers. They found stable coping patterns across a one year interval.

Heim, Augustiny, Schaffner & Valach (1993) assessed the coping styles of a group of breast cancer patients at least every six months over a period of up to five years after diagnosis. They found that social support, clinically rated Denial and avoidance coping were stable over time.

The trait approach to coping has been much criticised by Lazarus (e.g.1999). These days, rather than attacking the very existence of trait factors in coping, much of his criticism has been directed towards how coping is measured. For instance, he states:

“...trait measurement promotes a vague response related more to the way a person might prefer to cope, influenced in all likelihood by what is socially desirable or ideal rather than how that person actually coped”

(Lazarus, 1999, p.117).

However, research by David (1998) looked at coping in response to day-to-day stressors using both state and trait methods. In study 1 a retrospective approach was taken, asking participants how they had coped in general over the last month. In study 2 a diary of coping behaviours was completed by participants every day for a month. Similar patterns of coping styles were found with both methods, i.e. the average of daily state measures vs. the retrospective trait measure.

In a review of coping stability, Hewitt and Flett (1996) concluded that coping does seem to be to a great degree stable, over both short and long time spans. For example, they report work by Billingsley, Waehler and Hardin (1993) that found significant stability in Carver, Scheier and Weintraub's (1989) COPE coping styles instrument in a group of students over a one month time span. They also report work by Rohde, Lewinsohn, Tilson and Seeley (1990) that found good reliability in coping styles over a one-year gap.

The evidence presented above suggests that patterns of coping choices can be stable over time. (As a side issue, Hewitt and Flett (1996) suggest that this raises the possibility that many instruments developed to measure the process of coping and particular coping

behaviours are in fact actually measuring, to an extent, personality variables.)

Specifically, it seems that emotionally-focused strategies are the ones that are most often found to be stable. Of the personality traits, those related to anxiety and emotion seem to be the most predictable (Krohne, 1996), i.e. the factors related to Denial and emotion coping.

(Parker and Endler (1996) suggested that it was perhaps the context of early coping research, very focused on people's reactions to extreme and life threatening situations, that made it appear that personality variables were not as important as situational ones.)

To conclude this part, it is argued that there is more in common between viewing Denial as a defence mechanism and viewing it as an extreme way of emotional coping than is often accepted. From both perspectives they both perform broadly the same function, seem both to remove the individual away from "reality" in performing that function, and both seem to have stable trait-like elements.

This presents a way to investigate Denial (both as a defence and as a emotion-focused coping strategy), as it may be that its use is associated with certain, stable personality characteristics. That will be the goal of this thesis. Before this can be accomplished, however, consideration of how Denial can be measured must be taken.

1.3 Problems in measuring Denial.

A number of methods have been used to assess Denial. The most common are interviews, projective techniques and self-report instruments.

There are two important problems when trying to measure Denial. Firstly, the very act of measurement may be seen as threatening and so other, non-Denial, defensive processes may form part of what is measured. For instance, lying is sometimes confused with Denial (Moyer and Levine, 1998). Interviews can be most prone to the problem of arousing defensiveness by the interviewee, because the presence of the interviewer can be a potent social threat, and although confidentiality can be assured, anonymity cannot be reasonably claimed.

The second problem is, to the extent that Denial operates below conscious experience, these aspects may not be available to conscious report. The problem is similar to asking someone if they are asleep or not. Scales such as the Denial scale from the COPE inventory (Carver, Scheier & Weintraub, 1989) try to tap respondents' meta-cognitive knowledge about their own behaviour, an approach akin to asking someone if they are aware that they sleep. Items such as "I pretend that it hasn't really happened" thus attempt to tap participants self-knowledge about how they tend to deal with problems. However, direct questioning can again provoke other types of defensive responding e.g. lying. Also, this approach relies on people being self-aware of their behaviour.

Projective techniques (e.g. Thematic Apperception Test, Murray, 1943) attempt to tap directly into the unconscious by presenting ambiguous stimuli that are not likely to provoke defensive reactions. Participants' responses may then reflect characteristic defensive processes of which they are not aware. However, these tests fall prey to the above problems of having to be administered by a tester in a social situation and often

quite subjective scoring.

A crucial property of any measurement device is that of reliability. Whatever it claims to measure, a measurement tool must do so reliably if it is to be of any use whatsoever. A brief discussion of the various methods in relation to reliability is given below.

Interviews have most often been used in clinical settings, such as assessing Denial in patients (e.g. Wool, 1986). Interviews are also sometimes supported by rating scales or other devices to impose structure on the process (e.g. Hackett and Cassem, 1974).

Interviews have been viewed as having very good face validity to researchers, because the interviewee's posture, tone of voice and other characteristics can be evaluated as well as the actual content of what they say. However, it is rarely made explicit how this information is used and observer bias can be especially strong in clinical settings (Moyer and Levine, 1998). Unstructured interviews in general have been found to have very low reliability (e.g. Herriot, 1987). Standardised procedures can help, but even then results are not impressive. For instance, Todd and Magarey (1978) used standardised questions, the interviews were video-taped, and multiple raters used standardised coding schemes to score the interview tapes. Even with these rigorous procedures inter-rater reliability was only found to be .62.

Projective techniques, such as the Thematic Apperception Test (TAT; Murray, 1943), have been used to investigate Denial (e.g. Cramer, 1991). Lilienfeld, Wood and Garb, (2001) have criticised these tests because of their lack of standardisation in usage. For instance, with the TAT researchers often use only a few of the available cards and do not

report which ones. Scoring processes, even using standardised schemes, involve a significant amount of observer judgement; however, scoring is rarely carried out under 'blind' procedures and inter-rater reliability is often also not reported (Lilienfeld, Wood and Garb, 2001). However, even using standardised administration and scoring procedures they have been found to be inadequate in terms of their psychometric properties (Anastasi & Urbina, 1997). For instance, Cramer (1991) developed the Defense Mechanism Manual, a structured, TAT-based tool which includes the evaluation of Denial. The reliability of the Denial measure was as follows: in a sample of college students alpha reliability was found to be .52; in a sample of adolescents, three week test-retest reliability was found to be .26; mean inter-rater reliability for the college student sample was found to be .62. These results are quite poor by the standards usually applied to psychometric instruments (e.g. Kline, 1993). Especially for a tool designed to assess a trait concept like defence, the test-retest reliability is not acceptable.

Regarding self-report measures of defences including Denial, Davidson and MacGregor (1998) performed an extensive review of measures that try to directly assess defences. Self report measures with fixed response formats and explicit scoring schemes can avoid the subjective bias possible with other methods. They can also be completed in a non-social situation.

Davidson and MacGregor (1998) assessed measures such as the Coping and Defending Scale (CDS; Joffe and Naditch, 1977) and the Life Style Index (LSI; Plutchik, Kellerman & Conte, 1979) which include Denial scales. They found different approaches used in different instruments; the CDS used an odd mix of indirect questions

to avoid triggering defensiveness (e.g. "Christ performed miracles such as turning water into wine"), combined empirically rather than rationally; The LSI used direct questions, somewhat like the COPE approach, that were based on theoretical constructs.

However, the overall findings were not promising. Virtually all measures had some serious inadequacies, such as lack of reliability for the CDS and no estimates of stability for the LSI. Other shortcomings were noted, such as the lack of validation evidence with other ways of assessing Denial. In short, it was concluded that either the constructs that were assessed, or the measurement instruments themselves, were not valid. They suggested a more promising approach might be to examine individual differences that underlie the use of defences.

1.4 Moving forward

Goldberger (1983), in his analysis of the concept of Denial and the mechanisms that underlie it states that "denial is a neglected topic for systemic research - a surprising fact in view of its seeming popularity." (p.84). This situation still holds today, and it is the aim of this thesis to address this.

It has been argued that a broad approach to the problem, covering both consciously motivated and unconscious strategies that distort information to reduce threat, would be a promising approach to take.

Lazarus suggests that it would be useful to investigate trait effects by "...grouping people

together on whatever organising strategies we find them consistently using over time and across occasions.“ (Lazarus, 1999: p. 110). As was discussed earlier, emotion-focused and emotion regulating coping processes and personality traits were found to be important in this respect, and these are aspects of coping that share similarities with Denial the defence.

Davidson and MacGregor (1998) suggest that currently available instruments for measuring Denial are inadequate, and as Lazarus (1999) above, advocate a trait approach.

The next chapter will use the broad appraisal-based coping framework described earlier (Lazarus and Folkman, 1984) to guide the selection of trait concepts that may be associated with the use of Denial for inclusion in a questionnaire.

Specifically, personality factors involved in primary appraisal and the regulation of emotion will be included. Also included will be factors such as social support that are considered coping resources. Finally, existing tools for the measurement of certain Denial / emotion-focused related coping strategies will be included. In this way, following the suggestion of Hewitt and Flett (1996) it may also be possible to uncover personality factors that may underlie coping styles and their assessment instruments.

2 CHAPTER TWO:

COPING RESOURCES AND PERSONALITY FACTORS RELATED TO DENIAL

Previously we saw how Denial shifted from the extreme end of defence mechanisms to become part of daily coping. Using the coping framework described in the previous chapter, here it was attempted to investigate the relationship between those factors which have been considered important in coping and which have also been hypothesized to be related to or involve Denial or similar process that result in a distortion or rejection of information.

This thesis proposes a relationship among certain types of the factors which are vital parts of the process of coping and which are expected to be more prominent in the case of Denial. These concepts will form the basic structure for the creation of a questionnaire that aims to explore the relationship of coping and personality variables in relation to Denial in individuals who are considered to be predisposed to Denial and Denial-like processes. The concepts are grouped according to their conceptual relationship to the model of coping presented earlier; Personality variables, coping resources and coping styles, and will be dealt with in order.

2.1 Emotionally Related Personality Variables

Stress, emotion, and coping are three concepts that belong together and as Lazarus states are “existing in a part-whole relationship... and form a conceptual unit, with emotion

being the superordinate concept because it includes stress and coping” (Lazarus, 1999; p.37). At the same time, the reactions of the individual who faces a stressful situation can not be predicted if one does not take in consideration the personality traits and processes that account for the individual differences that people have in the way that they respond to a stressful stimulus (Lazarus, 1999).

Therefore emotions per se and their intensity and expression as experienced by the individual are defining the coping process and are defined by the personality traits that are characteristic for the individual.

2.1.1 Emotional Impulse Strength

Impulse strength refers to the actual strength of emotion that is felt by the individual, that means “the strength of the individual’s emotional response tendencies” rather than the degree which the felt emotional impulse is actually expressed as overt behaviour (Gross and John, 1995, p.556). Impulse strength is conceptually related to Affect Intensity (Larsen & Diener, 1987), both concepts deal with the strength of the individual’s emotions.

Emotional reactions are automatic coping responses. They are the first reaction to many if not to most of the stressful problems and they form the foundation of coping responses (Krohne, 1993). When a situation is perceived as threatening or stress inducing, a wide range of negative emotional reactions such as fear and anger are stimulated. These reactions naturally affect the whole system and therefore, emotions inevitably become

themselves part of the problem as they become themselves targets for coping (Leventhal, Suls & Leventhal, 1993).

Highly emotional individuals may tend to use more emotional focused coping style, since they often have to deal with the intensity of their emotions in addition to the original stressor. They may have to engage in procedures that would deal first with the emotions they are experiencing and their properties in order to facilitate further problem-focused coping (Leventhal, Suls & Leventhal, 1993).

Watson and Pennebaker (1989) have formed a hypothesis that individuals who have the tendency to experience strongly their emotional impulses will have greater 'somatopsychic' stress, because the strength of their emotional impulses strain their coping capacity (Gross and John, 1995).

An individual who experiences his or her emotions strongly, therefore, would be more vulnerable in experiencing anxiety and negative affect in relation to the threat he or she is encountered with. The fact that a highly emotional person has to deal with both the existent threat and the overwhelming emotions that are associated with it, provide good reasons for the person to engage in Denial and in effect 'save' himself or herself from the awareness of both the threat and the excessive emotions that are elicited with it. It is also understood that a highly emotional person would demand more resources -since they may have to start with an emotion-focused coping to move to problem focused coping- but also have less resources available since he or she has to 'spread thin' the limited resources they have in the first place.

Consequently, impulse strength and emotional reactivity would be expected to be positively associated with Denial.

2.1.2 Emotional Expressivity-Emotional Inhibition

Emotional expressivity refers to the degree with which a person is expressing an experienced emotion. It is a term which refers to “the behavioural (e.g. facial, vocal, postural) changes associated with the experience of emotion, such as smiling, laughing, frowning, storming out of a room, or crying”. In other words Emotional Expressivity refers to the extent that emotional impulses are manifested behaviourally (Gross and John, 1995; p. 555).

As a term, it stands as the opposite of the term Emotional Inhibition which "refers to ‘bottling up’ or inhibiting the expression of experienced emotion (and is thus distinct from the hypothesised emotional arousal)” (Roger, de la Banda, Lee and Olason, submitted; p.3). So in effect both terms refer to the two extremes of the same dimension.

The degree that an individual expresses his or her emotions is positively correlated with the actual experience of these emotions (Gross & John, 1995). Emotions are ways of communication and people that are highly emotionally expressive by more able to communicate their feelings may be more able to make the best of resources available to them such as social support (Forbes & Roger, 1999).

Also because Emotional expressivity gives the chance to the observer to have a better 'view' of what is happening to the person who encounters the stressful situation, the individual in crisis may get the benefits of feedback from his or her environment.

Although earlier, the high intensity and reactivity of emotions were considered a drain rather than a resource for the person, here, the actual expression of the felt emotion is considered a resource which facilitates the person to make the most of his social support, therefore emotional expressivity would be expected to be negatively related to Denial and Denial-like coping.

2.1.3 Anger

Anger is a subjective state of emotional arousal (McDougall, Venables and Roger, 1991). According to Spielberger, Jacobs, Russell & Crane (1983), anger can be conceptualised as an emotional state with different degrees of intensity or an overall stable personality trait.

Anger is based upon the attribution of blame for a certain threat; Smith and Lazarus (1993) conceptualise anger as sharing similar primary appraisal components with anxiety, i.e. they both arise when the individual's aims or goals are impeded, but anger occurs when secondary appraisal processes involve the attribution of blame.

This, then describes a process of threat perception, which can become defensive in the process of preserving one's self-esteem. As we will see later, in order to sustain self-

esteem, and its usefulness to the person, it has first to be protected itself.

Krohne (1996) suggests that dispositional measures of tolerance of emotional arousal should be related to attempts at coping in general, and avoidant strategies in particular. Conceptualising Denial as an extreme emotion-focused or avoidant strategy, as was done in the previous chapter, suggests a possible link between experiences of emotion and Denial. Additionally, the extent to which people try to suppress their expression of emotion may be similarly related.

Anger has been found to be positively correlated with the tendency of the individual to be preoccupied with emotional upset, (McDougall, Venables & Roger, 1991). Though, Janis (1971) had found that rumination of negative expected outcomes can decrease the experience of anger, because anticipation of the aversive event has given the chance to the person to prepare for it.

Inhibition of anger as a habitual way of coping is associated with negative effects on social support resources. Inhibition of anger has also been found to be associated with perceived inadequacy in self-esteem support (Palfai and Hart, 1997).

Because as we saw earlier, the experience of anger (emotion) can become itself an additional 'burden' in the process of coping (Leventhal, Suls & Leventhal, 1993) it is considered to be a drain rather than a resource for the individual. At the same time though, the actual expression of the felt anger, because it facilitates self-esteem and social support, is conceived to be a resource.

To recap, High experienced Anger, could be evidence of a characteristic style of self-esteem preservation. Though, when Anger that is experienced is expressed, it is considered to facilitate the individual's resources and to promote reality testing, Expressed Anger therefore, could be negatively related to Denial.

2.2 Other Personality Variables

2.2.1 Optimism

Optimism can be defined as a generalised expectancy of positive outcomes and is very conceptually related to Self Efficacy. However, the whole concept of Optimism has from the start been seen as a general factor that is relatively stable over time and situation.

“Optimism is a case in which a person is confident not just about one aspect of life, but about one's personal future more generally, whereas pessimism is a broad sense of doubt about one's personal future”

(Scheier and Carver, 1985).

Self Efficacy and Optimism differ in how they view the relationship between expectancies and behavioural outcomes. In essence, Self Efficacy theory views efficacy expectations, the individual's personal belief in their ability to carry out certain behaviours, to be most important when deciding whether and what action could or should be taken in any particular situation. Optimism, on the other hand, views outcome expectancies, the belief in how likely a certain outcome is to occur, as being most

important in determining behaviour.

Therefore Optimism is reinforcement independent - people may view an outcome as likely to happen even if they have low efficacy expectations, because outcome expectations can be influenced by sources other than self efficacy, e.g. religious beliefs (Scheier & Carver, 1985).

There is often a misunderstanding in between Optimism and Denial. While often individuals who are in Denial may appear optimistic, a positive orientation towards life could be considered as one more resource for the individual in his or her attempts to cope with life stressors. This was shown by Aspinwall & Brunhart (1996), who investigated memory for threatening health messages. Participants high in dispositional Optimism performed better on a test of recall of the threatening health information (specifically, UV radiation exposure) than did pessimists. Optimism has also been linked to less hostility and greater social support in the face of a threatening situation, in this case cardiac surgery (Scheier, Matthews, Owens, and Magovern, 1989).

Having generalised beliefs about good outcomes is likely to be a powerful coping resource, and so reduce the likelihood of using solely emotion-focused strategies such as Denial.

To recap, optimism is considered to be an internal resource likely to be related to lower threat appraisal. As a vital and stable resource, optimism (when not in excess) is not likely to be related with Denial. It is important to point out that as optimism-pessimism

form a continuum, with realism probably in the middle, the extent to which these concepts are actually depicting distortions of reality, will depend on the amount and the extent with which they are embodied in the individual.

2.2.2 Self Esteem

Another important coping resource is that of Self-esteem. “Self-esteem is the facet of one’s self-concept which concerns one’s global evaluation” (Johnson, Vincent and Ross, 1997, p.385). It is the general view of one’s self as worthwhile and of primary value (Greenberg et al, 1993).

Self esteem has been found to act as a buffer of anxiety in normal individuals, and this reduction of anxiety has been found to reduce the use of defensive distortions e.g. Denial of vulnerability and Denial of mortality (Greenberg et al, 1993; Tesser & Cornell, 1991). Therefore, self-esteem could be likely to be associated negatively with the use of defensiveness in general and Denial specifically.

However, these findings are contrasted by the work of Taylor & Brown (1988). They found that normal individuals (i.e. those without psychopathology; “good” mental health) showed greater self-enhancing biases in their self evaluations, expectancies for the future etc. than did psychologically unhealthy individuals. In the former case high self esteem was associated with low defensiveness, but in the latter case “normal” self esteem was associated with higher defensiveness than was low self esteem.

It could be that this apparent contradiction is because of non-equivalent groups; Taylor and Brown (1988) compared normals with non-normals for psychopathology, whereas Greenberg et al (1993) compared within a normal group. It could also be because of differences in the way self-esteem and the threats to it were defined and measured across the studies. Another interpretation would see no contradiction between the two studies. If it was the self-image of the individual that was at stake, not self-esteem per se, then that would mean that individuals very low in self esteem may be motivated to maintain their negative self image in the same way that individuals slightly higher in self esteem are motivated to maintain a positive self image. Individuals “closer” to their individual boundary of self esteem would need to employ higher defensiveness to maintain their self image, whereas individuals “farther” from this boundary, i.e. with very high or very low self esteem, would not. This view is supported by studies showing that individuals actively seek information that confirms the self-concept they hold and reject information which threatens how they generally view themselves (Heatherton & Polivy, 1991).

As a buffer of anxiety, [high] Self-esteem naturally could be considered as one of the strongest personal resources the individual could rely upon when in need, and it could be expected to correlate negatively with Denial.

Though, it has also been found that threats to self-esteem are causing anxiety (Greenberg et al, 1993) which in return through defensive responses, is reduced (Mehlman & Snyder, 1985; in Greenberg et al, 1993)

So, it also seems that because [high] Self-esteem is so vital to the person, it is of great

importance, and to be defended in order to be sustained. It seems to be a high-maintenance factor, an asset which needs to be protected in order to sustain its status and in return to provide the individual with its service.

Also, although self-esteem appears to be a relatively enduring disposition it has been found that ego-threatening manipulations produce a variety of emotional responses and significant changes to it (Heatherton, Polivy 1991), so when threatened self-esteem gives rise to defensive reactions.

To recap, the relationship of Self-esteem with Denial is not clear. As an internal resource, high self-esteem may facilitate the person to actively cope with stressful stimuli. It may empower the person with confidence in his or her abilities and enhance the chances for the stressful stimulus to be perceived as challenge rather than as a threat, overall buffer anxiety and hence making the onset of Denial unnecessary.

On the other hand, the demands that high self esteem impose to the person, to be protected, maintained and overall defended, may give onset to Denial. This is because the person may have to avoid threat to his or her self esteem encounters or reinterpret the meaning of threatening issues in such a way as to guarantee the maintenance of the self esteem.

2.2.3 Hardiness/ Mental toughness

The construct of hardiness represents the aggregate of beliefs that life is meaningful,

controllable, and challenging rather than threatening (Kobasa, 1979; in Wiebe and Smith, 1997). Because 'hardy' individuals have a sense of commitment in their life and a feeling that the tasks that they are involved with are meaningful and significant, they tend to be able to handle stress well (Power & Brewin, 1997). That means that individuals that encounter a stressful stimulus when they are high in hardiness or 'hardy' individuals, they will be more likely to appraise the stimulus as a challenge rather than as a threat.

Mental Toughness (Clough & Earle, 2000), is a concept that can be considered a synonym of hardiness. It deals with the same notions of challenge, control, commitment and confidence. (As a research tool tends to be used in different application areas.) Here, again a person that feels highly in control of the situation and has a strong sense of commitment (focus on their goals, c.f. Lazarus and Folkman, 1984) and confidence (self belief that they can achieve their targets based on their abilities). They will be more likely to perceive the stressor as a challenge or opportunity rather than as a threat (Lazarus, 1999).

Since threat and limited resources are not an issue, the presence of Denial would not be expected, and so Hardiness and Mental Toughness are clearly expected to have a negative relation to Denial. (Although, many of the arguments for self-esteem would perhaps apply here too.)

2.3 Coping Resources

2.3.1 Social support

As a psychological resource in the context of coping, Social Support depends on the effort of the individual to cultivate social relationships and to draw on them when under stress (Lazarus, 1999). This use of social support is considered an emotion-focused strategy (Leventhal, Suls & Leventhal, 1993).

The importance of Social Support as a buffer towards stress is considered so significant that it has been given special interest in relation to disease-related stress (Filipp, Klauer & Ferring, 1993). In fact, Social Support is conceived as a protective device against stress and even as a health-protective resource (Palfai & Hart, 1997). Social Support has been found to be very beneficial not only in relation to general health but also to facilitating adaptation and promoting adjustment to change (Forbes & Roger, 1999).

Social Support functions by offering reassurance to the person and hence fostering the previously insecure individual to turn to problem-focused coping, and also by being the outlet that the person needs in order to vent his or her emotions (Carver, Scheier and Weintraub, 1989).

This second function of Social Support is considered by some as potentially negative because although it provides an outlet for the individual to vent-off emotions and can be very functional when helping the person to accommodate a loss and move forward, when the focusing on the negative emotions is prolonged it can hinder adjustment

(Carver, Scheier & Weintraub, 1989). The negative consequences of Social Support have also been reported by Fiore, Becker and Coppel (1983), where they found that negative interactions outweigh the positive effects of Social Support in relation to the health of the individual (in Forbes & Roger, 1999)

Although Social Support can be considered an emotion-focused strategy there are times when seeking out social support can be for the purpose of obtaining information in order to solve the problem the individual is facing (Leventhal, Suls & Leventhal; 1993), in this context it is often referred to as instrumental social support and is considered to be problem-focused coping (Carver, Scheier & Weintraub, 1989).

In this thesis Social Support in general is viewed as a vital part of the external resources that the individual depends upon in his or her attempts to cope with stressors and as such is expected to be negatively associated with Denial.

Social Support with the feedback that provides the person with, can also enhance the reality testing of the individual, minimise reality distortions and promote a more objective approach towards the stressful stimulus, i.e. less Denial.

2.4 Coping styles

2.4.1 Avoidance coping

Originally, avoidance coping was identified as a third dimension of coping, together

with emotion and problem focused coping. It was conceptualised as the tendency of the individual that encountered a stressful situation to seek out other people or engage in substitute tasks (Parker & Endler, 1996).

Cognitive avoidance indicates a group of coping strategies that aim to shield the person from stimuli which induce arousal and it is marked by turning away from the threat cues (Krohne 1993). Avoidance coping can be seen as an emotion-focused way of coping where either the threat stimulus itself or its meanings are avoided by the person, and which aims to protect the individual from the threatening cue (Krohne, 1993). The act of avoidance can be solely cognitive in nature, where the individual seeks to avoid to think about the threatening stimulus (or think about the stimulus in a threatening way). It can also contain a behavioural element, whereby the individual seeks to physically avoid the threatening stimulus or situation.

Although (cognitive) avoidance is considered a conscious act, as has been argued earlier it can become automatised and unconscious through routine deployment (cf. Erdelyi, 1990).

Avoidance or emotion-focused coping may help at maintaining emotional balance, but the research evidence on the adaptiveness of avoidance coping are not clear. It may be that avoidance coping such as overt efforts to deny may work against rather than in favour of the person, while others suggest that avoidance coping may offer to the person an opportunity to get away from the stressful situation and what it entails (Zeidner & Saklofske, 1996).

Avoidance is directly related to Denial, in fact Denial is considered an avoidant defence (e.g. Blatt, 1990). Clearly, Denial and avoidance are so interrelated that they are expected to be positively related.

2.4.2 Detachment

Detachment is a concept that describes the tendency of the individual to cope by feeling independent of the event and the emotion associated with it (Roger, Jarvis & Najarian, 1993). The term “conscious detachment” according to Lazarus refers to the coping process which implements the person to perform optimally in any circumstances without interference from threatening or aversive cognitive intrusions (Lazarus, 1999).

Interestingly, feelings of detachment, based on anecdotal evidence, suggested that the concept of detachment did not involve attempts by the individual to avoid stress and that also didn't involve Denial (Roger, Jarvis & Najarian, 1993).

Detachment has been found to correlate negatively with emotional coping (Roger, Jarvis & Najarian, 1993) and it would be expected to be negatively associated with Denial too. This follows from the above findings which state the non avoidant, non emotional, non Denial nature of Detachment.

2.5 Questionnaire validation scales

A number of well-established scales measuring related concepts to those above will be used to provide evidence of the validity of the new scale, later in the chapter. The dimensions will be discussed briefly here first.

2.5.1 Anxiety

Anxiety can be conceived as an unpleasant emotional state or condition, or as a relatively stable personality trait (Spielberger, 1983). While state anxiety refers to the concept of a transitory emotional state or condition which is characterised by feelings of tension and uneasiness that are subjectively and consciously perceived, and activation of the autonomic nervous system; trait anxiety is conceptualised as a relatively stable proneness to anxiety by the individual. Specifically, Trait anxiety refers to the disposition of the individual to perceive a broad range of stimuli and situations as threatening or dangerous, and to the tendency of the individual to respond to those kinds of threats with state anxiety reactions (Spielberger, 1972).

As a term it is often used interchangeably with concepts such as apprehension, concern or worry, describing an underlying state of unease (Lazarus, 1999).

Overall it can be described as the emotion which is elicited when the person experiences stress facing uncertain, existential threat (Lazarus, 1999). Anxiety can also be viewed as the conscious feeling that is produced when an individual's appraisal of threat is greater in some way than their belief in their ability to cope (Lazarus, 1999).

Eysenck (1992) argues that the main function of anxiety is to alert the individual to threats in their environment. More than this, he argues that anxiety serves to increase the likelihood that any particular stimulus will be perceived as a threat, rather than being perceived as being irrelevant or beneficial.

The relationship in between anxiety and defence mechanisms is quite complicated. From the one hand there is the likelihood that well established defences may prevent the appearance of anxiety. Denial's core function as we have seen is to ward-off anxiety. This successful elimination or reduction of anxiety can occur in relation to a particular threat as a sole incident or it can be an ordinary way with which the individual deals with certain stressors. In the latter case, anxiety may not be experienced by the individual under circumstances that it would be expected, because the threatening meaning has been made benign due to an ego-defensive process, such as Denial. This is often referred-to as the 'Short-circuiting principle' and is based on the notion that a defence can be triggered without anxiety having to play a role, because the decision about the threat and the defence against it, has been made earlier in the person's life as a result of prior learning. So, the presence of the right cue is enough to elicit it (Lazarus, 1999).

On the other hand the use of defences and especially Denial, may actually be responsible for the provocation of anxiety. By engaging in Denial and not dealing with the existing threat, the individual may ward-off anxiety by not processing the threatening stimulus itself or its full meaning, but at the same the person has not actually altered the threatening situation. Too often threats that can be avoided and denied for a while have

to be faced later. The fact that the individual has not dealt with the threat at its onset may have actually augmented its negative effects - a phenomenon too often observed in relation to Denial of illness. The process of Denial that helped the person to ward-off anxiety previously is now found to be insufficient and therefore presents the person with a situation even more threatening, and so results to the provocation of anxiety (Breznitz, 1983).

Since the process of coping is a constant exchange of information between the encountered stimulus and its demands and the available perceived resources, and since the outcome of this exchange defines the evaluation of the stimulus as a threat or a challenge, the tendency of an individual to perceive stimuli as threatening, implies a general tendency for this individual to perceive his or her resources as less sufficient. This is considered to be the profile of the high anxious (trait) individual. As a result of this evaluation of insufficient resources and therefore encounter with threat, a high anxious individual will be more likely to engage in emotion-focused coping and Denial.

2.5.2 Rumination

Rumination is marked by continuous conscious awareness about an unpleasant event and its associations. It implies a sense of uncontrolled repetition of thinking, which is beyond the ordinary thinking about a problem or a situation that the individual engages until he or she reaches a decision or completion point (Horowitz, 1983). This tendency of the individual to be preoccupied with emotional upset applies to both past and future events (Roger, de la Banda, Lee and Olason, 2000; submitted).

Rumination is overall characterised by attention to the threatening event (opposite to avoidance coping) and is positively associated with neuroticism, and specifically with a component of social sensitivity (McDougall, Venables and Roger, 1991, p.628).

The process of rumination may generate somatic tension to the person which in turn may be attempted to be reduced by the person engaging in emotionally expressive behaviour (McDougall, Venables & Roger, 1991).

In contrast to the above is the view of rumination hold by Janis (1971) where he supports that by suppressing anticipatory fear through Denial and avoidance of warnings the person interferes with the process of worry which in this case (pre-surgical patients) is considered beneficial. Rumination, according to Janis, is a vital stage in the process of worry that is related to anticipatory threat.

Rumination although is not considered a resource for the individual, by being an attentional rather than avoidance type of coping is not expected to be positively related to Denial and Denial-like coping.

2.5.3 Coping

The final validation tool to be used is the Brief COPE (Carver, 1997; see also Carver, Scheier and Weintraub, 1989), in its trait form. This instrument measures coping behaviours that are expected to be related to the newly developed instrument. As a

coping framework was used to select the factors listed above, the predicted relationships between Brief COPE and emotion-focused coping / Denial are considered fairly obvious, and will be discussed as they arise later in the chapter.

2.6 METHOD

So, the goal of this chapter was to investigate the relationship between the factors described above, that were all hypothesised to be related to attempts at coping that may involve Denial or similar process that result in a distortion or rejection of information.

2.6.1 Item generation

This was achieved by combining items from existing scales that measure the constructs listed above. This would mean that the items selected would already have been subject to rigorous validation and would have demonstrated desirable psychometric properties in their parent scales.

The disadvantage of this approach is that construct validity may suffer when the pre-existing scales are focused on concepts that do not map perfectly on to the ones of interest, leading to inadequate coverage of the construct domain. Additionally, when scales are particularly old, or have been developed and validated in a population very different to the one of interest, the items may prove to be written in a linguistic style unfamiliar to the target population. The phrasing of items in personality tests has been shown to be an important factor in influencing their psychometric properties (Guilford,

1959).

In an effort to minimise these drawbacks, when no acceptable items could be found in existing scales some of the items were slightly adapted to better suit the purpose in hand (e.g. changing a state measure to a trait measure). When it proved impossible to adapt items in a simple fashion new items were generated. This was done by the author, in collaboration with a panel of staff members from the Department of Psychology at the University of Hull, all of whom had prior experience in scale development.

The scales that were chosen to represent the concepts described above were as follows:

2.6.1.1 Emotionally related personality factors

- 11 items on Emotional Inhibition from the Emotion Control Questionnaire (ECQ; Roger & Nesshover, 1986).
- 8 items from the Berkeley Expressivity Questionnaire (BEQ; Gross & John, 1995), from the Impulse Strength and Positive Expressivity scales.
- 10 items on Anger Impulse Strength/Emotional Reactivity generated by the author.

2.6.1.2 Personality factors

- The revised Life Orientation scale (LOT-R; Scheier, Carver & Bridges, 1994), is a widely used measure of dispositional optimism / pessimism. 5 items were taken from this questionnaire.
- 7 items from the Social Self Esteem scale of the State Self esteem Scale (SSES; Heatherton & Polivy, 1991).

- 18 items from the Mental Toughness-18 questionnaire, a sub-set of the full MT-48 scale (Clough & Earle, 2000). The constructs of this questionnaire, are similar to hardiness; challenge, control, commitment and confidence.

2.6.1.3 Coping Resources

- 8 items on the use of emotional Social Support drawn from the Interpersonal Trust Questionnaire (ITQ; Forbes & Roger, 1999).
- 6 items on seeking Instrumental Social Support, generated by the author.

2.6.1.4 Coping Styles

- 25 items, 15 on Detachment coping and 10 on Avoidance Coping, from the Coping Styles Questionnaire (CSQ; Roger, Jarvis & Najarian, 1993).
- 9 items on Denial-like coping, generated by the author. These were mainly Denial-like attitudes towards aspects of every day life, such as attitudes to health regime.

In total, 107 items were selected for inclusion in the CWL instrument.

As a check on the face validity of the generated or adapted items a draft questionnaire was pre-tested on a sample of 10 staff and students from the University of Hull. Two items that were found to be ambiguous were reworded and the overall arrangement and layout of the questionnaire was slightly adapted to include extra instructions and an example item.

2.6.2 Response formats

Depending on the content and wording of the items the response scale took one of two four-point Likert-type formats.

2.6.2.1 Frequency-based response scale

For items that referred to the frequency of specific behaviours, the participant was asked the extent to which he or she used the particular behaviour on the following scale:

1 = almost never, 2 = sometimes, 3 = often, 4 = almost always

2.6.2.2 Agreement-based response scale

For items that presented attitudes the participants were asked to indicate the extent to which they agreed with the statement on the following scale:

1 = Strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.

Some items would have fitted either scale format (e.g. "I have strong emotions") and these items were distributed between the two scale types to give an approximately equal distribution of items across scale type, 55 items for the former and 52 for the latter. The frequency-based items formed the first half of the questionnaire, the agreement-based items the second.

The 107 item CWL instrument can be found in Appendix A.

2.6.3 Questionnaire Distribution Procedure and Sample

The questionnaire was distributed to an opportunity sample of adults in Hull and at various Universities and other locations in the UK (for a full listing refer to Appendix B). Participants were initially approached either by e-mail shot, by door-to-door canvassing or by canvassing in a public place (e.g. a University Campus).

In the initial approach participants were informed as to the purpose of the study, how long it would take (about 15 minutes) and that it would be entirely anonymous and confidential. To encourage participation the participant was told that if they completed and returned the questionnaire a donation of 20p would be made to the NSPCC charity on their behalf. If the participant agreed to take part they were given or sent a questionnaire along with a cover letter and a reply-paid envelope with which to return the questionnaire. The cover letter specified a date for the latest return of the questionnaire, which was set to be approximately two weeks after the questionnaire was distributed.

Overall 2000 questionnaires were distributed and 841 were received back within one week of their return date, a response rate of 44% .

2.6.4 Criterion validity sample

A sub-sample of 500 were given an extended questionnaire, that in addition to the 107 CWL items contained:

- Brief COPE (Carver, 1997), an abridged version of the widely used COPE coping styles inventory. The abridged version was used to reduce the overall time burden of the assessment protocol (Anastasi and Urbina, 1996).
- STAI form Y2 trait anxiety scale (Speilberger, 1983).
- The rumination scale of the ECQ (Roger & Najarian, 1989).

The extra scales formed part of the same booklet as the CWL, and were inserted at the

end to reduce any sensitisation that their completion would have on the CWL. The protocol for distribution to the validation sample was identical to the original questionnaire, the only difference being that the participants were told that completion of the questionnaire would take about 20 minutes as opposed to about 15 for the original.

500 validation questionnaires were distributed and 269 were received back, a response rate of 54%.

2.6.5 Test-retest reliability sample

After they had agreed to participate in the study a sub-sample of 200 agreed to form the test-retest reliability sample. They were asked if they would mind completing the CWL questionnaire for a second time in about eight weeks. It was explained that this would mean that their participation would no longer be anonymous, as they would have to provide a name and address that the retest questionnaire could be sent to, but that their data would remain highly confidential and would only be identified by a code number.

143 retest questionnaires were received back, a response rate of 72%.

2.7 RESULTS

Questionnaires received from participants under the age of 18 and over the age of 70 were not entered into the analysis. Questionnaires with significant missing data (i.e. no

age or sex data, or more than 3 missing items) were excluded from the analysis. This left a final first sample of 789; 204 males (mean age 40.27, SD 13.36) and 585 females (mean age 37.04, SD 12.90).

2.7.1 Item analysis

Standardised (Z) scores for the Standard deviation and skewness of each item were computed. Items with significantly lower standard deviation compared to the rest (less than -1.96) were excluded from the analysis (items 74, 60 and 67). Items which were significantly skewed (less than -1.96 or greater than 1.96) were also excluded from the analysis (items 46, 107, 42, 65 and 78).

Correlation matrices of all of the remaining variables were produced to check that each variable had substantial correlations with at least a couple of other variables. In addition, the Measure of Sampling Adequacy (MSA) was computed for each variable and variables with MSAs of less than 0.7 were excluded from further analysis. This resulted in the removal of five variables (items 65, 74, 81, 92, 107), leaving a final total of 97 items in the analysis.

2.7.2 Factor extraction

Kline (1994) recommends the use of Principal Axis factoring for factor extraction. However, Nunnally (1978) points out that for large matrices principle components or other methods such as maximum likelihood tend in practice to produce virtually identical results. Both Principal Components and Principle Axis factoring were employed on the set of items from the CWL.

Both methods extracted 19 factors with eigenvalues greater than one. Cattell (1978) has shown, however, that the use of this criterion greatly overestimates the number factors. A scree test was carried out to select a more manageable number of factors to rotate. Scree tests on both extraction procedures produced a major elbow point at the third factor and a minor elbow point at the sixth factor. It was decided to retain both three and six factor solutions for rotation.

2.7.3 Rotation of factors

Kline (1994) recommends oblique rotational procedures, as in real life factors are likely to be correlated. However, he points out that orthogonal procedures can often produce simpler and more easily interpretable solutions. It was decided in this case to use both oblique and orthogonal rotational methods, namely Direct Oblimin and Varimax, respectively.

So, eight models in all were rotated:

1. Six factors extracted by Principle Axis factoring, rotated by Direct Oblimin
2. Six components extracted by Principle Components, rotated by Direct Oblimin
3. Six factors extracted by Principle Axis factoring, rotated by Varimax
4. Six components extracted by Principle Components, rotated by Varimax
5. Three factors extracted by Principle Axis factoring, rotated by Direct Oblimin
6. Three components extracted by Principle Components, rotated by Direct Oblimin
7. Three factors extracted by Principle Axis factoring, rotated by Varimax
8. Three components extracted by Principle Components, rotated by Varimax

The aim of any factor analysis is to arrive at a solution with simple structure. Kline (1994) suggests that this can be operationalised by searching for a solution which maximises the hyperplane count. Similar criteria should also hold true for the individual items in the analysis; they should each have at least one high loading on one of the factors and at least one low loading on at least one other of the factors.

Each of the eight solutions above was initially inspected to ensure that each item had an absolute loading of at least 0.3; any items that did not were dropped. Of the remaining items, those that did not have a difference of at least 0.1 between their highest and next highest loadings were also dropped. (For details of excluded items see Appendix D.)

For the purpose of comparing the solutions two indices were compiled; the number of hyperplanes for each matrix (as a percentage); and the number of items that did not have at least one low ($< .1$) loading. Hyperplane width was set at ± 0.1

The statistics for each solution are shown in Table 2.1.

Table 2.1 points clearly towards the six-factor, Varimax-rotated solutions as best approaching simple structure. Both the Varimax and Oblimin solutions had low numbers of items with no low loadings and the highest proportion of hyperplanes overall. These two solutions were then compared to see if they had reproduced similar patterns of factors.

Table 2.1: Comparison of the simple structure of eight candidate factor analysis solutions.

	1	2	3	4	5	6	7	8
Factors rotated	6	6	6	6	3	3	3	3
Extraction	PA	PC	PA	PC	PA	PC	PA	PC
Rotation	O	O	V	V	O	O	V	V
Hyperplanes (%)	29	34	41	40	24	22	25	23
Items without low loading (n)	11	3	0	3	18	28	22	27

6 = six factors, 3 = three factors; PA = Principle Axis factoring, PC = Principle Components;
 O = Direct Oblimin ($\delta = -0.6$), V = Varimax

The pattern of factor loadings was identical for both solutions except for one item in the first factor and two items in the third factor. In both cases the solution based upon Principle Axis factoring included the items, while the solution based upon Principle Components did not. Given the virtually identical nature of the solutions it was decided to use solution number three, based upon Principle Axis Factoring and Varimax rotation, to compute the scales. The full table of items and factor loadings is shown below in Table 2.2.

Table 2.2: Factor analysis loadings for the CWL

Item	Factor					
	1	2	3	4	5	6
105	.75	-.13	.07	.13	.09	-.05
075	.71	-.18	.05	.15	.02	-.03
087	.65	-.02	.05	.13	.15	-.01
035	-.60	.13	.03	-.19	-.21	.38
099	.57	-.13	.06	.28	.19	-.12
041	.57	.01	.28	.19	.19	-.08
024	-.57	.14	-.18	-.13	-.05	.29
106	-.54	.14	.07	-.14	-.12	.28
039	.53	.16	.26	.09	.14	-.20
040	.53	.09	.20	.17	.34	-.18
034	-.52	.18	.07	-.17	-.07	.36
045	.46	.12	.20	.30	.26	-.08
057	-.46	.09	.06	-.15	-.10	.26
030	.42	.09	.12	-.02	.12	-.12
008	.40	.16	.25	-.06	.16	-.07
089	-.32	.05	.01	-.03	-.17	.09
096	.02	.82	-.09	.01	.09	-.04
095	.07	.80	-.14	.07	.12	-.08
086	-.07	.70	-.09	-.03	-.01	-.03
084	.04	.66	-.10	.12	.10	-.09

Table 2.2 Continued: Factor analysis loadings for the CWL

Item	Factor					
	1	2	3	4	5	6
013	-.02	.66	-.41	-.06	.07	.07
088	-.02	.65	-.09	.04	-.04	-.03
103	.04	-.64	.27	.03	.00	.18
082	.09	.52	-.12	.22	.10	-.13
002	-.06	.41	-.26	.07	-.04	.12
015	.15	-.35	.63	.12	.06	.05
010	.12	-.22	.55	.13	-.13	-.02
001	.13	-.43	.55	.09	-.03	.00
014	.02	-.16	.53	.09	-.05	.17
054	.19	-.32	.46	.09	.09	-.05
017	.26	-.24	.44	.23	.05	-.10
016	-.02	.29	-.43	-.20	.21	.21
018	-.04	-.20	.42	.03	-.19	.32
101	.23	.05	.06	.83	.09	-.16
104	.15	.04	.18	.73	.04	-.07
080	.15	.01	.17	.65	.18	-.09
097	.25	.09	.20	.65	.15	-.19
094	.21	.05	.09	.63	.10	-.06
090	.23	-.03	-.10	.12	.71	-.13
064	.24	.02	-.07	.12	.68	-.07

Table 2.2 Continued: Factor analysis loadings for the CWL

Item	Factor					
	1	2	3	4	5	6
044	.30	.08	.12	.12	.63	-.12
043	.24	.12	.10	.14	.54	-.04
071	-.09	-.05	.12	-.08	-.53	.26
070	-.13	-.03	.14	-.07	-.47	.27
023	-.27	-.05	-.09	-.08	-.14	.62
020	-.19	-.16	.19	-.01	-.31	.53
032	-.16	-.01	.02	-.12	-.07	.52
050	-.32	-.08	-.09	-.17	-.24	.50
098	-.20	-.06	.08	-.13	-.28	.42
% variance	11.00	9.50	6.64	6.10	5.90	5.21

Hyperplanes = 41% (width = ± 0.1)

As well as simple structure the factor solution must be interpretable if it is to be useful.

The solution presented in Table 2.2 was found to be psychologically meaningful, as discussed next.

2.7.4 Interpretation of the factors

Factor 1 was labelled Pessimism. It comprised 16 items, the highest loading items being 105 "I hardly ever expect things to go my way" and 75 "I rarely count on good things

happening to me". All of the items reflected a general negative expectancy, an attitude of perceiving the threat in a situation. Some items included an element of powerlessness, most clearly shown by 39 "I feel overpowered and at the mercy of the situation".

Factor 2 contained nine items and was called Social Support. The items with high loadings on this factor all described a predominantly emotion-focused coping style based on seeking out social support. It includes items such as 96 "I like to talk problems over to 'get them off my chest'" and 86 "I feel better when I have talked to my friends about my problems"

Factor 3 contained eight items, the highest loading being 1 "I keep things to myself and don't let others know how bad things are" and 10 "When someone upsets me, I try to hide my feelings". It was labelled Emotion Control as all items were concerned with inhibiting the expression of emotions to others. All of the items except one were explicitly concerned with the hiding of negative emotions. The exception was 17 "I feel embarrassed about expressing my feelings", which did not make clear whether it referred to positive or negative emotion.

Factor 4 was labelled Esteem Concern and was characterised by items such as 101 "I'm worried about what other people think of me " and 104 "I feel concerned about the impression I am making". All of the items related to the perception of threat from the social environment, e.g. the potential to be evaluated negatively by others. This factor comprised five items in total.

Factor 5 was made up of six items, the highest loading being 64 "I have a very short fuse when things don't go as planned", and was labeled Anger. This factor describes the strength of negative emotions (perhaps more correctly anger alone) rather than their expression per se.

Factor 6 was best described by item 23 "I cope well with any problems that occur", the highest loading item. It reflects a positive self belief and positive expectancy in an ability to deal with uncertainty and problems. It was made up of five items in all, and was labelled Self Mastery.

A full listing of the items that load on each scale is shown in Appendix C. Descriptive statistics for each of the CWL scales are shown in Table 2.3, which also presents scale intercorrelations and reliability alpha coefficients on the diagonal.

Table 2.3: Coping With Life scale means, standard deviations, inter-correlations and reliabilities (α) on the diagonal

Factor	Mean	SD	F1	F2	F3	F4	F5	F6
F1, Pessimism	2.15	.45	.86					
F2, Social Support	2.83	.52	-.05	.88				
F3, Emotion Control	2.35	.56	.29**	-.55**	.81			
F4, Esteem Concern	2.74	.61	.48**	.08*	.29**	.87		
F5, Anger	2.28	.55	.48**	.13**	-.02	.35**	.82	
F6, Self Mastery	2.63	.56	-.51**	-.11**	.04	-.32**	-.46**	.76

N = 789, * = $p < .05$, ** = $p < .01$

NB. Even though an orthogonal rotation was used (varimax) there are significant factor intercorrelations because only the subsets of highest loading items per factor were used in scale construction.

All factors had means between two and three on the four-point scale. Alphas were all above 0.8 apart from F6 Self Mastery, which was still an acceptable 0.76.

Regarding the scale intercorrelations, F1 Pessimism showed moderate correlations with all of the other factors bar F2 Social Support. Social Support had a moderate negative correlation with F3 Emotion Control but weak correlations with the other factors. Apart from Pessimism, Emotion Control correlated moderately with Esteem Concern, but its other correlations were effectively zero, including that with Anger. Factor 4 Esteem Concern had modest correlations with Anger (positive) and Self Mastery (Negative). Self Mastery showed a moderate negative relationship with Anger.

2.7.5 Concurrent Validity

Table 2.4 shows the correlations between CWL scales and STAI Trait Anxiety scale (Spielberger, 1983); the ECQ Ruminant scale (Roger & Najarian, 1989); and relevant scales from Brief COPE (Carver, 1997).

Because of the large number of intercorrelations and the opportunity for type I error that this presents, only the correlations with significance levels less than .01 were considered as significant here.

Table 2.4: Correlations between Coping with life scales and validation scales

	Coping with Life scales					
	f1	f2	f3	f4	f5	f6
Cope self distraction	.30**	.13	.15*	.14*	.14*	-.17**
Cope disengagement	.52**	-.05	.20**	.27**	.36**	-.29**
Cope denial	.48**	.05	.06	.24**	.21**	-.25**
Cope positive reinterpretation	-.20**	.31**	-.16**	-.00	-.10	.01
Cope self blame	.62**	-.12	.32**	.44**	.32**	-.30**
Cope venting	.21**	.41**	-.22**	.15*	.40**	-.18**
Cope emotional support	-.02	.56**	-.29**	-.01	.11	-.17**
Cope instrumental support	-.04	.65**	-.36**	-.04	.10	-.14*
Cope Active coping	-.07	.21**	.00	.01	-.03	.09
STAI	.73**	-.07	.36**	.56**	.55**	-.54**
RUMINATE	.53**	.12*	.12*	.43**	.46**	-.29**

N=269, * = p < .05, ** = p < .01

The CWL Pessimism scale had notable positive correlations with Brief COPE Self Distraction, Denial, Behavioural Disengagement, Self Blame and Venting. The only significant negative correlation was with Positive Reinterpretation. CWL Pessimism also correlated significantly with STAI Trait Anxiety and ECQ Ruminant.

The Social Support scale from CWL showed significant positive correlations with Brief COPE Active Coping, Emotional Support, Instrumental Support, Venting and Positive Reinterpretation.

Factor 3 from CWL, Emotion Control, had a significant positive correlation with STAI Trait Anxiety, as well as Brief COPE Self Blame and Behavioural Disengagement. In addition, it had significant negative correlations with Brief COPE Emotional Support, Instrumental Support, Venting and Positive Reinterpretation.

Esteem Concern was found to have only positive correlations with the concurrent validity scales. These were with Denial, Self Blame and Behavioural Disengagement from the Brief COPE, STAI Trait Anxiety and ECQ Ruminant.

Anger again showed just positive significant intercorrelations; Brief COPE's Denial, Behavioural Disengagement, Venting and Self Blame; STAI Trait Anxiety; and ECQ Ruminant.

Finally, Self Mastery was found to correlate significantly with ECQ Ruminant and STAI Trait Anxiety, both negatively. Brief COPE scales of Self Distraction, Denial, Emotional Support, Behavioural Disengagement, Venting and Self Blame all were found to have significant negative correlations with Self Mastery.

2.7.6 Test-Retest reliability

The CWL scales were completed for a second time by a sub-sample of 143 of the original participants between seven and nine weeks after the original administration. Scale reliabilities and test-retest correlations are shown in Table 6.

Table 2.5: Retest reliability statistics for the Coping with Life scale

	retest α	r test-retest
F1	.88	.83**
F2	.88	.74**
F3	.84	.80**
F4	.89	.85**
F5	.85	.76**
F6	.76	.69**

N = 143, ** = $p < .01$

The scale reliabilities are comparable with those found for the first administration, and again were all above 0.7. The test-retest correlations were also all highly significant and all above 0.69.

2.8 DISCUSSION

Of the solutions that were tried in the analysis of the data, a stable six factors solution was arrived at. The factors were found to have good internal reliability and the factor solution was found to be stable over time.

The first factor, Factor 1, was labelled Pessimism. The highest loading item was 105 "I hardly ever expect things to go my way", and was a typical example of the general

expectancy (in this case negative) that characterises the concept of Optimism/Pessimism. Indeed, six of the items (including 105) were based on items in the LOT (Scheier & Carver 1983).

Pessimism showed a strong positive correlation with trait anxiety (Speilberger, 1983), as would be expected (e.g. Aspinwall & Brunhart, 1996). Individuals high in Pessimism are more likely to grade stimuli as threatening, and less likely to feel that they have adequate resources to deal with that threat both factors that increase anxiety.

Pessimism was found to have a moderate positive correlation with Rumination. This in line with Carver, Blaney and Scheier (1979), who found Pessimism was significantly related to a measure of Rumination based on focusing on negative feelings and their associated distress.

The concept of Optimism / Pessimism has been criticised as merely reflecting the underlying effects of variables such as Neuroticism, Anxiety and Self Esteem (e.g. Smith, Pope, Rhodewalt & Poulton, 1989). The results found here agree with Scheier, Carver and Bridges (1994), who found that Optimism / Pessimism was related to these concepts, with correlations in the moderate range between .50 and .60 (as here), but were distinct in nature.

The Pessimism Factor found in this study had a moderate negative correlation with the Self Mastery Factor which is what would be expected for scales representing negative and positive expectancies respectively. Self Mastery can be seen as being quite

conceptually related to Hardiness (Kobasa, 1982), and Kobasa (1979) found that Hardiness was correlated positively with Optimism. Indeed, two items in the Pessimism scale were drawn from the Mental Toughness questionnaire (Clough & Earle, 2000), itself based on the concept of 'Hardy personality', which Scheier and Carver (1987) suggest is underpinned by the concept of Optimism/Pessimism. For example, item 34 "However bad things are, I feel they will work out positively in the end" is clearly central to the Optimism/Pessimism construct.

The reason that the items making up Pessimism and Self Mastery did not load onto just one factor is perhaps best explained by control. The Pessimism scale includes elements of lack of control and powerlessness, whereas Self Mastery suggests a belief in one's ability to influence events to produce positive outcomes (cf. Pearlin and Schooler, 1978).

Overall the structure of the Pessimism factor found here supports the contention of Scheier and Carver (1987), that the dimension of Optimism / Pessimism underlies the use of a number of different coping styles. As well as providing additional support for the link between Pessimism and Hardiness (in this case, through 'Mental Toughness'), the analysis presented here suggests that Detachment and Avoidance coping are also underpinned somewhat by Pessimism.

For instance, Items such as 39 "I feel overpowered and at the mercy of the situation" and 40 "I become miserable or depressed" were originally part of the Detachment scale of the CSQ (Roger, Jarvis & Najarian, 1993). However, they do fit well with the scale here, describing statements of powerlessness, and negative affectivity that characterise

the concept of Pessimism (Scheier, Carver & Bridges, 1994). Another item from the CSQ, this time from the Avoidance scale, 8 “I pray that things will just change”, actually describes a sense of resigning and powerlessness rather than avoidance per se.

The Pessimism factor showed significant correlations with logically related scales from the Brief COPE inventory. Pessimism and the Positive Reinterpretation scale from Brief COPE had a weak but significant negative correlation, as was also found by Carver, Scheier and Weintraub (1989) for the full COPE (a positive correlation with Optimism in their case). The same study by Carver et al found a negative correlation between Optimism and Behavioural Disengagement, and Optimism with Venting Emotions. The same pattern of results were found here, with the direction of correlation reversed for the Pessimism scale (as opposed to their Optimism). In the Carver et al study, a non-significant correlation was found between Optimism and Seeking Emotional support, which is also what was found here. One notable exception to the pattern of similar results was the Positive correlation between Active Coping and Optimism found by Carver et al, which was not replicated here. In this study Pessimism had a non-significant correlation with Active Coping. This could be because of the focus on actions in the Carver et al study (items such as “I take additional action to try to get rid of the problem” and “I take direct action to get around the problem”) rather than just expectancies in the present study.

Factor 2 was called Social Support. The items with high loadings on this factor all described a predominantly emotion-focused coping style based on seeking out social support (Krohne, 1993). It includes items such as 96 "I like to talk problems over to 'get

them off my chest” and 86 "I feel better when I have talked to my friends about my problems". Overall Factor, 2 describes a tendency by the individual to share his or her problems and to seek support when in need. Social Support is conceived as a resource for the individual when under stress and he or she want to communicate their emotions (see Palfai & Kenneth. 1997).

The Social Support factor that emerged in this study had a negative moderate correlation with the Emotion Control Factor, which could be expected since these two scales are conceptually opposite. Emotion Control is directly related to the concept of Emotional Inhibition which refers to ‘bottling up’ or inhibiting the expression of experienced emotion. Roger and Najarian (1997) and Forbes and Roger (1999) found a significant negative correlation in between Emotional Inhibition and Social Support. Indeed, one of the items that forms the current Social Support factor was drawn originally from the Emotion Control Questionnaire (Roger & Najarian, 1989).

Colby and Emmons’ (1997) findings are also supportive to these results, they found a positive relation in between openness in emotion and the perception of availability of Social Support.

Correlations of the Social Support Scale were found with different scales of Brief COPE. The Focusing on and Venting of Emotions scale (Brief COPE) was also positively correlated with the Social Support Scale, a rather self-evident finding (since people need other people in order to vent their emotions) which was confirming previous results (Carver, Sheier & Weintraub, 1989).

The Active Coping Scale (Brief COPE) had a positive correlation with Social Support. This was expected since both scales are predominately based on an essence of seeking out (rather than passively waiting). Similar correlations were found previously by Carver, Sheier & Weintraub (1989).

The Rumination scale had zero correlation with the Social Support scale, in agreement to findings by Forbes and Roger, (1999).

The third factor was called Emotion Control, and was consisted of eight items describing the tendency to inhibit the expression of emotions to others. All of the items except one were explicitly concerned with the hiding of negative emotions. Most of the items (five) were from the Emotional Inhibition scale of the ECQ (Roger & Najarian, 1989) and they clearly indicated the identity of the scale. Two of the items were drawn from the Avoidance Coping scale of the CSQ. However, they were describing a tendency of the person to keep a brave face and not let others know about the negative events in their life (e.g. "I keep things to myself and don't let others know how bad things are"), rather than actual avoidance coping.

As we saw above, the Emotion Control scale as expected was found to have a negative correlation with the Social Support scale (Roger & Najarian, 1997; Forbes & Roger, 1999). Seeking Emotional Support from COPE and Emotion Control were also negatively correlated.

A positive correlation between Emotion Control and the Esteem Concern scale was also expected based on the hypothesis that individuals who care a lot about the opinion of the others in relation to themselves, would attempt to keep their emotions controlled in order to avoid being exposed. This expectation was confirmed with a weak positive correlation. The expectation that Emotion Control would correlate negatively with the Anger scale was not confirmed, maybe because the Emotion Control scale deals purely with withholding expression of negative affect while the Anger scale does not indicate clearly if the felt emotions are controlled or expressed.

The Emotion Control scale was found to have a moderate positive correlation with Trait Anxiety. This finding is in contradiction with the results of Bleiker et al (1993) where they had found a negative correlation in between Emotion Control and anxiety.

Finally, a small non-significant positive correlation with the Rumination Scale, confirmed previous research findings (Roger & Neshoever, 1987).

Factor 4 was labelled Esteem Concern and was characterised by items such as 101 "I'm worried about what other people think of me " and 104 "I feel concerned about the impression I am making". All of the items were related to the perception of threat from the social environment, e.g. the potential to be evaluated negatively by others, and a sense of worry related to their self concept.

The Esteem Concern Scale was expected to correlate positively with the Social Support Scale, since the concept of Social Support embodies the notion of Esteem Support,

which deals with the effects that the others have on promoting the person's feelings of self-esteem and value (Cohen & Wills, 1985) The results of the analysis though, did not support the hypothesis. This is may be due to the fact that esteem concerned individuals may avoid to open up to others or seek support because they wouldn't like to jeopardise their positive profile and expose themselves as stressed or needy.

As we saw previously the Esteem Concern scale correlated as expected positively with the Emotion Control scale.

A moderate positive correlation was also found as it was expected between Esteem Concern and Anger. This finding is in accordance to Lazarus (1999) where he supports that although anger is disapproved of by society in general, there are cases when the use of anger is considered almost necessary for the preservation of self-esteem and also that "Anger depends heavily on the goal of preserving or enhancing self - or social esteem" (Lazarus, 1999, p.217).

A negative correlation between the Esteem Concern scale and the scale of Self Mastery was expected, since high on Esteem Concern individuals could be expected to have relatively low confidence and greater need for approval and therefore less belief in themselves and their ability to control positive outcomes. This hypothesis was supported with a weak negative correlation.

Because Esteem Concern is essentially a source of anxiety the significant positive correlation between Esteem Concern and Trait Anxiety was expected. The core of the

Esteem Concern items, dealing with worry, is also consistent with its positive correlation with the Rumination scale. As well, Roger and Neshoever (1987) had also found a significant correlation in between Rumination and Social Sensitivity which is very similar to Esteem Concern.

Positive correlations were also found with the Denial, Behavioural Disengagement and Self Blame scales of COPE. These are consistent with the underpinning of Esteem Concern with Anxiety.

Factor 5, Anger, was characterised by items such as 90 "I get annoyed easily". Almost all of the items were dealing with the individual's experience of anger, only one was referring to the actual expression of it. This factor represents what Gross and John (1995) called 'Impulse Strength', the actual strength of emotion felt by an individual, rather than the expression of that emotion - which is represented here by Factor 3 Emotion Control. This may explain the lack of relationship with the Emotion Control Scale.

Of the six items of the Anger scale, four were newly created, while the rest were from the Detachment scale of the CSQ and were describing irritability and frustration - seen in the context of that scale as the opposite of detached coping. It can be seen then, that perhaps underlying the ability to take a Detached Coping style is the absence of very powerful emotions.

As it was mentioned above, the Anger scale was found to have a weak positive

correlation with the Social Support and a moderate positive correlation with the Esteem Concern scale. A hypothesis that the Anger scale would have a negative correlation with Self Mastery was confirmed (moderate negative correlation). It was of no surprise that a notion based on the individuals' feelings of control over the situation they encounter, would correlate negatively with a concept based on anger and its facets.

A moderate positive correlation in between the Pessimism and Anger scales was also found. This relationship confirmed previous research findings where anger had been found to correlate moderately negative with the scale of Optimism (Cohen & Hoberman, 1983).

In relation to COPE, the Anger Reactivity scale was found to have moderate positive correlations with Behavioural Disengagement, Venting, and Self Blame. The last is in accordance to the relationship of anger and attribution of blame (Smith and Lazarus, 1993).

Anger, as also expected was found to correlate moderately positively with both Trait Anxiety and Rumination. The repetition of negative thoughts that the concept of Rumination describes can help the existing anger to sustain itself or give onset to it, by the constant rethinking of painful affect or threatening thoughts. This positive relation in between Anger and Rumination is also supported by McDougal, Vanables & Roger (1991)

Factor 6 was labelled Self Mastery as It reflects the positive self belief and positive

expectancy in an ability to deal with and control uncertainty and problems, related to Pearlin and Schooler's (1978) formulation. As we saw earlier, The Self Mastery scale as expected was found to be negatively correlated with the scale of Pessimism and Esteem Concern.

The Self Mastery Scale was found to be negatively correlated with appropriate scales from the Brief Cope (Self-Distraction, Denial, Behavioural Disengagement, Self-Blame, Seeking Emotional Support and the Venting). These negative correlations fit with the general notion of self-sufficiency and perception of control that Self Mastery represents.

2.9 CONCLUSIONS

A six factor self-report questionnaire was developed based on concepts that have proven to be important in coping, and that were hypothesised to be related to Denial processes. The six scales were found to be internally consistent and stable over time. They were also found to have sensible relationships among themselves and with other conceptually related and well validated questionnaires.

The factors showed clear conceptual and empirical relationships. Pessimism and Self Mastery were found to be similar concepts that differed in their direction and their relationship to perceived control. Pessimism, probably via its link with Anxiety, seemed to underpin to a greater or lesser extent the other CWL scales with the exception of Social Support.

Social Support and Emotion Control were found to be very related to one another (almost opposites). They seemed to be distinguished primarily by their relationship with threat perception from the social environment - Emotion Control was linked to greater threat perception as characterised by its relationships with Esteem Concern and Pessimism (both moderately positive correlations), whereas Social Support showed no relationship with those variables.

Anger was found to be independent of Emotion Control, but as expected was related to threats to self esteem from external sources (Pessimism and Esteem Concern).

The factor structure revealed here helped clarify certain relationships that were not clear from the previous literature, and lent support to the contention of Hewitt and Flett (1996) that personality traits may underlie some coping assessment instruments. Specifically, it appeared that Avoidance Coping (Roger, 1995) and Emotional Coping (Roger, Jarvis and Najarian, 1993) may actually measure certain factors associated with Pessimism and Trait Anxiety.

The next chapters will provide the crucial tests of the central hypothesis, however, that this questionnaire, theoretically derived from a model of coping, will measure trait factors related to the use of Denial.

3 CHAPTER THREE:

PERSONALITY CORRELATES OF DENIAL IN OFFENDERS

Although everybody may use Denial at one point in life and beside the fact that there may be individuals who use Denial more, or more often than others, there are specific areas, categories of people, where the use of Denial seems to be extremely prevalent. It seems that for some symptoms, illnesses, or behaviours, Denial is often the common way that people engage in order to deal with their particular stressor.

Categories of such include people who suffer from breast cancer, cardiovascular diseases, eating disorders, AIDS, alcoholism (or other addictions such as smoking) and also people who commit crimes that are viewed as the most unacceptable by society, e.g. child sexual abusers and other sex offenders.

It is the hypothetical Denial of sex offenders and their admission of guilt in relation to their offence, that will be attempted to be addressed in this chapter. A Denial that although may vary in type and levels of depth, seems to be a very powerful common characteristic of the offenders of sexual crimes committed against both children and adults. (Crighton, 1995; Gocke, 1991)

Although a big body of the literature of sex offence and Denial is devoted to the area of child sexual abuse, and as a form of distorting thinking has received particular attention

by those who work with sex abusers (Briggs, Doyle, Gooch and Kennington, 1998), Denial is considered a usual point of view regarding sex offences in general (Lanyon and Lutz, 1984). Specifically, Grossman and Cavanaugh (1990) state that

“There is a general consensus among clinicians who evaluate and treat male patients accused of sex offences that these patients frequently deny any deviant sexual acts or desires”

(Grossman and Cavanaugh, 1990, p.742)

Interestingly, while the majority of the relevant literature has focused on levels of Denial in sex offenders (Stewart, 1996) there are not many studies that have actually compared levels of Denial between sex offenders and other offenders. The overriding assumption in the literature seems to be that sex offenders are more prone to use denial in relation to their offence than other offenders.

This is based on the literature that shows the extreme use of Denial in sex offenders.

Research in the area shows that as many as two-thirds of imprisoned sex offenders deny their offences (Marshall, 1994). The fact that such a substantial proportion of sex offenders deny the allegations against them and respond defensively, constitutes a major issue in both forensic and clinical setting (Birgisson, 1996).

This Denial of allegations that the sex offender insists upon, are not as in the case of lying motivated by fear of consequences, but by fear of overwhelming emotion and a need to maintain a favourable image about ones self (Chaffin,1997). Sex offenders who deny, have often core beliefs about themselves that they are incompatible with their

abusive behaviour, for example they may consider themselves as non violent so they could be unable to accept that they have committed a violent crime such as rape (Crighton, 1995). This may explain also the fact, that although admission by the sex offender of his offences would raise the possibilities for reduction of penalties and increase the chances for obtaining treatment (Baldwin & Roys, 1998), so many sex offenders insist on denying.

This significance of Denial in the area of sex offence is so prominent that the assessment of many sex offenders as untreatable depends on the levels of Denial and minimisation which are present at the time of their evaluation (Winn, 1996).

Theoretical models which are based on extensive empirical work suggest a strong link between Denial and sex offence. Conceptually, Denial is seen, together with minimisation, as self-protective processes which maintain the sex offenders' ability of distorting their level of responsibility (Winn, 1996). Engaging in Denial the sex offender avoids to acknowledge the details and ramifications of his abusive behaviour and the internal discomfort that the awareness of his offensive behaviour would cause (Briggs, Doyle, Gooch & Kennington, 1998).

There are undoubtedly pragmatic reasons on why sex offenders deny their offensive behaviour (Baldwin & Roys, 1998). Threats of imprisoning, stigmatisation, humiliation, isolation, loss of professional and social status, naturally, can be so immense, that for the sex offender to deny the existence of either the act itself -complete Denial- or aspects of it, can be considered as an adaptive way for dealing with the threat and the anxiety that it produces (Furniss, 1995). So, Denial can be conceptualised as an adaptive functional

process, aimed at protecting the individual (sex-offender) and his family (Baldwin, 1997).

Levels or areas of Denial that the sex offender uses in order to refute responsibility for the abusive act have been identified by many clinicians and researcher in the area.

Concrete data which denote various levels of Denial are regularly obtained through verbalised statements of offenders which participate in therapy (Veach, 1997).

Although there are some differences among the various classifications, the general idea is more or less the same. In brief, the major levels that Denial is identified are, Denial of the abuse as an act that ever took place (complete or total Denial), its planning, its severity, its awareness, its abusive nature, its harmful effects, its responsibility, its guilt and Denial of Denial (Furniss, 1995; Salter, 1988; Veach 1997; Winn, 1996).

Conceptually, sex offence can be conceived as having more than one link with Denial. As a particular type of expressed behaviour, sex offence can be related to avoidance of reality under the syndrome of secrecy and addiction. This may explain the maintenance of the Denial by the sex offender even in those cases where they have pleaded guilty in court. Sex offence is often perceived as a form of addictive behaviour and as such it is understood not as primarily a pleasurable experience but mostly as a tension relief behaviour which serves reality avoidance and supports coping mechanisms. Specifically, in relation to weakness of ego-strength which is often theoretically linked with the use of Denial, there is the suggestion that the same mechanism of avoidance of reality that initiated the abusive behaviour in the first place, maintains the Denial of the responsibility of the act afterwards (Furniss, 1995).

The belief system that ratifies the behaviour of the sex offender produces in the first place a cognitive distortion, in continuation the sex offender constructs complex Denial mechanisms which are instrumental and vital to his refusal in accepting responsibility for his actions. If the sex offender continues without accepting responsibility for his behaviour then he will not accept responsibility for change either and so no change in the behaviour will occur (Dominelli, 1991). The above theoretical constructions may offer a plausible explanation on why although the reconviction rates of sex offenders is no greater than that for other types of crime in the short term, the long-term risk of reconviction remains high (Soothill, 1986, in Roger & Masters, 1997)

The general profile of sex offenders as based on numerous studies, includes concepts such as low self esteem, inefficacy in social relationships and overall inadequacy in social skills, lack of confidence, increased anxiety and anger (Finkelhor, 1986; Roger & Masters, 1997). In other words, concepts which as discussed previously imply a low sense of external and internal resources for the individual and therefore a tendency towards emotional-focused coping in the form of defensiveness. Research on sex offenders which compared sex offenders who deny their offences with sex offenders who admit them, have shown that 'deniers' tend to exaggerate less than 'admitters', in relation to their problems (Baldwin & Roys, 1998) and the description of their psychological functioning and adaptation. Also, 'Deniers' showed more defensiveness (Grossman & Cavanaugh, 1990), were more likely to minimise anxiety and personality disorders (Haywood, Grossman & Hardy, 1993) and present themselves as emotionally stable, in comparison to admitters (Birgisson, 1996).

However, although a number of studies in the area have explored demographic and other variables and beside the fact that there are theories which propose explanations in relation to the motives that are associated with Denial, there is little empirical work on personality factors which are related to the Denial of the sex offender (Baldwin & Roys, 1998).

The present study focused on evaluating coping and personality aspects that are associated with Denial in a population of prisoners consisting of sex offenders and offenders of other crimes but of similar seriousness, as denoted by the prison sentence to be served by the offender. A sample of sex offenders seems to be a very appropriate place to look for elevated use of Denial, and CWL seem a very appropriate tool with which to search for relevant individual differences associated with this Denial.

The first hypothesis was, that those considered to be predisposed to engage in Denial (sex offenders) would present a different pattern of coping and personality variables as evaluated by the CWL, in comparison to the non sex offenders. So, sex offenders would be expected to score lower on Social Support and Self Mastery and higher in variables such as Anger and Esteem Concern and Pessimism when compared with the non sex offenders.

This study focused also on differences in the claim of guilt or innocence of the offence in both the sex offenders and the non sex offenders sample. In other words it compared coping and personality factors in 'deniers' and 'admitters'. The hypothesis in this case

was that 'deniers' would be like the sex offenders, and score lower in variables such as Social Support and Self Mastery, and higher in variables such as Pessimism, Esteem Concern.

3.1 METHOD

3.1.1 Participants

The 131 male participants were prisoners at HMP Wolds. They were divided in two groups, sex offenders (N=48) and non-sex offenders (N=83). Sex offences, for the purpose of this study, included rape, attempted rape, indecent assault and child molestation. The non-sex offenders were selected on the basis of their crimes being serious enough to warrant similar lengths of sentences, and included murder, attempted murder, manslaughter, serious assaults and serious drug offences.

The sex offenders and non-sex offenders were segregated within the prison, sex offenders occupying one block and non-sex offenders occupying two separate blocks. The matching of the participants on the length of their sentence was initially done on the basis of prison records. These showed a mean sentence of 7.68 years for the group of non-sex offenders (SD = 4.52 years), and a mean of 6.76 years for the sex offenders (SD = 3.16 years). The difference between the groups in terms of sentence was not significant ($t[111] = 1.31, p > .05$, using a correction for unequal variances between the groups).

3.1.2 Materials

The Coping With Life (CWL) questionnaire and an additional set of questions, relevant to the status of participants as prisoners, were used.

The ten additional questions were related to the status of the participants as prisoners, and included questions about the length of their sentence, the number of years they had still to serve, any disciplinary trouble they had been involved in while in prison, and whether they considered themselves as innocent or guilty of the crime for which they had been convicted.

3.1.3 Procedure

The CWL questionnaires were distributed in A4 envelopes that included a cover letter which was explaining the nature of the questionnaire, guaranteed the anonymity of it, and offering debriefing by the researcher and/or advice from the prison doctor together with the CWL57 with the additional questions attached and a blank return envelope.

The distribution procedure of the questionnaires was designed to reduce the likelihood of the respondents giving significantly biased desirable self reports in completing the measures, what Edwards (1970) referred to as 'impression management'. A number of precautions were taken to minimise this, in line with the suggestions of Anastasi and Urbina (1997) and the procedures of Weinberger and Schwartz (1982).

Distribution was done by the prison wardens but in the presence of the researcher, so that the nature of the study and its independence from the prison authorities could be explained. Envelopes were given directly to the individual participants, sex offenders and non sex offenders who had been selected based on the matching of their sentence length. Participants were asked to read the cover letter and, if they wished, to fill out the questionnaire and return it in the blank envelope enclosed to the researcher later in the day. Participation was encouraged by the offer of a voucher for a snack from the prison canteen (a chocolate bar) if they returned the questionnaire. The researcher remained in the wing to allow the participants to ask questions about the study.

It was considered essential to guarantee the anonymity of the participants' responses, especially given the nature of some of the extra questions relating to their guilt and innocence, and so it was stressed that the participants should not put their names on the questionnaires. Additionally, as stated above, the participants were asked to return their completed questionnaire directly to the researcher, so that the fear that their questionnaire could be identified by a member of staff would be reduced. (Not all questionnaires distributed were returned direct to the researcher on the same day; a minority were returned at a later date.)

The participants were given as long as they liked to complete the questionnaire. They were free to complete it at the place of their preference, but were encourage to find somewhere where they would be assured of reasonable privacy. This was always possible, as prisoners had individual cells.

When the participants asked questions related to the nature of the questionnaire the researcher avoided completely any reference to denial or sex offence and concentrated on the coping nature of the questions.

Even though the two offender groups were housed in separate wings of the prison it was necessary to code the questionnaires as to which group they were distributed to, to avoid any potential mix up. The questionnaires distributed to each group were thus identical except for one missing full stop from the last page, and this information was used to assure which group each questionnaire came from.

3.2 RESULTS

In total, 125 questionnaires were distributed and 107 were returned, giving a response rate of 86%. From those returned a small number (9), mostly from the sex offenders group, had significant obscenities or other evidence of not taking the study seriously, and were not used in the analysis. Of the remainder, 15 questionnaires had more than five items of missing data, or had not completed the question as to whether they considered themselves guilty or not (and so would not be able to be used in the analysis) and these were not included in the analysis also.

Of the remaining 83 questionnaires, 31 were from sex offenders and 52 from non sex offenders. The average age of the sex offenders was 53.06 years (SD = 20.64) and the average age of the non-sex offenders was 34.80 years (SD = 8.27).

The matching of the two groups in terms of their sentences was initially done on the basis of prison records of the participants selected to be offered a questionnaire. However, because the returned questionnaires were completely anonymous it was not known from this data alone what the actual composition of the sample of returned questionnaires consisted of. It was thought desirable to check the length of sentence reported on the questionnaires between the groups. The average sentence for the sex offenders group was found to be 6.38 years (SD = 3.16), the average sentence of the non-sex offenders group was 7.81 years (SD = 4.52). The difference between the groups were not significant, neither were these self reported sentences significantly different to the sentences according to the prison records.

The next thing to check was the "guilt" status of the two groups. By this it is meant the extent to which the two groups reported that they were innocent of the crime for which they were found guilty. Seventy-three percent of the non-sex offenders group reported that they perceived themselves to be guilty of their crime. Only 39% of the sex offenders group reported that they were guilty of their crime. This difference was highly significant ($\chi^2 [1] = 9.58, p < .01$).

Home office statistics (Mattinson, 1998) for the year 1996 show that 84,900 convictions were made leading to a prison sentence. In the same year 3,368 convictions were quashed, just less than 4% of the total number of convictions. As a very rough estimate these figures would suggest that only a very few people in our sample (about 3) would

be expected to have unsafe convictions that would be later reversed on appeal.

Finally, the CWL questionnaire was developed in a sample of the general adult population which can not be considered representative of the sample of prisoners in this study. This does not present a problem for comparisons between the participants' mean scores on the various CWL scales as they will not be compared to norm groups, only within the prison sample itself. However, it was felt necessary to check that the internal consistency and reliability of the CWL scales were adequate in this sample.

Alphas for the scales were as follows: Pessimism = .80; Social Coping = .89; Emotion Control = .82; Esteem Concern = .79; Anger = .75; Self Mastery = .81.

Tables 3.1 and 3.2 below show descriptive statistics for the CWL scales broken down by sex offender and guilt status respectively.

There appeared to be no striking differences between the two offender groups' mean scores, virtually all mean scores falling between 2 and 3 on the 1 to 4 CWL response.

There was perhaps a slight tendency for the standard deviations in the sex offenders group to be higher than those in the other group.

As for the breakdown by guilt acceptance, there appeared no striking differences between the CWL scale scores for those who consider themselves innocent compared to those who report accepting their conviction.

Table 3.1 Coping With Life scale means and standard deviations for sex offenders and non-sex offenders

	Sex offenders		Non-sex offenders	
	(n = 31)		(n = 52)	
	Mean	SD	Mean	SD
Pessimism	2.44	.80	2.27	.40
Social Support	2.35	.73	2.32	.61
Emotion Control	2.74	.77	2.77	.61
Esteem Concern	2.49	.75	2.43	.63
Anger	1.99	.56	2.13	.55
Self Mastery	2.74	.78	2.89	.65

Table 3.2 Coping With Life scale means and standard deviations for those prisoners considering themselves guilty and those considering themselves innocent.

	Consider themselves guilty		Consider themselves innocent	
	(n = 40)		(n = 43)	
	Mean	SD	Mean	SD
Pessimism	2.38	.68	2.26	.42
Social Support	2.44	.61	2.16	.70
Emotion Control	2.67	.61	2.88	.74
Esteem Concern	2.60	.60	2.22	.71
Anger	2.11	.55	2.04	.57
Self Mastery	2.72	.64	3.00	.76

Because the two Sex offender status groups differed significantly in terms of age, before carrying out analyses of the CWL scores across offender groups the effect of Age on the CWL scores was checked. Pearson correlations between Age and each of the 6 CLW scales produced no significant relationships, and so it was decided that it was not necessary to control for age in the analyses.

The CWL scale scores were thus subjected to a 2-way Multivariate Analysis of Variance (MANOVA). Offender Status (sex or non-sex offender) was the first Independent Variable (IV) and Guilt Status (guilty or innocent) was the second, both variables having two levels. The 6 CWL scales were used as Dependent Variables (DV).

The results of the overall multivariate analysis showed no significant effect of Offender Status ($F[6,74]=1.33, p >.05$) but a highly significant effect of Guilt Status ($F[6,74]=3.10, p <.01$). Subsequent univariate analyses on the separate CWL scales showed significant differences between the two Guilt groups on 3 of the CWL scales.

Social Coping was found to be lower for those who believed themselves to be innocent ($F[1,79]= 4.16, p < .05$). Esteem Concern was also lower for the innocent group ($F[1,79]= 7.43, p < .01$). Finally, Self Mastery was higher for the innocent group ($F[1,79]= 4.80, p < .05$).

No significant interactions between Sex Offender Status and Guilt Status were found.

3.3 DISCUSSION

This study attempted to explore the relationship between relevant trait personality variables as measured by CWL, and the predisposition to use Denial. Status as a sex offender was assumed to be a good indicator of a likelihood to use Denial, and so differences were expected between sex offenders and other offenders in their scores on the CWL scales. In addition, whether or not offenders admitted or denied their guilt was expected to be indicative of the use of Denial in relation to status as a convicted prisoner, and so similarly likely to be related to differences in CWL variables.

The first step was to check that the newly developed CWL questionnaire was adequate to perform the comparison. Although the questionnaire was found to be a reliable and valid measure of particular trait personality and coping-related variables in a general adult sample, the groups measured here were substantially different, in age and sex profiles at the very least. However, it was found that all 6 of the scales had good reliability even in the new sample, and this provided a solid foundation on which to test the particular hypotheses of interest.

The hypothesis that sex offenders would display a pattern of low internal and external resources based on the general idea of their profile as described earlier -socially inadequate, low in self-esteem and confidence, high in anxiety and anger- was not supported.

While this was at first look surprising, there are a number of explanations that may account for it. A possible but unoriginal reason is that this study did not look at a big enough sample to detect any small differences that may have existed between the groups.

A more interesting explanation is that although levels of Denial may be high in the sex offenders group, they may just not be any higher than that found in serious offenders of non-sex crimes. Although there is supportive clinical evidence and well constructed theories on why sex offenders are expected to engage in high levels of Denial, we can not really claim with certainty that the levels of Denial in sex offenders are in fact higher from the levels of Denial in non sex offenders. As it was mentioned in the introduction, there are not many studies that have directly compared levels of Denial between sex offenders and other offenders. In this absence it is not known for sure that the reason that high levels of Denial are found in sex offenders is not just because sex offences are serious crimes, and people who commit serious crimes, sex offences or otherwise, may use Denial a lot.

A contributory factor towards this may also be that the profile of sex offenders that led us to believe that certain characteristics are likely to be important in Denial was not based on a good comparison. In general studies on sex offenders, where the overall description about their profile is mainly coming from, and where comparison groups have been used, these groups may not be really be considered to have been adequate for the comparison. For example, comparing sex offenders to police officers (Filkenhor, 1986).

The second hypothesis, relating differences between those who admit their guilt compared to those who state that they are innocent even after conviction, was partially supported. Although there are many levels of Denial, a refusal to admit guilt of some sort in the face of powerful evidence to the contrary is exactly what we would expect from someone engaging in a distortion of reality to minimise their psychological distress. Those who stated that they were innocent were found to be lower in the CWL scales of Social Coping and Esteem Concern, and higher on Self Mastery.

Two of these scales were related to social factors (Social Support and Esteem Concern). Social Support, as it has been described previously, is considered a resource for the individual, an important buffer against stress as it provides the opportunity for the individual to express their emotions and to communicate his or her problems when under stress (Cohen & Wills, 1985). It involves opening up and implies sharing personal matters.

The fact that those who denied their offence responded significantly lower in Social Support than those who admitted it can be explained in more than one way. For example, it is possible that the offender who claims and believes that he is not guilty may avoid seeking Social Support because he considers himself so different (innocent) from the rest of the prisoners that he does not want to be associated with them.

Another factor is that there has been found a general tendency of the 'deniers' to present themselves as emotionally stable individuals (Birgisson, 1996), and this may dissuade

them from sharing their emotions and problems when under stress.

The Esteem Concern variable was also found to be lower in the group of prisoners who claimed that they were innocent. Esteem Concern measures the extent to which respondents report that they worry about what others may think about them. It can thus be thought of conceptually as a source of threat to self esteem. It was found to have moderate positive correlations with Trait Anxiety and Rumination from the original CWL validation.

This result would also be in accordance to the general tendency of those claiming to be innocent to perceive themselves as "different". If an individual's perception was that they were innocent while everyone else was guilty, then to minimise the threat to their esteem from the negative evaluations of others, they could adjust their level of concern for what others thought of them downward. This would be an emotion-focused way of dealing with the anxiety associated with being negatively evaluated by others. Research has shown those who deny their offences have been found to minimise their anxiety (Haywood, Grossman & Hardy, 1993) and this is a mechanism that would do exactly that, given the appraisal-based model of coping adopted in this thesis.

The final CWL scale that showed a significant difference between admitters and deniers was Self Mastery. The finding that those denying their guilt were actually higher on the measure of Self Mastery than were the group accepting their guilt was somewhat surprising. As related in the introduction the use of Denial was expected to be related negatively with Self Mastery, as Self Mastery is seen as a coping resource that would

function as a buffer against anxiety and reduce the need for Denial. Here, it seems to be a factor positively related to Denial.

This finding though is consistent with previous research that has shown that those sex offenders who deny their offences tend to exaggerate less about their problems in comparison to those who admit their offences, to the degree that they deny everyday problems that typically are considered common in the general population (Baldwin and Roys, 1998). This perception of having few problems is what we would expect if people perceived themselves as generally being in control and having positive expectancies in being able to deal with threats. In effect, high Self Mastery may be seen to reduce threat appraisals, since the perception of the magnitude of a problem depends on how able the person feels to deal with it.

Interestingly, in the original development of the CWL Self Mastery was found to correlate negatively with both Social Support and Esteem Concern. This negative correlation is consistent with the findings here, and with the idea that the Self Mastery factor does not only entail a general sense of control, self belief and positive expectancy, but also a sense of self sufficiency that is so strong that the person does not feel the need to rely on others for social support, or feel threatened by the evaluations of others.

Although these results seem explicable within a general model of coping, it is necessary to consider what they mean in the context of defining a difference between those who admit and those who deny their offence.

Firstly, regarding the interpretation of admitting or denying an offence, refusing to admit guilt even when in prison is also exactly what would be expected from a person who is actually innocent. While this cannot be categorically ruled-out in the present study, it seems very unlikely that the sample of offenders used in the present study contained over 50% of innocent people, as was claimed. Home Office figures from 1996 (Mattinson, 1998), showed a snapshot of the entire population of prisoners in England and Wales, and found a successful appeal rate of only 4% of convictions. While the criminal justice system is certainly not perfect, the process for accusing, convicting and imprisoning people is designed to be conservative, and to be more biased to let the potentially guilty free rather than imprison the potentially innocent. Although this goes spectacularly wrong on occasion (e.g. "the Birmingham six") the rate of occurrence of this is quite rare. In particular, sex crimes such as rape and child molestation are seen as being particularly difficult crimes in which to secure a conviction in the first place, a sad situation but one which in this context is likely to mean that fewer innocent people may be expected to be convicted than is the average.

If we assume that it is highly likely that the majority of those who denied their guilt were actually guilty, another possibility must be considered, that the prisoners who responded that they believed themselves to be innocent of their crime did not actually believe this, but merely reported it to give a good impression, i.e. 'impression management' as Edwards (1970) termed it. A number of precautions were taken to minimise this, in line with the suggestions of Anastasi and Urbina (1997) and Weinberger and Schwartz (1982). Indeed, in some respects the procedures used here were even more stringent than the Weinberger and Schwartz (1982) methods, e.g. participants were not required to sign

a consent form in the present study, they only had to give verbal consent.

The fact of the study's anonymity was made very relevant and observable to the participants. The participants were all assured of anonymity personally by the researcher, and no names were required to be put on the questionnaire. It was made clear that the research was being conducted independently from the Prison and the Criminal Justice System, and this was reinforced by the majority of the questionnaires being returned direct to the researcher, rather than being handed direct to Prison staff (and even then in a sealed envelope). It was also made clear that the research was not forming part of, or informing in any way, any clinical assessment or evaluation of the prisoners by the prison. Therefore there was no obvious external goal that would motivate the prisoners to alter their responses, i.e. no prospect of better treatment, or indeed punishment, to be gained from how they completed the questionnaire. As well as anonymity from the prison authorities and the researcher, the participants were encouraged to fill out the questionnaires individually in their own cells, to maximise their anonymity from other prisoners, perhaps a more important consideration.

The fact that in this study the questionnaires were first anonymous and second not used for some clinical assessment that may have had an effect on the offenders' prison life in some way, make a strong case in supporting that the responses of the prisoners were probably more honest than might be expected. Research on recidivism shows that confidentiality (in this case anonymity can be seen as equivalent) has a great effect, as probably would be expected, on the admission of re-offence by non-incarcerated individuals. According to Finkelhor re-offence rates based on self reports were found at

3% when the individual could be identified and at 21% when confidentiality was promised to the offender, demonstrating that when confidentiality is guaranteed a large number of reports that otherwise would be withheld can be obtained (Finkelhor, 1986). So, there is much indirect evidence to suggest that the likelihood of these results being purely the result of impression management was low.

There are additional arguments in favour of this conclusion based on the actual pattern of results obtained here. For instance, regarding reports of sentence length, there was found to be very good correspondence between objective and subjectively reported measures of length of sentence, another factor that could be seen as vulnerable to impression management if so desired.

Additional evidence against an impression management explanation comes from the close agreement between the present results and work by Paulhus and Reid (1991). They carried out a detailed empirical investigation into the various structural models that seek to explain the phenomenon of socially desirable responding.

They found a general consensus in the literature that distinguished between 'impression management' and 'self deception'. Impression management is the tendency to give a favourable impression to others, even though this impression isn't a sincere reflection of self perceptions. Self deception, on the other hand, is the tendency to give favourably biased, but this time honestly held, self descriptions. They refined this standpoint to incorporate 'enhancement', the tendency for an individual to exaggerate their positive attributes, from 'denial', the tendency to minimise negative ones.

Image management was found to be characterised by indifference to the 'enhancement' and 'denial' dimension - the two were highly correlated, so that people who consciously decide to present themselves favourably will assess which is the most socially desirable response on a questionnaire and pick that one, regardless of whether it enhances favourable characteristics or refutes negative ones.

This is not what was found in this study. Some CWL scales with clear social desirability directions, e.g. Pessimism and Anger, did not show any significant difference between the two Guilt Status groups. The Social Support scale, which does not have a very clear social desirability direction, did show differences between the groups. This is not the pattern of results that would be expected if those who refuted their guilt were merely impression managing.

Rather, Paulhus and Reid (1991) found that the tell-tale sign of 'self deception', as opposed to 'image management', was the endorsement of what they called 'self-deception enhancement' (SDE) items. These items were characterised as positive expectancies implying "an exaggerated sense of control and confidence in one's thinking powers - almost a cognitive narcissism" (Paulhus and Reid, 1991; p.315). Self-Deception Enhancement was found to be virtually identical in character to the Self Mastery scale from the CWL. Both imply the enhancement of positive qualities and both show expectancies of good outcomes that are perceived to be under internal control. SDE was found to be indicative of honestly held but distorted beliefs, and Self Mastery was found to be higher in those who did not admit that they were guilty.

When incarcerated in prison the prospects for control over significant aspects of an individual's life seem highly limited, and so high beliefs in control expectancies would appear to be perhaps further evidence of distortion of reality.

Further than this conceptual agreement, there were found to be similarities in the relationships of SDE and Self Mastery with other individual difference variables.

Paulhus and Reid (1991) found that SDE was correlated negatively with social anxiety.

Social anxiety is essentially what the CWL Esteem Concern scale measures, and Esteem

Concern was found to be lower in those who did not admit to being guilty also. Self

Deceptive Enhancement was found also to be related negatively with empathetic

distress, a measure of an individual's tendency to share the negative affect of others. In

the present study Social Support was found to be lower in the 'denial of guilt' group, and

the Social Support factor is clearly underpinned by the idea of sharing negative affect,

i.e. 'a problem shared....'.

Paulhus and Reid (1991) explain SDE in terms of its relationship with self esteem. They

found that SDE correlated positively with self esteem, and suggested that SDE could

serve to distort everyday events to build up (or support?) self esteem. In this they follow

the approach detailed by Greenberg, Pyszczynski Solomon, Pinel, Simon and Jordan

(1993), who argue for the buffering effect of self esteem on anxiety. However,

Greenberg et al's (1993) finding was that although experimentally manipulated self

esteem was negatively related to anxiety, it was also negatively related to defensive

distortions of mortality-vulnerability.

These distortions would be vulnerable to the existence of powerful contrary evidence, i.e. being in prison having been found guilty of a crime, and having very little control of much of day to day life. Ways of minimising this evidence would be to not talk to people (low Social Support) and to not worry that people might view you negatively (low Esteem Concern).

Taking the results concerning sex offenders in relation to the results for those denying their guilt offers a tentative explanation for the findings in the literature regarding the prevalence of the use of Denial by sex offenders. It may not be the status as a sex offender that is the crucial factor related to the use of Denial, but the fact that the individual refuses to admit their guilt. The confusion arises because the two are not independent; sex offenders are much less likely to admit their guilt than non sex offenders. This is hardly surprising when it is considered that sex crimes are one of the most reviled forms of behaviour in society.

The lack of extensive literature in comparing Denial in sex offenders to that of other offenders may have led to the assumption that it is the status as sex offence which is the causal factor in Denial when it may not be. It could be that Denial itself 'empowers' the person to engage in such an unaccepted behaviour as it 'keeps' all the consequences of this appalling act away from the understanding of the person.

To recap the major findings, it was found that about half of the respondents reported that they believed that they were innocent of the crime for which they were in prison for. This level of belief in innocence was highly unlikely to be objectively true, and so was likely to be the result of some kind of distortion for most of the prisoners who claimed it.

This distortion could have been the product of conscious impression management, but the precautions taken to reduce this style of responding, and the actual pattern of results obtained, suggested that this was unlikely.

Rather, this ability to reject very powerful evidence that is contrary to the self-image is seen as evidence of Denial or Denial-like processes.

After this research was completed, a very interesting chapter from a book on working with sex offenders in prisons (Spencer, 1999) was discovered. This contained a letter from a sex offender who was in prison, and who wanted to encourage other prisoners to join a rehabilitation programme that he had found very helpful. An extensive section from it is reproduced below, as it is quite remarkable the similarity between the impression one gets when reading it and the findings from this chapter.

"When I first came to prison in March 1992 I didn't care about anyone but myself. I thought I had been hard done by and why should I be punished this way. The selfishness and contempt I showed towards prisoners, warders, my family and most importantly my victim was way out of line. For years before and after I offended I portrayed myself as a hardman and unhurttable. To put it mildly, I was the best thing since sliced bread. I couldn't have been more wrong. ...

I thought I was better than the next person...I went around the prison with blinkers on, hiding the full extent of my offence from myself and the others around me."

(Spencer, 1999; p.189).

4 CHAPTER FOUR:

PERSONALITY FACTORS ASSOCIATED WITH DENIAL OF RISK IN SMOKERS

In the previous chapter the CWL was administered to a prison sample and it was found that those who were holding a distorted view in relation to their guilt shared a particular pattern of responses, being found lower in Esteem Concern and Social Support and higher in Self Mastery in comparison to those prisoners who had accepted their guilt.

However, a defining factor of the previous sample was that they had been found guilty of a serious crime, and indeed were incarcerated at the time of the research, not factors that are shared by the majority of the population. Therefore, it was considered essential to administer the CWL to a sample more near to the norm for a general population and find out if the response patterns that have been found in the previous study would be replicated in this one.

Previously the sample of sex offenders had been originally assumed to be predisposed to distorting reality, in this study smokers were identified as a sample that is generally considered to have a distorted view of otherwise well accepted information - i.e. the risks associated with smoking.

As reported by Lee (1989), the major cause of disease and illness in developed countries is considered to be cigarette smoking. Although for years now there are plenty of warnings and health messages that inform people about the extremely negative effects of

smoking, too many people are continuing to smoke. This smoking behaviour can not be justified due to lack of information not only because of the availability of health warnings related to smoking but also because nowadays the majority of smokers claim that they are well aware about the risks that are attached to their smoking behaviour (Gibbons, Eggleston & Benthin, 1997).

Smoking today has surpassed the status of being seen as simply a bad habit and has become a distinctive category in a social context. Smokers are not only getting bombarded by negative information about their unhealthy habit but they are also treated differently in a wider context. Indeed, smoking is probably one of the very few legal habits that are not only prohibited in a huge number of places but that also entail penalties for the individual if he or she refuse to comply with. For instance, mass transportation such as buses and airlines now almost uniformly ban smoking. If a smoker applies for a mortgage to buy a house he or she will be treated less favourably if they admit to smoking. Many workplaces now ban smoking in buildings, forcing smokers to brave the elements to partake of their habit. So even if a smoker refutes the negative health related information connected with their smoking, it is very difficult in societies such as this one to ignore the negative view that society at large has of smoking, and by association, of smokers.

The smoker therefore has to deal with the negative information about smoking and his or her habit of smoking at the same time, a situation that may not be very comfortable for the individual since it brings up a state of inconsistency between acquired knowledge and exhibited behaviour.

According to consistency theories there is an overall agreement that the subjective experience of inconsistency produces to the person an aversive state and that in return the person will be motivated to prevent or reduce the inconsistency (Robins & John; in Hogan, Johnson & Briggs, 1997). Specifically, it has been suggested that this conflicting situation in between a strong habitual behaviour and the abundance of available information to the individual, may produce cognitive dissonance to the smoker (Lee, 1989; Stahlberg & Frey in Hewstone, Stroebe, Codol, Stephenson, 1988; Gibbons, Eggleston & Benthin, 1997). Cognitive dissonance is unpleasant and motivates the person to reduce dissonance by either adding new cognitions or changing existing ones (Festinger, 1957; in Gibbons, Eggleston & Benthin, 1997) and he suggested that smokers may reduce their dissonance by changing their knowledge about their behaviour (Gibbons, Eggleston & Benthin, 1997).

Cognitive dissonance can get reduced for the smoker by him or her denying or minimising the risks that smoking entails. Many studies (e.g. Lee, 1989; Gibbons, Eggleston & Benthin, 1997; Weinstein, 1998) have found that smokers tend to underestimate the health risks of smoking compared to non-smokers.

One way for these processes to operate is if the person can avoid the appraisal of the potential threat as an actual threat by changing the state of his or her vulnerability to it. If the individual is unrealistically optimistic about a situation then he or she will not have to feel threatened at the presence of the threat because he or she wouldn't consider it applying to them. The person, in this case the smoker, may deny his or her

vulnerability by denying the personal relevance of the threat (Lee, 1989). Even where studies have found that smokers have similar or even elevated estimates of the risks of smoking compared to non-smoking (see Weinstein, 1998) they may still resist that the risks are personally relevant. Smokers have a tendency to conclude that they have less chances than other smokers to suffer health effects from their smoking. The risk of smoking can get minimised by the smoker in many ways, e.g. estimating the number of years that are needed for negative health effects to be produced as being more than the years that he or she smokes (Weinstein, 1998).

The extent to which smokers minimise their personal risk in relation to the negative health effects of smoking is such, that although they may consider their susceptibility to smoking related diseases as higher than that of a non-smoker, they still believe that their chances of getting lung cancer or even smoker's cough is about "average" (Hahn & Renner, 1998). Specifically Weinstein (1998) summarising the findings of numerous relevant studies writes, "Smokers claim that their risk of smoking-related illnesses is "slightly less than", or "equal to", or only "slightly greater than" that of the "average person." Their actual risk of lung cancer may be more than ten times the risk of non-smokers, but, at most, they say that their own risk is "a bit higher" than the average." Even further, he states that even though research shows without doubt that smokers may acknowledge that their risk for various health problems is higher than that of the non smokers, a large body of findings indicates that smokers tend to conclude that they are less likely to suffer health effects relative to other smokers.

This level of negative information and therefore risk may be able to be sustained by the

smoker as a piece of information or even acquired knowledge because he or she may perceive himself or herself as personally immune to the threat (Lee, 1989) hence, they do not have to experience negative affect because in their view there is no inconsistency between their knowledge and their behaviour.

So, these low risk appraisals of smokers can be conceived as illusional beliefs which are conceptualised as ego-protective unrealistically positive evaluations over aspects of the individual's environment (Wiebe & Black, 1997). Positive beliefs can be conceived as systems that may be developed in order to regulate the negative affect that awareness of one's risky behaviour would otherwise produce. Once positive beliefs are developed, various processes will facilitate their maintenance and the buffering of stress, such as avoidance of contradictory evidence to their optimistic beliefs, comparison of oneself with a created social group which is seen as unrealistically high in risk, selective attention and biased processing of information which is risk relevant. Positive illusions have also been found to be associated with illusions of invulnerability (Wiebe & Black, 1997).

This perceived invulnerability that the individual has in relation to personal risk or harm is known as 'unrealistic optimism' or 'optimistic bias' (Hahn & Renner, 1998; Vollrath, Knoch & Cassano, 1999) and it can be conceived as being the result of Denial (Neubauer, 1989). As such, 'Unrealistic optimism' is obviously different from dispositional optimism which is defined as a generalised expectation that positive things will occur (Scheier and Carver, 1985, 1992) and which is characterised by the individual's attempts to reduce discrepancies between goals and current situations by

problem solving and active coping rather than engaging in passive coping strategies such as avoidance (Wiebe & Smith, 1997).

Denial, unrealistic optimism, optimistic bias, positive illusions, self-deception are all in effect ways to describe the process of reality distortion, and they are all in the service of stress reduction or stress buffering, in general they are means that regulate negative affect. They achieve this regulation or buffering by keeping the threat (or reality of the threat) outside of the person's awareness and at the same time they are maintained through avoidance, selective attention and biased processing of the threatening information. Overall, Denial, positive illusions, self-deception, unrealistic optimism, optimistic bias are facilitating the individual to deal with the stressor, but in passive rather than active ways of coping.

Smoking is generally perceived as a risky kind of behaviour - together with unprotected sex, fast driving, excessive drinking etc- and individuals who start it may have in general a distorted perception of risks. Perceived vulnerability has been found to be linked with various health related behaviours and is considered to be directly related to the decision of a person to engage in almost all the health promoting or health harming behaviours (Gibbons, Eggleston & Benthin, 1997).

In fact, perception of health risks have been found to relate negatively to the intention of adolescents to start smoking (Gibbons, Eggleston & Benthin, 1997) and longitudinal research has shown that teenagers who begin to smoke decrease their ratings of how crucial issues of safety are to them when they decide to take up smoking (Weinstein,

1998). Moreover, it is possible that individuals who begin to smoke may believe that they are less at risk than others, in other words there may be pre-existing differences in perceived susceptibility of risk in those individuals who become smokers (Lee, 1989).

However, there is strong evidence to suggest that even if there are pre-existing differences between those who begin to smoke and those who do not, smokers' risk perceptions vary over time in response to changes in smoking behaviour. Gibbons, Eggleston and Benthin, (1997) found that their participants' perceptions of the risks of smoking varied in response to their overt behaviour. Perceptions of the risks of smoking were measured for a group of smokers during and after attending sessions to help them quit smoking. Risk perceptions of the smokers who relapsed and began smoking dropped significantly, but only after they had started smoking again. No changes in attitudes were found leading up to quitting, so it was not the case that changes in attitudes provoked the changes in behaviour. Rather, their risk perceptions changed in response to their starting smoking again. "The decline in risk perception is apparently evidence of a dissonance reduction process" (Gibbons, Eggleston and Benthin, 1997; p.194).

Based on the widely accepted notion that smokers exhibit reality distortions in relation to the

otherwise well recognised risks, or threat, of smoking, the present study aimed at exploring the relationships among personality variables as described in CWL and attitudes to smoking and perception of risks associated with it.

It was expected that smokers would exhibit lower perceptions of the risks associated with smoking compared to non-smokers. It was thought that smokers would show a pattern of responses more similar to that found indicative of Denial in the previous Chapter than would the non-smokers. It was also thought that participants with lower perceptions of risk would be the ones most likely to be engaging in reality distortion, and so similarly exhibit patterns of responses on the CWL matching those of the prisoners who denied their guilt in the previous studies.

4.1 METHOD

4.1.1 Participants

One hundred and four participants participated in this study. Of the participants, 54 were female with a mean age of 21.19 years ($SD = 3.87$ years) and 50 were male with a mean age of 21.68 years ($SD = 2.80$ years). All were students at the University of Hull and were recruited by quota sampling on the University campus. The quota was used to ensure a roughly even split between men and women and smokers and non-smokers. Of the 104 participants 50 had never smoked and 54 were either current or ex-smokers. Of the never smokers 27 were female and 23 male. Of the current or ex-smokers 27 were female and 27 were male.

4.1.2 Materials

Two separate questionnaire measures were employed. The CWL questionnaire was used, with slight adaptation to the front sheet. Instead of asking for just the age and sex of the participant additional questions asked for the self-rated smoking status of the

participant and the number of cigarettes they smoked per day on average. Possible categories for the smoking status question were 1) never smoked; 2) ex-smoker; 3) light smoker; 4) moderate smoker, and; 5) heavy smoker.

In addition to the CWL, an "Attitudes towards Smoking" questionnaire, based upon Rindfleisch and Crockett's (1999) instrument, was used. This seeks to assess participants' perceptions of risk associated with smoking across a number of dimensions as shown below (and including an example item in parentheses):

- Health risks (e.g. "getting lung cancer")
- Addiction risks (e.g. "wanting to, but not being able to quit")
- Financial risks (e.g. "spending a lot of money on cigarettes")
- Social risk (e.g. "making a bad impression when dating someone who doesn't smoke")
- Time risks (e.g. "wasting a large portion of the day smoking")

In addition to these scales the instrument also has two other measures: the participants' beliefs about the benefits of smoking, such as helping to relax; and participants' general attitude to risk taking.

Finally, at the end of the smoking questionnaire were three questions asking the participant to estimate how many cigarettes a person would have to smoke to be considered a light smoker, a moderate smoker and a heavy smoker.

Before going on to describe the study procedure, various factors will be discussed that

are relevant to the complex problem of measuring risk perceptions.

The questionnaire assessed participants' risk perceptions using a variant on the "risk stereotype" (Weinstein, 1980) or "victim prototype" (Gibbons, Gerrard, Lando & McGovern, 1991) procedure. This procedure is used to reduce the social desirability bias found when collecting personal risk estimates with direct questioning (Fisher, 1993). It involves presenting the participant with a short description of a hypothetical person designed to be easily identified-with by the participant. The participant is then asked to give responses relating to the presented hypothetical person rather than to him- or herself, or non-specified "others" .

Regarding eliciting actual risk estimates, using a 'technological' model the risk associated with some activity is measured using two constructs, the desirability of the consequences of an activity and the probability that those consequences will occur.

Numerical estimates are given for these two factors and then they are multiplied to give an estimation of risk (e.g. Ricci, Sagan and Whipple, 1984). This model of 'actual' risk does not, however, seem to be how people arrive at their opinions of risk in everyday life. Other factors such as the familiarity and perceived controllability of the activity play a more significant part (Slovic, 1987). However, in this study we were not seeking to compare different activities, but different people's perceptions of risk for the same activity, and so factors such as familiarity were controlled for. Three factors were seen as very relevant, though.

The first was the 'intensity' of the risk activity. In relation to smoking this usually

corresponds to the amount of smoking, i.e. number of cigarettes smoked. The risk stereotype in this study was presented as smoking 20 cigarettes a day, and it was important to control for how the different groups of participants viewed this. For example, a non-smoker may consider this quite high, but a smoker may consider this fairly average. To check on this participants were asked to give estimates of how many cigarettes smoked per day corresponded to the qualitative categories of light, moderate and heavy smoking.

The second factor was consideration on how people combine their estimates of probability and desirability. Bettman (1975) found that eliciting separate ratings for desirability and probability and then multiplying them to arrive at the risk estimate often misrepresents people's risk ratings, as not all people subjectively combine these elements in the same way. In this study, following the method of Stone and Gronhaug (1993), a more "participant orientated" approach was taken. Here participants were presented with a definition of risk, but were then allowed to assess for themselves the relative roles of probability and desirability in arriving at their single estimate of risk. This sacrifices knowledge about "where" the risk estimate comes from in return for a more valid indicator of how that person perceives "their" risk.

The third consideration was regarding what form the participants' risk estimates should take. In a comprehensive review of risk perceptions in smoking Weinstein (1989) found that asking participants to evaluate or generate numerical estimates, such as probabilities, percentages or odds, generated highly variable indicators that very likely did not represent the respondents' actual beliefs. This was true even for 'numerate'

samples of college graduates. In this study verbal estimates of risk were therefore used. Ratings here were given on a four point Likert scale, ranging from 1 "very small risk" to 4 "very large risk".

4.1.3 Procedure

Participants were initially approached by asking them if they were, or ever had been, a cigarette smoker. If they fitted the outstanding quota they were asked if they would be able to spare 15 minutes to take part in a survey on 'coping with life' and attitudes to smoking. Participants who agreed were taken to a quiet room and given the CWL questionnaire to complete. After they had finished the CWL it was taken from them and they were given the "Attitudes towards Smoking" questionnaire to complete.

As mentioned above, the "Attitudes towards Smoking" questionnaire utilised a format designed to reduce social desirability bias, by presenting a hypothetical person for the respondent to give responses in relation to. Two versions of the questionnaire were prepared, to give better-fitting stereotypes to male and female participants. Male participants were given the version where the prototype was called "John", female participants were given a version where the prototype was called "Jane". In all other respects the two versions of the questionnaire were identical. The male version was as follows:

"John is a 20 year old undergraduate. He has been smoking 20 cigarettes per day for the past two years. John says that he plans to quit smoking 'sometime' but does not know

exactly when. He is not currently experiencing any health problems."

The participant was then asked to rate each statement that followed as to the level of risk that each one represented for John. Risk was described as "the likelihood that the statement will turn out to be true combined with how bad you think the situation would be for John if it did occur".

Finally, the participant completed the questions asking them how many cigarettes smoked per day they considered constituted a light, moderate and heavy smoker.

Importantly for the smokers, they did not have the CWL questionnaire at this point and so could not refer back to it to check how they had described themselves in relation to the number of cigarettes they had reported smoking per day.

4.2 RESULTS

Of the 104 participants 6 were ex-smokers. This was felt to constitute too small a group to meaningfully analyse separately, and problematic to combine with either the never smokers or current smokers. It was decided to remove these participants from the data, leaving 50 never smokers and 48 current smokers.

Estimates of what smokers and non-smokers considered to constitute light, moderate and heavy smoking was compared. The raw data are presented in Table 4.1. A 2 (Smoking Status) x 3 (Estimate category) ANOVA was performed. Smoking Status, either never or

current smoker, was a between participants variable and Estimate Category, with the estimates for light, moderate and heavy smoking, was a within participants variable.

The covariances between levels of Estimate Category were found to be unequal, so the Greenhouse and Geisser (1959) correction was applied to the degrees of freedom values reported here and used to test for significance (as appropriate).

Table 4.1. Descriptive statistics of never smokers' and current smokers' estimates of amount smoked by hypothetical light, moderate and heavy smokers.

Estimate Category	Smoker status			
	Never Smoker (n=50)		Current Smoker (n=48)	
	Mean	SD	Mean	SD
Light smoking	5.00	2.79	5.61	2.53
Moderate smoking	11.94	6.03	13.50	4.69
Heavy smoking	22.36	11.55	23.57	9.98

There was a significant main effect of Estimate Category ($F[1,108]=269.47, p < .01$). Comparisons between the levels revealed that estimates for the light smoker category were significantly lower than those for a moderate smoker ($F[1,94]=339.47, p < .01$), and the moderate smoker category had significantly lower estimates than the heavy smoker category ($F[1,94]=187.63, p < .01$).

The main effect for Smoker Status was not found to be significant, nor the interaction between Smoker Status and Estimate Category.

The reliability of the various scales were checked before proceeding to the various analyses of the questionnaire scales data. The various scales that make up the two questionnaires are shown below, with alpha coefficients in parentheses:

CWL: Pessimism (.86); Social Support (.68); Emotion Control (.81); Esteem Concern (.88); Anger (.82); Mastery (.81).

Smoking Attitudes: Health Risks (.83); Addiction Risks (.49); Financial Risks (.76); Social Risks (.67); Time Risks (.72); Smoking Benefits (.76); Risk Acceptability (.73).

The reliability of the Smoking Attitudes Addiction Risk scale was below .50, and considered too low to be included in further analysis.

The differences between the never smokers and current smokers in terms of their estimates of smoking risks and attitudes was evaluated next. Smoking Status was used as the independent variable and average scores on the 6 remaining scales from the "Attitudes Towards Smoking" questionnaire were used as the dependent variables in a MANOVA. Data for the scales by groups can be seen in Table 4.2.

There was found to be an overall significant difference between the pattern of scores for the never smokers compared to the current smokers ($F[6,91]=12.44, p < .01$).

Subsequent univariate tests on each scale individually showed significant differences for two of the smoking risk scales: Health Risks ($F[1,96]=5.05, p < .05$) and Social Risks

($F[1,96]=5.61, p < .05$). For both scales current smokers scored significantly lower than never smokers.

Table 4.2. Smoking Risk Perception, Smoking Benefits and Risk Acceptability scores by Smoking Status

Smoking Attitudes	Smoker status			
	Never smoker (n = 50)		Current Smoker (n = 48)	
	Mean	SD	Mean	SD
Health Risks	3.24	.61	2.93	.74
Social Risks	2.71	.53	2.42	.67
Financial Risks	2.88	.43	2.82	.60
Time Risks	2.04	.63	1.99	.76
Benefits of Smoking	2.09	.45	2.72	.36
Risk Acceptability	2.13	.50	2.58	.45

There was also a significant difference between Smoking Status groups for scores on the Smoking Benefits scale ($F[1,96]=59.34, p < .01$). As might be expected the current smokers rated the benefits of smoking much higher than the never smokers. The last significant difference between the groups was on the Risk Acceptability scale ($F[1,96]=22.05, p < .01$). The current smokers scored higher than the never smokers in terms of risk acceptability.

To ensure that the differences between the groups in terms of their perceptions of Health Risks and Social Risks were not just the result of the differences between the Smoking

Status groups in terms of their Risk Acceptability, a further MANOVA analysis was conducted. Smoking status was again the independent variable, but this time Risk Acceptability was included as a covariate. This would statistically control for the differences in Risk Acceptability between the Smoking Status groups, and so show the true relationship between Smoking Status and Risk measures. The two Risk measures found to be significantly different in the previous analysis, Health Risks and Social Risks, were included as dependent variables in this analysis.

The results replicated those from the previous analysis. There was still an overall significant difference between the never smokers and current smokers ($F[2,94]= 4.25, p < .05$). Subsequent univariate tests on each individual Risk scale showed significant differences for both of the smoking risk measures. For Health Risks, current smokers scored significantly lower than never smokers ($F[1,95]= 5.98, p < .05$), and for Social Risks current smokers also scored significantly lower than never smokers ($F[1,95]=5.34, p < .05$).

The differences in CWL scale scores between the Smoker Status groups were assessed next. The 6 CWL scales were used as dependent variables in a MANOVA. As for the preceding analysis Smoking Status was used as a between participants independent variable. Another between participants independent variable, Risk Category, was also included. This was because significant differences between never smokers and current smokers were found for Health Risk and Social Risk, and so it was desired to investigate these direct measures of risk perception in the analysis. Because Health Risk and Social Risk were significantly correlated ($r= .49, p < .01$) for simplicity it was decided to

combine participants' mean score on these two variables as a composite index of their risk perception. A median split was then carried out, giving a new variable called Risk Category with two levels, low risk and high risk. Low risk represented those who rated the Health and Social Risks of smoking as lower than the high risk group.

So to summarise, a MANOVA was performed. Smoking Status (with two levels, never smoker and current smoker) was the first independent variable. Risk Category (with two levels, high risk and low risk) was the second independent variable. The 6 CWL scales were used as the dependent variables.

The results of the analysis showed that there were no significant overall multivariate effects for either Smoking Status, Risk Status or the interaction. This indicated that neither Smoking Status, Risk Category nor the combination of the two was related to the pattern of responses to the CWL. Therefore, no step-down univariate tests were carried out.

It was decided to perform the above analysis separately for the current smokers and never smokers. Although the above analysis does effectively exactly this in the interaction term there were reasons to believe that the way that the Risk Category variable was computed may have been inappropriate.

The Risk Category variable was computed using the overall distribution of risk perception scores across current and never smokers. As has been demonstrated earlier, however, the risk perceptions of the Smoker Status groups were different. So, for the

following analysis the Risk Category variable was computed separately for each Smoking Status group. The median of the composite Health and Social Risks variable was 2.96 for the never smokers and 2.65 for the for the current smoker group. These values were used to divide low Risk Category from high Risk Category participants separately for the two Smoking Status groups, and so hopefully give more appropriate estimates of risk perceptions for the two groups

This gave, for the current smokers group, 27 participants in the low Risk Category and 21 in the high Risk Category. A MANOVA was carried out on just the current smokers, with the new Risk Category variable as the between participants independent variable and the 6 CWL scales as dependent variables.

Table 4.3. CWL scales scores by Risk Category (for just the current smokers)

CWL scales	Risk Category			
	Low Risk (n = 27)		High Risk (n = 21)	
	Mean	SD	Mean	SD
Pessimism	1.96	.37	2.13	.41
Social Support	2.77	.86	2.87	.53
Emotion Control	2.40	.59	2.38	.50
Esteem Concern	2.50	.61	3.02	.61
Anger	2.30	.40	2.44	.52
Self Mastery	2.76	.49	2.31	.51

Table 4.3 shows the CWL scales broken down by Risk Category for just the current

smokers. Results showed the multivariate main effect of Risk Category to approach but not quite reach significance ($F[6,41]=1.89, p < .10$). Because of this nearly significant trend it was decided as appropriate to carry out separate univariate tests on the separate CWL scales. These showed significant differences for the Esteem Concern scale ($F[1,46]=8.63, p < .01$) and the Self Mastery scale ($F[1,46]=5.01, p < .05$). For the Esteem Concern scale those in the low Risk Category group had lower scores, and for the Mastery scale the low Risk Category group had higher scores.

The above analysis was carried out again but this time for just the never smokers group (with Risk Category computed based upon just the never smokers scores). There was found to be no overall multivariate significant effect, signifying no difference in the pattern of CWL scores by never smoker Risk Category.

4.3 DISCUSSION

The present study aimed to explore the relationships between perceptions of smoking risks and trait personality variables as they have been defined by CWL, for both current smokers and people who have never smoked. Being a smoker in a society that heavily disapproves of smoking was considered to be a likely threat to provoke cognitive dissonance and result in reality distortions such as positive illusions and Denial of risk.

Any systematic biasing of risk perceptions by the smokers compared to the never smokers was considered to be evidence of distortion or rejection of the very widely available information on the risks associated with smoking. Further than this, it was

supposed that any systematic factors that distinguished groups of smokers who perceived the risks of smoking to be less than that perceived by other smokers would be even more evidence of distortion and Denial of risk. However, before these results could be interpreted some account of the differing perceptions of what actually constituted smoking had to be taken.

Firstly, it was found that both current smokers and never smokers were not significantly different in the actual numbers of cigarettes smoked per day that they thought corresponded to their subjective rating of “amount” of smoking, e.g. what actually constitutes “heavy ” smoker? This was important because it suggested that both never and current smokers will have perceived the risk stereotype similarly. For instance, if the never smokers on average thought that 10 cigarettes per day constituted heavy smoking, they will have viewed the presented risk stereotype (who smoked 20 cigarettes per day) as being a very heavy smoker indeed. The current smokers, on the other hand, may have thought that 20 cigarettes per day constituted moderate smoking, and therefore will have seen the stereotype as a moderate smoker. In that situation, the risk perception scales will have been measuring different things for the different groups - the risk for a very heavy smoker for one group (likely to be seen as higher), and the risks for a moderate smoker for the other group (likely to be seen as lower). However, it was found that there was effectively no differences in perceptions of this kind between the current and never smokers, as so their risk perceptions can be meaningfully compared.

The results of the present study then went on to confirm the findings of previous research (Lee, 1989; Gibbons, Eggleston & Benthin, 1997; Weinstein, 1998; Hahn &

Renner, 1997), that subjective health risks related to smoking are being perceived as lower by smokers in comparison to non smokers. Social risks were also found to be lower in the smokers group, while no significant differences were found between the two groups in time and financial risks.

The present findings are also in accordance to previous research where ex-smokers had been found to have higher perceptions of health and social risks in relation to smoking compared to current smokers (Copeland, Brandon & Quinn, 1995). This finding confirms the view that supports that when the person has given up a particular risky activity such as smoking, he or she does not have to compromise anymore his or her perceptions of risk that are related to this in order to reduce his or her cognitive dissonance.

Perceptions of health risks are a type of risk that one safely can claim that are known to both smokers and non smokers (Gibbons, Eggleston & Benthin, 1997). In fact, one can even claim that smokers are more exposed to the health risks of smoking since both advertisements aimed at smokers and cigarette packets themselves have prominent health warning on them.

These perceptions of health risks were found lower in the smokers group and this supports the tenet that smokers may attempt to reduce their cognitive dissonance by minimising the risks that are associated with smoking (Lee, 1989).

The lower ratings of smokers in relation to social risks may again be interpreted as an attempt by them to reduce their cognitive dissonance, since social restrictions, penalties

and different treatment of smokers in a wide range of social aspects, are situations that one can safely assume that smokers have to face in a daily basis.

This study didn't find any differences between smokers and non smokers in relation to time and financial risk. The former can be understood if we take in consideration the fact that time may be less of an issue in a sample of young university students, who have a comparatively flexible life style, than for people with more constraints on their activities (e.g. job, family).

In respect to financial risks the current study didn't confirm previous research on similar sample (Rindfleish & Crockett, 1999) where the perception of financial risks have been found to be higher in smokers compared to non smokers. This may be because of the similarity of the current smoker group and never smoker group in terms of their perceptions of how many cigarettes per day smokers actually smoke. The major factor in influencing how much money is spent on smoking is the actual amount smoked, and because the two groups had such similar perceptions of this it is perhaps no surprise that both groups gave similar estimates for the financial risks of smoking.

Smokers compared to non smokers were found to rate higher the benefits that are associated with smoking. This finding was not surprising since on the one hand non smokers have never experienced any benefits from smoking (since they never smoked), and on the other hand presumably smokers not only enjoy their habit, and therefore find it to an extent beneficial, but also may tend to focus on its benefits in order to justify or counteract the many negatives that smoking entails.

Smokers compared to non smokers were also found to have a higher Risk Acceptability scores. This finding is in accordance to previous research such as Rindfleisch and Crockett (1999) who state that most relevant studies have found evidence that smoking behaviour and risk acceptability are positive related and, summarising the findings of a number of studies, confirm that “both risk acceptability measures and assessment of smoking-related behaviours suggest that smokers have a higher tolerance for risk than non smokers do.” (p.163). However, as the analysis of covariance showed, the difference in Risk Acceptability between the two smoker groups was not the defining factor in explaining their differences in Risk Perceptions. Even after statistically controlling for the effects of Risk Acceptability (effectively equalising the groups in terms of their Risk Acceptability scores) current smokers still rated as lower their perceptions of the Health and Social Risks of smoking compared to the never smokers.

In relation to CWL no significant differences were found between the two smoker status groups. This may look initially surprising since the smokers may have been expected to manifest personality differences that distinguished them from never smokers. In fact, the two groups did show a personality difference, that in relation to Risk Acceptability (as shown in the previous literature), but just not on any of the personality scales as measured by the CWL. On reflection this is not perhaps surprising, as the CWL in general was designed to look for personality correlates of Denial, and this study in particular was designed to look for correlates of Denial in relation to smoking. The never smokers presumably did not need to use reality distortion in relation to smoking, as they do not smoke and therefore it is not a terribly big personal threat for them.

More reasonably, differences in CWL scales were observed amongst the group of participants for whom smoking did represent a personal threat, and that are presumably in a situation conducive to dissonance - the current smokers. When the appropriate measure of Risk was used (i.e. computed from the range of current smokers' scores), those current smokers who perceived their smoking related risks as lower had significantly lower Esteem Concern and significantly higher Self Mastery than those current smokers who perceived a higher (more realistic?) level of risk.

The lower levels of the variable of Esteem Concern describe an individual who does not particularly care about the opinion that other people have for him or her and who does not rely on others' approval. For the individual to perceive the risk as low while he or she is indulging in a habit that is highly disapproved, it may be necessary to reduce the importance of social approval. In this way the stress and anxiety that could naturally be produced every time that the smoker would be disapproved, criticised or discriminated against because of his or her habit, would be buffered since the others' opinion about them -and presumably their habit- would be considered to be of no great importance. To use coping terminology, holding lower Esteem Concern would serve to reduce the level of threat at the Primary Appraisal stage.

As we saw previously, Esteem Concern is clearly an aspect of self-esteem and self-esteem itself is very related to cognitive dissonance. According to Steele (1988), cognitive dissonance asserts a threat to self-esteem which in return prompts a response that serves to protect the ego, either reduction of cognitive dissonance or self affirmation (Steele, 1988; in Gibbons, Eggleston & Benthin, 1997). The relationship between self-

esteem and cognitive dissonance reduction is not clear; initially it was suggested that the higher the person's self-esteem the less the efforts for rationalisation and the less the responsiveness to the threat to their self image (Steele, 1988). Further research though, suggests that the opposite is more likely the case. In fact, Gibbons, Eggleston & Benthin, (1997), summarising the findings of a number of studies, state that "when the inconsistency between attitude and behaviour is attributable to the latter's being clearly inappropriate or unwise and therefore threatens self-esteem, low self-esteem persons appear to be less likely, and high self-esteem people more likely, to respond in a defensive manner" (p.191) and they further suggest that change in risk perception may assist to protect the self-esteem.

This viewpoint is supported by Greenberg, Pyszczynski, Solomon, Pinel, Simon and Jordan (1993). They suggest that the stress buffering that the person is trying to achieve is conceived as consisting of the interaction between a cultural view that provides a set of approved values by which the person can be evaluated, and by self-esteem which is achieved through the person's perception of living up to the approved values which are derived from the approach that he or she holds and supports. When these two clash the person, in order to keep his or her self-esteem protected and therefore protect themselves from stress, may have to disregard others' opinions.

Also consistent with this view is the finding of higher Self Mastery in those who perceived the risks of smoking as lower. Self Mastery can be seen as a form of self affirmation that serves to protect the ego (Steele, 1988), in this case as protection against the dissonance of being a smoker when smoking is a threat to health, and as with Esteem

Concern, being a smoker in a in a smoker-hostile society.

The findings from this and the previous chapter show similarity to those by Farwell and Wohlwend-Lloyd (1998), who investigated self-enhancement in relation to dispositional narcissism. Non-clinical, dispositional narcissism involves feelings of superiority, illusions of control and self-sufficiency. The similarity between narcissism and Self Mastery can be seen by comparing that with some items from the CWL Self Mastery scale: "In situations where others get very upset I can usually be relaxed" and "I cope well with any problems that occur". These suggest perceptions of superiority over others and exaggerated beliefs in control - especially over the threats that confronted the prisoners and smokers. Farwell and Wohlwend-Lloyd (1998) suggested that narcissism was in part defined by exactly these sort of social comparisons, where those higher in narcissism see themselves as superior to others. Low scorers on the Esteem Concern scale are those who are untroubled by the thought of social comparisons, thus fitting this definition.

As in the studies presented here, Farwell and Wohlwend-Lloyd (1998) found that narcissism was related to self-enhancement. Following the format of Taylor and Brown (1988), they viewed self enhancement as involving "unrealistic, positive views of the self, exaggerated perceptions of personal control, and unrealistic optimism" (Farwell & Wohlwend-Lloyd, 1998: p.66).

The one CWL factor that was not replicated here was the lower Social Support scores found in the prisoners who denied their guilt. No such result was found in the sample of

low risk perception smokers. This could be explained by differences in access to social support between the two samples. It was thought that access to social support may have been limited for the prisoners. As well as the isolation and stigma of being labelled as a sex offender, those who denied their guilt were further likely to be ostracised by both other prisoners who did not deny their guilt and the prison authorities. This range and level of disapproval is unlikely to be found by a smoker in their social sphere (who at the very least has other smokers to turn to). For these reasons it is not thought surprising that the differences in CWL Social Support found in the prison sample was not replicated here.

To conclude, the present study for the most part replicated the findings of the previous prison study. In relation to a threat (guilt, smoking risk) those low in Esteem Concern and high in Self Mastery tended to minimise the threat. That this is evidence of the action of Denial follows from the very obvious nature of the reality of the threat in each instance. Against this interpretation is the possibility that the pattern of responses to the CWL were merely the result of a conscious strategy of image management rather than the result of honestly held perceptions based upon distortion of information. This possibility will be tested in the next chapter.

5 CHAPTER FIVE:

PERCEPTUAL PROCESSES IN DENIAL

So far the CWL tool has been used to uncover a relatively stable pattern of individual differences that have been associated with bias in the way that individuals perceive themselves in relation to apparent threats.

In Chapter Four those prisoners who did not admit their guilt were found to be higher in Self Mastery and lower in Esteem Concern and Social Support than those prisoners who admitted their guilt. A similar pattern of results was found for those smokers who had low perceptions of the risks of smoking. In this seemingly very different context, the smokers with low perceptions of the risks of smoking were found to rate their Self Mastery as higher, and Esteem Concern as lower, than those smokers who had higher perceptions of the risks of smoking. In both cases the results were interpreted as being suggestive of a defensive reaction to defend self image in the face of threatening information - the denial of guilt status and the denial of smoking risk respectively.

Implicit in this viewpoint is the belief that the participants were not just 'image managing', i.e. consciously manipulating their responses from what they themselves perceived to be the truth, but genuinely held these beliefs. Supporting evidence for this view was found in the participants' overall pattern of responses, which suggested a 'self deceptive - enhancement' bias rather than an 'image management' strategy (Paulhus and

Reid, 1993). However, it was thought necessary to test this claim more stringently, and that will be the focus of this chapter.

The key to Denial, i.e. methods of rejecting, distorting, ignoring etc. threatening information, is that the individual must remain, at least in part, consciously unaware of the information to be Denied if it is to be useful as a strategy in reducing anxiety (Lazarus, 1999). How then to measure the sub-conscious processes of Denial without interference from conscious and potentially 'image-managing' processes?

There has been considerable interest in the past over the use of projective tests such as the Rorschach Ink-Blot test (Rorschach, 1921/1942) and the Thematic Apperception Test (Murray, 1943) in investigating Denial (e.g. see Cramer, 1991). These tests are designed to reveal the unconscious aspects of personality (and defeat conscious image manipulation) by presenting ambiguous stimuli that are not likely to provoke defensive reactions. There is considerable debate about whether they do indeed provide a 'window on the unconscious', but underlying these issues are more basic issues regarding reliability and validity. Even using standardised administration and scoring procedures they have been found to be seriously inadequate in terms of their psychometric properties (Anastasi & Urbina, 1997; Lilienfeld, Wood and Garb, 2001). For this reason they were not considered adequate for the purposes of this study.

Ben-Zur and Breznitz (1997) point out that the previously thought of "paradox" of denial offers insight into a potentially promising way to investigate the sub-conscious processes involved in Denial.

As discussed in previous chapters, the so-called "paradox" of Denial involves the fact that the individual must be able to identify a stimulus as threatening so that Denial can operate, and so how can the threat of the stimulus be perceived and also ignored etc. by the cognition system both at the same time? The resolution of the paradox lies in the appreciation that cognitive function is hierarchically organised and modular, not singular and undifferentiated.

Weinberger (1990) cites MacLean (1975) and LeDoux (1986) in concluding that "processes which encode the adaptive value or significance of stimuli occur in subcortical regions outside of conscious awareness" (p.340). Weinberger (1990) also advances the view that the emotional / limbic system specialises, in part, in coming to a rapid appreciation of the emotional relevance and therefore the likely physiological demands of a situation (e.g. fight, flight). For example, it is a common experience that when confronted unexpectedly with a very loud noise, the sympathetic system has initiated a dramatic increase in heart rate almost before conscious awareness of the event occurs.

This process of rapid, non-conscious evaluation of the emotional content of stimuli seems a very good place indeed to search for evidence of processing bias that may underlie or at least contribute to Denial. Ben-Zur and Breznitz (1997) suggest that if an individual uses Denial towards a stimulus, then the processing of that stimulus must in some way be "incomplete, biased, and shallow" (p.232). If that is the case then these processing biases should be detectable, given an adequate experimental paradigm.

Adequate in this sense means able to determine the rapid perceptual and attentional process that occur in response to threatening vs. non-threatening stimuli.

One paradigm that has been used quite extensively to study these sorts of processes is the emotional Stroop paradigm.

Beginning with Stroop (1935), it has been found by many researchers that participants' ability to rapidly name the ink colour that various word and word-like stimuli were presented in was very much affected by the semantic content of those stimuli.

Specifically, the ink colour of non-word stimuli (e.g. rows of Os or Xs) can be named much more quickly than the ink colour of a colour word (e.g. RED) presented in an incongruent colour (e.g. the word RED presented in green ink). This effect was further illustrated by showing that colour words presented in a congruent colour (e.g. the word RED presented in red ink) could be named even faster than non-words (Dyer, 1973; MacCleod, 1992).

The Stroop effect is typically attributed to the automatic attention-getting processes that come about through practice. Most people are very much more practised at extracting the semantic meaning of words, i.e. reading them, than they are at naming the ink colour, and so the task of identifying the word is much more "automatic" than the task of naming the colour. Part of what is meant by saying that the process is "automatic" is that it is generated mechanically in response to the stimulus, and not necessarily mediated by conscious control. So, when the stimulus is an incongruently-coloured colour-word, and the task is to name the ink colour, the automatically generated response to the actual

meaning of the word interferes with the desired response, i.e. the ink colour (Cohen, Dunbar and McClelland, 1990; MacCleod, 1992).

The emotional Stroop paradigm emerged from the traditional Stroop following research that showed that, as well as colour words, delay was observed in colour naming words with negative emotional impact compared to emotionally neutral words. For instance, Williams & Broadbent (1986) showed that a group of participants who had attempted suicide took longer to colour-name suicide relevant words than they did neutral words. Similar results were found by Watts, McKenna, Sharrock & Trezise (1986), this time in colour-naming spider related words for a group of spider-phobics. Although the majority of work on the emotional Stroop has been conducted in clinical populations the effect has also been observed in non-clinical groups. For example Giles and Cairns (1989) found delay with violence-related words for English students living in Northern Ireland; Freeman and Beck (2000), in a study on Post Traumatic Stress Disorder (PTSD) found delayed colour naming with their control group (as well as their PTSD group) in response to general threat words; MacLeod and Rutherford (1992) demonstrated delay in colour naming threat words (e.g. fail) for students tested before an examination. The size of the interference effect is usually a lot smaller with non-clinical samples, compared to clinical samples, however (Williams, Mathews and MacLeod, 1996).

Emotional Stroop interference has been explained in relation to the influence of anxiety. The effects of anxiety are well demonstrated using other cognition research methodologies; for example Mathews, May, Mogg and Eysenck (1990) reported that patients with general anxiety disorder were much more distracted by threatening non-

target words than were non-anxious controls when trying to detect target words amongst distractors. Eysenck (1992) concluded that normal participants high in trait anxiety were more easily distractible by non-task relevant stimuli than were those low in trait anxiety. Eysenck and Keane (1995) concluded that anxiety seems to function as an attention-getting mechanism biased towards threatening stimuli. When the threatening stimuli are not relevant to the task being completed (as in the emotional stroop) then performance suffers.

Williams, Matthews and MacLeod (1996), in an extensive review on the emotional stroop literature, found this same pattern of results in research using the emotional Stroop. That is, the tendency for distraction, or in this case delay in responding to emotional words, to be increased in situations where anxiety is higher (state anxiety), and in those participants with higher general levels of anxiety (trait anxiety).

These emotional Stroop processes have been found to be operating at a level below conscious awareness. For example, MacLeod and Rutherford (1992) tested students before an examination on an emotional stroop task with relevant threat words (e.g. stupid) vs. neutral words (e.g. uncommon). The words were only presented for 20 ms, and the participants only managed to perform at chance levels on subsequent word recognition tests that showed that they had not consciously perceived the semantic content of the words. However, students high in trait anxiety showed significant delay in colour naming the threat words in comparison to the neutral words. No such delay was found for students low in trait anxiety.

Williams, Matthews and MacLeod (1996) used Cohen, Dunbar and McClelland's (1990) model of Stroop interference to explain how anxiety acts to produce delay in the emotional Stroop. In the context of their parallel distributed processing model they proposed that input processing units that have become associated with emotionally threatening stimuli (such as threat words in the emotional Stroop) have a higher resting level of activation than do processing units that are associated with non-threatening stimuli (e.g. the neutral words). For any given level of input, the units that have a higher resting level of activation will have a higher level of output than units with lower resting levels, and so will produce more of a bias on attention. In the context of the emotional Stroop this will bias attention towards aspects of a stimulus that are perceived as threatening (the word meaning, its emotional significance, etc.) and away from other aspects of the stimulus (i.e. the ink colour). In simple terms, the greater the level of anxiety that is produced in association with the threat word, the greater should be the interference and therefore the greater the delay in responding to threat words compared to the neutral words.

However, this simple way of modelling just the affects of anxiety was not found to be sufficient to explain all of the emotional Stroop findings. Mathews and Sebastian (1993) tested snake avoidant participants and control participants on snake related words and neutral words in a 'snake' Stroop experiment. They found a significant delay for snake words with the snake avoidant participants but no effect for the control participants, as expected. However, another task had the participants perform the snake Stroop, but this time in the same room as a big snake. In addition, the participants had been told that after the Stroop experiment they would perform a test to see how close they would

voluntarily move the jar containing the snake towards them. Under these circumstances, where snake related anxiety was presumably at much higher levels than when there was no snake present, no delay at all was found for the snake avoidant participants on the snake vs neutral words. This in effect meant that the emotional stroop delay effect had been abolished in circumstances when it might be expected, with an "anxiety" hypothesis, to be most evident, because anxiety would be expected to be very high indeed for participants with snake phobia to be in a room with a snake that they thought they would be expected to go near to.

A similar finding was produced by Amir, McNally, Riemann, Burns, Lorenz and Mullen (1996). They found that in an emotional Stroop experiment high anxious participants (with social phobia) were slower at colour-naming threat words compared to neutral words. However, they found that when the participants were put into a highly stressful situation (before delivering a speech), the delay in colour naming the threat words disappeared for the social phobics. Again, this result is exactly the opposite of what would be expected if only the effects of anxiety were playing a part.

The explanation that Williams, Mathews and MacLeod (1996) propose for these sort of results is that the interference due to the high resting activation levels of the threat-related units can be "overridden" by the action of task-demand units. In effect, the participant can apply more effort directed at the task, and so overcome the interference. In support of this view they suggest that the performance of high anxious participants tends to be faster at the emotional Stroop task overall than that of low anxious participants. This, they suggest, is evidence of the greater effort being applied to the

task-based goals by the highly threatened participants.

Ben-Zur and Breznitz (1997), however, suggested that reduction in the delay in colour naming threat words in emotional Stroop tasks may be evidence of Denial. They make the argument that good performance on the emotional Stroop task, i.e. lack of a delay on emotional words, must be based on the ability of participants to reject the threat information present in the stimulus. If this were actually the action of Denial, then the threatening stimulus would have to be attended-to at some level by the cognitive system, to be first recognised as threatening, before being either suppressed or rejected or otherwise shielded from the conscious response selection stage of the emotional Stroop task. This would then explain the results where emotional Stroop interference is abolished when under high stress (as for the snake- and social-phobic participants above) - very rapid perceptual processes that shield the participant from the effects of the threatening stimulus, and so allow performance on emotional words just as good as performance on neutral words. To use the parallel distributed processing model terminology, the threat-relevant input units could be subject to processes that reduce their resting level of activation, or reduce the spread of activation from them by weakening their connection strengths to other units, i.e. "inhibition" of the threat effects.

If this was the state of affairs in the emotional Stroop then it would be expected that the overall performance on the emotional Stroop task would be slower when delay is low, if reduced delay (less interference) is brought about by an inhibitory process (Denial). This is opposite to the predictions of Williams, Matthews and MacLeod (1996) hypothesis.

So, this study will measure the delay in responding to threat words in an emotional Stroop experiment. The operation of a quick, perceptual Denial process would be expected to manifest itself as lower levels of delay in responding to emotional words as compared to neutral words. If this is because of "inhibition" then those participants who exhibit this delay should have slower responding overall. If this is the result of extra task effort (Williams, Matthews and MacLeod, 1996) then quicker responding should result for those participants lower in delay.

In terms of CWL variables it would be expected that participants high on Self Mastery and low on Esteem Concern, i.e. those factors that were found constantly associated with distortion in previous chapters, may be the ones to exhibit these perceptual defences. Additionally, the emotional Stroop delay effect has been found to be associated with Anxiety in previous studies, as discussed above. In this case it is expected that the CWL Pessimism scale may be related to delay, because the Pessimism scale is highly correlated with measures of Trait Anxiety.

Although the situations investigated in the previous chapters were quite different to the lower threat, more contrived situation of an emotional Stroop experiment, it is thought that the ability to hold views that may contradict much available contrary evidence (the tendency towards Denial) may be supported by fairly basic perceptual processes, and these will be tested here.

5.1 METHOD

5.1.1 Participants

Forty seven participants took part in this study. All were undergraduate students at the University of Hull, and were recruited on an opportunity basis around the University campus. Ten were male (mean age 21.20 years, standard deviation 3.88), the remaining 37 were female (mean age 19.70, standard deviation 0.66). All participants were paid £5 for their participation.

5.1.2 Materials

Three psychometric instruments were utilised for this study. First was the Coping With Life (CWL) scale, as used in previous chapters. Secondly was the Trait Anxiety Form Y2 of the Spielberger State-Trait Anxiety Inventory (STAI(T); Spielberger, 1983), again as used in Chapter 3. Finally, a thirteen item short form (scale 3) of the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960), as developed by Ballard (1992), was used in this study. This scale will be referred to as the Marlowe-Crowne Short Form (MCSF). Loo and Thorpe (2000) found that it had better psychometric properties than the full Marlowe-Crowne scale and it was considered that its use would be advantageous because of the shorter administration time.

These final two questionnaires, the STAI(T) and MCSF were included to take into account the effects of what have been labelled the "Repressive" style (e.g. Weinberger, 1990). First identified by Weinberger, Schwartz and Davidson (1979), they described participants who they labelled as "Repressors". These participants are thought to be

highly defensive against recognising negative affect in themselves, and report that they almost never consciously feel negative affect even though various measures show them to be highly anxious. Specifically, Repressors score low on self-rated measures of Trait Anxiety but are observed (via various psychophysiological and task measures) to be at least as anxious as those who rate themselves as high on Trait Anxiety. These Repressors also score high on the Marlowe-Crowne Social Desirability Scale - indeed it is the combination of low Trait Anxiety scores and high Marlowe-Crowne scores that has been found to be the 'signature' of the Repressive style. Because the emotional Stroop effect has been explained in terms of anxiety it was thought important to control for this Repressive style (i.e. participants who 'actually' were anxious but did not report being so).

A computer-based experiment based on the Stroop and emotional Stroop paradigms was used. The experiment was presented using a Pentium 3 PC computer running Windows 98, on a 15" monitor set to 800 x 600 screen resolution, using the SuperLab Pro v2.0 experimental design software.

There were five categories of stimuli used. All stimuli were presented in 32 font size.

1. *Non-words*: There were 3 non word items; OOO, OOOOO and OOOO. In correspondence with previous Stroop literature these were selected because of their low semantic content. Strings of 3, 4 and 5 Os were used to correspond to the character lengths of the colour words (described next). Each of the stimuli were presented in each of the colours red, green and blue (from the standard Windows 256-colour palette). Each of the six unique combinations were presented 5 times,

giving 30 presentations of the non-word stimuli in all.

2. *Congruent colour words*: There were 3 words in this category; red, green and blue.

Each word was presented in its own colour, and each was presented 10 times, giving 30 congruent word presentations in all.

3. *Incongruent colour words*: These were the same words as for 2. above, but this time presented in the two non-congruent colours. The words (3) by colours (2)

combinations were presented 5 times each, giving 30 incongruent word presentations.

4. *Neutral words*: The following 10 words were used; pen, note, pile, desk, gate, clock, thumb, folded, carpet, starch. Each word was presented 3 times (once in each colour) giving 30 presentations in all.

5. *Emotional words*: The following 10 words were used; war, stab, pain, fail, debt, crash, death, lonely, cancer, scream. Each word was presented 3 times (once in each colour) giving 30 presentations in all.

The neutral and emotional words were taken from previous studies into the emotional Stroop (Dawkins and Furnham, 1989; Freeman and Beck, 2000; Watts, McKenna, Sharrock and Trezise, 1986; Williams & Broadbent, 1986). The neutral and emotional words were matched in terms of character length, syllable length and frequency in the English language. The particular emotional words were selected on the basis of their likely relevance to the young student sample (e.g. fail, debt, lonely), relevance to high profile news stories at the time (e.g. crash, stab), or just generally threatening (e.g. cancer, war)

In addition to the test items above there was a set of practice items identical to set 1., except that they consisted of rows of Xs.

The inter-stimulus interval between items was 1 second. The order of presentation of items was random, i.e. not blocked into categories.

Responses were given on a key pad that the participant operated with their dominant hand. The three response keys, one for each colour, were labelled with a coloured patch that matched the colour as presented on screen.

5.1.3 Procedure

Participants were initially briefed and their consent to take part obtained. They then completed the CWL, STAI(T) and MCSF (in that order) in a quiet room. They were then taken to a small computer lab where they completed the Stroop experiment singly or in groups of two. The Stroop experiment consisted of a period of practice where the practice items were presented and the participant could get used to responding using the key pad. Participants were told to always press the key that corresponded to the colour of the stimulus, not the word or symbol. They were also told to respond as quickly as they could, but without making mistakes. In the practice period the correct key press was required before the next stimulus was presented.

When the practice period was over the participants were told that they were about to begin the timed trials, and that any response, not just the correct one, would now lead to

the next stimulus. They were reminded to respond as quickly as they could, but without making mistakes. When they were ready they pressed the space bar. After they had finished they were de-briefed. The whole procedure took no more than 30 minutes for any participant.

5.2 RESULTS

One participant had significant missing data from their CWL questionnaire and so their data were removed from further analysis. This left 46 participants for all of the analyses reported below. Descriptive statistics and intercorrelations are shown for the CWL scales in Table 5.1 below.

Table 5.1: Means, Standard deviations, intercorrelations and alpha reliabilities (on diagonal) for Coping With Life scales.

Scale	Mean	SD	F1	F2	F3	F4	F5	F6
F1, Pessimism	2.09	.39	.80					
F2, Social Support	3.04	.57	-.21	.88				
F3, Emotion Control	2.19	.56	.12	-.61**	.81			
F4, Esteem Concern	2.89	.53	.21	.30*	-.02	.72		
F5, Anger	2.48	.54	.25	.21	-.37*	.18	.79	
F6, Self Mastery	2.37	.51	-.53**	-.07	.10	-.43**	-.50**	.75

N = 46; * = $p < .05$, ** = $p < .01$; alpha reliabilities are shown on the diagonal

All reliabilities were above .70. All scale means were found to be between (approximately) 2 and 3 on the 4 point scale. As in previous samples the Pessimism scale was found to correlate significantly negatively with the Self Mastery scale. The Social Support scale had a significant negative relationship with the Emotion Control Scale. Self Mastery was significantly negatively related to Esteem Concern and Anger.

Table 5.2 shows the descriptive statistics for the STAI(T) Trait Anxiety scale and the Marlowe-Crowne Short Form (MCSF) Defensiveness scale. Also shown is the correlation between the scales and the alpha reliabilities on the diagonal. Additionally, correlations between the CWL scales and the STAI(T) and MCSF are shown to the right.

The mean score for the STAI(T) was approximately 44 (the minimum possible was 20, the maximum 80). The STAI(T) also had a good reliability. The mean for the MCSF was just under 10 (out of a maximum possible 13). The reliability of the MCSDS was somewhat lower than the other measures (.62) but was considered acceptable.

Table 5.2: Means and Standard deviations for STAI(T) and MCSDS, and correlation between STAI(T) and MCSDS (alpha reliability on diagonal), and correlations between the CLW and the STAI(T) and MCSF.

Scale	Mean	SD	intercorrelations		correlations with CWL scales					
			STAI(T)	MCSF	F1	F2	F3	F4	F5	F6
STAI(T)	43.56	9.07	.89		.71**	.00	.11	.39**	.28	-.58**
MCSF	9.42	1.30	-.35*	.62	-.17	.15	-.03	.02	-.27	.37*

N = 46; * = $p < .05$, ** = $p < .01$; Alpha reliabilities for the STAI(T) and MCSF are shown on the diagonal. CWL scales are labelled as follows: F1 = Pessimism, F2 = Social Support, F3 = Emotion Control, F4 = Esteem Concern, F5 = Anger, F6 = Self Mastery.

As found previously Trait Anxiety (STAI(T)) was strongly correlated with Pessimism (positive) and moderately correlated with Self Mastery (Negative). Trait Anxiety was also correlated positively with Esteem Concern. The MCSF Defensiveness scale did not have any correlations significant at the .01 level. It did, however, show a moderate negative correlation with STAI(T) and a positive correlation with Self Mastery.

The data from the Stroop experiment will now be presented. Before aggregation into mean scores the data from each participant's Stroop trials were checked for a speed accuracy trade off. No significant differences were found between correct and incorrect reaction times. The aggregated data are presented in Table 5.3. Errors were at or below 5% for all word categories, which corresponds to previous Stroop experiments and was considered acceptable.

A repeated measures ANOVA was conducted. Word category was the independent variable, with five levels; nonwords; congruent words; incongruent words; neutral words, and; emotional words. Reaction time was the dependent variable. (There were found to be significant differences between the covariances of the different levels of the independent variable, and so the correction suggested by Greenhouse and Geisser (1959) was applied to the degrees of freedom reported here.)

Table 5.3: Means and standard deviations for the Stroop experiment, showing error (%) and reaction time (ms) by word category.

		Word Category				
		nonwords	congruent	incongruent	neutral	emotional
Errors (%)	mean	.01	.03	.04	.02	.02
	SD	.03	.04	.05	.02	.03
RT (ms)	mean	638.68	599.80	755.10	604.23	622.85
	SD	197.75	139.90	223.18	143.27	136.04

N = 46

There was an overall significant effect of Word Category ($F[2,111]= 24.18, p < .01$). Within-participant contrasts revealed that the traditional Stroop effect had been successfully replicated. Incongruent words took longer to respond-to than non-words ($F[1,45]= 44.95, p < .01$), and congruent words were quicker to respond to than non words ($F[1,45]= 4.42, p < .05$). However, despite the average delay of 18.62 ms (SD = 83.11) in responding to emotional words compared to neutral words, this effect was not quite significant ($F[1,45]= 2.31, p > .05$).

However, the standard deviation of the Delay variable indicated that there was much variation around this mean value. Therefore, the individual differences that were associated with variation in delay in responding to emotional words versus neutral words were investigated next. Multiple regression was thought the most appropriate approach for this because it would maximise statistical power and therefore reduce the problems of only having 47 participants.

As is the tradition in the emotional Stroop literature a measure corresponding to the delay in responding to emotional vs. neutral words was computed. This measure would be used here as the dependent variable in the regression analyses. This new variable, called Delay, was simply the response time for emotional words minus the response time for neutral words. Positive values of the Delay variable therefore reflected a delay in responding to emotional words, negative values reflected quicker responding to emotional words.

Another variable was computed to take into account effects of Repressive style, as discussed in the Method section. This was done by creating a new variable named Repressor. Median splits for participants' MCSF and STAI(T) scores were taken. Those participants who scored below the median on the STAI(T) but above the median on the MCSF were given a 1 on the Repressor variable. All other participants were given a 0. Ten participants were categorised as Repressors using this method.

With multiple regression it is considered essential to not "overfit" the regression model to the data. Many 'rules of thumb' have been advanced as to how to avoid this. Howell (1997) presents the commonly cited rule that the ratio of participants to predictor variables in a multiple regression should not fall below 10 to 1. Including the Repressor variable in the regression to control for its effects would then allow a maximum of 3 additional CWL variables to be tested with the 47 participants. To test the predictions made at the end of the Introduction to this chapter these 3 variables would be Esteem Concern, Self Mastery and Pessimism.

So, a hierarchical multiple regression analysis was performed. Delay was the dependent variable. Repressor was the first entered variable. The CWL variables were entered next, in the order Pessimism, Self Mastery and Esteem Concern. This allowed the effects of Self Mastery and Esteem concern on Delay to be assessed with the effects of Repressor status and Pessimism evaluated beforehand and controlled for.

Table 5.4: Hierarchical Multiple regression predicting delay in responding to emotional words with Repressor status, Pessimism, Self Mastery and Esteem Concern.

model	Overall model					Change in model		
	R	R ²	df	F	p	ΔR ²	ΔF	Δp
1.	.14	.02	1,44	.82	> .05	.02	.82	> .05
2.	.23	.05	2,43	1.18	> .05	.03	1.54	> .05
3.	.43	.18	3,42	3.14	< .05	.13	6.73	< .01
4	.43	.18	4,41	2.30	< .10	.00	.00	> .05

N = 46.

Variables in each model: 1. Repressor; 2. Repressor, Pessimism; 3. Repressor, Pessimism, Self Mastery; 4. Repressor, Pessimism, Self Mastery, Esteem Concern

The first and second stages of the hierarchical regression introduced Repressor and Pessimism respectively. Neither of these models were significantly good predictors of Delay. At stage 3 Self Mastery was added and the R² value jumped from 5% of the variance accounted for by the model to 18%. This was a highly significant change in the model (F[3,42]=6.73, p < .01) and overall the model at stage 3 was found to be a significantly good predictor of Delay (F[3,42]=3.14, p < .01). The addition of Esteem

Concern at stage 4 accounted for almost no additional variance and the overall model was consequently a worse, and non-significant, predictor of Delay.

Table 5.5 shows the contributions of the individual variables at stage 3 - the only model that was found to be a significantly good predictor of the delay in responding to emotional words vs. neutral words.

Table 5.5: Contribution of individual variables included in model 3 from Table 5.4 (Repressor status, Pessimism, Self Mastery) in predicting delay in responding to emotional words.

Variable	β	t	p
Repressor	.13	.88	>.05
Pessimism	-.40	2.39	<.05
Self Mastery	-.43	2.60	<.05

Repressor was not found to contribute significantly to the prediction of the model. Both Pessimism and Self Mastery, however, were found to be significant predictors of Delay. This was surprising, as the individual correlations between Delay and Pessimism (-.22, $p > .05$) and Delay and Self Mastery (-.18, $p > .05$) are both weak and non-significant, and the addition of Pessimism at stage 2 (see Table 5.5) did not produce a significant change in the model. It therefore seemed that the effects of Pessimism and Self Mastery in predicting Delay were important, but only when taken together.

Inspection of the beta coefficients showed that the magnitude of the effects of both

Pessimism and Self Mastery were comparable. Both were related negatively with delay, indicating that a high Pessimism score coupled with a high Self Mastery score was predictive of lower Delay.

Because of the unexpected importance of Pessimism in combination with Self Mastery in predicting Delay scores, it was decided to test the extent to which the effects of Pessimism were accounted for because of its high correlation with Trait Anxiety.

Another multiple regression analysis was run with Delay as the dependent variable. The non-significant variables from the first analysis (Repressor, Esteem Concern) were not included in this analysis. The first variable to be input was STAI(T), followed by Pessimism then Self Mastery.

Table 5.6: Hierarchical Multiple regression predicting delay in responding to emotional words with Trait Anxiety, Pessimism and Self Mastery.

model	Overall model					Change in model		
	R	R ²	df	F	p	ΔR ²	ΔF	Δp
1.	.18	.03	1,44	1.45	> .05	.03	1.45	> .05
2.	.22	.05	2,43	1.12	> .05	.02	.79	> .05
3.	.44	.19	3,42	3.35	< .05	.14	7.47	< .01

N = 46.

Variables in each model: 1. STAI(T); 2. STAI(T), Pessimism; 3. STAI(T), Pessimism, Self Mastery

At stage 1, Trait Anxiety on its own was not a good predictor of Delay. The addition of Pessimism did not improve the model significantly, probably because of the high

correlation between State Anxiety and Pessimism ($r = .71, p < .01$). As before, the only significant improvement in the model came with the addition of Self Mastery at the third stage. Overall, the final model with all three variables included was the only significant model. The contribution of the individual variables in this model is shown below in

Table 5.7

Table 5.7: Contribution of individual variables included in model 3 from Table 5.7 (Trait Anxiety, Pessimism, Self Mastery) in predicting delay in responding to emotional words.

Variable	β	t	p
STAI(T)	-.24	1.14	>.05
Pessimism	-.31	1.52	>.05
Self Mastery	-.48	2.73	<.01

As before, Self Mastery was the only significant individual predictor of Delay. Neither Trait Anxiety (STAI(T)) nor Pessimism were found to be significant individual predictors of Delay. This was probably because their high intercorrelation - their contribution to the model was shared between the two of them in this model, leaving neither as significant individual predictors. However, of the two Pessimism had the higher beta coefficient, showing that its contribution to the model was higher than that of Trait Anxiety.

Finally, the overall speed of responding was investigated. For ease of presentation participants were divided categorically on the two best predictors found in the regression

analyses: Pessimism and Self Mastery. By taking median splits of both variables four categories were produced. Table 5.8 shows the overall Speed of response (the mean of responses to emotional and neutral words) broken down by Pessimism Category (low, high) and Self Mastery Category (low, high).

Table 5.8: Speed of responding in the emotional Stroop (ms) by Pessimism Category and Self Mastery Category

Pessimism, Self Mastery Category	N	Mean	SD
Low Pessimism, low Self Mastery	9	537.04	89.48
Low Pessimism, high Self Mastery	12	596.09	119.33
High Pessimism low Self Mastery	16	632.63	138.66
High Pessimism high Self Mastery	9	679.38	154.22

Although a one way analysis of variance did not reveal a significant difference between the groups overall ($F[3,42]= 2.03, p > .05$) it can be seen that the high Pessimism, high Self Mastery group, the combination that was found to be associated with least Delay in responding to the emotional Stroop words from the regression analyses, actually had the slowest overall responding in the experiment. A planned contrast comparing the high Pessimism, high Self Mastery group with the average of the other groups also just failed to reach significance ($t[42]= 1.88, p < .10$).

5.3 DISCUSSION

Once again the CWL scales were found to be reliable. As a further basic condition that had to be satisfied before confident interpretation of the other results could start, the well known Stroop effect was replicated in the this experiment.

Although there was an average delay of 18.62 ms in responding to emotional words compared to neutral words this effect was not significant. This level of delay is, however, almost exactly the same as the average delay found in studies comparable to this one, as reviewed by Williams, Mathews and MacLeod (1996). They found six studies that used consciously presented, randomly ordered threat vs. neutral words, on a computer, with non-clinical participants (as here), and the average delay was 20.59 ms. Given that the level of delay measured here was virtually identical it could be that if the experiment were repeated with more participants then the effect would become significant. It could also be that the chosen threat words in this study just did not reflect the current concerns of the participants to a great extent, i.e. they were not threatening enough. However, the words were all selected from previous studies on the emotional Stroop, and most had proven ability to generate delay in previous studies, and so this seems less likely.

The major finding of this study was that participants' delay could be predicted by their combination of CWL Pessimism and Self Mastery scores. High Pessimism and high Self Mastery were found to be significantly related with reduced delay. Reduced delay

indicates an ability by the participant to not let the semantic content of the emotional Stroop stimuli interfere with their performance of the colour naming task. Participants will not have been able to change their responses by conscious strategies because, with responses made in about half a second, there simply was not time. They will also not have been able to bias their attention or gaze away from the stimuli because successful completion of the task required that the stimuli were attended to. Evidence of an attentional avoidance strategy would have shown up as a marked increase in errors for the emotional words and this was not seen. Therefore the results are taken as evidence of rapid perceptual processes that manage the processing of threat information - a candidate mechanism by which, at least in part, Denial may operate.

Two hypotheses were offered as to how this process might work. Williams, Matthews and MacLeod (1996) argued that increased cognitive effort towards the task underlies the reduction in interference, and this would be expected to be accompanied by faster overall responding in those with reduced delay. On the other hand, following from Ben-Zur and Breznitz (1997), it was hypothesised that some kind of inhibition may have been reducing the threat relevant response, and this would be expected to lead to slower overall responding for those with less delay. As it turned out the high Pessimism, high Self Mastery participants, i.e. those with the lowest delay, were the slowest at colour naming in the experiment, but the effect just failed to reach significance. Therefore, it must be admitted that this experiment has failed to distinguish between the two competing hypotheses. A replication of this experiment with a larger sample size would be desirable to try and provide a definitive answer. Similar improvement could be achieved with the same amount of experimental effort, though, if the participants were

pre-screened for Pessimism and Mastery scores, and only those participants scoring in the top or bottom 25% were selected for participation.

Moving on from the competing explanations as to precisely what mechanisms allow participants to reduce delay, this experiment provides further evidence of the importance of Self Mastery in the process of Denial. As for the prisoners denying their guilt and smokers denying the risks of smoking, Self Mastery was found to be related here to the ability to reject or suppress threatening information.

Self Mastery alone did not account for the reduction in delay, but in connection with Pessimism. The effect of Pessimism was found to be mostly, though not wholly, attributable to its underlying relationship with Trait Anxiety. Another effect related to anxiety was Repressive style. This effect of Pessimism / Trait Anxiety was not attributable to Repressive style, however, as Repressive style was taken into account in the data analysis.

The fact that high Pessimism / high anxiety was found to be a necessary precondition for this Self Mastery effect to operate was perhaps a result of the somewhat contrived experimental setting. In the previous chapters the participants faced real and very relevant threats to their self image. In this experimental setting the threats were modest at best, and therefore were perhaps only triggered for the participants who were very threat sensitive, i.e. high in Pessimism / Trait Anxiety.

Esteem Concern had been found important for Denial in the previous Chapters, but was

not a good predictor of reduced delay here. This could be because of the nature of the threat words used in this experiment, which were not social threat words. The Esteem Concern scale contains items such as "I'm worried about what other people think about me" and the previous two studies used threats with very significant social self esteem aspects. It would be interesting to replicate this study using social threat words to see if CWL Esteem Concern would predict delay in this setting.

To summarise, this chapter sought to address the possibility that the results from the previous chapters, which showed CWL Self Mastery and Esteem Concern to be related to Denial-like responding, were just impression management and not actually the product of sub-conscious defensive processes. It was found that high Self Mastery was predictive of reduced delay in responding to threat words for those participants high in Pessimism / Trait Anxiety. This effect could not plausibly have been the result of conscious strategies, and so the implication is clear - that Self Mastery could be a stable factor, measurable by self report personality inventory, that is correlated with the use of Denial type defensive strategies.

6 CHAPTER SIX:

GENERAL DISCUSSION

This thesis started with the purpose of throwing some light on an area which is as significant and fascinating as it is messy and misunderstood, the area of Denial. Seeking to comprehend what Denial, and in general reality distortions, are, is a difficult task because the more one tries to cover the topic the more contradictions and confusions one comes across.

From the original psychoanalytic writing of Anna Freud to the later writings of coping theorists, it seemed clear that people have a repertoire of specific defences or ways of coping that they use in order to deal with their threats (Parker & Endler, 1996). This repertoire comprises mechanisms that operate with different levels of awareness and intention. Indeed, processes originally conscious and attentional can become highly practised until they are unconscious and automatic (Lazarus, 1984; Rasmussen, 1986).

To a certain extent trying to overcome the usual problems over definitions and measurement it was decided that Denial could be approached indirectly by means of personality and coping variables.

Based on principle ideas of coping, it was hypothesised that a person tends to engage in Denial in order to deal with various stressors of his or her life when he or she does not

feel 'equipped' with the internal and external resources that one needs when facing a stressful stimulus.

Therefore, it was assumed that some personality traits and coping resources might be associated with the use of Denial and reality distortions more regularly than others.

Concepts such as avoidance coping and pessimism were assumed to be related to increased use of Denial, while on other hand optimism and high self esteem were expected to be negatively related to it.

The outcome of this exercise, which included the creation and validation of a questionnaire (CWL) based on the above ideas, was a set of mainly personality variables that were thought to underlie Denial. Specifically, the six factors which resulted from the factor analysis of the CWL were, Pessimism, Social Support, Emotion Control, Esteem Concern, Anger and Self Mastery. What in effect was uncovered was mostly personality factors rather than coping behaviours, supporting the contention of Hewitt and Flett (1996), that at least some of the coping styles questionnaires used as input to the factor analysis are in fact somewhat measuring personality variables.

Predisposition to Denial and other reality distortions was expected to be positively related to Pessimism, Emotion Control, Anger and Esteem Concern and negatively related to Social Support and Self Mastery. These hypotheses were mainly based on the general expectation that greater need for anxiety reduction and therefore processes such as Denial, and therefore predisposition to it, would be associated with factors that were

likely to lead to increased primary appraisals of threat (rather than challenge), and likely secondary appraisals that result in higher anxiety because of perceived deficiencies in resources. Using psychodynamic terms, these factors were thought to be associated with an ego that needs protection from the painful aspects of reality.

Having developed a tool to investigate these traits hypothesised as important in Denial the study went on to test these hypotheses in situations conceived of as being highly predisposed to producing Denial and reality distortions. These were the areas of sex-offence and smoking. The former was chosen because both theoretical and extensive clinical work support that not only Denial but various layers or levels of Denial are commonly found in sex offenders in relation to their offences (Crighton, 1995; Gocke, 1991). In the latter case it is generally accepted that smokers experience high levels of cognitive dissonance in relation to their smoking and that in their attempt to reduce it often result in Denial and other reality distortions (Lee, 1989).

The results of these studies revealed mostly consistent findings, although not quite as anticipated. For the offenders, it was not sex offender status per se that was found to be important, but rather the fact of refusing to admit being guilty when the overwhelming evidence suggested the opposite. For the smokers the important factor was not smoking status per se, but having a lower perception of the social and health risks compared to other smokers.

For both of the above groups a consistent patterns of responses to two of the CWL scales were found, but again in somewhat an unexpected direction. It was found that the

variables that were associated with these two predisposed to Denial groups, were Esteem Concern (negative, although it was expected to be positive) and Self Mastery (positive, although it was expected to be negative). These findings did not support the initial hypothesis, that those predisposed to Denial would be low in coping resources. One prediction was borne out, as it was found that those offenders who denied their guilt were low on Social Support, but this finding was not replicated in the smokers group.

Broadly, the findings were describing the individual predisposed to Denial as somebody who perceived himself or herself as in control of the stressful situation, confident that they could cope with most of life's hassles better than the average person, and also as someone who did not need the approval of others and overall did not depend on others' opinions for reassurance.

This discrepancy may be explained if we were to assume that what we initially hypothesised to be related to Denial i.e. perceived low resources, was more related to the state that a person, not a predisposed user of Denial, was finding himself or herself to be in when encountered with a serious threat; in other words before he or she engaged in Denial as a result of a threatening incident. This could be contrasted with what we measured here, Denial as a regular way for dealing with threats. This regular way of dealing with threats could be called 'trait-Denial'. This 'trait-Denial' may then be associated with (at least the appearance of) high resources: high Self Mastery and low Esteem Concern. This would be because the regular use of Denial may have empowered the person with a general feeling of control and a self-belief that he or she is able to deal with whatever life throws at him or her, because there are fewer unsolvable threats in

his or her life (because the threats are reduced to fit the self-image).

As described, this 'trait-Denial' seems similar to "Egoistic Bias" (Paulhus & John, 1994, 1998), where self worth is exaggerated in relation to social and intellectual status. 'Trait-Denial' also seems similar to Narcissism (e.g. Farwell & Wohlwend-Lloyd, 1998), which is associated with feelings of superiority, self-admiration and self-sufficiency. For example, Jackson, Ervin & Hodge (1992) found that narcissism was positively related to self-esteem and negatively related to social anxiety which is analogous to high Self Mastery and low Esteem Concern (as found here).

One could speculate then that predisposition to the use of Denial is characterised by narcissistic and self-deceptive enhancements. In the studies above the results were interpreted as suggesting a defensive reaction by the individual in order to defend his or her self image in the face of threatening information - which corresponds to Denial in relation to guilt status and smoking risk in the first two studies, respectively.

According to this view, it was understood that the participants were not just 'image managing' or lying, but that they were reporting honestly held beliefs. Supporting evidence for this view was found in the participants' overall pattern of responses, similar to Self-Deceptive Enhancement rather than image management (Paulhus and Reid, 1993).

However, it was considered necessary to test this assertion further under stricter conditions, where it could be ascertained that those participants identified as predisposed

to Denial would not be able to consciously manipulate their responses, neither by image management nor pure lying.

To achieve this measurement of Denial without contamination from potentially confounding conscious strategies, it was decided to test Ben-Zur and Breznitz's (1997) suggestion that the processing of a threatening stimulus which is denied must be in some ways "incomplete, biased, and shallow" (p.232).

Ben-Zur and Breznitz (1997) suggested that the perceptual, rapid, non-conscious biases that occur in relation to a threatening stimulus can be adequately measured by the Emotional Stroop Paradigm. Delay has been found in responding to the colour of threat words compared to neutral words, and so an ability to overcome this delay could be interpreted as evidence of a rapid, pre-conscious Denial process.

It was found that higher Self Mastery, in the presence of higher Pessimism / Trait Anxiety, was associated with lower delay in responding to emotional words vs neutral words. This ability to not be distracted by the emotional content of the stimuli was interpreted as evidence for Denial, fitting the pattern found in the previous two studies of Denial being related to higher Self Mastery.

The fact that in this study Pessimism / Trait Anxiety was combined with Self Mastery for the group that was assumed to be predisposed to Denial, may be explained if we take in consideration the rather contrived experimental situation. Previously those who were assumed predisposed to Denial were distorting reality in relation to very potent and real

threats they were currently experiencing, either of their offending or smoking. In the emotional Stroop paradigm, where there was no such threat. However, the disposition of the person to perceive stimuli as threatening, as anxious individuals tend to do (Mathews, 1993), may have led to the emotional stimuli having more potency for the high Anxious participants. However, this characteristic on its own was not enough to abolish delay. Of the individuals who were high anxious, it was those with higher Self Mastery, as found in the previous two studies, that were showing evidence of Denial.

It is considered of particular interest that Self Mastery was not associated positively with optimism, verifying in effect the opinion that optimism and Denial are very different concepts (Aspinwall & Brunhart, 1996). On the other hand the positive correlation of Self Mastery and the negative correlation of Esteem Concern with Denial, suggests that an inflated self-esteem could be indicative of Denial, and supports previous research which has found that self-esteem needs defending in order to sustain itself (Mehlman & Snyder, 1985; in Greenberg et al, 1993).

The findings from the three studies are encouraging towards the approach of investigating Denial via personality variables. The consistency with which Self Mastery was found suggests that future research should attempt to address factors related to similar aspects of personality such as self-esteem, narcissism, self-enhancement and others (Paulhus and Reid, 1991). This would help clarify exactly which personality variables are most potent in being able to explain the pre-attentive bias that was found in the current study.

Particularly in relation to the emotional Stroop paradigm, future research should include larger numbers of participants or perhaps pre-selection of individuals who score in the top and bottom 25% of anxiety / Pessimism and Self Mastery. A particularly useful strand of further study would involve the use of psycho-physiological variables in an emotional Stroop paradigm. Some control over repressive style was possible in the emotional Stroop experiment reported here (i.e. the use of the repressive 'signature' of low self-reported anxiety but high Marlowe-Crowne score; Weinberger, 1990), but greater sensitivity would be provided by measures such as heart-rate and galvanic skin response. This would be especially important given the small nature of the effects observed in these experiments, of the order of milliseconds.

In summary, it seems that many of the approaches taken in this study have shown tentative promise. Personality variables have been shown to be associated with a tendency to Deny aspects of external and threatening reality. This has been demonstrated in relation to processes that presumably involve a mix of conscious and unconscious processes, such as reflecting on one's actions and status as an offender or as a smoker, and also in relation to quick, perceptual process that do not have time to be consciously moderated.

As quoted by Somerfield and McCrae, "What people do in response to stress, consciously and unconsciously is to a substantial degree determined by who they are - by their enduring dispositions" (2000). This thesis provides support for this contention.

7 REFERENCES

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Appendix A

The original 107-item CWL questionnaire

Coping with life

This questionnaire is about how we see ourselves and others in relation to how we deal with the ups and downs in life. It is completely anonymous, but please complete the box on the right so we can make sure that we are getting answers from a balance of different people.

your age: _____

your sex: _____

How to complete this questionnaire

Although people react in different ways to different situations, we all tend to have a typical way of dealing with life's ups and downs. On the following pages are a number of statements that people have used to describe what they do in various situations. Please read each statement and circle the appropriate number to the right of the statement to indicate typically how much you do what the statement describes.

Here is an example statement:

	almost never	some- times	often	almost always
I worry about things well before they actually happen	1	2	3	4

The number 3 has been circled to indicate that, typically, this person often worries about things well before they actually happen.

Sometimes you might feel that no answer is right for you, but please try to think of the alternative that is most like you.

Now please turn over the page to start, and do remember - there are no correct or incorrect responses, only what is most appropriate for you.

	almost never	some- times	often	almost always
1. I keep things to myself and don't let others know how bad things are	1	2	3	4
2. When I face a new problem I seek advice from someone who knows how to deal with it	1	2	3	4
3. I sit tight and hope the problem goes away	1	2	3	4
4. I daydream about things getting better in future	1	2	3	4
5. If I'm pleasantly surprised, I show immediately how pleased I am	1	2	3	4
6. I trust in fate - that things will somehow work out for the best	1	2	3	4
7. I try to forget that the whole thing has happened	1	2	3	4
8. I pray that things will just change	1	2	3	4
9. I talk about the problem as little as possible	1	2	3	4
10. When someone upsets me, I try to hide my feelings	1	2	3	4
11. People find it difficult to tell whether I'm excited about something or not	1	2	3	4
12. I find it difficult to comfort people who are upset	1	2	3	4
13. When something upsets me I prefer to talk to someone about it than to bottle it up	1	2	3	4
14. If I receive bad news in front of others I try to hide how I feel	1	2	3	4
15. I pretend there's nothing the matter, even if people ask	1	2	3	4
16. If I get angry or upset I say how I feel	1	2	3	4
17. I feel embarrassed about expressing my feelings	1	2	3	4
18. I manage to remain outwardly calm, even though I may be churned up inside	1	2	3	4
19. I can't help showing how I feel, even when it isn't appropriate to do so	1	2	3	4
20. Even under a lot of pressure I remain calm	1	2	3	4
21. I worry about things well before they actually happen	1	2	3	4
22. I find it hard to summon enthusiasm for the tasks I have to do	1	2	3	4
23. I cope well with any problems that occur	1	2	3	4

	almost never	some- times	often	almost always
24. I feel that I am a worthwhile person	1	2	3	4
25. "I just don't know where to begin" is a feeling I have when presented with several things to do at once	1	2	3	4
26. I speak my mind when I have something to say	1	2	3	4
27. When I make mistakes I let it worry me for days after	1	2	3	4
28. In discussions, I tend to back-down even when I feel strongly about something	1	2	3	4
29. I generally feel in control	1	2	3	4
30. I wish life was more predictable	1	2	3	4
31. When I am feeling tired I find it difficult to get going	1	2	3	4
32. I am able to react quickly when something unexpected happens	1	2	3	4
33. If I have a query I feel confident to ask for help	1	2	3	4
34. However bad things are, I feel they will work out positively in the end.	1	2	3	4
35. I look on the bright side of life	1	2	3	4
36. I find it hard to relax	1	2	3	4
37. I find it difficult to make a mental effort when I am tired	1	2	3	4
38. If I feel somebody is wrong, I am not afraid to argue with them	1	2	3	4
39. I feel overpowered and at the mercy of the situation	1	2	3	4
40. I become miserable or depressed	1	2	3	4
41. I feel that I am lonely and isolated	1	2	3	4
42. I feel helpless - there's nothing I can do about it	1	2	3	4
43. I take my frustration out on the people closest to me	1	2	3	4
44. I become irritable or angry	1	2	3	4
45. I criticise or blame myself	1	2	3	4
46. I think or talk about the problem as if it did not belong to me	1	2	3	4
47. I see the situation for what it actually is and nothing more	1	2	3	4

	almost never	some- times	often	almost always
48. I do not see the problem or situation as a threat	1	2	3	4
49. I resolve the issue by not becoming identified with it	1	2	3	4
50. I feel completely clear-headed about the problem	1	2	3	4
51. I try to keep a sense of humour - laugh at myself or the situation	1	2	3	4
52. I believe that time will somehow sort things out	1	2	3	4
53. I decide it's useless to get upset and just get on with things	1	2	3	4
54. I am reluctant to ask people for assistance	1	2	3	4
55. If I feel stuck in a situation I seek help from people who have experienced similar kinds of problems	1	2	3	4

For the following questions please indicate how much you **agree** or **disagree** with each statement by circling the appropriate number.

	strongly disagree	disagree	agree	strongly agree
56. I seldom show how I feel about things	1	2	3	4
57. In uncertain times, I usually expect the best	1	2	3	4
58. The world is full of resources that I look for when I need help	1	2	3	4
59. I am sometimes unable to hide my feelings, even though I would like to	1	2	3	4
60. It's important to get enough exercise	1	2	3	4
61. I experience my emotions very strongly	1	2	3	4
62. Small things in life make me very happy	1	2	3	4
63. I get excited with things that leave others indifferent	1	2	3	4
64. I have a very short fuse when things don't go as planned	1	2	3	4
65. The dangers of unprotected sex are overstated by the media	1	2	3	4
66. I like everyone I know	1	2	3	4

	strongly disagree	disagree	agree	strongly agree
67. When I'm happy my feelings show	1	2	3	4
68. I get worried with things which don't bother others so much	1	2	3	4
69. I get excited easily	1	2	3	4
70. I don't get annoyed even at times when everybody around me seems to	1	2	3	4
71. Very few things in life can make me angry	1	2	3	4
72. Whenever I feel positive emotions, people can easily see exactly what I'm feeling	1	2	3	4
73. I'm an emotionally expressive person	1	2	3	4
74. Most people have sex before marriage	1	2	3	4
75. I rarely count on good things happening to me	1	2	3	4
76. When I get bad news it seems to affect me less than other people	1	2	3	4
77. It's been ages since the last time I felt miserable	1	2	3	4
78. It is important to have somebody who I can talk things over with.	1	2	3	4
79. I have strong emotions	1	2	3	4
80. I am worried about looking foolish	1	2	3	4
81. Buying insurance is a waste of money	1	2	3	4
82. I like to discuss even trivial problems to reassure myself that I am making sensible decisions.	1	2	3	4
83. There have been times when I've been unable to stop crying even though I've tried to stop	1	2	3	4
84. It is important to me to have somebody that will listen to my problems	1	2	3	4
85. I'm never unhappy	1	2	3	4
86. I feel better when I have talked to my friends about my problems.	1	2	3	4
87. If something <i>can</i> go wrong for me, it <i>will</i>	1	2	3	4
88. In the past I have found a problem easier to solve if I have talked it over with somebody	1	2	3	4
89. I don't expect life to hold any major problems for me	1	2	3	4
90. I get annoyed easily	1	2	3	4

	strongly disagree	disagree	agree	strongly agree
91. I pay attention to the smaller problems, but just hope that major problems will go away	1	2	3	4
92. People should go to see their doctor regularly for health check-ups	1	2	3	4
93. Eating healthily is a luxury, not a necessity	1	2	3	4
94. I am worried about whether I am regarded as a success or a failure	1	2	3	4
95. When I feel upset about something I feel the need to talk to somebody about it.	1	2	3	4
96. I like to talk problems over to 'get them off my chest'	1	2	3	4
97. I feel self-conscious	1	2	3	4
98. In situations where others get very upset I can usually be relaxed	1	2	3	4
99. I'm displeased with myself	1	2	3	4
100. My body reacts very strongly to emotional situations	1	2	3	4
101. I'm worried about what other people think about me	1	2	3	4
102. I feel inferior to others at this moment	1	2	3	4
103. Some people need somebody to confide in but I prefer to solve my own problems	1	2	3	4
104. I feel concerned about the impression I am making	1	2	3	4
105. I hardly ever expect things to go my way	1	2	3	4
106. I'm always optimistic about my future	1	2	3	4
107. I think the negative health effects of smoking are exaggerated	1	2	3	4

Thank you very much for completing this questionnaire.

Appendix B

Locations of initial questionnaire distribution

The CWL 107 item scale was administered to the following groups:

- Adults in Hull
- Members of staff of the University of Hull
- Under- and postgraduate students from the University of Hull
- Students from Hull College Summer School and other Adult education Centres
- Open University Students attending summer schools at Stirling and Sussex Universities, or attending regular tutorial meetings with their supervisor.
- Members of staff of the University of Worcester.
- Adults in Bristol and London.

Appendix C

Final CWL 57 item questionnaire, arranged by scale

Item No.	Factor	Item
008	1	I pray that things will just change
024r	1	I feel that I am a worthwhile person
030	1	I wish life was more predictable
034r	1	However bad things are, I feel they will work out positively in the end.
035r	1	I look on the bright side of life
039	1	I feel overpowered and at the mercy of the situation
040	1	I become miserable or depressed
041	1	I feel that I am lonely and isolated
045	1	I criticise or blame myself
057	1	In uncertain times, I usually expect the best
075	1	I rarely count on good things happening to me
087	1	If something can go wrong for me, it will
089r	1	I don't expect life to hold any major problems for me
099	1	I'm displeased with myself
105	1	I hardly ever expect things to go my way
106r	1	I'm always optimistic about my future
002	2	When I face a new problem I seek advice from someone who knows how to deal with it
013	2	When something upsets me I prefer to talk to someone about it than to bottle it up
082	2	I like to discuss even trivial problems to reassure myself that I am making sensible decisions.
084	2	It is important to me to have somebody that will listen to my problems
086	2	I feel better when I have talked to my friends about my problems.

Item No.	Factor	Item
088	2	In the past I have found a problem easier to solve if I have talked it over with somebody
095	2	When I feel upset about something I feel the need to talk to somebody about it.
096	2	I like to talk problems over to 'get them off my chest'
103r	2	Some people need somebody to confide in but I prefer to solve my own problems
001	3	I keep things to myself and don't let others know how bad things are
010	3	When someone upsets me, I try to hide my feelings
014	3	If I receive bad news in front of others I try to hide how I feel
015	3	I pretend there's nothing the matter, even if people ask
016r	3	If I get angry or upset I say how I feel
017	3	I feel embarrassed about expressing my feelings
018	3	I manage to remain outwardly calm, even though I may be churned up inside.
054	3	I am reluctant to ask people for assistance
080	4	I am worried about looking foolish
094	4	I am worried about whether I am regarded as a success or a failure
097	4	I feel self-conscious
101	4	I'm worried about what other people think about me
104	4	I feel concerned about the impression I am making
043	5	I take my frustration out on the people closest to me
044	5	I become irritable or angry
064	5	I have a very short fuse when things don't go as planned
070r	5	I don't get annoyed even at times when everybody around me seems to
071r	5	Very few things in life can make me angry
090	5	I get annoyed easily
020	6	Even under a lot of pressure I remain calm
023	6	I cope well with any problems that occur
032	6	I am able to react quickly when something unexpected happens

Item No.	Factor	Item
050	6	I feel completely clear-headed about the problem
098	6	In situations where others get very upset I can usually be relaxed

Appendix D

Excluded CWL 107 items arranged by scale of origin

For the exact wording of items, please refer to Appendix A

Coping Styles Questionnaire (CSQ; Roger, Jarvis & Najarian, 1993)

Detachment coping: Items 42, 46, 47, 48, 49, 51

Avoidance Coping: Items 3, 4, 6, 7, 52

Interpersonal Trust Questionnaire (ITQ; Forbes & Roger, 1999).

Emotional Social Support: 78

Instrumental Social Support (generated by the author): 33, 58

Mental Toughness (Clough & Earle, 2000): 21, 22, 25, 26, 28, 31, 36, 37, 38

State Self esteem Scale (SSES; Heatherton & Polivy, 1991)

Social Self Esteem: 102

Berkeley Expressivity Questionnaire (BEQ; Gross & John, 1995)

Impulse Strength and Positive Expressivity scales: 59, 61, 67, 72, 73, 79, 83, 100

Emotional Reactivity (generated by the author): 62, 63, 69, 76, 77

Emotion Control Questionnaire (ECQ; Roger & Neshover, 1986)

Emotional Inhibition: 5, 11, 12

Social Desirability (generated by the author): 66, 85

Denial-like coping (generated by the author): 60, 65, 74, 81, 91, 92, 93, 107

The items that were excluded originated from all the scales that were used for the construction of CWL. Items excluded seem to be dealing mostly with particular behaviours, such as item 60 from Denial-like scale, 'It's important to get enough exercise'; items describing the 'detachment' concept such as 'I think or talk about the problem as if it did not belong to me'. Overall they seemed to be general, task or problem oriented that didn't fit the factor structure as developed.