Shyness Online: The Experience and Treatment of Shyness in an

Online Environment

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Peter Saunders

30/04/2012
Abstract

Shyness is a debilitating experience for a large proportion of the population. Shyness can be defined as a form of excessive self-focus, a preoccupation with one’s thoughts, feelings, and physical reactions and may vary from mild social awkwardness to total social inhibition. Shyness often includes subjective feelings of anxiety and social withdrawal. This thesis explores shyness and the role of the Internet in the experience and treatment of shyness. There are three research aims of this thesis: (1) to examine the online behaviour, motivations and attitudes of people who are shy and determine what impact context has on shyness; (2) to adapt an offline shyness treatment manual for online delivery; and (3) to conduct a randomised controlled trial to examine the efficacy of an online intervention for shyness. To address these aims three studies were conducted. In the first study, four hypotheses were proposed: (1) it was hypothesised that individuals who are shy would be more motivated to use the Internet for social reasons compared to non-shys; (2) it was hypothesised that individuals who are shy would be more likely to perceive the Internet to have a positive influence on their lives; (3) it was predicted that individuals in the shy group would score lower on measures of initiating relationships, self-disclosure, and providing emotional support in an offline context compared to non-shy individuals, but there would be no differences between the two groups on these measures in an online context; and (4) it was predicted that there would be no significant differences between levels of shyness between the shy and non-shy group when in an online environment. 303 participants (202 females, 100 males and 1 identified as other) completed a survey examining shyness levels and Internet use. Results supported the first and fourth hypotheses, the second hypothesis was not supported and the third hypothesis was partially supported. To address the second and third research aims, a treatment manual, the Social Fitness program, that has been
found to be effective for the treatment of shyness, was adapted for online delivery. Previous research has examined the efficacy of using online interventions for the treatment of shyness, however, few of these studies are based on an efficacious manual and no research has been conducted on the Social Fitness manual in an online environment. The usability of the site was examined by obtaining feedback from six reviewers. Results showed that the modules had adequate usability based on defined usability criteria. In the third study, the efficacy of the online Social Fitness program was examined. The sample consisted of 296 participants (189 females, 105 males and 2 who identified their sex as other) who were randomly allocated to one of three treatment conditions: individual group (who completed the modules online), discussion group (who completed the modules online but were also asked to contribute to a discussion board) or wait-list control group. Participants completed psychological measures of shyness, social phobia, estimations of others, quality of life, and depression pre and post-intervention. Results revealed that there was a significant reduction on measures of shyness, social phobia and estimation of others in the individual and discussion groups compared to the control group after completion of the online Social Fitness program. There were no differences between the individual and discussion groups. Results support the use of the Social Fitness manual as an online intervention and suggest that it can be successfully adapted for online treatment. Limitations of the studies and suggestions for future research are discussed.
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Introduction

In my work as a psychologist and a teacher I have seen how distressing the symptoms of shyness can be. For most of us, communicating and interacting with others is an important part of our lives. We are social beings who want to talk, listen and disclose information. For people who experience shyness the ability to interact with others is affected. People who experience shyness worry about what others think of them and fear they are being evaluated. They experience intense self-consciousness. The fear of being watched and judged can be overwhelming and distressing and can disrupt their everyday functioning. However, people who are shy do not necessarily experience shyness symptoms in all environments.

Shyness is context dependent and can change quite quickly depending on the situation. Anxiety symptoms may fluctuate depending on the environment and who the person is with. How is it that someone can feel comfortable in some contexts and then experience intense symptoms in others? As context is an important factor in shyness, what role does it play in treatment? Changing a person’s views and thoughts around a context, as cognitive behaviour therapy aims to do, is one way that shyness can be reduced. However, the feelings of shyness can be so overwhelming that even attending a treatment session can be difficult. An alternative is to try and change the context altogether. In his book, Zimbardo (1977) talks about his brother, George, who experienced shyness. To try and help George, his mother came up with the idea of wearing a mask to help him cope with his shyness:

The idea came to me that George would not be so self-conscious if he could become invisible, if he could watch and join in the action but not be watched by the other children… I encouraged George to help me make a hooded mask... We cut out eyes, a nose, and a mouth and coloured it a little to make it attractive… His teacher agreed to
give my plan a try… she told the other children that the new child would be wearing a mask and they were not to remove it, but to just enjoy playing with this masked child. Surprisingly, this unusual approach worked. George could be part of the class, though set apart. He could imagine being unrecognized when he wanted to be without having to hide himself. Gradually he moved closer to the other children and eventually, in a few weeks, was lured into play. (p.11)

Although the use of a mask may not be a plausible treatment for everyone, the idea of increasing an individual’s ability to control their self-presentation and reduce their feelings of evaluation is an important one. The Internet is one context where a person who is shy could potentially gain control and feel comfortable without fear of evaluation. The Internet, like George’s mask, could potentially offer safety and security for an individual who experiences shyness. The Internet could potentially be a safe zone, an environment where individuals could learn skills where they feel comfortable, until they gradually increase self-confidence and, like George, take off their mask.

One of the aims of this thesis was to investigate the use of the Internet as a medium for therapy for people who are shy. Although there is a range of treatment options available for shyness, it can be difficult for individuals to obtain treatment due to embarrassment, cost, distance and therapist availability. The Internet could potentially be a powerful tool, increasing access to treatment.

The Social Fitness program is one model that has effectively helped individuals reduce symptoms of shyness. This program was developed by Lynne Henderson at the Shyness Clinic at Stanford University. The term ‘Social Fitness’ refers to the idea that, similar to physical fitness,
in order to stay in social shape we need to constantly exert effort and work out by making social contact with others. The Social Fitness program, with its structured weekly sessions made it an ideal program for adapting for online delivery.

There were three broad research aims of this thesis: (1) to examine the online behaviour, motivations and attitudes of people who are shy and determine what impact context has on shyness; (2) to adapt an offline shyness treatment manual for online delivery; and (3) to conduct a randomised controlled trial to examine the efficacy of the Social Fitness online intervention.

Before the medium of the Internet is utilised for the treatment of shyness and social phobia, the impact that it has on people who are shy and how they interact with it needs to be better understood. The literature examining shyness online has suggested conflicting views about the relationship between shyness and the Internet. One side of this view is that the Internet may be a form of avoidance that may exacerbate shyness symptoms. This is a credible interpretation considering that avoidance is a prominent symptom in shyness. If people leave their masks on then it may distract them from face-to-face relationships and make it more difficult to form long-lasting intimate relationships. The conflicting view is that the Internet may be empowering and could potentially be used as a tool for people who are shy to gradually build and enhance their skills to reduce evaluative fear. Similar to the mask worn by George, the Internet may allow people who are shy to interact from a safe distance; to feel unrecognized without having to completely hide. It was therefore important to develop a clearer picture of how people who are shy use the Internet before adapting the Social Fitness program online.

In my thesis I wanted to piece together how shyness can present and change offline and online. I wanted to tell the story of how shyness appears offline and what happens when people
who are shy go online. The structure of my thesis is based around the idea of these two different contexts. The first half is about how shyness presents offline, how it impacts individuals and their relationships, and how it is treated. The second half of the thesis examines the treatment of shyness in an online environment.

This thesis is divided into ten chapters. The first chapter focuses on describing what shyness is and how symptoms present. This chapter plays an important role in the thesis as definitions around shyness have not been consistently applied and notions of shyness have changed over time. Regardless of the specific definition of shyness, it is clear that many people find the symptoms of shyness distressing as it can interfere with their functioning and stop them achieving their goals. This chapter describes the symptoms, prevalence and comorbidity of shyness. The purpose of this chapter is to show what shyness is and describe the theoretical approaches that have been used to describe and explain shyness.

In the second chapter the impact and aetiology of shyness are described. This chapter demonstrates the wide-reaching effects that shyness can have and identifies potential causes of shyness. Although most people tend to have a negative experience of shyness, some perceive shyness as a positive trait. The causes of shyness are also reviewed, focusing on biological, environmental and cognitive factors.

In the third chapter the treatment of shyness is examined. This review focuses on both biological and psychological forms of treatment. The purpose of this chapter is to examine which type of treatment is the most efficacious for reducing symptoms of shyness and social phobia. The efficacy of treatments is instrumental in guiding service delivery and the development of
treatment programs. In this thesis, understanding which types of treatments are more effective is important for the development and adaption of a treatment online.

In the fourth chapter the relationship between shyness and the Internet is introduced. Conflicting views on the impact of the Internet are discussed and research examining the role of this context is explored. Chapter five directly examines the key questions raised in chapter four and addresses the first aim of the thesis. The results of a survey comparing shys and non-shys is presented. This chapter attempts to reduce gaps in the literature and provide a clearer understanding of how and why people who are shy use the Internet.

The affordances and limitations of online treatments are explored in chapter six. This is followed by an analysis of research investigating the online treatment of shyness and social phobia. Key details of these studies are highlighted and features of online treatments that appear integral to the success of interventions are identified. These details are important as they help guide the adaption of the Social Fitness program which is discussed in chapter seven. In this chapter, the process of adapting the offline manual for online delivery is described. Justification for the inclusion and exclusion of material is offered as well as a description of the modules and interface of the online Social Fitness program. This chapter directly addresses the second research aim of this thesis.

In chapter eight the results of a usability study of the online Social Fitness program are presented. This study tested the accessibility and ease of use of the program. A randomised control trial designed study investigating the efficacy of the online Social Fitness program is presented in chapter nine. The impact of the program on shyness and social phobia is evaluated and some of the strengths and limitations of the program are explored. This study addresses the
third aim of this thesis. In the final chapter key issues and conclusions presented in the thesis are discussed and limitations and suggestions for future research are offered.
Chapter 1: Understanding Shyness

Anxiety is a thin stream of fear trickling through the mind. If encouraged, it cuts a channel into which all other thoughts are drained.

Arthur Somers Roche

Chapter Overview

In this chapter shyness is introduced and described. A major focus of this chapter is defining shyness and describing how it may impact an individual’s functioning. This is of crucial importance as there is a lack of agreement on a definition of shyness. The chapter begins by examining some of the problems associated with defining shyness. The symptoms of shyness are then described using a model incorporating cognitions, physiology, emotions and behaviour. This is followed by an examination of the interaction between shyness and social phobia and a discussion of proposed hypotheses that help explain their relationship. The chapter ends with a review of prevalence rates and comorbidity.

1.1 What is Shyness?

Most people have at least a vague understanding of what shyness is and how it presents, perhaps remembering shy people at school, or recalling situations and times when they too have felt shy or self-conscious. Shyness is a label that is used in everyday expression to describe reactions and feelings to social interactions and important facets of a person’s character (Crozier, 2002).

Despite this common understanding of the essence of shyness and the term’s regular use in interpreting behaviour, it lacks precise meaning, particularly in terms of what constitutes shyness and the psychological makeup of a shy person. The problems associated with having a
clear understanding of shyness are not just restricted to the general public; clinicians and researchers continue to struggle to agree on the nature of shyness (Henderson & Zimbardo, 1998).

Shyness lacks a precise meaning for two reasons. First, shyness spans an exceptionally wide psychological continuum, ranging from mild discomfort and awkwardness in the presence of others, to traumatic episodes of anxiety that disrupt an individual’s life (Zimbardo, 1977). Unlike diagnosed clinical disorders, shyness does not have a specific diagnostic criteria or an agreed clinical cut off point. Although a range of valid and reliable shyness measures have been successfully developed, no universal criteria with which to diagnose shyness exists. This lack of specificity can therefore make it difficult to identify the occurrence and the degree to which somebody is experiencing shyness. The second reason for the lack of precise meaning relates to the changing understanding of shyness. Shyness has been viewed as a basic human instinct, an inherent faculty that helps guide us in social situations. Others, such as Cheek and Briggs (1990), conceived shyness as a personality trait. More recent research has conceptualised shyness as both state and trait (Henderson & Zimbardo, 1998). Zimbardo (1982) defines shyness as a heightened state involving egocentric preoccupation and concern with social evaluation. Although this lack of understanding and agreement has made construction of a specific definition difficult, as research has accumulated, a clearer picture of the symptoms that make up shyness has emerged.

Studies have identified primary characteristics that comprise shyness, which include quietness, inhibited behaviour, self-consciousness and apprehension about being negatively evaluated in social situations (Zimbardo, 1977). Further, shyness involves feelings of awkwardness, concern, tension and discomfort when confronted with strangers or casual
acquaintances (Cheek & Buss, 1981). Underlying shyness is also concern regarding self-presentation.

Self-presentation theory, based on a theory proposed by Leary, has an underlying assumption that in social situations individuals attempt to control images of self or identity-relevant information (Stritzke, Nguyen & Durkin, 2004). The self-presentation approach suggests that individuals feel shy when they are motivated to make an impression amongst real or imagined audiences, but perceive or imagine unsatisfactory evaluative reactions. The theory suggests that shyness is influenced by specific situational and dispositional antecedents that impact people's motivation to impress others and their expectations of satisfactorily doing so (Schlenker & Leary, 1982). The fear of being judged negatively by others and the belief that desired impressions will not be conveyed leads to a tendency to adopt a cautious and protective self-presentation style during social interactions (Cheek & Stahl, 1986). Whilst shy people display reticent outward behaviour, internally, they are in a state of turmoil. Shy individuals are excessively self-focused and preoccupied with their own thoughts and reactions (Henderson & Zimbardo, 1998). Potential contributions to conversations are rehearsed but are abandoned in anticipation that they will be thought banal, inadequate or inappropriate. Thus, it is easier for a shy person to say nothing than to risk disapproval or rejection from others (Crozier, 2002).

Shyness can be understood as involving a combination of interest and fear (Henderson, 2011): shy people want to contribute to conversations and be socially active but concern about negative evaluation prevents this. Unlike those who are introverted and are happy to spend time on their own, shy people want to interact and engage with others. To be shy then is to be frightened of social interactions and overly concerned about how one is perceived by others. Shy people desire social interaction but fear of being judged negatively restricts them. Another way
to understand shyness is to specifically examine the symptoms of shyness and how they impact functioning.

Research has shown that shyness is a condition that affects one’s cognitions, physiology, emotions, and behaviours. A model of the interaction between cognitions, emotions, physiological sensations and behaviours experienced in shyness can be seen in Figure 1. This model is based on the general principles of emotional reaction. Although this model presents a simplified version of the relationship between these variables, it clearly shows the range of symptoms associated with shyness, how these symptoms interact with one another, and how they help maintain an individual’s level of shyness. Like all emotion, shyness arises in response to a trigger. In the case of shyness this trigger is always a social situation. The perception of this situation leads to an automatic triggered response in the limbic system that is based on learning and memory (LeDoux, 1995). Self-depreciating thoughts follow which undermine the individual’s ability to cope. Negative thoughts are often accompanied by physical sensations that further increase anxiety. The result of the combined thoughts and physical sensations is feelings of shame and embarrassment which is likely to make the individual want to avoid the situation.
Figure 1. A model of the interaction between cognitions, feelings, physiological sensations and behaviours experienced in shyness.
In the following section each of the four variables in the model of shyness presented in Figure 1 are described in detail.

1.1.1 Cognitive Symptoms of Shyness

Thoughts play a crucial role in shyness. Essentially, shyness can be viewed as being cognitively mediated. When confronted with a trigger, various automatic thoughts may be activated. For example, the person may assume that they will not cope and that people will judge them. A shy person’s thoughts are likely to be self-focused, involve some kind of negative anticipatory outcome and be focused on what others may be thinking (Zeman, 2001). For example, the shy person may predict that they are going to make a fool out of themselves, or that other people are not going to want to talk to them. The fear of possible rejection or disapproval is foremost in a shy person’s mind and they are likely to search for any signs to confirm their expectations (Markway & Markway, 2001). These self-deprecating thoughts are usually accompanied by physical discomfort. Automatic thoughts may cause physical symptoms to occur.

1.1.2 Physical Symptoms of Shyness

Cognitions are explicitly linked to physiological processes. When an individual feels shy the sympathetic and parasympathetic branches of the autonomic nervous system are aroused and a complex pattern of responses occur (Hofmann, Moscovitch, & Kim, 2006). Individuals may experience symptoms such as racing heart, shortness of breath, dry mouth, sweating, muscle tension and trembling. In a study conducted by Beidel, Turner and Dancu (1986), 52 socially anxious and non-socially anxious individuals engaged in a role play which involved an interaction with a confederate of the same and opposite sex and an impromptu speech on a selected topic. Heart rate, systolic blood pressure and diastolic blood pressure were measured at
baseline and during the behavioural tasks. The socially anxious group displayed a significant increase in heart rate and systolic blood pressure compared to the non-socially anxious group.

Although individuals may experience a range of physical symptoms, blushing represents one of the most common psychophysiological markers of shyness (Hofmann et al., 2006). Blushing refers to the spontaneous reddening or darkening of the skin and is most prominent around the face, ears, neck and upper chest (Leary, Britt, Cutlip, & Templeton, 1992). Blushing is a form of emotional expression, unique to humans, which, among other things, has the purpose of providing social messages. According to Castelfranchi and Poggi (1990) blushing communicates to observers that the person blushing is aware of, and cares about, the other’s evaluation. Although generally viewed as problematic and embarrassing for the person experiencing it, blushing has the adaptive function of pacifying others’ aggression; the sight of a blushing person is more likely to evoke sympathy and understanding rather than anger. Darwin (1872) viewed blushing as a social phenomenon linked inherently to shyness. This idea is supported by Hofmann et al. (2006) who found that the blushing response was the strongest autonomic measure to distinguish people who experience shyness and those who do not.

As previously noted, there are links between the various symptoms of shyness and it is these symptoms combined that formulate shyness. Thoughts have an impact on our physiology and, in the case of blushing, are the direct trigger for its occurrence. For example, a person may be confronted by a social situation, start to become preoccupied with their own thoughts, have thoughts regarding negative evaluation and then, as a result, experience an increase in heart rate and blush. Numerous studies have found that blushing is a result of concerns about attention directed to the self. In their study, Leary and Meadows (1991) found that blushing propensity correlated most strongly with variables associated with people’s concerns about how they were
regarded by others. However, although it is clear that blushing is a symptom of shyness, the
cognitions underlying blushing may vary greatly and there may be reasons other than the fear of
negative evaluation and threat to public identity for its occurrence. For example, blushing may
occur as a result of praise and positive attention, scrutiny, or from the accusation of blushing
(Leary et al., 1992). The activation of thought and physiological processes can also affect our
feelings and emotions as well.

1.1.3 Emotional Symptoms of Shyness

The combination of negative self-talk and physical symptoms typically leads to
distressing and hurtful feelings. A shy person is likely to experience feelings such as shame and
embarrassment. Shame can be viewed as the gap between our actual self and ideal self. It
involves feelings of inadequacy and doubt (Henderson, 2011). A shy person may also
experience guilt and self-contempt. For some people these negative experiences can lead to anger
and frustration towards themselves or others. Individuals who are shy also often
experience self-consciousness. A shy person may become more acutely aware of their own body
sensations (which may then increase physical sensations such as blushing) and their own feelings
of inadequacy. This idea coincides with the two factor theory of emotion (Schachter & Singer,
1962) that proposes that emotion is a result of the combination of cognitions and physiological
arousal and that physical sensations are interpreted by available cognitions. The experience of
negative thoughts, physical responses and emotions, in turn, results in behavioural symptoms.

1.1.4 Behavioural Symptoms of Shyness

A person who is shy often displays several characteristic behavioural symptoms. One of
the most common is avoidance. Because the pain of exposing themselves to social situations is
so great, people who experience shyness often avoid them altogether. A shy person may limit
their social choices out of fear (Markway & Markway, 2001). If a shy person does attend a social event they may engage in other avoidance behaviours, such as playing with their mobile phone or sitting away from others. Individuals who experience shyness may attend social situations, endure discomfort but say little and limit their interactions. Some studies have found that those with higher levels of social anxiety also tend to have decreased eye contact in social interactions (Daly, 1978; Farabee, Holcom, Ramsey, & Cole, 1993), although other studies of face scanning have failed to find differences (Bruent, Heisz, Mondloch, Shore, & Schmidt, 2009).

Even when social interactions have finished the interplay between cognitions, feelings, physical sensations and behaviours is not necessarily over. A shy person is likely to ruminate, have negative thoughts and experience negative feelings towards themselves. For example, after an interaction, a shy person will typically berate themselves and worry about what the other person thought of them. The interactions between cognitions, physical sensations, feelings and behaviour can be likened to a negative cycle, where the shy person continually berates themselves and negativity intensifies. The individual is then likely to engage in avoidant behavior in an attempt to reduce the intensity of adverse thoughts and physical sensations. Although anxiety may be initially reduced, avoidant behavior is likely to be reinforced and negative thoughts perpetuated, as entering social situations become more anxiety inducing (Henderson, 2007).

As noted, shyness can be explained by understanding the symptoms individuals experience when in certain contexts and breaking these symptoms down into cognitions, physical sensations, emotions, and behavior. The interplay between these variables is often cyclic which can lead to greater levels of anxiety and avoidance. The important role this cycle plays in shyness can be exemplified in what are considered typical shyness eliciting situations.
1.1.5 Shyness Eliciting Situations

Whilst interpersonal interactions represent a primary concern for shy people, different situations may increase an individual’s level of shyness. Research suggests that the most powerful shyness eliciting situations involve interactions with authority figures, one to one encounters with members of the opposite sex for heterosexuals, conversations with strangers, being the focus of attention in small groups and explicitly evaluative situations, such as job interviews and public speaking (Cheek & Stahl, 1986; Henderson & Zimbardo, 1998). Underlying all of these situations is fear of judgement and evaluation. These situations are particularly anxiety provoking for individuals who experience shyness because they all involve specific instances where others are perceived to be focusing on them and when desire to make a desired impression is likely to be high. Little research has specifically examined variations in age, gender or culture in these situations. Reactions to situations may also be dependent on the level of shyness, and to gain a deeper understanding of the variants in shyness, theorists have attempted to classify shyness by subtypes.

1.1.6 Subtypes of Shyness

Types of shyness have been categorised based on the severity of symptoms reported. Zimbardo (1977) conceptualises shyness in terms of the impact that it has on the individual. According to this perspective, shyness exists on a continuum. At one end of the continuum are individuals who do not seek social interaction and prefer to be alone (Henderson & Zimbardo, 1998). Further along the continuum are individuals who experience situational shyness. Situational shyness involves experiencing the symptoms of shyness in specific social performance situations but not incorporating it into one’s self-concept (Henderson & Zimbardo, 1998). The middle range consists of those who feel intimidated and awkward in situations with
certain types of people. Their discomfort is strong enough to disturb their social lives and inhibit their functioning (Zimbardo, 1977). At the end of the continuum are those who are chronically shy. This is the most debilitating form of shyness, which involves a fear of negative evaluation accompanied by emotional distress or inhibition that interferes significantly with the participation of desired activities and the undertaking of goals (Henderson, 1998). Chronically shy individuals experience extreme dread whenever called on to do something in front of people, and find it difficult to control their anxiety (Zimbardo, 1977).

These distinct types of shyness were developed by Zimbardo (1977) based on scores obtained on shyness scales. Their usefulness is in allowing clinical identification of where individuals fit on the continuum and understanding the likely impact of their experience of shyness. The categories are problematic, however, in that they were originally developed in 1977 and there has been only sporadic research into the typologies and limited evaluation of their current usefulness and applicability. Nevertheless, the value of the shyness continuum lies in its ability to help identify when individuals may need treatment and its message that shyness is a broad term that describes a range of reactions from mild imitation to overwhelming anxiety.

1.2 The Relationship between Shyness and Social Phobia

The definition and symptoms of shyness also encompass several of the central components found in social anxiety and social phobia (Crozier, 2002; Lorant, Henderson, & Zimbardo, 1999). There is some conflation of these three terms in both the literature and in common understanding. Although the purpose of this thesis is not to examine the definitional or diagnostic differences between shyness and social phobia, some explanation of current thinking in this area is important because the two terms are often used synonymously and similar
treatments are suggested for both labels. The aim of the following section is to define and distinguish shyness and social phobia and clarify how they overlap.

1.2.1 What is Social Phobia?

Social phobia is defined as a persistent fear of social or performance situations in which exposure to the situation invariably provokes an anxiety response (American Psychiatric Association, 2000). Social phobia is a diagnosable condition that is classified in the Diagnostic and Statistical Manual of Mental Disorder IV (DSM IV) and in the International Classification of Diseases (ICD-10). Table 1 and Table 2 summarise the DMS IV and ICD-10 diagnostic criteria for social phobia respectively. A diagnosis of social phobia is given when anxiety of a social or performance situation significantly interferes with an individual’s routine, occupational functioning, or social life.
Table 1.

DSM-IV criteria for Social Phobia (300.23)

A. A marked and persistent fear of one or more social and performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing.

B. Exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or predisposed Panic Attack.

C. The person recognizes that the fear is excessive or unreasonable. Note: In children, this feature may be absent

D. The feared social or performance situations are avoided or else are endured with intense anxiety or distress.

E. The avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine, occupational (academic) functioning, or social activities or relationships, or there is marked distress about having the phobia.

F. In individuals under age 18 years, the duration is at least 6 months

G. The fear or avoidance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition and is not better accounted for by another mental disorder (e.g., Panic Disorder With or Without Agoraphobia, Separation Anxiety Disorder, Body Dysmorphic Disorder, a Pervasive Developmental Disorder, or Schizoid Personality Disorder).

H. If a general medical condition or another mental disorder is present, the fear in Criterion A is unrelated to it (e.g., the fear is not of Stuttering, trembling in Parkinson's disease, or exhibiting abnormal eating behavior in Anorexia Nervosa or Bulimia Nervosa).
A. Either (1) or (2):

   (1) marked fear of being the focus of attention, or fear of behaving in a way that will be embarrassing or humiliating;

   (2) marked avoidance of being the focus of attention or situations in which there is fear of behaving in an embarrassing or humiliating way.

These fears are manifested in social situations, such as eating or speaking in public; encountering known individuals in public; or entering or enduring small group situations, such as parties, meetings and classrooms.

B. At least two symptoms of anxiety in the feared situation at some time since the onset of the disorder, as defined in criterion B for F40.0 (Agoraphobia) and in addition one of the following symptoms:

   (1) Blushing.

   (2) Fear of vomiting.

   (3) Urgency or fear of micturition or defecation.

C. Significant emotional distress due to the symptoms or to the avoidance.

D. Recognition that the symptoms or the avoidance are excessive or unreasonable.

E. Symptoms are restricted to or predominate in the feared situation or when thinking about it.

F. Most commonly used exclusion criteria: Criteria A and B are not due to delusions, hallucinations, or other symptoms of disorders such as organic mental disorders (F0), schizophrenia and related disorders (F20-F29), affective disorders (F30-F39), or obsessive compulsive disorder (F42), and are not secondary to cultural beliefs.

Table 2. *ICD-10 criteria for Social Phobia (F40.1)*
The DSM IV also includes a “generalised” specifier which can be used when anxiety is mostly attributed to social situations, such as interacting with people, talking to authority figures and engaging in performance situations. Approximately 50% of individuals who are diagnosed with social phobia have the generalised type of the disorder (Schneiner, 2006). The remainder tends to experience fear and avoidance around specific performance situations, such as public speaking. The generalised specifier can be seen as appropriate for an individual who is anxious about how they are perceived across various situations and how they would perform in these instances. This specifier suggests a broader type of social anxiety, whereas the non-generalised type implies anxiety in a specific situation, such as using public bathrooms or performing in front of a group of people (American Psychiatric Association, 2000).

In comparison to the term shyness, which has been used over centuries, social phobia is a relatively new label. Previously known as social anxiety disorder, social phobia was only distinguished from other anxiety disorders forty years ago (Stein & Stein, 2008). In these forty years, however, there has been much research dedicated to understanding the symptoms of social phobia and its relationship to shyness.

1.2.2 The Interaction between Social Phobia and Shyness

Social phobia shares many of the same symptoms that characterise shyness. On a physiological level, both social phobia and shyness involve an anxiety response that acts on the autonomic nervous system. Both have almost identical physical symptoms, including sweating, blushing, trembling and muscle tension. Panic attacks can be present in both social phobia and shyness, particularly chronic shyness, and in both cases an individual is likely to overestimate the presence of their symptoms. For example, a person with social phobia and an individual with shyness are both likely to focus on symptoms such as blushing and assume that others notice
these changes. Cognitions, emotions and behaviours of social phobia and shyness are also very similar. For example, individuals with social phobia and shyness experience fear of novel situations and negative evaluation, distress, avoidance, inhibition, and interference with functioning (Lorant et al., 1999). As discussed in section 1.3 and 1.4, shyness and social phobia are pervasive and continuous problems with similar comorbidity that are unlikely to completely resolve without treatment.

Despite their similarities, there are clear distinctions between shyness and social phobia. An important difference between social phobia and shyness relates to their definitions and conceptualisations. As previously noted, the definition of shyness is neither completely agreed upon nor understood. In contrast, the DSM IV and ICD-10 clearly outline the symptoms required for a diagnosis of social phobia. Unlike shyness, which spans a broad continuum, the diagnosis of social phobia is explicit: you either have the diagnosis or you don’t. This makes comparing the two syndromes difficult and also highlights why social phobia is perhaps more clinically accepted than shyness: being able to categorise somebody as having certain, clear cut, pathological symptoms makes diagnosis much easier. Some authors have argued that shyness is nothing more than a common language statement used to describe feelings (Crozier, 2002). As research into shyness has increased, however, a clearer picture of its relationship to psychopathology has emerged. Studies have shown that shyness has a strong, albeit complex, relationship with social phobia.

1.2.3 Hypotheses to Explain the Relationship between Shyness and Social Phobia

Examination of the available literature suggests at least three different hypotheses to help explain the relationship between shyness and social phobia.
The first hypothesis suggests that shyness may be a developmental precursor to social phobia (Crozier, 2002). In their study, Cox, Macpherson and Enns (2005) examined retrospective childhood shyness reports in 5877 participants to determine their relationship to anxiety and mood disorders. Of the 5877 participants 26% of women and 19% of men described themselves as ‘very shy’ when growing up. Of these shy participants, 53% of women and 40% of men met a lifetime diagnosis of one or more anxiety or mood disorders. Of all the anxiety and mood disorders, social phobia was found to be the disorder most likely to be given to participants reporting childhood shyness. Similarly, in their examination of shy children and their mothers, Cooper and Eke (1999) found that mothers of children who were shy had a significantly raised lifetime rate of social phobia. Together these studies provide evidence for a specific association between shyness and social phobia and suggest that childhood shyness may be a precursor to social phobia. There are, however, a range of limitations associated with the use of retrospective studies: participant accounts may be prone to bias, community samples are often used without detailed analyses of specific variables, and confounding variables are more difficult to control. Nevertheless, other research has found results consistent with this hypothesis.

Stemberger, Turner, Beidel, and Calhourn (1995) examined the family history of anxiety, childhood shyness and traumatic conditioning of 68 individuals with a diagnosis of specific or generalised social phobia. In their analysis they identified two primary factors associated with social phobia: shyness and traumatic social conditioning.

Traumatic social conditioning refers to instances in which individuals have been exposed to a social performance situation that has been negative and has been classically conditioned. In their study, 54% of participants with specific social phobia had a history of traumatic experiences and 72% of individuals with social phobia reported a history of shyness, with the
majority of these (76%) having a diagnosis of generalised social phobia. This finding suggests that a history of childhood shyness is more common in generalised social phobia while traumatic conditioning events are more common in non-generalised social phobia. It may be that extreme levels of shyness in adulthood are predated by shyness in childhood that is more likely to develop into generalised social phobia than specific (Chavira, Stein, & Malcarne, 2002). The research by Stemberger et al (1995) suggests that shyness may be a pre-dispositional factor for social phobia in that an adult with this diagnosis is likely to have a childhood history of shyness but the interplay of shyness, traumatic experiences and other factors may determine if they have specific or generalised social phobia as an adult, or alternatively, no psychiatric diagnosis at all. This perspective suggests that social phobia develops from interactions with the environment and the experience of traumatic factors. This perspective also emphasises the importance of differentiating generalised and specific phobia when examining the relationship between social phobia and shyness.

Although the studies conducted by Cox et al. (2005) and Stemberger et al. (1995) have clearly shown that an association between social phobia and shyness exists, not all the differences between these two syndromes can be accounted for. Not all children with extreme shyness persist into adolescence and adulthood and manifest into social phobia. Further, approximately 50% of adults with social phobia do not report excessive shyness in childhood (Stein & Stein, 2008). Thus, these studies imply that, whilst shyness and social phobia have similar underlying characteristics and are inherently linked; they are not synonymous with one another and are, ultimately, different syndromes.

Another prominent hypothesis is that social phobia represents an extreme and exaggerated form of shyness (Heisner, Turner & Beidel, 2003). That is, there is an overlap of
symptoms experienced by a person diagnosed with social phobia and a person with shyness at the far end of the continuum. According to this hypothesis, shyness is a manifestation of social phobia but social phobia is more severe (Rapee, 1998). This coincides with Chavira et al. (2002) who suggest a spectrum model based on research by Stein (1999) and McNeil (2001) (see Figure 2). In this spectrum, levels of shyness increase from average (normative) to chronic. As shyness symptoms increase in severity they overlap with clinical diagnoses of non-generalised social phobia, generalised social phobia and avoidant personality disorder (Chavira et al., 2002).

![Spectrum model of shyness and social phobia.](image)

Support for the spectrum hypothesis comes from research investigating social phobia in low shy and chronically shy groups and studies that have found correlations between severity of shyness symptoms and social phobia and an overlap between shyness and social phobia. For example, Chavira et al. (2002) examined the differences between shyness and social phobia in a group of 148 high shy and 155 low shy individuals. In the highly shy group, approximately 49% of individuals obtained a social phobia diagnosis, compared to 18% in the normatively shy group. Further, in an assessment of 114 chronically shy patients who attended the Palo Alto Shyness Clinic, Lorant et al. (1999) found that 97% received a diagnosis of generalised social
phobia and 67% had an additional diagnosis of avoidant personality disorder. These results imply that shyness and social phobia are related conditions and that shyness is a milder syndrome than social phobia (Tignol et al., 2001).

There are, however, numerous limitations to this hypothesis. First, although the above mentioned studies clearly show an overlap between shyness and social phobia, shyness does not account for all the variance in social phobia and some individuals with social phobia are not shy (Heiser et al., 2003). This suggests that whilst shyness and social phobia are related constructs, they are not completely synonymous. In their study, Lorant et al. (1999) identified several specific features of shyness that differentiate it from social phobia. According to this study, individuals with chronic shyness were more likely to have higher rates of comorbid dysthymia and generalized anxiety disorder than those found in social phobia. Further, avoidant, schizoid and dependent personality disorders were more prevalent in chronically shy individuals than people with social phobia. This suggests that chronic shyness may be equally debilitating as social phobia due to the prevalence of personality disorders and that there are marked differences between shyness and social phobia.

The relationship between shyness and social phobia is therefore not entirely clear and understood. A primary reason why it is so difficult to succinctly identify the relationship between these two constructs relates to the complexity of shyness. Henderson and Zimbardo (1998) suggest that a major difference between social phobia and shyness is that shyness is heterogeneous. Shyness may not necessarily involve problematic emotion or avoidance of goals important to the shy person. A person who is shy may feel all the emotions that a person with social phobia does but, behaviourally, they may engage in perceived undesirable activities. Further, an extroverted shy person may not necessarily avoid situations, whereas shy introverts
may be phobic and not socially anxious. In this sense, shyness is difficult to categorise and specifically diagnose.

Another model that helps account for some of these differences suggests that shyness and social phobia are related and overlap but that shyness is a broader construct (Heiser et al., 2003). This hypothesis proposes that shyness and social phobia are similar conditions with comparable symptoms and characteristics but they are not the same condition and the exact nature of their relationship and overlap is unclear. Heiser et al. (2003) propose that shyness may be a “manifestation of a broad temperamental condition related to differences in vulnerability to pathology” (p.219). This view suggests that shyness may be a risk factor for developing a range of psychopathology. There is some support for this hypothesis. In their study, Lorant et al. (1999) found that 65 (57%) out of the 114 participants with shyness also met the criteria for another Axis I diagnosis. Of these 65 participants, 33 (35%) met the criteria for dysthymia, 31 (33%) for generalised anxiety disorder, and 19 (20%) met the criteria for specific phobia. Similarly, Heiser et al. (2003) found that two-thirds of people with shyness met the criteria for axis I or II disorders and social phobia was higher among shys compared with non shys but the majority of shy individuals (82%) were not socially phobic.

This hypothesis suggests that shyness is closest to social phobia but may cause a range of psychological problems. This idea helps explain why not all individuals who are shy as children develop social phobia and why studies have found higher rates of social phobia in shy groups compared to non-shy groups but not all individuals who are shy have social phobia.

Taken together, these studies suggest plausible, albeit different, hypotheses to understand the relationship between shyness and social phobia. The first hypothesis suggests that shyness is a developmental precursor to social phobia, with childhood shyness being likely to be diagnosed
as social phobia in later years. This theory suggests that social phobia typically develops in two ways: from experiencing a traumatic event in a specific situation, or from having chronic shyness and a generalised fear of social situations. The second hypothesis suggests that social phobia differs from shyness in its greater severity, pervasiveness and impairment (Schneier, 2006). According to this view, shyness exists on a spectrum whereby chronic shyness and social phobia overlap at the far end of the continuum. The third hypothesis suggests that, although similar, shyness is more heterogeneous and extends a broader continuum than social phobia. This may account for why shyness is not recognised as a formal category in the Diagnostic Statistical Manual (American Psychiatric Association, 2000). Shyness and social phobia overlap but differences between the two emerge and problems with defining shyness arise because shyness reflects a broader psychological continuum and can have different domains of difficulty compared to social phobia (Henderson & Zimbardo, 1998). Further research into shyness and social phobia may help to continue to reveal the relationship between the two categories.

Although it is acknowledged that there are differences between shyness and social phobia, this thesis will review research on both shyness and social phobia and the two terms will be used together.

Although shyness is not a diagnosable disorder, clinical researchers have begun to take shyness seriously and to consider its impact on individuals (Crozier, 2002). A primary reason as to why shyness has gained increasing attention is due to its debilitating outcomes and high prevalence rates.

1.3 The Prevalence of Shyness

Shyness is a pervasive social phenomenon. Prevalence estimates of shyness are primarily drawn from self-reports that are based on the idea that an individual is shy if they perceive
themselves to be. Whilst there are problems associated with the use of self-reports, they represent a useful format given that symptoms of shyness are often covert and thus, not readily observable. Zimbardo (1977) has conducted numerous studies investigating the rates of shyness, via self-report. In the largest scale to date, 5000 individuals completed the Stanford Shyness Survey, a questionnaire designed by Zimbardo to specifically assess levels of shyness. Of the 5000 respondents, more than 80% reported that they were shy at some point in their lives, either now, in the past or always (Zimbardo, 1977). Of these, over 40% described themselves to be presently shy; whilst the other 40% indicated that they had considered themselves as shy previously but no longer (Henderson & Zimbardo, 1998). A quarter of respondents described themselves as chronically shy. Of all the participants sampled only 7% reported that they have never experienced any feelings of shyness (Zimbardo, 1977). It is arguable that the sample studied by Zimbardo may not be representative of the population as the study was conducted in America with a predominant student sample; however, other research has reported similar findings.

The figures obtained by Zimbardo’s (1977) study coincide with the shyness rates obtained from other researchers. Pilkonis (1977) found that 41% of surveyed students identified themselves as shy. Further, Bryant and Trower (1974) reported that 1 in 3 British participants sampled report having difficulty in a number of social situations. Similarly, in their study, Gortmaker, Kagan, Caspi and Silva (1997) reported that 15% of participants sampled were chronically shy. More recent research with similar samples indicates that the percentage of currently shy has escalated from 40% to 58% (Carducci, Stubbins, & Bryant, 2007; Carducci & Zimbardo, 1995). These results suggest that shyness is an extremely common condition which may be increasing.
1.3.1 Gender Differences in Shyness

Some gender differences have been found in shyness. Although there are generally few gender discrepancies in childhood, differences start to emerge in adolescence. Zimbardo (1977) found that adolescent girls (54%) were slightly more likely to be shy than adolescent boys. These differences may be due to societal pressures. For example, studies have indicated that parents find shyness less acceptable in sons than daughters (Stevenson-Hinde, & Shouldice, 1993). Further, it may be that the need to be popular in school and to be considered attractive is programmed more forcefully into teenage girls which leads increased self-consciousness and shyness (Zimbardo, 1977). In adulthood, no sex differences have been found in the prevalence of shyness. There are, however, some gender differences in specific settings. For example, in university settings there is a slightly higher percentage of men than women who report being shy. At the Shyness Clinic in Palo Alto, a clinic specialising in shyness treatment, 64% of clients who present are male, compared to 36% of females (Zimbardo, 1977). Cultural settings can have an important impact on the prevalence of shyness.

1.3.2 Shyness across Cultures

The cross-cultural research that has been conducted indicates that shyness is universal (Henderson & Zimbardo, 1998). As would be expected, however, the prevalence of shyness varies from culture to culture. For example, in comparisons of current shyness in 18-21 year olds across different countries, rates are highest in Oriental cultures such as Japan (60%) and lowest in Israel (30%), with Mexico (39%), India (47%) and Germany (50%) in between (Zimbardo, 1977).

Paulhus, Duncan and Yik (2002) conducted four studies comparing students of Asian heritage and European heritage to determine if there were differences in the prevalence of
shyness. Of the 897 participants, Asian heritage students were found to have significantly higher rates of shyness (68%) compared to European heritage students (44%). No gender differences were found. These figures are similar to those reported by Zimbardo. A limitation of Paulhus et al. (2002) study was the use of a self-reported test to categorise shyness. Although self-reported measures are commonly used to infer shyness, typically, the measures used have been rigorously researched and have been found to be psychometrically sound. In this study, participants simply categorised themselves as ‘shy’ or ‘non-shy’ and severity was determined by one item: “if you are shy, does it cause you serious problems in everyday life?” To reduce some of the problems associated with self-report, in their fourth study, direct behavioural observations were conducted for 250 participants. Ethnic differences were found in class participation, suggesting that Asian students have higher levels of shyness in self-reports and behaviour. These differences remained when level of education and grade point averages were controlled for.

There are, however, a range of problems associated with examining shyness across cultures. Two primary interrelated difficulties are faced when comparing shyness cross culturally. The first problem relates to understanding the construct of shyness. Different countries have different notions about what constitutes shyness. For example, in Asian cultures, where shame plays an important role, it is expected that individuals will exhibit emotional control and obedience to people in authority. If these societal norms are not abided by and correctly followed then shame typically results. Characteristics such as inhibition and control are revered in Asian cultures. In contrast, freedom of expression and assertiveness are seen as important qualities in Western cultures. In a comparative study of adult attitudes towards children with shyness in Thailand and America, Weisz, Suwanlert, Chaiyasit, Weiss, and Jackson (1991) found that Thais rated shyness as less problematic, less likely to be related to
personality and more likely to improve over time compared to the Americans. Similarly, Chen, Rubin and Li (1995) found that shy-inhibited children were more accepted in China, compared to shy children in Western nations. These results imply that shyness is more likely to be perceived as problematic in Western cultures, compared to Eastern cultures.

The second difficulty, which is also directly associated with the first problem, relates to the measurement and assessment of shyness. The majority of available research has been conducted in Western nations and, whilst a range of questionnaires have been successfully developed to measure shyness, there are few measures that can be used effectively across cultures. As previously noted, shyness may present differently depending on the context. Collectively, these studies suggest that shyness is common, widespread and universal. Similar prevalence research has been conducted into social phobia.

1.3.3 Prevalence Rates of Social Phobia

In comparison to shyness, social phobia has a smaller prevalence rate. Studies have shown that social phobia has a life-time prevalence rate of 12.1% (Kessler, Chiu, Demler, & Walters, 2005). Approximately half that prevalence represents persons who have the generalised type of the disorder, the remainder report fear and avoidance limited to specific performance situations. Studies in other Western nations (such as Australia and Canada) have reported similar rates (Stein & Stein, 2008). This makes social phobia one of the most common psychiatric disorders. Similar to shyness, it is believed that the rates of social phobia have gradually been increasing overtime. Social phobia is slightly more common among women than men, however, an equal number of men and women seek treatment for it (Schneier, 2006). Taken together, the prevalence rates of shyness and social phobia are concerning. These rates are particularly worrying considering the negative impact that shyness can have on individual functioning.
1.4 Comorbidity

As previously noted, the presentation of shyness can be complex as it often has a high comorbidity with a range of psychological disorders. Research has clearly demonstrated high comorbidity between shyness and social phobia. Shyness is also related to a range of other Axis I and Axis II disorders. On Axis I, shyness has a high comorbidity with dysthymia, generalised anxiety and specific phobia (Lorant et al., 2000; Heiser et al., 2003). Some studies have also reported comorbidity rates as high as 23% between shyness and major depressive disorder (Chavira et al., 2002). Studies investigating the comorbidity of shyness and substance-related disorders have reported mixed findings. Some studies have reported comorbidity rates as high as 18% whilst others have been as low as 2% (Heiser et al., 2000).

There is also a high comorbidity between shyness and Axis II disorders. Using the Millon Clinical Multiaxial Inventory- II, Lorant et al. (2000) found shyness co-existed most frequently with avoidant (67%), schizoid (35%) and dependent (23%) personality disorders. Heiser et al. (2003) found highest rates of comorbidity with avoidant (35%), followed by borderline personality disorder (13.5%). Rates of dependent and schizoid personality disorder were both 3%. Other studies have also found high comorbidity between shyness and avoidant personality disorder (Chavira et al., 2002).

These studies suggest that shyness coexists with a range of psychological disorders. Although research findings have been varied, shyness appears to be most strongly related to social phobia, avoidant personality disorder, dysthymia, and generalised anxiety disorder.
Chapter 2: The Impact and Causes of Shyness

I would rather sit on a pumpkin and have it all to myself, than be crowded on a velvet cushion.

Henry David Thoreau

Chapter Overview

In this chapter the impact that shyness can have on people’s lives is explored. Although shyness is not a diagnosable condition, this chapter demonstrates how debilitating shyness can be. The chapter begins with a review of the negative effects of shyness. Four key areas are identified as being negatively affected by shyness: social interactions, understanding and relating to people, performing in public situations, and physical and mental health. The positive effects of shyness are then explored. This is followed by an analysis of the aetiology of shyness, focusing on the contribution of biological, environmental and cognitive factors. The cause and maintenance of shyness is then described using two different models: the three vicious cycles and self-presentation theory.

2.1 The Negative Effects of Shyness

Shyness can be severely debilitating and, as described in chapter 1, can have serious behavioural, affective, cognitive, and physiological effects. Although the experience of shyness is different for each individual, research has suggested four key areas in which shy people are affected: social interactions, understanding and relating to people, performing in public situations, and physical and mental health.
2.1.1 Social Interactions

One of the most prevailing effects of shyness is a decreased level in social interactions. Shyness makes it difficult to meet new people, make friends, or enjoy potentially good experiences (Zimbardo, 1977). Due to their pervasive fear of social interactions, shy individuals don’t take advantage of social situations. A shy person is likely to avoid social situations entirely or, if they do attend social situations, they will initiate fewer conversations and be less expressive verbally and non-verbally (Henderson & Zimbardo, 1998). Rather than contributing to a conversation, shy people tend to remain quiet and hover at the edge of social situations (Crozier, 2002). The lack of interpersonal interactions can have a dramatic impact on an individual’s functioning. A shy person often does not get to express their own ideas, values and beliefs; communicated information can be substantially reduced and the ability to ask questions and obtain information is often impacted. A shy person may struggle to ask a person for directions and talk about their favourite film, let alone request a job promotion or ask somebody to do something for them. Perhaps one of most detrimental aspects of shyness is the impact it has on making friends.

Making friends for a shy person is extremely difficult. Shy people find it hard to communicate with people so being able to meet people and make meaningful connections is difficult. Asendorpf and Wilpers (1998) found that the more sociable and less shy first time university students were at the beginning of the semester, the more their peer network grew over the course of the semester. Further, in their investigation of the relationship between shyness and Facebook use, Orr et al. (2009) found a significant negative correlation between shyness and number of friends. These findings indicate that the more shy the person is, the fewer friends on
Facebook they have and highlight that shyness can have a detrimental impact on making friends, even in an online environment.

That is not to say, however, that people who experience shyness fail to make any friends. Burgess, Wojoslawowicz, Rubin, Rose-Krasnor, and Booth-LaForce (2006) examined friendships in shy children and control children. No significant differences in the reported number of best friends between shy children and controls were found. This finding suggests that shy individuals are able to establish close relationships. It should be noted, however, that friendships with the shy individuals were generally viewed in a more negative manner as the best friends of shy children reported their best friendships to be less fun and lower in overall friendship quality than best friends of control children. Similarities were noted between shy children and their best friends in that they both tended to be withdrawn, victimised and excluded. Taken together, these findings suggest that shy/withdrawn children are more likely to bond with one another and that because of their similarities of exclusion the benefits of friendship may actually be reduced. More research is needed, however, to support this relationship.

The lack of social interaction for shy people can also impact their likelihood of finding a sexual partner and increase loneliness. Individuals who feel shy are less likely to interact socially than individuals who aren’t shy (Schlenker & Leary, 1982) and this, together with the finding that shy people view approaching a potential sexual partner as one of the most difficult situations, makes meeting a potential partner extremely challenging. Research has found that individuals who experience shyness date less than individuals who aren’t shy and experience more loneliness (Henderson & Zimbardo, 1998). In their study of school children over a two year time period, Boivin, Hymel and Bukowski (1995) found that social withdrawal and peer rejection led to feelings of loneliness and depression. The negative impact of shyness is not
restricted to the experience of symptoms mentioned previously (in the symptoms section); rather, shyness reduces one’s ability to interact socially and find a partner which can ultimately lead to feelings of exclusion, loneliness and impact how individuals perceive and relate to others.

2.1.2 Understanding and Relating to People

Shy people also tend to have negative views of themselves and others. Shy individuals generally have an attributional bias, whereby they reinterpret events in a way that fits their pre-existing belief about themselves (Mash & Wolfe, 2005). For example, because a shy person is likely to have a negative view about themselves they are likely to interpret things that happen to them in a negative manner. If there is a long pause in a conversation, a shy person is likely to assume that it was their fault, that they were not interesting enough and that the other person did not want to talk to them. Individuals who are shy remember negative feedback more than less socially anxious people, see themselves as less physically attractive (Henderson & Zimbardo, 1998), and are more likely than people who are not shy to attribute success to external factors and failure to internal causes (Federoff & Harvey, 1976). This negative attributional style also leads to a self-blaming tendency, particularly in chronically shy individuals. Individuals who are shy blame themselves for their perceived inadequacies, report intense feelings of shame and report negative thoughts about themselves in social interactions; seeing themselves as awkward, unfriendly and incompetent (Henderson & Zimbardo, 1998). Whilst shy individuals are generally consumed by self-loathing, their negative thoughts are not just restricted to themselves.

Henderson (1997) found that shy individuals blame others as well as themselves and tend to view others as dangerous, rejecting and unreliable. These negative interpretations of others can further social withdrawal and lead to greater evaluative fear.
2.1.3 Performing in Public Situations

An individual who experiences shyness will typically dread performing in social situations. This can include anything from giving a presentation, eating in public, or using public toilets. Although there may be different individual reasons as to why a person who feels shy dislikes performing such behaviours in public, one of the major underlying factors relates to their preoccupation with their performance due to fear of being judged.

Shy individuals’ preoccupation with performance has been shown to negatively affect cognitions and information processing skills. For example, individuals who are shy have been shown to perform significantly worse than individuals who are not shy on the Stroop test (Arnold & Cheek, 1986), and measures of social processing skills (accuracy in judging social situations) (Schroeder, 1995). It is suggested that because shy people possess low levels of self-esteem and are overly fearful about receiving negative feedback they become anxiously self-preoccupied to the extent that they become distracted from tasks (Cheek & Stahl, 1986). This leads to a decrease in their level of problem solving and information processing ability (Schroder, 1995).

The pervasive fear of evaluation that is characteristic of shy individuals may also lead to a decrease in creative performance. To investigate the relationship between creativity and shyness, Cheek and Stahl (1986) had 20 college women who were identified as shy and 22 who did not experience shyness write poems that were objectively rated for creativity. Half of each group were told that they would receive evaluative feedback on the quality of their poems. Results demonstrated that shyness was inversely related to creative performance. This shows that the thought of evaluation impacted creativity. Furthermore, those participants in the evaluative feedback group performed less creatively than those who were not shy.
These findings coincide with other studies, indicating that shy people suffer from performance anxiety whereby information processing skills and creativity become inhibited. Whilst studies have specifically investigated these areas it is likely that other important skills are also affected. This performance fear may potentially impact all areas of life ranging from partaking in a sport to pursuing work related goals. Therefore, shyness appears to be a barrier to developing one’s potential (Cheek & Stahl, 1986).

2.1.4 Physical and Mental Health

Studies also indicate that shy individuals are at a greater risk of health problems and psychological disorders. In a study by Bell et al. (1993) older shy individuals were found to suffer higher rates of hay fever, insomnia, and constipation than their non-shy counterparts. Further, individuals who were shy had an increased risk of arteriosclerotic vascular disease and adrenal and thyroid-related diseases.

Extreme shyness has also been found to be a predictor of other emotional and psychosomatic problems. Schmidt and Fox (1995) examined differences in personality and psychological factors among 40 young women who were selected for having high or low self-ratings of shyness. Individuals with higher shyness reported significantly more neuroticism, loneliness, depression, and had lower self-esteem than their lower shy counterparts. Health problems may be further exacerbated because shy people typically fail to disclose fully personal or sensitive problems to medical and psychological professionals (Henderson & Zimbardo, 1998).

As previously mentioned, shyness has a high comorbidity with a range of disorders, such as social phobia (Henderson & Zimbardo, 1998). Being shy also increases the likelihood of experiencing sexual disorders (Tignol et al., 2001) and substance dependence, particularly
alcohol abuse. In an examination of alcohol dependence, Lewis and O’Neil (2000) found that the majority of problem drinkers reported experiencing shyness. It has been suggested that shy people may use alcohol in an effort to relax socially, which may then lead to abuse and impaired social performance (Henderson & Zimbardo, 1998). Others, however, maintain that higher levels of shyness may decrease drinking when the individual believes that drinking will lead to negative consequences, such as embarrassing behaviour. For example, Eggleston, Woolaway, and Schmidt (2004) found that socially anxious college undergraduates showed a decreased consumption frequency and drinking binges than other college undergraduates. However, these findings may be restricted to college students where alcohol consumption is more prevalent. Taken together, these studies illustrate the negative and far-reaching effects that shyness can have on individual functioning. However, it is important to note that not all shy people regard their condition as negative.

2.2 The Positive Effects of Shyness

Although research has predominantly focused on the negative and debilitating repercussions of shyness, for some individuals, shyness is perceived as a positive trait. It is estimated that between 10 and 20% of people who are shy actually like it (Zimbardo, 1977). For these people, shyness may be regarded as a positive quality or as an aspect of their personality to which they have adjusted (Crozier, 2002). Shyness can carry positive connotations, such as “reserved”, “retiring” and “sophisticated” (Zimbardo, 1977).

Shy individuals are also likely to be relationship focused; they are concerned about getting along with others and are usually sensitive and thoughtful about other people’s feelings (Henderson, 2011). Shyness can also provide anonymity and discreetness and allow individuals to stand back and observe. Nevertheless, for the majority of shy people, shyness is regarded as a
persistent and distressing problem that they would overcome if they could (Crozier, 2002; Zimbardo, 1977). Whilst it has not been investigated, it may be that perceiving one’s shyness as positive may be dependent on one’s level of shyness. In summary, whilst a small proportion of shy individuals report benefits associated with their shyness, for the vast majority, shyness is a pervasive and devastating condition that can lead to various problems.

2.3 The Aetiology of Shyness

Research indicates that shyness is generally caused by a contribution of biological, environmental, cognitive and societal factors. However, it is crucial to note that the aetiology of shyness is poorly understood and there is little research to support a direct link between shyness and specific factors (Neal & Edelmann, 2003).

2.3.1 Biological Factors

The biological foundation of the social anxiety component of shyness is found in the action of the amygdala and hippocampus (Henderson & Zimbardo, 1998). The amygdala is prominent because it plays a central role in processing emotional material and responding to unfamiliar material (Hofmann, Heinrichs, & Moscovitch, 2004). In their meta-analysis of 55 positron emission topography (PET) and functional magnetic resonance imaging (fMRI) studies, Phan, Wager, Taylor and Liberzon (2002) noted specific changes in the amygdala when healthy participants were shown pictures of fearful, angry and happy expressions compared with neutral faces. This finding suggests that it is part of our make-up to respond to specific social cues within our environment and that these changes take place, primarily, in the amygdala.

Although this predisposition to react to facial expressions appears to be inbuilt, Kagan (1994) suggests that the activation threshold of these brain structures, specifically the amygdala, to unfamiliarity or challenge is tonically lower in inhibited than uninhibited children. This
suggests that shy or inhibited children have a heightened level of fearfulness to threat. A shy person is likely to be constantly scanning their environment for potentials threats; analysing the speech, behaviours and gestures of others, looking for anything that could be deemed as negative or threatening. Support for this theory has been demonstrated by measuring physiological responses to face processing and various unfamiliar stimuli (Kagan, Reznick, & Snidman, 1988). For example, Stein, Goldin, Sareen, Zorilla and Brown (2002) found that when participants were exposed to angry, fearful, and contemptuous emotional expressions, participants diagnosed with social phobia had increased neural activity in the amygdala compared to controls. Although the amygdala plays an important role in shyness, it does not work in isolation. Anxiety is a complex emotion that involves an extensive range of neural networks (Furmark, 2009).

A range of neurotransmitters have been associated with shyness. In particular, serotonin and dopamine appear to play an important role. It is thought that shy individuals produce less serotonin in the amygdale compared to non-shy individuals. Some evidence has been found to support this idea. Lanzenberger et al. (2007) found significantly lower serotonin receptor biding potential in the amygdala of participants with SAD compared to controls. The importance of the role of serotonin in anxiety is further supported by the efficacy of the use of selective serotonin reuptake inhibitors (SSRIs) for the treatment of anxiety (discussed in chapter 3).

Reduced dopamine production has also been found to be associated with shyness. Dopamine plays a key role in pleasure and motivation; two factors which impact social phobia (Furmark, 2009). In support of this idea, Arbelle et al. (2003) found a correlation between shyness and levels of dopamine and serotonin in 118 second grade children. Similarly, Tiihonen et al. (1997) reported lower levels of dopamine reuptake in participants with social phobia compared to controls. Few other studies, however, have specifically examined dopamine levels
in individuals with shyness or social phobia and although serotonin and dopamine appear to play a crucial role in shyness, isolating the impact that they have on anxiety can be extremely difficult.

Genetic factors have also been implicated in shyness. Evidence from family and twin studies suggest that shyness is one of the most heritable temperament characteristics (Hofmann et al., 2004). In a meta-analysis conducted by Beatty, Heisel, Hall, Levine and La France (2002) it was reported that social anxiety had a heritability rating of 65%. This suggests that children of shy parents are at increased risk for the development of shyness. Other studies have reported heritability levels at around 50% (Kendler, Karkowski, & Prescott, 1999).

Some genetic factors are expressed early in development. In concordance to the fearful category of shyness, some infants seem to be born timid, demonstrating non-responsiveness to social engagements as early as two months (Henderson & Zimbardo, 1998). Genetic factors may also play a role in affecting levels of norepinephrine and dopamine neurotransmitters mentioned previously, which, in turn, influence sympathetic nervous system activity (Crozier, 2002). Other studies have suggested that certain receptors, specifically the β1-adrenergic receptor, may influence personality traits, such as introversion (Stein, Schork, & Gelernter, 2004).

Overall, there is strong evidence to suggest that biological factors play an important role in shyness. Research has clearly demonstrated that the amygdala, neurobiological and genetic factors have some impact on the development of shyness. Yet, exactly how these biological variables impact shyness is still not entirely clear. We have a broad understanding about how these variables operate and may impact shyness but we do not yet know the exact mechanisms of action or the specific genotype of shyness. Although research in the biological field of anxiety continues to progress, particularly with advances in brain imaging and genotyping techniques,
further research is needed to understand the biological implications of shyness. Shyness clearly has an underlying biological element but the expression of genes may be dependent on other aspects, particularly environmental and societal factors.

2.3.2 Environmental Factors

The interactionist interpretation of the origins of shyness suggests that shyness is influenced by both genetic and environmental factors. In a study of shyness in infants with adopted and biological parents, Daniels and Plomin (1985) reported significant correlations between shyness and low sociability for both biological and adoptive mothers. This finding suggests that both genetics and environment play a role in shyness.

In order for the genetic component of shyness to be expressed, it may be that certain environmental factors need to occur. Henderson and Zimbardo (1998) suggest that a reactive temperament may need to be aggravated by environmental triggers, such as inconsistent or unreliable parenting, insecurity of attachment, family conflict, frequent criticism, a dominating sibling or a stressful school environment.

Societal factors have also been suggested to play a key role in maintaining and exacerbating shyness. Henderson and Zimbardo (1998) argue that the increase in shyness may be attributed to recent technological advances and an overall reduction in “real time” face-to-face communication and interaction. It has been argued that the increasing use of technological appliances, such as telephones, televisions, and ATMS may reduce the level of shared social interactions and further promote social isolation. The Internet, in particular, has been considered one of the most socially distancing and impersonal modes of communication (Matheson & Zenna, 1998). The fundamental assumption underlying this argument is that the Internet may become a substitute for the reality of human connectedness and thus, people may not acquire and
maintain the skills necessary for social interaction (Henderson & Zimbardo, 1998). From this perspective, shyness can be viewed as a type of societal pathology that is influenced by a lack of socialisation and an alteration in the nature of interpersonal communication (Henderson & Zimbardo, 1998). Others, however, argue that the way in which individuals interact with technological advances is mediated by cognitive factors.

2.3.3 Cognitive Factors

According to the cognitive model of shyness, social anxiety results from individual self-evaluation of social performance and negative self-statements (Snyder, Smith, Augelli, & Ingram, 1985). Cognitive styles, such as attributional biases and negative beliefs about the self, may also play a role in influencing shyness. Schroeder (1995) suggests that shy individuals invoke negative implications for the self when thinking about poor performance, which then becomes a self-fulfilling prophesy. In this sense, shy individuals’ expectation about how they will behave in social situations influences their actions. Thus, shyness becomes a vicious cycle that becomes difficult to break.

2.3.4 The Three Vicious Cycles

According to Henderson (2003), the cycle of shyness can be conceptualised in, what she terms, the three vicious cycles of shyness:
In the first cycle, fight/flight, as the individual who feels shy approaches or anticipates a social situation, feelings of fear and negative predictions about the outcome of the social situation are prevalent. These feelings of fear and other negative cognitions increase the number of negative predictions about the social situation that in turn aggravate the already heightened level of fear (Henderson, 2003).

As discussed previously, avoidance is a typical response of an individual who is shy. Avoiding the social situation may provide relief for the individual, however, feelings of shame and rumination take over and the shy individual then feels shame for fearing and avoiding the social situation and moves onto the second cycle where feelings of shame and self-blame are
present (Henderson, 2003). If an individual avoids the situation (such as going to a party) it is likely that they will blame themselves and view themselves as a social failure. Or, alternatively, if they don't avoid the situation they are likely to blame themselves for a less-than-perfect performance. Together these feelings typically produce shame and guilt which, in turn, produce more self-blame. The next time the individual enters the feared social situation in which they experienced feelings of failure, this self-blame and shame is likely to lead to increased vulnerability. This then leads to the third vicious cycle.

When one experiences shame, others may appear more powerful and untrustworthy. Individuals who are shy feel anger and resentment towards others and enter the third cycle. By blaming others, the shy individual reduces his/her feelings of self-blame and shame. Therefore, other individuals are seen as inconsiderate, unsupportive, and uncaring. Negative emotions and negative cognitions influence each other in an escalating reciprocal pattern (Henderson, 2003). According to Henderson (2003) this vicious cycle interferes with open-mindedness and the forming and maintaining of safe and trusting relationships. If this vicious cycle persists, it results in anger, resentment and passive aggression, and ultimately to increased feelings of alienation and increased behavioural withdrawal.

This is a simplified version of how people may experience shyness but it helps to explain some of the typical behavior of individuals who experience shyness. The practical application of this model is discussed in detail in Chapter 7.

2.3.5 Self-Presentation Theory

Cognitive and behavioural theorists further argue that shyness results from the development of social learning patterns and cognitive distortions over time (Walsh, 2002). Individuals therefore develop a way in which they perceive themselves and others in social
situations. Self-presentation theory is based on the assumption that in social situations individuals attempt to control images of self or identity-relevant information. Shy individuals are motivated to create a desired impression in others but lack the confidence that they will be able to do so (Crozier, 2002). The relationship between shyness and self-presentation can be conceptualized in the following model:

\[ \text{SHYNESS} = M \times (1 - p) \]

In this model, adapted from Leary (1996), \( M \) refers to impression motivation or the degree to which an individual is motivated to make a desired impression on others, and \( p \) is the subjective perceived probability of being able to make the desired impression. According to this principle an individual’s level of shyness increases when they are motivated to make a desired impression on others but doubt they will successfully be able to do so. For example, two individuals may interact with the same person. Both individuals may be highly motivated to make a desired impression. However, the first individual may not experience any anxiety or symptoms of shyness because their perceived probability of making the desired impression is high, \( M \times (1 - 1) \). In contrast, the second individual may believe that they will be unable to make the desired impression, \( M \times (1 - 0) \), therefore leading to higher levels of shyness.

The model represents a mechanism to predict an individual’s level of shyness and help describe why shyness occurs. Moreover, it provides a useful foundation for explaining how an individual’s level of shyness may alter in different contexts or situations. For example, a person may feel extremely shy when in a group but when interacting with someone they know they may be relaxed, talkative and confident.
From this perspective, shyness is essentially context dependent. An individual’s level of shyness is dependent on the situation and the individual’s cognitive interpretation of the event: if the individual has a positive expectation of the situation then goal attainment is likely to result, whereas if the individual has a negative expectation then an increase in anxiety and a decrease in goal attainment is expected (Snyder et al., 1985).

There has been some support for this model. In their study, Saunders and Chester (2008) measured shyness, impression motivation (M) and perceived probability of making a desired impression (p) via self-reports in a sample of 90 participants prior to taking part in a 15 minute interaction with a member of the opposite sex. Results found that impression motivation and perceived probability of making a desired impression were significant predictors of shyness. These findings provide some support for Leary’s (1996) model and suggest that shyness is a dynamic condition that is context dependent.

2.4 Conclusion

From the range of research, models, and theories presented in this chapter it is clear that trying to isolate why shyness occurs is difficult. Although there has been an abundance of research investigating the aetiology of shyness and significant relationships and factors have been found, it is difficult to account for all the factors in research, therefore making it difficult to analyse how all the biological, environmental, social and cognitive factors contribute to shyness. The problem of understanding why shyness occurs is further confounded by issues regarding the differentiation of shyness and social phobia discussed in chapter 1. As previously noted, shyness and social phobia are very similar, but there are differences between the two. The aetiology research has, however, generally tended to combine the two. It would be beneficial for future research to investigate the causes of shyness using specific shyness measures. Nevertheless, the
available research suggests that shyness is caused by the complex interplay of biological, environmental, social and cognitive factors. It is important to have an understanding of the causal factors of shyness as they help guide the treatment of shyness.
Chapter 3: The Treatment of Shyness

The shell must break before the bird can fly.

Alfred Tennyson

Nerves and butterflies are fine - they're a physical sign that you're mentally ready and eager. You have to get the butterflies to fly in formation, that's the trick.

Steve Bull

Chapter Overview

This chapter focuses on the face-to-face treatment of shyness and social phobia. Predominant treatment methods for shyness are described and evaluated. A review of the studies evaluating the treatment methods is important as it provides the strengths and weaknesses of each approach and gives an indication as to which treatment is the most efficacious. The chapter begins with an examination of pharmacotherapy and the different drugs that have been found to reduce shyness and social phobia symptoms. This is followed by a review of the psychological treatments, including exposure therapy, cognitive behaviour therapy (CBT), acceptance and commitment therapy (ACT), psychodynamic approaches, and social skills. The chapter concludes with the idea that CBT is the most efficacious approach for the treatment of shyness and social phobia.

3.1 Treatment Approaches

Shyness can be severely debilitating and have serious psychological and behavioural outcomes. As previously discussed, the majority of people (80%) will experience shyness at some point in their lives. The changing course of shyness and lack of diagnostic criteria may
make identifying when treatment is required difficult. For social phobia, it is generally recommended that intervention is necessary when anxiety is disabling, with respect to daily activities, relationship or occupational functioning (Keltner, & Folks, 1997). This could represent a similar time to intervene when treating shyness.

Over the last two decades emphasis has been placed on the development of psychological treatments that are based on empirical evidence. The identification of empirically supported treatments has been guided by rigorous RCT designed research (Wampold & Bhati, 2004). The appropriate mode of treatment for shyness and social phobia is dependent on a range of factors, such as the level of impairment, functioning of the client and area of skills deficiencies (Henderson & Zimbardo, 1998). There are a range of different treatment options available to assist people with their shyness. Therapeutic interventions are primarily biological (pharmacotherapy) or psychological. Pharmacotherapy relies on a variety of drug treatments, whilst the psychotherapeutic approach employs a range of psychological techniques that teach people skills and coping mechanisms in order to reduce distress and bring about change. The comparative efficacy of interventions is a crucial aspect for the successful treatment of people who consider themselves shy. Presented and discussed in this section is the effectiveness of pharmacotherapy and psychotherapy for treating shyness specifically for adults, taking into consideration factors such as response rates, toxicity, and likelihood of relapse. First, the pharmacotherapy approach and studies examining its efficacy is described. Although pharmacotherapy is not the focus of this thesis, research in this area is reviewed to show the various treatments available for shyness and social phobia and to allow for a comparison with psychological treatments. The review of the effectiveness of pharmacotherapy is followed by an analysis of the limitations surrounding the approach. Psychotherapy and the effectiveness of
treatment are then explored. It is important to note that the majority of research conducted in the area of shyness has been performed on participants with a diagnosis of social phobia. This review incorporates studies examining shyness and social phobia.

3.2 Pharmacotherapy Treatment

Anxiety is one of the most common symptoms for which drug therapy is prescribed (Keltner, & Folks, 1997). Pharmacotherapy has had an exceptional impact on the treatment of anxiety; reducing morbidity and achieving improved outcomes for millions of individuals across the world (Pickar, & Rubinow, 2001). Pharmacotherapy is often seen as a useful treatment option as they are readily available and can help provide relief to individuals suffering chronic shyness and social phobia (Stein, Fyer, Davidson, Pollack & Wiita, 1999).

There are a range of drug treatments that are available for shyness and social phobia. Interest in the use of medication for the treatment of social phobia gained momentum in the late 1970s (Rodebaugh, Holaway & Heimberg, 2004). Since that time, research has demonstrated the efficacy of numerous types of medications to treat symptoms of shyness and social phobia. The main classes of drug that have been subject to research include: antidepressants (predominately monoamine oxidase inhibitors (MAOIs) and selective serotonin reuptake inhibitors (SSRIs)), beta blockers and benzodiazepines. A complete review of all of these classes is beyond the scope of this thesis. In the following review the focus will be on examining the efficacy of the dominant SSRIs, beta-blocker and benzodiazepines.

3.2.1 Selective Serotonin Reuptake Inhibitors (SSRIs)

According to the International Consensus Group, SSRIs are recommended as first-line agents in the treatment of social phobia (Bandelow, Zohar, Hollander, Kasper, & Moller, 2002). The reason for this is because an abundance of research has demonstrated the efficacy of SSRIs
and they have been found to have less side effects compared to other drugs (including MAOIs), with most side effects described as mild to moderate (Scott & Heimberg, 2000). Nevertheless, side-effects of SSRIs can be debilitating. Patients undertaking SSRI treatment have a high risk of experiencing irritability, weight gain and decreased sexual functioning. Studies also indicate that taking SSRIs during pregnancy may lead to neurological symptoms in newborn babies (Laine, Heikkinen, Ekblad & Kero, 2003). Although numerous SSRIs exist, the main drugs that have been found to demonstrate efficacy for the treatment of social anxiety include: Fluvoxamine, sertraline, paroxetine, fluoxetine, and escitalopram.

3.2.2 Fluvoxamine

Of all the SSRIs, fluvoxamine was the first drug to be shown to be efficacious in the short-term treatment of social phobia. In their study, van Vliet, den Boer and Westernberg (1994) examined the efficacy of fluvoxamine for the treatment of social anxiety in 30 participants who had a diagnosis of social phobia. A 12-week double-blind placebo design was used, with participants taking 150 mg of fluvoxamine on a daily basis. Improvements were found in 46% of patients taking fluvoxamine, compared to 7% on placebo. Significant differences were noted on measures of social phobia and general anxiety.

These findings have been replicated in numerous other studies with larger sample sizes (Davidson et al, 2004). For example, in a 12-week double-blind, randomized, placebo-controlled trial, Stein et al. (1999) examined the efficacy of fluvoxamine for the treatment of 92 participants with a diagnosis of social phobia. After the 12 week trial period, 43% of participants taking fluvoxamine showed improvements on the Clinical Global Impression- Improvements Scale (CGI-I), compared to 23% in the placebo group and fluvoxamine was superior to placebo on all the social phobia scales.
In a more recent study, Asakura, Tajima and Koyama (2007) investigated fluvoxamine for the treatment of generalised social phobia disorder in 176 Japanese participants. By the end of the 10 week double-blind study, the fluvoxamine treated participants had a significantly greater reduction in social phobia compared to controls.

Although these studies suggest that fluvoxamine may assist with the reduction of symptoms of social anxiety, the majority of these studies have been conducted over a relatively short time period (12 weeks) and, as social phobia generally occurs over a prolonged period, they offer little evidence for the long-term treatment of social anxiety. In order to examine the effectiveness of fluvoxamine for the long-term treatment of social phobia, Stein, Westenberg, Yang, Li and Barbato (2003) extended on a previous 12-week randomized placebo-controlled study in which fluvoxamine was found to effectively treat social phobia. 112 participants from the initial study who had shown at least minimal improvement were invited to take part in the extended study. Results showed that, in the 12-24 week period, participants on fluvoxamine continued to improve compared to those in the placebo condition. The magnitude of change, however, was smaller in the extended study (12-24 week period) compared to the initial study (1-12 weeks). Fluvoxamine continued to be well tolerated in participants with minimal side effects reported (sweating= 9%, nausea= 7%, abnormal ejaculation= 7%).

3.2.3 Sertraline

Sertraline is another SSRI that has been used to treat social phobia. Although there has been less research investigating sertraline for the treatment of social phobia, the available research suggests that it is efficacious. In one of the first studies to examine the efficacy of sertraline for the treatment of social phobia, Katzelnick et al. (1995) administered 5-200 mg sertraline to 12 participants using a double-blind place-controlled trial over a 10 week period. A
significant improvement was found in social anxiety scores in the sertraline group but not in the placebo group. Similarly, Van Ameringen (2001) evaluated the efficacy of the use of sertraline for the treatment of 204 adult patients diagnosed with generalised social phobia in Canada. The trial was a double-blind, placebo–controlled trial spanning 20 weeks. Participants were commenced on 50 mg of sertraline (or matching placebo) with doses increased by 50 mg per day every 3 weeks after an initial 4 week starting period. Results found significant improvements in the group of participants given sertraline compared to those given placebo. Ratings of social phobia gradually dropped over the 20 week period for those taking sertraline.

### 3.2.4 Paroxetine

Paroxetine is another SSRI that has been found to be effective for the treatment of shyness and social phobia. Allgulander (1999) compared paroxetine to placebo in a randomised, double-blind study consisting of 65 participants over a 12 week period. Social phobia scores were found to decrease in the paroxetine group (significant differences first noted after 4-6 weeks). Sexual side-effects were reported by 18 participants taking paroxetine. Numerous other studies have reported on the efficacy of paroxetine for the treatment of social phobia, with clinically significant changes reported in 12 week trials (Stein et al., 1998) and studies with sample sizes as large as 290 (Baldwin, Bobes, Stein, Scharwachter, and Faure, 1999).

Although research has generally focused on symptom reduction when investigating the efficacy of medications, positron emission tomography can also be conducted to determine occupancy levels of the serotonin reuptake transporter (SERT). In a study by Kent et al. (2002) the level of occupancy of SERT was examined in 5 patients with a diagnosis of social phobia before and during treatment with paroxetine (ranging from 20-40 mg per day). Results revealed that, after taking paroxetine, participants had higher levels of SERT. This finding suggests that
taking paroxetine at therapeutic doses achieves high occupancy levels of SERT. Taken on its own, this study does not show that paroxetine reduces social phobia, however, coalesced with previous findings showing the reduction of social phobia symptoms from paroxetine intake, this study offers further evidence that paroxetine can lead to changes in the brain which then leads to symptom reduction.

Overall, these studies suggest that anti-depressants can be very effective for treating social anxiety. Fluvoxamine, in particular, appears to be useful for treating social anxiety. The efficacy of fluvoxamine is demonstrated by the numerous studies that show its effectiveness in reducing social anxiety symptomatology and, importantly, how it may assist for the longer-term treatment of social anxiety. Although these findings are exceptionally promising, it would be beneficial if there was more research investigating the use of anti-depressants. The limited studies that are available suggest that the effectiveness of anti-depressants may gradually reduce over time; it is therefore difficult to determine how useful these drugs are for the longer term treatment of social anxiety. There are also questions regarding the likelihood of relapse once they cease taking medication. Research indicates that the likelihood of patients relapsing once they have completed pharmacotherapy treatment is exceptionally high. Figures from one study suggested that 25% of anxiety patients relapse within one month of discontinuing drug therapy and as many as 60-80% relapse within one year (Gliatto, 2000). However, those who are treated for longer periods are generally less likely to relapse (Hersen, & Ammerman, 1994).

3.2.5 Benzodiazepines

Benzodiazepines reduce anxiety by interacting with GABA neurotransmission, particularly in the amygdala. Benzodiazepines can act relatively quickly (compared to anti-depressants) but often have a smaller half-life. In one study (Davidson et al. 1993), clonazepam
was compared to placebo over a 10 week double-blind trial. 78.3% of participants responded in the clonazepam group, compared to 20% in the placebo group. In a 2 year follow up, Sutherland, Tupler, Colket and Davidson (1996) reported that those in the clonazepam group continued to demonstrate significantly less symptoms than those in the placebo group. Other studies have also found clonazepam to be effective for social anxiety (Otto et al., 2000).

Other benzodiazepines, however, may not be as effective. For example, Simeon et al. (1992) conducted a 4-week double-blind placebo controlled study of the use of xanax for 30 participants with overanxious or avoidant disorder. No significant differences were found between the Xanax and placebo group.

Concerns about abuse and dependence curtail the use of benzodiazepines (Scott & Heimberg, 2000). An abundance of studies have highlighted the dangers and adverse effects that are associated with drug treatment. For benzodiazepines, sedation, decreased mental activity, decrease in co-ordination, occupational efficiency and an increased risk of accidents are common side effects. Literature also suggests that Diazepam may lead to an increase in agitation, leading to violence or terror (Keltner, & Folks, 1997). In therapeutic dosages benzodiazepines do not generally lead to abuse, and addiction is rare, however, all benzodiazepines can lead to dependence. Withdrawal symptoms, for example, anxiety, irritability and insomnia, occur once medication is discontinued or reduced (Gliatto, 2000).

3.2.6 Beta-blockers

Beta-blockers are a class of drugs that work by blocking the action of adrenaline on beta receptors in cells of the heart, lung, and other muscles (Drummond, 2006). This means that they can reduce some of the physical sensations associated with social phobia, such as racing heart, blushing, tension and sweating. Beta-blockers may therefore be particularly useful for
performance anxiety (Scott & Heimber, 2000), such as when giving a presentation or making a speech.

There is little evidence, however, to support the use of beta-blockers for the treatment of generalised social anxiety, which is more commonly seen in shyness. Both Turner (1994) and Liebowitz et al. (1989) found that atenolol was no better than placebo for the treatment of social anxiety. Similar to benzodiazepines, the side effects of beta-blocker can also be problematic. Side effects can include impotence, insomnia, indigestion, and hair loss.

3.2.7 Conclusion

Pharmacotherapy generates marked improvements for individuals with social phobia. MAOIs, SSRIs and some benzodiazepines have all be found to be effective for the treatment of social phobia. The newer SSRIs, fluvoxamine in particular, have demonstrated efficacy for treating social anxiety. SSRIs have comparatively fewer side-effects than older classes of antidepressants, however, individuals are still likely to suffer some side-effects and there are problems regarding relapse rates once individuals stop taking their medication.

This presents a major problem for using pharmacotherapy as the sole approach for intervention. With such high relapse rates it is arguable that prescribing medication is ineffective in the long term; serving as treatment for the symptoms of anxiety but not the causes. In this sense, pharmacotherapy alleviates individuals of the aversive effects of anxiety but it does not equip individuals with the tools they need to effectively combat the underlying problem. Moreover, critics of pharmacotherapy claim that the availability of new drugs has shifted many psychiatrist practices away from a long-term therapeutic focus to that of short-term drug treatment (Lauerman, 1997). A consideration of the underlying psychological factors seems necessary for an effective treatment.
3.3 Psychological Treatments

The psychological model of intervention is another form of treatment that has been shown to be effective in treating shyness. In direct contrast to drug treatment, the psychological approach encompasses techniques that attempt to empower the individual and identify causes of the disorder. A range of different psychological approaches exist for the treatment of shyness and social phobia. The focus of this evaluation will be on three treatments whose efficacy has been thoroughly researched and investigated in the literature: behavioural treatments, cognitive behaviour therapy, acceptance and commitment therapy, psychodynamic based therapy and social skills training. Each of these approaches and the studies examining their efficacy will be discussed and evaluated.

3.3.1 Exposure Therapy

There are a range of behavioural treatments that have been used to help treat shyness and social phobia. Exposure therapy represents the most commonly used and efficacious behavioural technique.

Exposure therapy is a prominent component of most behavioural and CBT treatments for shyness and social phobia and involves individuals identifying anxiety provoking situations and being continually exposed to either imagined or real-life social situations until anxiety diminishes (Feldman & Rivas-Vazquel, 2003). Rather than avoid feared social situations, individuals are encouraged to enter anxiety provoking situations until anxiety reduces. It is argued that, in the same manner in which fear can be learned, fear can reduced by direct experiences (exposures), vicarious exposures, or transmission of information (de Silva & Rachman, 1981). Individuals who experience shyness are taught strategies to help them confront situations in which fear of negative evaluation arises.
Research (Borkovec & Sides, 1979; Mathews, Gleder & Johnston, 1982; Butler, 1985) has identified four main principles for conducting exposure: (1) exposure should be graded. According to Butler (1985), individuals confront their anxiety by entering situations that they would normally avoid. For optimal effectiveness, exposure should be graduated by developing a fear hierarchy listing most anxiety confronting situation to least anxiety provoking situation. Starting with the least anxiety provoking situation, individuals work up the hierarchy, progressively building confidence as they gradually expose themselves to each of the feared situations; (2) exposure should be prolonged. Research suggests that prolonged exposure is necessary as it allows individuals to learn that fear will subside if they stay in the situation long enough. If the individual is in the situation long enough, anxiety will naturally decrease and new pairings will be made between the situation and calmer feelings (Boyd & Levis, 1983; Butler, 1985); (3) exposure should be repeated to ensure that extinction occurs. Exposing oneself to the anxiety-provoking situation on one occasion is not enough for extinction to occur. Usually extinction requires regular exposure sessions. For example, an individual who considers themselves shy will not necessarily reduce their overall shyness by attending a party on one occasion; rather, they will need to repeatedly attend parties in order for shyness to decrease; and (4) exposure should be functional. That is, the chosen exposures should be able to elicit anxiety; otherwise extinction will not occur (Butler, 1985). It is suggested that these four rules should attempt to be met in order to increase the effectiveness of the exposure (Rachman, 1983).

There are also different techniques that can be used to conduct the exposure. Research suggests at least six different ways in which exposure can be conducted. The varying forms of exposure treatment may be more applicable and show greater efficacy for varying disorders and different individuals (Ballenger, 1999).
1) Imaginal Exposure. Imaginal exposure involves the individual thinking about the anxiety provoking situation in the safety of their home or whilst with their therapist. Individuals imagine the anxiety provoking situation in detail and repeatedly conduct imaginal exposures until anxiety reduces. Imagined images are not fleeting or vague; rather, exposures are planned, detailed, and involve repetitive evocations of the anxiety provoking situation (de Silva & Rachman, 1981). Imaginal exposure has been found to be particularly useful for individuals with PTSD where the distressing traumatic memories are too traumatic to confront (Foa, Zoellner, Feeny, Hembree & Alvarez-Conrad, 2002). Research has shown that in vivo exposure is more effective for shyness and social phobia.

2) In vivo Exposure. In vivo exposure involves exposure involves exposure to feared situations in real life settings. The purpose of in vivo exposure to provide the client with coping strategies to assist in anxiety provoking situations and for clients to gradually confront feared situations, usually starting with least feared situations and gradually progressing to most feared situations.

3) Simulated Exposure (Role Plays). Similar to imaginal exposure, in simulated exposure the therapist gets the client to go through anxiety producing scenarios and ensures that subjective units of distress (SUDS) levels decrease before the exposure ends.

4) Virtual Reality. There is limited research testing the efficacy of VRET in social phobia/shyness. Extinction and co-occurring cognitive changes have to generalise to real situations so that real-life situations will not be avoided any longer or will be endured with less anxiety. The research that has been conducted has looked predominately at
using VRET to attempt to reduce fear of public speaking. The studies available so far suggest that VRET may effectively reduce anxiety (Harris, Kemmerling, & North, 2002).

5) Feedback from performance. In Rapee’s (1998) guide to help overcome shyness he suggests that because shy people often underestimate their performance in social situations, they need to get feedback from others about their social performance. For example, a shy person could randomly ask different people for an evaluation of their performance or, alternatively, they could have a special person (such as a wife or close friend) to give them honest feedback about how they performed socially. If using someone else to provide feedback it is important that they provide a balanced (both positive and negative) evaluation.

6) Use of video. The client may find it beneficial to video record their self and to analyse it and look for some of the positive and negative aspects of their social performance.

Anxiety reduction techniques, such as relaxation, are often taught to individuals before or concurrently to taking part in exposures to help individuals manage their anxiety during exposures. In relaxation training individuals learn how to identify physiological sensations of anxiety (such as those listed previously) and how to apply relaxation skills while engaging in social or performance activities (Feldman & Rivas-Vazquez, 2003).

There are, however, some problems associated with the use of exposure. In their review, Pence, Sulkowski, Jordan and Storch (2010) identify difficulties that may arise from the use of exposure. First, individuals may misjudge how much anxiety an exposure will actually cause. Although individuals usually construct a fear hierarchy where they categorise their fear situations in order of most feared, individuals may underestimate or overestimate how much anxiety their
feared situation may cause. If anxiety is underestimated then there is the potential for flooding which disrupts the graded approach and may result in the individual feeling too overwhelmed to practice the exposures. If anxiety is overestimated then anxiety may not reach therapeutic levels for extinction to occur. A second problem associated with exposure relates to when individuals fail to habituate to their anxiety (Pence et al., 2010). For example, this may occur if the exposure task is not long enough and there is not enough time for anxiety to reduce during the feared situation. Although these issues relating to exposure cannot always be solved, it is crucial that these factors are taken into consideration and are monitored during any exposure session.

Numerous studies have demonstrated the effectiveness of exposure alone for the treatment of social phobia (Ehmelkamr, Mersch, Vissia & Van-Der Helm, 1985; Wlazlo, Schroeder-Hartwig, Hand, Kaiser & Munchau, 1990). Research evaluating the use of exposure extends as far back as the 1960s. Paul (1966) used systematic desensitisation, a form of imaginal exposure, to treat fear of public speaking. Participants were randomly assigned to one of four groups: systematic desensitization, insight-orientated psycho-therapy, attention-placebo, or a no treatment control group. Results showed higher improvements in the systematic desensitisation group with 14% improved and 86% very much improved.

Fava et al (2001) examined the long-term efficacy of exposure for the treatment of social phobia. 45 participants with a diagnosis of social phobia were included in the study. Treatment consisted of 8 individual 30 minute sessions conducted every 2 weeks. Participants developed their own exposure plan which consisted of grading their social phobic situations and then exposing themselves to the stressful situation for a pro-longed period. Assessments were performed before treatment, at the end of treatment, and then on a yearly basis. Results revealed that 85% of participants remained in remission after a 10 year period. These results suggest that
exposure has long lasting effects and therefore has strong therapeutic merit. There are, however, some limitations that need to be considered. First, there were initially 70 participants taking part in the study but only 45 were included in the follow up because they were found to have remitted after the 8 exposure sessions. The exposure treatment was therefore not effective for 25 of the participants. Thus, although exposure can be seen as having long lasting effects for some individuals, not all individuals benefit sufficiently from it. Exposure might therefore be only beneficial for certain types of people but if initially successful then these effects are long lasting. Although research has demonstrated that exposure alone can be effective, it is clear that cognitive factors also play an important role in shyness and social phobia (Andrews et al, 2003).

### 3.3.2 Cognitive Behaviour Therapy

Of all the psychological treatments, Cognitive Behaviour Therapy (CBT) has generally been found to be the most effective for the treatment of shyness and social phobia. In this review, the foundations of CBT are described; this is followed by an examination of the literature on the efficacy of CBT for the treatment of shyness and social phobia.

The theory underlying CBT was originally proposed by Beck (1976). He suggested that depression was caused by negative thinking which develops from early experiences in life. Beck claimed that we all develop assumptions about the world as we grow and develop but although some assumptions can be positive, some assumptions can also be too extreme, rigid and be highly resistant to revision (Enright, 1997).

Individuals who experience shyness and social phobia are likely to have a range of negative thought patterns around their social performance and around being evaluated negatively by others. This is likely to result in cognitive distortions which are patterns of biases in information processing (Enright, 1997; Henderson, 2011). As discussed previously, these
negative thought patterns and cognitive distortions, together with an increase in physiological arousal, are likely to result in behavioural avoidance.

The main aim of CBT is to attempt to make an individual’s thought patterns more rational and adaptive. This is achieved by attempting to make the individual more aware of their thoughts and by replacing irrational thoughts with more objective and helpful cognitions. Behavioural experiments (exposures) designed by the client are used to test illogical and irrational thoughts and challenges are made to the underlying assumptions thought to generate the maladaptive cognitions in the first place (Andrews et al, 2003). Although various forms of CBT exist, interventions for shyness and social phobia typically include symptom management skills, exposure, cognitive restructuring and often include social skills training (Bruce & Saeed, 1994; Enright, 1997).

Cognitive restructuring represents an important technique used in CBT. As discussed earlier, thoughts play an important role in maintaining and exacerbating shyness and social phobia. Cognitive restructuring teaches individuals that they have control over their thoughts and attempts to challenge maladaptive beliefs about social situations and the opinions of others (Taylor, 1996). Individuals are taught to identify unhelpful thoughts that precede or pervade social or performance situations and learn to challenge and develop rational alternatives that are more adaptive (Feldman & Rivas-Vazquez, 2003). For example, if an individual is having the unhelpful thought “I will look stupid” in a social situation, the individual is taught to set challenging questions to ask themselves every time they have this thought, such as “Am I 100% sure that this thought is correct” and “What evidence supports this idea.” The objective is to try to not accept the automatic thought as fact and replace this unhelpful thought with a more rational and helpful thought.
A common problem that relates to the use of cognitive restructuring is that some individuals find it difficult to identify what their underlying thoughts are (Andrews et al, 2003). Thoughts can often become automatic for individuals so that they feel unable to stop and identify exactly what thoughts they are having. Various strategies exist to help individuals identify their thoughts and asking individuals to write their thoughts down is often very helpful.

CBT can be administered individually or in a group format. The number of sessions in individual treatment generally ranges between 8-12 sessions. Group therapy is often conducted by two therapists, typically in 12 weekly 2.5 hour sessions with groups of 5-7 participants (Scott & Heimberg, 2000). Theoretically, there are a number of benefits of using CBT in a group format to treat shyness and social phobia. For example, having participants in a group allows for normalising. That is, participants can share their own social anxiety experiences. Talking with people who experience and understand shyness may ease fearfulness and reduce their fear of being judged negatively. Group treatment also allows for modeling, whereby individuals can learn from one another about how to cope with anxiety. There has been little research comparing individual and group therapy but the research that has been conducted have failed to find significant treatment outcomes (Gould et al., 1997).

There has been an abundance of research conducted on the use of CBT for the treatment of shyness and social phobia. Overall, research supports the efficacy of CBT for shyness and social phobia. In 1998 the International Consensus Group concluded that CBT was the most well supported psychological treatment for social phobia (Ballanger et al., 1998). In this section, research evaluating the effectiveness of cognitive therapy alone is examined. This is followed by a discussion of the efficacy of combining cognitive and exposure based therapy.
2.3.3 Cognitive Therapy

Numerous studies have demonstrated the importance of addressing cognitive factors during therapy in order to bring about change. In particular, therapies aimed at targeting specific cognitions, such as judgemental biases and fear of negative evaluation, have been shown to be successful in treating shyness and social phobia (Mattick & Peters, 1988). In their study, Voncken and Bogels (2006) developed a cognitive intervention aimed at reducing fear of negative evaluation in 13 participants with social phobia. Treatment was purely cognitively based and consisted of 9 sessions. The therapy was found to be effective but effect sizes (1.4) were much smaller than seen in other studies using CBT. One potential reason as to why effect sizes were smaller may be because the study was a pilot study and problems in the program may not have been adequately addressed. Alternatively, it may be that therapy focusing only on cognitive factors does not lead to better outcomes compared to therapies addressing both cognitive and behavioural elements.

There has been much debate in the literature about whether cognitive and exposure based therapies combined is more superior for treating shyness and social phobia than each of the treatments alone. Findings published in the literature are conflicting; some studies (Fremouw & Zittera, 1978) have failed to find any significant changes from the use of cognitive restructuring with exposure whilst others have reported significant changes with cognitive therapy alone. Clark et al (2006) reported greater improvement in cognitive therapy alone than exposure alone in their study on 62 participants with a diagnosis of social phobia. 84% of participants in the cognitive therapy group no longer met the diagnostic criteria for social phobia at the end of treatment, compared to 42% in the exposure group and 0% in the wait list control group. Other studies have failed to find any differences between cognitive and exposure based treatments
(Feske & Chambless, 1995). It is important to take into consideration that studies range in the number and duration of therapy sessions provided during treatment which may ultimately impact results.

3.3.4 Cognitive Therapy and Exposure Therapy Combined

The majority of research suggests that the combination of cognitive therapy and exposure is superior to using any of these treatments alone. Heimberg et al. (1990) provided 12 sessions of outpatient group therapy to 19 adults with social phobia. Therapists explained the typical etiology of social anxiety, used role-played interactions to expose clients to their social fears (simulated exposure), helped clients to identify their negative thoughts during social activities, and helped clients to challenge their negative thoughts. At the end of therapy, clients demonstrated significant reductions in their social phobia. By the time of the 5 year follow up assessment, 89% of patients remained significantly improved. Importantly, the gains reported at 5-year follow-up were much stronger than those reported in cognitive and behavioural treatments alone. Similarly, Gould, Buckminster, Pollack, Otto and Yap (1997) reported larger gains using CBT and exposure among individuals with a diagnosis of social phobia than cognitive restructuring alone or social skills training alone.

Mark and Peters (1988) conducted a study to examine the treatment differences of cognitive therapy and exposure combined (CBT) and exposure alone. There were a total of 25 participants in the CBT group and 26 participants in the exposure group. Those in the exposure group repeatedly exposed themselves to anxiety provoking situations, whilst those in the combined groups first learnt about restructuring to challenge their thoughts and then exposed themselves to anxiety provoking situations. Results showed that at the end of treatment both groups had significantly decreased in their level of avoidance; however, avoidance scores
continued to decrease in the CBT group at 3 month follow up but avoidance scores had increased in the exposure group. Further, at 3-month follow-up, 52% of participants in the CBT group could complete all of their fearful situations on their hierarchy, compared to 15% in the exposure only group.

Mattick, Peters and Clarke (1989) reported similar results from their study when comparing exposure alone, CBT alone, CBT and exposure combined, and wait-list control. Results revealed that all groups improved significantly compared to the control group. Differences between the remaining three groups became more noticeable at the 3 month follow up. At this time, scores increased in the CBT and exposure combined group. The results show that the combination of CBT and exposure is superior for the treatment of social phobia.

In one of the largest meta-analytic comparisons for social phobia to date, Taylor (1996) compared 42 trials of treatments for social phobia. Conditions included in the analyses were: exposure alone (simulated exposure), cognitive restructuring alone, cognitive therapy and exposure combined, social skills training, wait-list control, and placebo. Drop-out rates were similar across groups (around 10-15%). All treatment groups had positive changes compared to wait-list control, however, combined cognitive therapy and exposure (CBT) yielded larger effect sizes (1.0) than the other treatment groups (ranging from .4-.6). At 3 month follow up all treatment groups showed increased effect sizes.

Although both exposure and cognitive based therapies are effective, when combined improvements are longer lasting and more efficacious. It appears that the combination of challenging thoughts and then actively exposing oneself to stressful situations is more effective that conducting these therapies separately. CBT and exposure therapy used for treatment of social phobia helps clients reduce their levels of anxiety so they can confront their social fears.
CBT has also been found to be effective for the treatment of shyness and social phobia in children and adolescents. In their study, Hirshfeld-Becker et al. (2010) conducted a randomised clinical trial for 64 children aged between 4-7 years presenting with anxiety disorders, including social phobia. The CBT program was based on a manualised treatment intervention and included relaxation, cognitive restructuring, and in vivo exposure. Post treatment scores showed a significant decrease in symptoms of social anxiety for children in the CBT group compared to the control group. Melfsen et al. (2011) also reported improvements in measures of social phobia in children aged 8-14 who completed a 20 session CBT based program. Similarly, Crawley, Beidas, Benjamin, Martin and Kendall (2008) reported significant improvements in children aged 7-17 with a primary diagnosis of social phobia using CBT treatment.

A consistent limitation in the literature of CBT relates to its cross-cultural efficacy; the majority of research that has been conducted around CBT has been done in Western nations, predominately North America and Europe. Although shyness and social phobia have been found to exist across cultures, CBT models, such as the model developed by Clark and Wells (1995), have mostly been developed and tested in Western countries with little empirical research being devoted to the use of CBT in Asian countries (Nagata, 2004). To examine if a CBT treatment program originally developed for Western participants could be translated and used to treat Japanese participants with social anxiety, Chen et al (2007) recruited 57 participants to take part in a CBT program in Japan. Results showed significant reductions in social anxiety symptomatology, comparable to Western CBT programs. Although further cross-cultural research examining the efficacy of CBT needs to be conducted, this study supports the use of CBT in both Western and Asian nations.
3.3.5 Acceptance and Commitment Therapy (ACT)

ACT is another type of intervention that can be used to treat shyness and social phobia. Even though CBT is the most widely utilised and investigated treatment for shyness and social phobia, research and interest in ACT as an alternative to CBT is increasing. A complete review of the theoretical underpinnings of ACT is beyond the scope of this review but ACT can be understood as aiming to increase acceptance of distressing thoughts, beliefs and feelings in order to lead to an improved quality of life (Forman, Herbert, Moitra, Yeomans & Geller, 2007). ACT attempts to increase coping mechanisms for threat-related thoughts by diffusing and increasing acceptance of anxious thoughts (Arch & Craske, 2008). Proponents for the use of ACT view it as a useful alternative to CBT as rather than challenge and control thoughts, ACT encourages individuals to acknowledge and accept them. Teaching individuals to gain control over anxiety is viewed as counterproductive as it generally results in an increase in distress (Ossman, Wilson, Storaasli & Neill, 2006). Psychological difficulties are not viewed as a result of faulty cognitions that need to be challenged as with CBT, rather, ACT considers the need for individuals to let go and accept internal and external events in their lives (Block & Wulfert, 2000).

Research into the effectiveness of ACT is accumulating. Research has found ACT to be effective for the treatment of a range of anxiety disorders, such as obsessive compulsive disorder (Twohig, Hayes & Masuda, 2006) and mathematics anxiety (Zettle, 2003). Based on a sample of participants presenting with anxiety and depression, Forman et al. (2007) reported reductions in anxiety, depression and functioning difficulties using ACT based treatment that were comparable to cognitive therapy. Similarly, in a meta-analysis of 18 randomized controlled trials for anxiety, depression and a range other mental health disorders, Powers, Zum vode Sive Vording, and
Emmelkamp (2009) reported average treatment improvements of 66%, with ACT, overall, being superior to placebo.

Presently, however, there have been very few studies examining the treatment of shyness and social phobia using ACT. The studies that have been conducted show promising treatment outcomes. Ossman, Wilson, Storaasli and Neill (2006) examined the treatment of social phobia using an ACT based intervention. In their study, 22 participants with social phobia took part in the intervention which consisted of 10 weekly sessions. Of the 22 participants who took part in the study, 12 completed treatment. The intervention consisted of 10 two hour sessions which included mindfulness, experiential group activities, identification of values and systematic exposure exercises. Symptoms of social phobia and experiential avoidance were found to decrease following treatment and reductions were maintained at 3 month follow up. The effect sizes obtained (Social Phobia scale= 0.83) are comparable to CBT treatments for shyness and social phobia. In a pilot study, Dalrymple and Herbert (2007) conduct a 12 week program incorporating ACT and exposure on 19 participants diagnosed with social phobia. Results revealed significant improvement from pre-treatment to follow-up in social phobia symptoms and quality of life. Block and Wulfert (2000) compared the use of ACT and CBT in 11 students with public speaking anxiety. Scores on social anxiety decreased in both the CBT and ACT groups. Higher reductions of anxiety were seen in the CBT group; however, ACT lead to stronger willingness to perform previously avoided situations which Block and Wulfert (2000) predict may lead to better long-term outcomes on anxiety measures. There are, however, a number of limitations with this study. First, the sample was small and second, as the sample was so small, no statistical analyses were able to be conducted.
The studies investigating ACT as a treatment for shyness and social phobia are promising; however, more research is required. Further RCT designed studies are needed with increased sample sizes. There is also a lack of consistency and clarity of session content used in the programs. It is likely that ACT will grow in efficacy when more research addressing these issues is conducted.

3.3.6 Psychodynamic based Therapy

Psychodynamic therapy has a long history in psychology. The psychodynamic approach has been used to treat a range of psychological disorders, including depression and anxiety. Psychodynamic based therapy can involve a range of different approaches. One model, Supportive Expressive therapy, attempts to relieve disturbances in self-esteem and feelings of helplessness in social situations by increasing client insight and focusing on transference. Sessions can be short-term (6-25 sessions) or long-term (months to years) (Leichsenring, Beutel, & Leibing, 2007). Despite psychodynamic based therapy being a well-established approach, there is a lack of empirical validation of this approach. A review of the literature revealed only one study that has examined psychodynamic therapy for social phobia. Zippin Knijink, Kapczinski, Chachamovich, Claudio and Eizrika (2004) conducted a 12 week RCT designed study comparing psychodynamic group therapy with a control. Both groups showed significant pre to post treatment change on all three outcome measures but those in the psychodynamic group also showed less severe anxiety symptoms than the control on one of the measures.

Overall, there has been little research evaluating psychodynamic based therapy for the treatment of shyness and social phobia. More research is needed in this area in order to examine the effectiveness of this approach.
3.3.7 Social Skills Training

The use of social skills training to treat shyness and social phobia is a contentious issue. Proponents of the use of this therapy argue that individuals who suffer social anxiety lack social competence and therefore providing people with social skills and enabling them to practice these skills will lead to a decrease in social anxiety. Part of the argument over the role of the use of social skills training centres on whether apparently poor social skills are the result of actual skill deficits, or due to inhibition of skills expression due to anxiety (Andrews et al., 2003).

Essentially, this treatment is based on the social skills deficit model which proposes that some forms of shyness and social phobia are caused or worsened by lack of social competence. Social skills training aims to identify social skills lacking, discuss them and practice skills in feared situations (Ponniah & Hollon, 2008). Individuals undertaking social skills training will often learn appropriate interpersonal skills such as making appropriate eye contact, active listening, commencing and maintaining conversations, as well as assertiveness training (Feldman & Rivas-Vazquel, 2003).

There is some evidence to support the social skills model (Donahoe & Driesenga 1988). In their review, Van Dam-Baggen and Kraaimaat (2000) reported no differences in group social skills training and CBT group therapy for 48 participants with a diagnosis of generalised social phobia. Both treatments conditions were effective in reducing anxiety and increasing social skills and self-control.

Although research generally supports the use of social skills training for the treatment of social phobia, there has been few randomised control trials conducted and those that have been done have not been very effective. Ponniah and Hollon (2008) conducted a qualitative review of randomised control trials of psychological treatments for social phobia. In their review, 30
studies were included. Of these 30 studies, 2 studies evaluated the efficacy of social skills training, 15 evaluated exposure therapy, and 25 evaluated cognitive approaches. Results showed little evidence for the use of social skills training but exposure therapy and CBT were both found to be efficacious.

Others, such as Andrews et al. (2003), argue that it is not yet clear which part of social skills training is most effective, although it appears that exposure is the key component. It may also be that determining the most appropriate treatment for individuals may be more complex. It appears that the CBT model can provide a general framework for the treatment of social phobia; however, not all components are needed with all individuals. Some individuals may be quite skilled socially but performance is disrupted by anxiety. In contrast, others may have inadequate social skills (Overholser, 2002).

3.4 Conclusion

There are a range of different interventions available for the treatment of shyness and social phobia. This review has focused on pharmacotherapy, exposure, CBT, ACT, psychodynamic based therapy and social skills. Both pharmacotherapy and psychological treatments have been found to be effective, however, the adverse side effects of medication coupled with likelihood of relapse once medication is ceased, suggest that psychological treatments may be a more superior and safer treatment option.

Treatments are typically delivered face-to-face and can be administered in individual or group format. Although the effectiveness of a psychological treatment will vary depending on the motivation and needs of the individual, overall, research evidence suggests that CBT combined with exposure is the psychological intervention of choice for the treatment of shyness. Research has found positive treatment outcomes for CBT and exposure therapy combined with
rates of improvement as high as 89% after a five year period (Heimberg et al., 1990), effect sizes around 1.0 and dropout rates around 10-15% (Taylor, 1996). These outcomes indicate that CBT and exposure can be successfully combined to effectively reduce symptoms of shyness and social phobia.
Chapter 4: Shyness and the Internet

The Internet is becoming the town square for the global village of tomorrow.

Bill Gates

Internet: absolute communication, absolute isolation.

Paul Carvel

Chapter Overview

In this chapter the impact of context on shyness is discussed. The relationship between shyness and the Internet and the potential advantages this medium has for individuals who are shy represents a key component of this thesis. What happens when someone who experiences shyness moves into an online environment where an individual can interact anonymously in the absence of physical features? Two opposing hypotheses regarding the impact of the Internet on shyness are discussed; beginning first with the argument that the Internet has a negative impact on shyness and following with the counter argument that the Internet can reduce shyness and help people form relationships.

4.1 Shyness and the Internet

Shyness is a dynamic and complex construct whose presentation is dependent on a range of factors. Research suggests that shyness has a biological basis but generally requires a contribution of environmental and cognitive factors for symptoms to present. An individual with shyness experiences heightened self-consciousness in social situations or anticipation of such situations (Brunet & Schmidt, 2006). However, even if an individual is prone to experience shyness, symptoms can be context dependent, in that an individual’s level of shyness can alter,
depending on the situation that they are confronted with. Context may therefore play an important role in how an individual experiences and copes with their shyness. Typical shyness eliciting situations have previously been discussed but based on these situations it appears that the nature of the communication can have an important impact on an individual’s experience of shyness. Information communication technologies (ICT) have been found to play an important role for individuals who are shy.

ICTs are any electronic system used for broadcasting, telecommunications and computer mediated communication (CMC). Examples include computers, video games, cell phones and the Internet. ICT communication can incorporate symmetrical, asymmetrical text-based communication as well as video (Di Gennaro & Dutton, 1997).

Internet use has grown exponentially over the last decade (Milani, Osual della & Di Blaso, 2009). In 2000 there were approximately 360 million people using the Internet worldwide. In 2011 this figure escalated to 2 billion people, with growth rates at 480% from 2000-2011 (Internet World Statistics, 2011). Numerous researchers have commented on the social implications of the increased use of ICT (Anderson, Bikson, Law, & Mitchell, 1995; King & Kraemer, 1995). Research has shown that ICT has important implications for people who experience shyness. Individuals who are shy may be drawn to the Internet due to the difficulties they experience interacting face-to-face (Schneider & Amichai-Hamburger, 2010). Research examining the relationship between shyness and the Internet suggest two conflicting views: (1) the Internet may decrease real life social interactions for shy individuals which may lead to increased Internet use and Internet addiction. The Internet may therefore act as a type of avoidance as discussed in chapter one; (2) the Internet may empower shy individuals, lead to a decrease in levels of shyness and foster social relationships (Saunders & Chester, 2008).
Valkenburg and Peter (2007) have termed these opposing views on the effects of CMC as the \textit{reduction hypothesis} and \textit{stimulation hypothesis}. According to the reduction hypothesis, CMC has a negative impact on relationships because it encourages superficial relationships online and reduces the amount of time spent communicating face-to-face. In contrast to the reduction hypothesis, the stimulation hypothesis proposes that CMC increases friendships by reducing physical cues, encouraging self-disclosure and stimulating closeness. The Internet may potentially help or hinder an individual who is shy, depending on the way in which it used (Schneider & Amichai-Hamburger, 2010). The aim of this review is to examine the literature supporting and refuting the arguments of both these hypotheses.

\subsection*{4.2 Negative Implications of the Internet for Shyness}

Support for the reduction hypothesis and the idea that the Internet may lead to an increase in shyness has been primarily based on correlational studies investigating the relationship between shyness and Internet addiction. Although the presence of two conditions does not suggest a causal relationship, research has suggested that shyness is a comorbid symptom of Internet addiction and shyness may therefore be associated with the development or maintenance of Internet addiction (Yen, Ko, Yen, Wu & Yang, 2007).

Internet addiction is a relatively recent phenomenon that has progressively been gaining research attention since it was introduced in 1996 (Young, 1996). Young was the first to clinically define the term Internet addiction (Milani et al., 2009). There has been some disagreement about the use of the term “Internet addiction” in the literature. Internet addiction is also commonly referred to as Internet use disorder, problematic Internet use and Internet dependence. In this thesis, the term “Internet addiction” is used as this the term that has been commonly discussed as being related to shyness in the literature.
The criteria for defining Internet addiction is based on pathological gambling and, similar to pathological gambling, it is defined as an impulse control disorder that does not involve an intoxicant (Young, 2004). Internet addiction involves excessive use of the Internet which causes significant impairment in individual functioning (Yang & Tung, 2007). Key symptoms of Internet addiction include tolerance and withdrawal. However, Young (2004) developed specific criteria and set of questions to diagnose the disorder. There is still a lack of agreement about the diagnostic criteria of Internet addiction and if it should be viewed as a disorder (Aboujaoude, 2010). The diagnostic criteria for Internet addiction, adapted from Tao et al. (2010), are presented in Table 3 and the questions used to diagnose Internet addiction are presented in Table 4. These questions were adapted from previous addiction questionnaires and have been frequently used in the literature.

The criteria for Internet addiction is met if the client answers yes to five or more of the questions during a 6 month period. Few studies have examined prevalence rates of Internet addiction but one study conducted by Bakken, Wenzel and Gotestam (2009) reported that 1% of participants from a Norwegian student sample met the criteria for Internet addiction using Young’s diagnostic questions. Young (2004) reports that, although the amount of time spent on the Internet is not the prominent factor in diagnoses, Internet addicts will generally spend from 40-80 hours online per week.

Although diagnostic tools have been developed, the DSM IV (American Psychiatric Association, 1994) does not formally recognise Internet addiction as a diagnosable condition and there are controversies and opposition in the literature about whether it exists (Mitchell, 2000). Byun et al. (2008) conducted a review of the Internet addiction literature and suggested that there have been various problems with the way in which Internet addiction has been defined and
researched and reported that the majority of research that has been conducted is exploratory rather than causal. It is important to note that as the studies that have been conducted are primarily correlational it is difficult to obtain a clear understanding of the costs and benefits of Internet use (Schneider & Amichai-Hamburger, 2010). Nevertheless, research examining the relationship between shyness and the Internet addiction provides important information about relationship between these two variables.

Numerous studies have found a relationship between shyness and frequent Internet use (Engelberg & Sjoberg, 2004). Based on a sample of 722 participants, Chak and Leung (2004) examined the influences of personality and shyness in Internet addiction. Results demonstrated that patterns of Internet use were associated with shyness, loneliness, anxiety, depression, and self-consciousness. Moreover, the shyer a person was, the higher the tendency they had to becoming addicted to the Internet. This coincides with findings from Yang and Tung (in press). In this study, differences between Internet addicts and non-addicts were investigated based on a sample of 1708 Taiwanese adolescents. Whilst it was found that both Internet and non-addicts viewed Internet use as enhancing peer relations, students with personalities characterised by shyness, depression, and low self-esteem were more likely to have Internet addiction.
Table 3.

*Criteria for Internet addiction*

1. Preoccupation. Thinking about previous online activity or anticipation of the next online session. Internet use is the dominant activity in daily life.

2. Withdrawal. Manifested by a dysphoric mood, anxiety, irritability and boredom after several days without Internet activity.

3. Tolerance. Marked increase in Internet use required to achieve satisfaction.

4. Difficult to control. Persistent desire and/or unsuccessful attempts to control, cut back or discontinue Internet use.

5. Disregard of harmful consequences. Continued excessive use of Internet despite knowledge of having a persistent or recurrent physical or psychological problems likely to have been caused or exacerbated by Internet use.

6. Social communications and interests are lost. Loss of interests, previous hobbies, entertainment as a direct result of, and with the exception of, Internet use.

7. Hiding from friends and relatives. Deception of actual costs/time of Internet involvement to family members, therapist and others.

8. Alleviation of negative emotions. The Internet is used to escape or relieve a dysphoric mood (e.g. feelings of helplessness, guilt, anxiety).
Table 4.

*Questions used to identify Internet addiction*

1. Do you feel preoccupied with the Internet (think about previous online activity or anticipate next online session)?
2. Do you feel the need to use the Internet with increasing amounts of time to achieve satisfaction?
3. Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?
4. Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?
5. Do you stay online longer than originally intended?
6. Have you jeopardized or risked the loss of a significant relationship, job, educational or career opportunity because of the Internet?
7. Have you lied to family members, therapists, or others to conceal the extent of involvement with the Internet?
8. Do you use the Internet as a way of escaping from problems or of relieving dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)?

Furthermore, numerous factor analytic studies examining constructs underlying Internet addiction have identified shyness and introversion as possible predictors of problematic Internet use (Davis, 2002; Pratarelli, Browne, & Johnson, 1999). Huang and Leung (2009) examined
which psychological factors predict instant messaging addiction in 330 Chinese teenagers. Of the 330 participants, 9.8% were found to fit the diagnosis for instant messaging addiction. Based on factor analyses, four major symptoms were identified as predictors of instant messaging addiction: shyness, loss of relationships due to overuse, loss of control and escape and alienation of family and peers. There may, however, be limitations to the extent to which these findings can be generalised to western nations as little research has specifically examined the differences between Internet use across cultures. Further, as discussed in chapter 1, shyness has high comorbidity with other psychological problems and Heiser et al. (2003) suggest that shyness may involve a combination of different disorders; it may be that shyness has been identified as a predictor of Internet addiction because it has a strong relationship with a range of other psychological problems. Nevertheless, together these findings suggest that shyness may be a predicting factor for Internet addiction.

Russell et al. (2003) outline two hypotheses to account for the link between Internet use and shyness and loneliness: (1) communicating online leaves less time to interact face-to-face; and (2) individuals who are shy interact online more frequently than people who are not shy. Russell et al. (2003) posit that the time spent on the Internet leaves less time for face-to-face social activity. Thus, the more time an individual spends online, the less time they are engaging in real social interactions. This can lead to further social isolation and an increase in shyness. Henderson and Zimbardo (1998) argue that the increase in the prevalence of shyness may be attributed to recent technological advances and an overall reduction in “real time” face-to-face communication and interaction. It has been argued that the increasing use of technological appliances reduces the level of shared social interactions and further promotes social isolation. The Internet has been considered one of the most socially distancing and impersonal modes of
communication (Matheson & Zenna, 1998). The fundamental assumption underlying this argument is that the Internet may become a substitute for the reality of human connectedness and thus, people may not acquire and maintain the skills necessary for social interaction (Henderson & Zimbardo, 1998). From this perspective, the Internet plays a key role in maintaining and exacerbating shyness and shyness can be viewed as a type of societal pathology that is influenced by a lack of socialisation and an alteration in the nature of interpersonal communication (Henderson & Zimbardo, 1998).

The second hypothesis is that lonely and shy people choose to interact via the Internet more often than people who are not lonely or shy do. This may be because shy and lonely people are not receiving adequate social interaction offline or are dissatisfied with those they associate with. They therefore use the Internet as a method to attempt to connect, interact and associate with others.

The theory provided by Russell et al. (2003) is similar to the reduction hypothesis proposed by Valkenburg and Peter (2007). This theory suggests four main assumptions: (a) the Internet encourages people to form superficial friendships online; (b) online friendships are less beneficial than offline ones; (c) time spent online leads to a reduction of time with offline friends; and (d) together this leads to a reduction in closeness of offline friends and more time online.

These hypotheses have received at least partial support. Kraut et al. (1995) surveyed 73 households in America and found that greater use of the Internet was associated with reductions in social involvement and increased loneliness. Specifically, greater Internet use was associated with declines in communication with family members and social circles. This research may not, however, be applicable as since publication of this research there has been an increase in the
More recent research has found similar results. For example, Papacharissi and Rubin (2000) found that those who felt less satisfied and valued during face-to-face communication used the Internet as an alternative to interpersonal communication and that those with low or unsatisfactory contacts used the Internet more frequently than others. In their study of 88 undergraduate students, Ebeling-White, Frank and Lester (2007) found that individuals who are shy prefer conversing online compared to face-to-face and that shyness is associated with problematic Internet use; that is, using the Internet to relieve feelings of loneliness, avoid stressful matters, decrease problems in real-life social network and staying online longer and thinking about the Internet longer than they believe they should. In a study examining Facebook use of individuals who are shy, Orr et al (2009) found that there was a significant weak positive correlation between shyness and amount of time spent on Facebook and a significant weak negative correlation between shyness and number of friends on Facebook. Results also showed that individuals who were shy had favourable attitudes towards Facebook. Similarly, Sheldon (2008) found that individuals who are socially anxious like to use Facebook to combat loneliness.

Further, in a study assessing the relationship between Internet dependence and shyness in online and offline contexts, Yuen and Lavin (2004) found that shyness level for non-dependents did not differ online or in face-to-face interactions. However, dependents’ shyness was found to be greater in face-to-face interactions. Other studies, however, have failed to find significant effects. In their study of 1158 Facebook users, Ryan and Xenos (2011) found no significant relationship between shyness and frequency of Facebook use. Henderson, Zimbardo, and
Graham (2002) examined whether 22 shy adolescents used computers more than non-shy students and if they experienced more loneliness. Overall, results revealed little difference between shy and non-shy adolescents in their use of technology. Further, those who were classified as moderately shy did not report more loneliness. However, this study was based on a relatively small sample size. In another study, based on a larger sample size, Scealy, Phillips and Stevenson (2002) surveyed 1757 participants to examine the relationship between Internet usage and shyness and anxiety. No differences were found between levels of Internet use for shy and non-shy participants. Similarly, no significant differences were found in level of Internet use for anxious and non-anxious individuals. The researchers concluded that shyness and anxiety did not predispose participants to higher levels of Internet use.

There are numerous applications and ways to communicate on the Internet. It may be that particular methods of communication on the Internet are more appealing to people who are shy. Chan (2011) examined the relationship between shyness and media synchronicity. Chan reported a positive relationship between asynchronous CMC media (such as email and social networking sites); however, a negative relationship between shyness synchronous media was not found. This suggests that applications such as instant messaging, that require immediate feedback and interpretation of textual cues, may be more challenging for individuals who are shy. More research is needed to replicate these findings and to further understand how individuals who are shy use the Internet.

Examination of the literature reveals contradictory findings. There is some evidence to suggest that shyness is associated with increased Internet use and Internet addiction and people with shyness show problematic Internet behaviour, however these findings are not conclusive and results have not been consistent across studies. Due to an overall lack of scientific research
into Internet addiction there is much that remains unclear about the characteristics of an Internet addict (Aboujaoude, 2010). These findings are further complicated by other studies that have reported that ICT can have a positive impact on forging relationships and developing friendships (Valkenburg & Peter, 2007).

4.3 The Positive Implications of the Internet for Shyness

Despite the negative implications of the Internet, there is a growing body of research that suggests that ICT may facilitate interpersonal relationships and reduce levels of shyness. According to social network theory, the Internet is a form of social communication that supplements and extends on traditional face-to-face social behaviours (Birnie & Horvath, 2002). Thus, contrary to the arguments proposed by Henderson and Zimbardo (1998), this theory suggests that the Internet enhances communication by increasing ties between people. theory has been supported by numerous studies suggesting that ICT has the potential for fostering satisfying, enduring, healthy relationships (Bargh et al., 2002; Cornwell & Lundgren, 2001; McKenna et al., 2002). ICT use allows users to communicate across distance and time and allows individuals to find and interact with people with similar interests and ideas (Sheeks & Birchmeier, 2007). In accordance with the social network theory, Scealy et al. (2002) and Birnie and Horvath (2002) found that shy people feel confident using the Internet and that the Internet provides a mechanism for expanding their social network. Counter to the idea that shyness may lead to an increased frequency of Internet usage, Scealy et al. (2002) found that shyness did not predispose individuals to lower or higher levels of the Internet’s communicative functions. Furthermore, Kraut et al. (2002) reported that a greater level of Internet use was associated with spending more time in face-to-face interactions with family and friends.
Other studies have suggested that shy individuals feel less inhibited online than offline. In a study by Robert, Smith and Pollock (2000) individuals who perceived themselves as shy were interviewed regarding their usage of computer-mediated communication. Shy individuals reported forming intimate relationships online and indicated that they felt less inhibited online than offline. In a subsequent six-month longitudinal study, seventeen low shy individuals and ten high shy individuals completed the Cheek and Buss Shyness Scale and various other measures intended to determine their level of shyness online and offline. Similar to the qualitative results, shy individuals reported feeling less shy online. Furthermore, comparisons of the pre and post-tests revealed that the high shy group demonstrated decreased levels of shyness offline. These findings imply that shy individuals feel more confident during social interactions online and that the Internet may enhance social skills that may then be transmitted offline. Despite the implications of this research, various limitations hinder the generalisability of the results. First, a small sample size was employed and second, the measure of shyness was based on a short 5-item version of the Cheek and Buss Shyness Scale.

To further investigate the effects of the Internet on shyness, Stritzke et al. (2004) compared shy and non-shy Internet users in online and offline contexts. Four primary aspects of shyness were measured: rejection sensitivity, initiating relationships, self-disclosure, and providing support and advice. The sample consisted of 134 university students with a mean age of 23.8 who responded via emails and flyers. Participants completed a web-based survey consisting of the Interpersonal Competence Scale, Rejection Sensitivity Scale and a Shyness Scale. Results showed that differences between shy and non-shy individuals, as measured by the Shyness Scale, were seven times larger in the offline context than in the online context, but they were not significantly different on three (rejection sensitivity, initiating relationships, and self-
disclosure) of the four domains in the online context (Stritzke et al., 2004). Thus, in an online environment, shy individuals did not significantly differ from non-shy individuals on central aspects of shyness. The only measure that shy individuals did not differ on in the online and offline contexts was providing support and advice to others. This can perhaps be explained by the tendency of shy people to be pre-occupied with their own thoughts and feelings (Henderson & Zimbardo, 1998). Therefore, even in an online context shy individuals may still be excessively self-focused to the point of being unable to tune into others’ emotions and needs. These results coincide with findings by Robert et al. (2000) and offer further support for the idea that interacting online may reduce levels of shyness.

There are, however, various limitations to this study. First, this study, like the majority of shyness literature, was based on a university sample. It would be beneficial for future research to incorporate a broader sample base. Secondly, this study was based on self-reports. Whilst self-reports are generally a reliable source of information, it would be useful to track changes in shyness using a more objective, experimental format. Thirdly, important information regarding demographics and the amount of time spent online was unfortunately lost due to technological problems. Future research would benefit by determining how much time needs to be spent online for shyness levels to decrease and if, similar to the Internet addiction literature, individuals were spending excessive amounts of time on the Internet. Further, it would be beneficial to specifically investigate the Internet behaviours of people who experience shyness to help determine what aspects of the Internet may help reduce shyness. Nevertheless, this study provides further support for the idea that shyness decreases whilst engaged in online social interactions. However, it is important to consider what factors may play a role in reducing this inhibition.
4.3.1 How Does the Internet Reduce Shyness?

Based on their research, McKenna, Green and Gleason (2002) suggest two reasons as to why the Internet may foster healthy relationships and reduce feelings of shyness. First, CMC is primarily text-based; therefore most people do not see or hear one another when communicating using this medium (Bruner & Schmidt, 2006). Although technological advances now permit more visual interactions, the majority of communication is done via text. Online social environments lack the usual “gating features” implicit in real face-to-face interactions. This refers to easily discernable features, such as physical appearance, as well as other visible symptoms of shyness, such as blushing. These gating features often prevent shy people from developing and engaging in social relationships. In accordance with self-presentation theory and the findings by Stritzke et al. (2004), the absence of visual and auditory cues online may reduce shy individuals’ experience of detecting negative or inhibitory feedback cues from others. Thus, the Internet may provide shy individuals with more control over their interactions and allow them more time to plan their responses (Henderson et al. 2002).

The greater anonymity afforded by the Internet is another reason why shy individuals may be more comfortable online. According to this view, shy individuals can reveal intimate aspects of their self and share inner beliefs and emotional reactions with less fear of disapproval and sanction (McKenna et al., 2002). In this sense, the Internet may be described as “hyper-personal,” meaning that self-disclosure is more likely to occur online, when individuals are under the protection of anonymity (Russell et al., 2000). This higher level of self-disclosure may then lead to a stronger formation of relationships. In their study, Sheeks and Birchmeier (2006) found that individuals who report higher levels of shyness report more satisfying online relationships compared to individuals with lower levels of shyness. Similarly, Bargh, et al., (2002) found that
respondents showed significant reductions in social anxiety over a two-year period, and that individuals tended to like each other more online than face-to-face due to higher levels of self-disclosure.

This theory is closely linked with the stimulation hypothesis. According to Valkenburg and Peter (2007), the stimulation hypothesis has three assumptions: (a) reduced physical cues on the Internet encourage people to self-disclose more easily than offline; (b) self-disclosure predicts liking and formation of relationships; and (c) the combination of reduced physical cues and self-disclosure stimulates closeness between online communicators.

The stimulation hypothesis has been supported. Saunders and Chester (2007) examined the impact of context on shyness. In their study, 90 participants (45 females and 45 males) were randomly allocated to one of three social conditions: a face-to-face condition, a photo-only condition (ICT chat and photo), and a visually anonymous ICT condition. Shyness and impression motivation (based on Leary’s self-presentation model) were measured prior to participants engaging in a 15 minute interaction in their allocated social condition. Following the interaction, participants completed measures of the shyness and impression creation, together with a Self-Disclosure and Degree of Liking measure. Results found four key findings: (1) the visually anonymous condition demonstrated lower levels of shyness compared to the face-to-face group and photo-only group; (2) those interacting in the anonymous condition showed higher levels of self-disclosure than their face-to-face and partly visible counterparts; (3) the visually anonymous group displayed greater liking for their partners compared to the two other groups; and (4) impression motivation and perceived probability of making an impression based on Leary’s model predicted shyness. An individual’s level of motivation to make an impression on others and the perceived probability of being able to make a desired impression predict one’s
shyness. These results coincide with findings from Robert et al. (2000) and Stritzke et al. (2004) suggesting that the Internet is a powerful medium that can decrease shyness and facilitate social competence. Despite some limitations (Saunders & Chester, 2008), the findings of this study also support the underlying assumption of Self Presentational Theory that shyness alters across contexts and that anonymity can provide individuals with more confidence and self-presentational control. This study also offers support to the stimulation hypothesis as there were higher levels of self-disclosure and great liking between partners in the anonymous condition compared to the face-to-face condition.

Other research has also found that context influences shyness when behaviours are objectively coded and measured. In their study, Brunet and Schmidt (2006) examined the communication methods of 60 females who engaged in a 10 minute chat conversation with and without a webcam. Results showed that an increase in shyness was related to the number of self-disclosures in the webcam condition but not the anonymous condition. These results are consistent with research emphasising the importance of context and physical cues in shyness.

Another potential argument is that shy people may simply not take the Internet seriously (Stritzke et al., 2004). For example, in a study comparing non-shys involvement in online and offline romantic relationships, Cornwell and Lundgren (2001) found that commitment and seriousness was lower in cyberspace than in real space. Numerous respondents indicated that cyberspace relationships were “just for fun” and “unrealistic”. Attributed to shyness, this suggests that people may be less inhibited online because these interactions are viewed as unimportant. However, this seems unlikely given the emphases that shy people place on interactions and the frustration they display at being unable to effectively socialise.
Taken together these results imply that the lack of physical gating features and absence of negative cues reduces self-presentational demands and concerns. This can be seen as reducing self-focus, and providing the individual with the opportunity to interact with their partner in a more receptive and constructive manner. These findings support the stimulation hypothesis; however, they contradict some of the research previously mentioned. These differences may be due to difficulties associated with Internet research.

4.4 Problems Associated with Internet Research

There are a range of issues that are associated with research on the Internet that may help explain some of the differences in findings. The first issue concerns the diverse and broad nature of the Internet. Individuals can use the Internet as a form of communication in a number of different ways, including chat, blogging, games and social networking (Kraut, 1995). The Internet can also be used for a range of different purposes, such as research, education and entertainment. It is therefore difficult to get an accurate picture of the relationship between shyness and the Internet when individuals can use the Internet for so many different purposes. Social networking, for example, may potentially be more addictive than chatting or emailing, however research is lacking in this area. Differentiating between applications and variables may be particularly important for future research to obtain a clearer understanding of the impact of the Internet. If researchers are not always measuring the same thing then drawing conclusions and getting consistent findings may be extremely difficult.

The changing nature of the Internet may also explain inconsistencies in the literature. The Internet is rapidly evolving and changing over time. New applications and networking websites are being introduced and, with these new introductions, Internet behaviour and motivations for using the Internet is in a constant flux. Valkenburg and Peter (2007) suggest that changes in the
Internet may account for some of the differences in research findings. They argue that few people in the 1990s had access to the Internet and there was a greater difference between online and offline contacts. A result of this was that the time invested in online contacts reduced contact with offline contacts. Now, however, new technologies allow ease of communication online and there is greater overlap between offline and online contacts. These differences may help explain some of the differences in earlier and more current research.

4.5 Conclusion

In summary, research evaluating the relationship between shyness and the Internet is contradictory. On the one hand, research suggests that shyness is a central component and predicting factor of Internet addiction. It has been theorised that shy individuals may feel more confident online and engage in CMC to compensate for their lack of social interaction. This leads to a reduction in opportunities to engage in real face-to-face interactions and may cause an increase in the levels of shyness offline. From this perspective, the Internet is a source of social isolation that may maintain shyness. The studies in this field are primarily correlational and although there is some research to support the hypothesis that shy people seek out online interactions to compensate for the difficulties experienced offline, it is still unclear to what extent shyness produces Internet usage or is exacerbated by it.

Other research suggests that the Internet increases social ties between people and provides shy individuals with a safe place to interact and form relationships. Communicating in an anonymous environment appears to reduce the preoccupation with performance and reactions typical of shyness sufferers. According to this perspective, online interactions reduce shyness both online and offline, regardless of how shy people are initially. It would be beneficial for future research to attempt to gain a deeper understanding of the relationship between shyness and
the Internet. More specifically, key questions that need to be addressed are: (1) how much time do shy individuals, on average, spend online? (2) Compared to non-shys, what proportion of shy people are addicted to the Internet? (3) What do shy people do online compared to non-shys? (4) What are the motives for shy people going online? (5) Does going online reduce shyness?

Addressing these questions would help provide a more comprehensive of the impact of context on shyness and help determine if the Internet is an ideal environment to assist individuals who experience shyness.
Chapter 5: Study 1: A Survey Study Comparing the Online Behaviour of Shys and Non-shys

Chapter Overview
In this chapter the first study for this thesis is presented. This study addresses the contradictory findings in the literature regarding shy individuals’ use of the Internet. Further research into this area is crucial to understand how individuals who are shy use the Internet. The Internet has the potential to assist individuals who are shy, but before an online treatment program is developed further understanding about how people who are shy interact with the Internet is required. In this chapter the findings from a survey are presented. The results of this study are interpreted and suggest that qualities of the Internet may make it an ideal environment for a treatment program for shyness.

5.1 Online Interactions and Behaviour

The increasing availability and flexibility of ICT has expanded the ways in which people can interact. This has important implications for shy people who experience inhibition in face-to-face social situations. Shyness can be defined as a form of excessive self-focus, a preoccupation with one’s thoughts, feelings, and physical reactions and may vary from mild social awkwardness to total social inhibition (Henderson & Zimbardo, 1998; Zimbardo, 1977). Research suggests that shyness is a dynamic state and that context plays an important role in determining an individual’s level of shyness. ICT, in particular, has been found to play an important role in the extent to which an individual feels shy. Research evaluating the relationship between shyness and the Internet has suggested conflicting findings. The aim of the current study was to examine the relationship between shyness and the Internet and to elucidate inconsistencies in the literature. Specifically, five key areas relating to shyness and the Internet
were investigated: Internet usage and behaviour, Internet motivation, attitudes towards the Internet, the impact of the Internet, and differences in context (shyness online compared to shyness offline).

5.1.1 Shyness and Internet Usage and Behaviour

Research has found that shyness is a prominent characteristic associated with Internet addiction and that shyness may increase Internet usage (Chak & Leung, 2004; Engelberg & Sjoberg, 2004). These studies have found that shyness is a predictor of Internet addiction and the shyer a person is, the higher the tendency they have to becoming addicted to the Internet. This would suggest that people who experience shyness may use the Internet as a form of avoidance of social interaction and that shyness may exacerbate Internet use. Other studies, however, have not found associations between shyness and Internet use and suggest that shy and non-shy individuals use the Internet in similar ways (Henderson et al., 2002; Scealy et al., 2002). Further research is needed to understand the relationship between Internet addiction and shyness.

Although research has identified shyness as a potential predictor of Internet addiction, there has been little research examining Internet usage among shy populations. Carducci and Klaphaak (1999) surveyed 3154 individuals about their Internet habits. Questions were asked about Internet usage, principal purposes for using the Internet, topics discussed on the Internet, whether participants revealed their true identity online and whether their online relationships developed “in-real-life.” Results revealed that the majority of participants (58.7%) used the Internet between 0-5 hours per week. Respondents used the Internet primarily for seeking new information (70.6%) and 19.2% used the Internet to meet new people. Respondents reported that when online 47% discussed personal topics, such as hobbies and other special interests. This
study showed that individuals who are shy do not use the Internet for excessive amounts of time (Young, 2002) and tended to use the Internet primarily for seeking new information.

This study provides informative details about the online behavioural characteristics of shy people and is based on a large sample size; however, there are numerous limitations that reduce the generalisability of the results. First, no measure of shyness was included in the study. The survey questions were linked to a published article on shyness and shy readers were encouraged to complete the questionnaire. This presents a major problem as there is no assurance that shy people completed the survey. Second, the brevity of the items used limits the conclusions that can be drawn from this research. Future research would be benefit by including measures of shyness and incorporating psychometrically sound questionnaires.

It would also be beneficial to get a clearer understanding of the relationship between shyness and Internet addiction. The majority of studies that have examined the relationship between these two variables have not looked specifically at shy populations but, rather, have noted that shyness is a predictor of Internet addiction. Further, few comparison studies of the rates of Internet addiction and Internet usage of shy and non-shy individuals have been conducted. A comparison of these two groups may provide a more coherent picture of the relationship between shyness and the Internet.

5.1.2 Shyness, Internet Attitudes and Motivation to Use the Internet

Few studies have examined what motivates people who are shy to use the Internet. The studies that have been conducted suggest that people who are shy use the Internet predominantly for social reasons. Research suggests that individuals who are shy prefer online communication to face-to-face communication (Ebeling-White et al., 2008). Whether this is due to avoidance of anxiety provoking situations is not entirely clear, however, research implies that individuals who
are shy seek relationships online to reduce feelings of loneliness (Sheldon, 2008) and increase their network of friends (Birnie & Horvath, 2002; Yang & Tung, 2007). Some theorists suggest that people who are shy use the Internet as it enables them to be more social. Carducci and Klapkaak (1999) use the term “electronic extroversion” to describe shy individuals using Internet applications, such as chat, as a form of forced extroversion. In their study, Morahan-Martin and Schumacher (2000) found that pathological Internet users were more likely than those with no pathological symptoms to experience loneliness and have higher scores on social confidence and social liberation on the Internet Behaviour and Attitudes Scale. This study suggests that pathological Internet users who are lonely use the Internet as a means for social liberation and to build social confidence. Research has not examined whether people who are shy use the Internet for the same purposes.

In the study by Carducci and Klapkaak (1999) results revealed that as the number of hours an individual spends on the Internet per week increases, the use of the Internet for social reasons also increases ($r = .31$) and the more individuals use the Internet for the principal purpose of meeting new people, the more willing they were to talk about personal or intimate topics ($r = .41$). These findings suggest that shy individuals may be motivated to use the Internet to develop social relationships and that as shy individuals become more involved in Internet relationships, they become more likely to disclose personal details. Carducci and Klapkaak (1999) also suggest that whilst the Internet allows shy people to form new relationships, increases in online relationship investment is associated with being less truthful about revealing their true identity. It should be noted, however, that these studies are correlational and do not allow us to make casual inferences.

*5.1.3 The Relationship between the Internet and Shyness*
Studies suggest that the qualities of the Internet, such as its greater anonymity and absence of gating features, may provide some protection for shy individuals, facilitate control over the impression that they are trying to create and lead to a reduction in shyness (McKenna et al., 2002). Research has shown that when under the protection of anonymity, shyness levels are lower compared to face-to-face interactions (Saunders & Chester, 2007). Stritzke et al. (2004) also found that, when people who are shy go online shyness is reduced and they show few differences in interpersonal competence compared to non-shy individuals. Other research has supported the “rich get richer” model, suggesting that the benefits of interacting online seem to spill over and transfer into the offline world (Robert et al., 2000; Valkenburg & Peter, 2007).

5.1.4 Research Aims and Hypotheses of the Current Study

This study attempts to redress the lack of empirical research investigating shyness online, resolve current inconsistencies and provide a more coherent and conclusive description of the relationship between shyness and ICT. Findings from an investigation into the relationship between shyness and the Internet would help clarify how shy individuals use the Internet and help to inform the development of future treatment models. The Internet may be an ideal medium for treatment of people who are shy but without a clearer indication of how shy people use the Internet, then such an intervention could be harmful.

The aim of this study was to gain a deeper understanding of the relationship between Internet and shyness by comparing shy and non-shy users on Internet usage and behaviour, Internet motivation, attitudes towards the Internet, and the impact of the Internet on shyness. In this study there was one investigative aim and four hypotheses. In regards to shyness and Internet usage and behaviour, research has been inconclusive. The aim of this study, therefore, was to investigate if there are differences between shy and non-shys in Internet use and levels of
Internet addiction. Based on previous research, it was hypothesised that (1) individuals who are shy would be more motivated to use the Internet for social reasons compared to non-shys. It was also hypothesised that (2) individuals who are shy would be more likely to perceive the Internet to have a positive influence on their lives. This study aimed to replicate the research by Stritzke et al. (2004). Based on the findings from Stritzke et al. (2004) it was predicted that (3) individuals who are shy would score lower on measures of initiating relationships, self-disclosure, and providing emotional support in an offline context compared to non-shy individuals but there would be no differences between these two groups on these measures in an online context. Consistent with the research conducted by Stritzke et al. (2004) and Saunders and Chester (2007), it was predicted that (4) there would be no significant differences between levels of shyness between the shy and non-shy group when in an online environment.

5.2 Method

5.2.1 Recruitment and Participants

The survey was posted on an internet site available to anyone who had access to the internet. To be included in the study participants needed to be at least 18 years of age. Participants were recruited using advertisements. Links to the survey were posted on social research (iPsychExpts, Lab-united, and webexperimentlist) and social networking (Facebook) sites. Flyers advertising the study were placed on information boards at RMIT University and distributed during undergraduate lectures. Advertisements for the study were also published on the RMIT online newsletter, ‘In the Loop.’ Information about the study and links to the survey were also placed in staff newsletters at RMIT University.

Of the 303 participants who completed the online survey, 66.7% (202) were female, 33% (100) were male, and 0.3% (1) identified as “other”. Participants ranged in age from 18 to 61
The majority of participants were Australian (83%), employed (74%) and had a university degree (45%). A description of the participants’ education level, occupation, and country of origin can be found in Table 5.

### 5.2.2 Measures

Participants completed an online questionnaire package consisting of:

**Respondent Demographics.** This included five questions regarding age, sex, occupation, education, and country of origin.

**Internet Usage.** Participants were asked six questions regarding their use of the Internet. Questions included: how long they had been using the Internet, confidence using the Internet, weekly hours spent on the Internet and time spent using specific Internet applications, such as email and chat.

**Shyness Scale.** This questionnaire was developed by Cheek and Melichor (1985) and consists of 20 items that assess discomfort/tension and inhibition in the presence of others. Items are expressed as statements, such as “I feel tense when I’m with people I don’t know” and “I am confident about my social skills”. Responses are given on a 5-point Likert scale ranging from very uncharacteristic or untrue to very characteristic or true. The 20-item Shyness Scale has high internal consistency reliability (.94) and test-retest reliability (.91). The Shyness Scale correlates well with other shyness scales and ratings, such as the Cheek and Buss 9-item-shyness scale (.96) and ratings provided by family members and close friends (Melchior & Cheek, 1990). The Cronbach’s alpha in this study was .94.

**Shyness Scale Online.** The Cheek and Melchior (1985) Shyness Scale was modified to measure shyness online. Each of the 20 offline items was matched with an equivalent online question so the measure could be adapted online. For example, “I feel tense when I’m with
people I don’t know” had the online equivalent “I feel tense when I’m with people I don’t know online” and “I am confident about my social skills” had the online equivalent “I am confident about my social skills online.” One item, “I have trouble looking someone right in the eye” could not be matched with an online equivalent so it was not included. There were a total of 19 items and responses were given on a five-point Likert scale ranging from very uncharacteristic or untrue to very characteristic or true. The Cronbach’s alpha in this study was .91.

*Internet Addiction Questionnaire.* This questionnaire was developed by Young (1997) and adapted from the DSM-IV criteria for pathological gambling. This measure was used as it is the most widely used measure of Internet addiction and was developed specifically to identify Internet addiction. The questionnaire measures preoccupation, compulsive use, behavioural problems, emotional changes, and impact on life due to Internet usage. The questionnaire consists of eight items expressed as questions, such as “Do you frequently stay online longer than originally intended?” Responses are given using a “yes” or “no” format. An individual is classified as having Internet addiction if they respond “yes” to five or more items. Studies investigating the psychometrics of this measure have reported good reliability and consistency. Johannson and Gotestam (2004) reported a split-half reliability coefficient of .72 and Cronbach’s alpha was .72. Cao, Su, Liu and Gao (2007) reported split-half reliability using Spearman-Brown at .72 and the internal consistency using Cronbach’s alpha was .72. Cronbach’s alpha in this study was also .72.
### Table 5

*Demographic Characteristics of Participants (N= 303)*

<table>
<thead>
<tr>
<th>Education level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
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<td>31.4</td>
</tr>
<tr>
<td>University Degree</td>
<td>149</td>
<td>49.2</td>
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<tr>
<td>Postgraduate Qualification</td>
<td>59</td>
<td>19.5</td>
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</table>

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Frequency</th>
<th>Percent</th>
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</thead>
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<tr>
<td>Employed</td>
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<td>73.9</td>
</tr>
<tr>
<td>Student</td>
<td>71</td>
<td>23.4</td>
</tr>
<tr>
<td>Unemployed</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>0.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country of Origin</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>251</td>
<td>82.8</td>
</tr>
<tr>
<td>Africa</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>Asia</td>
<td>5</td>
<td>1.7</td>
</tr>
<tr>
<td>European</td>
<td>27</td>
<td>8.9</td>
</tr>
<tr>
<td>North America</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>New Zealand</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>Missing</td>
<td>4</td>
<td>1.3</td>
</tr>
</tbody>
</table>
**Internet Usage Motivation and Gratification Scale.** This questionnaire was developed by Yang and Tung (2007) and is designed to determine user motivation and gratification in using the Internet. The scale requires participants to rate their level of motivation on 10 items using a 5-point scale, ranging from “Not a motivation at all” to “Strong motivation.” Factor analyses on this scale have identified two factors: Use of Internet for social/entertainment purposes and use of Internet to search for information. Item loadings have been found to be good to excellent, ranging from .44 to .79 (Yang & Tung, 2007). In this study Cronbach’s alpha was .70 on the social/entertainment scale and .46 on the information scale.

**Perception of the Internet Influences Questionnaire.** This questionnaire was originally developed by Tsa and Lin (1999) and has since been used by Yang and Tung (2007). The questionnaire requires the respondent to rate on a six-point scale the impact that the Internet has on their life (ranging from negative to positive) in the following areas: study, daily routines, general health, relationships, and parental relations. Cronbach’s alpha in this study was .73.

**Internet Attitudes and Behaviour Scale.** This scale was originally developed by Morahan-Martin and Schumacher (2000) and consists of 25 items that are answered using a 5-point Likert scale. There are six scales within the questionnaire: social confidence, socially liberating, competency, ease of communication, disadvantages of use and lurking. Factor analyses have revealed that the six scales account for 59.29% of the variance (Morahan-Martin & Schumacher, 2000). Cronbach’s alpha in this study was .93 for the social confidence scale, .78 for the socially liberating scale, .36 for the competency scale, .50 for the ease of communication scale, and .78 for the disadvantages of use. The lurking scale only consisted of one item.

**Interpersonal Competence Scale (ICS).** The ICS (Buhrmester, Furman, Wittenberg, & Reis, 1988) is a 24-item questionnaire that measures three constructs: initiating relationships (8
items), self-disclosure (8 items), and providing emotional support (8 items). It was by adapted by Stritzke et al. (2004) to allow for online versus offline comparisons. Items are presented as situations, each with an online equivalent. For example, “Introducing yourself to someone you might like to get to know (or date)” has the online equivalent of “Introducing yourself to someone online you might like to get to know (or date).” Items are answered on a 5-point Likert scale ranging from “I’m poor at this; I’d feel so uncomfortable and unable to handle this situation that I would avoid it if possible” to “I’m very good at this; I’d feel very comfortable and could handle this situation easily.” The scales of the original offline version have high internal consistencies ranging from .82 to .87 (Buhrmester et al., 1988). In this study Cronbach’s alpha was .95 for initiating relationships, .92 for self-disclosure and .85 for providing emotional support. The online adapted version has also been found to have high internal consistency with alphas ranging from .86 to .93 (Stritzke et al., 2004). In this study Cronbach’s alpha for the online version was .71 for initiating relationships, .72 for self-disclosure and .69 for providing emotional support.

5.2.3 Procedure

Participants were told that the purpose of the study was to examine online interactions and behaviour. Participants were directed to an Internet site that displayed an overview of the study, the plain language statement and a link to the questionnaire. The questionnaire could be accessed online via SurveyMonkey™, a secure website where data is protected through encryption. After registering consent to take part in the study, participants were invited to complete the questionnaire package. The questionnaire package was divided into an “offline” and “online” section. The offline section included demographic information, the Shyness Scale and the ICS. The online section included the Internet usage section, the Internet Addiction
Questionnaire, Perception of the Internet Influences Questionnaire, Internet Attitudes and Behaviour Scale and online versions of the Shyness Scale and ICS. Completion of the questionnaire package took approximately 20 minutes.

5.2.4 Statistical Analyses

Respondents were assigned into either shy or non-shy groups. Assignment was based on scores obtained on the offline version of the Shyness Scale. Those respondents who obtained scores above the population mean of 51.8 reported by Melchior and Cheek (1990) were categorised in the shy group, whilst those scoring below the population mean were classified in the non-shy group. This method was used as it was seen as the most reliable method to categorise shys and non-shys. Shyness groups were then compared in five key areas: Internet usage and behaviour, Internet addiction, Internet attitudes, Internet motivation, perceived impact of the Internet. Chi-squared analyses, t-tests and MANOVAS were used to determine if there were any significant differences between the two groups As there were 5 dependent variables on the Perception of the Internet Influences Questionnaire, Bonferroni adjusted alpha levels were used. To investigate the impact of context, separate mixed model MANOVAS on each of the four dependent variables of shyness, initiating relationships, self-disclosure, and providing emotional support and advice were performed.

5.3 Results

The results are divided into three sections: first, respondents are classified into shyness groups and compared on the demographic variables; second, the shyness groups (shy and nonshys) are compared on the Internet scales and, third, the impact of context (offline Vs. online) is investigated.
5.3.1 Comparison of Shyness Groups

Of the 303 participants, 49% (149) were in the shy group and 51% (154) were in the non-shy group. Analyses were conducted to examine if there were differences between the shy and non-shy group on the following 6 outcome variables: demographics, Internet usage and behaviour, Internet addiction, Internet motivation, impact of the Internet and Internet attitudes.

5.3.2 Demographics

Of the participants who were classified as shy, 54.4% (81) were female, compared to 78.6% (121) in the non-shy group. In the shy group 45% (67) were male, compared to 21.4% (33) in the non-shy group. In the shy group .6% (1) was other. The differences between the two groups in regards to sex was significant, $\chi^2 (1, N = 302) = 10.37, p < .001, V = .25$. The higher number of males in the shy group accounted for these differences. Respondents in the shy group were slightly younger ($M = 28.96, SD = 7.77$) than the respondents in the non-shy group ($M = 30.08, SD = 8.98$). This difference was not significant $t(303) = 1.16, p = .25$.

In the shy group 43.6% (65) of respondents had a university education, 36.9% (55) had a high school education and 19.5% (29) had a postgraduate qualification, compared to 54.5% (84), 26% (40) and 19.5% (30) in the non-shy group respectively. Chi-squared analyses revealed that these differences were not significant, $\chi^2 (2, N = 303) = 4.73, p = .09, V = .13$.

Of the participants in the shy group, 82.1% (119) were born in Australia, 7.6% (11) were born in the United Kingdom, 5.5% (8) were born in North America, 3.4% (5) were born in Asia and 1.4% (2) were born in another European country. In the non-shy group, 85.7% (132) were born in Australia, 4.5% (7) were born in the United Kingdom, 4.5% (7) were born in other European countries, 2.6% (4) were born in North America, 1.3% (2) were born in Africa and 2 (1.3%) were born in New Zealand. Chi-squared analyses comparing Australian and non-
Australian country of residence revealed that these differences were not significant, $\chi^2 (6, N = 299) = 0.74, p = .39, V = .05$.

### 5.3.3 Internet Usage and Behaviour

To examine if there were any differences between the shy and non-shy groups in Internet usage, a series of cross-tabulations were performed. The results from these analyses are presented in Table 6. As we were comparing groups of 6 variables, Bonferroni adjusted levels of $.008$ were used. There were no significant differences between the shy and non-shy groups in computer ownership, confidence using the Internet, average number of hours spent using the Internet per week, average number of hours spent using social networking sites per day and hours spent using email per day. There was, however, a significant difference between the shy and non-shy groups in the number of hours spent using chat per day ($p < .001$). There were no significant differences between the shy ($M = 9.74, SD = 2.82$) and non-shy ($M = 9.87, SD = 3.16$) group in the number of years spent using the Internet, $t(284) = 0.38 \ p = .71$.

Cross-tabulations were performed to examine if there were differences between the shy and non-shy group in Internet behaviour. The results of these analyses are presented in Table 7. There were no significant differences between the shy and non-shy group on these variables, with the exception of entertainment. Individuals who feel shy are more likely to use the Internet for entertainment than people who do not feel shy.

### 5.3.4 Internet Addiction

To examine if there was a significant difference between the number of shy and non-shy participants classified as having Internet addiction, a contingency chi-squared analyses was conducted. In the shy group, 10.4% of participants were classified as having Internet addiction, compared to 5.2% in the non-shy group. A contingency chi-squared analysis found no significant
relationship between level of shyness and Internet addiction, $\chi^2 (1, N = 298) = 2.85, p = .09, V = .098$.

5.3.5 Internet Motivation

The mean scores of the shy and non-shy groups on the two scales of the Internet Usage Motivation and Gratification Scale are presented in Table 8. A single-factor between subjects MANOVA was conducted to analyse the differences between the two groups on scores on the two scales. A significant multivariate effect was noted, Wilks' $\lambda = .03, F(2, 287) = 4890.02, p < .001$, multivariate $\eta^2 = .97$. Subsequent follow-up univariate analyses of each dependent variable found a significant difference between the two groups on the Use of the Internet for Social/Entertainment Purposes scale ($p < .001$) but not the Use of the Internet to Search for Information scale ($p = .129$). Individuals who are shy use the Internet more for social/entertainment purposes than those who are not shy.

5.3.6 The Impact of the Internet

To examine if there were any perceived differences regarding the impact of the Internet on study, daily routines, general health, relationships and parental relationships between the shy and non-shy groups, a series of contingency chi-squared analyses were performed. Results of these analyses can be seen in Table 9. Based on Bonferroni-adjusted alpha levels, significant differences at $p < .001$ were found on one of the variables, routines. Individuals who are shy are more likely to view the Internet as having a negative impact on their routines. No significant differences were found on the remaining variables.
Table 6.

Cross-tabulations Comparing Shy and Non-shy Groups on Internet Behaviour and Usage

<table>
<thead>
<tr>
<th>Measures</th>
<th>Shy (n = 149)</th>
<th>Non-shy (n = 154)</th>
<th>$\chi^2$</th>
<th>p</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own Computer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>142 (95.9)</td>
<td>144 (93.5)</td>
<td>1.25</td>
<td>.54</td>
<td>.06</td>
</tr>
<tr>
<td>No</td>
<td>6 (4.1)</td>
<td>10 (6.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence using Internet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lacks confidence</td>
<td>10 (6.8)</td>
<td>11 (7.2)</td>
<td>0.82</td>
<td>.84</td>
<td>.05</td>
</tr>
<tr>
<td>Confident</td>
<td>137 (93.2)</td>
<td>142 (92.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours using Internet per week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No use</td>
<td>0 (0)</td>
<td>1 (0.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5 hours</td>
<td>22 (15.5)</td>
<td>28 (18.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-10 hours</td>
<td>30 (21.1)</td>
<td>51 (33.6)</td>
<td></td>
<td></td>
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<tr>
<td>15-20 hours</td>
<td>28 (19.7)</td>
<td>25 (16.4)</td>
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<tr>
<td>20+ hours</td>
<td>31 (21.8)</td>
<td>23 (15.1)</td>
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<td>Hours using email per day</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never use</td>
<td>1 (0.7)</td>
<td>1 (0.7)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>0-1 hour</td>
<td>55 (39.6)</td>
<td>59 (38.8)</td>
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<tr>
<td>1-5 hours</td>
<td>73 (52.5)</td>
<td>65 (42.8)</td>
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<tr>
<td>5-10 hours</td>
<td>9 (6.5)</td>
<td>24 (15.8)</td>
<td></td>
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<tr>
<td>10+ hours</td>
<td>1 (0.7)</td>
<td>3 (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours using chat per day</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never use</td>
<td>50 (36)</td>
<td>90 (59.6)</td>
<td>34.93</td>
<td>&lt;.001</td>
<td>.35</td>
</tr>
<tr>
<td>0-1 hour</td>
<td>46 (33.1)</td>
<td>51 (33.8)</td>
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<tr>
<td>1-5 hours</td>
<td>41 (29.5)</td>
<td>8 (5.3)</td>
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<td>5-10 hours</td>
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<td>2 (1.3)</td>
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<tr>
<td>10+ hours</td>
<td>1 (0.7)</td>
<td>0 (0)</td>
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<tr>
<td>Hours using social networking sites per day</td>
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<td>Never use</td>
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<td>19 (12.7)</td>
<td>4.38</td>
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<tr>
<td>1-5 hours</td>
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<td>43 (28.7)</td>
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<tr>
<td>5-10 hours</td>
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<td>1 (0.7)</td>
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<tr>
<td>10+ hours</td>
<td>0 (0)</td>
<td>0 (0)</td>
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Table 7.

*Cross-tabulations Comparing Shy and Nonshy Groups on Internet Behaviour and Usage*

<table>
<thead>
<tr>
<th>What the Internet is Used For</th>
<th>Shy $(n = 148)$</th>
<th>Non-shy $(n = 154)$</th>
<th>$\chi^2$</th>
<th>$p$</th>
<th>$V$</th>
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<td>109</td>
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<td>.75</td>
<td>.02</td>
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<td>45</td>
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<td></td>
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<tr>
<td>Communication</td>
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<td></td>
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<td>.18</td>
<td>.08</td>
</tr>
<tr>
<td>Yes</td>
<td>105</td>
<td>119</td>
<td></td>
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</tr>
<tr>
<td>No</td>
<td>44</td>
<td>35</td>
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<tr>
<td>Entertainment</td>
<td></td>
<td></td>
<td>5.23</td>
<td>.02</td>
<td>.13</td>
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<td>Yes</td>
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<td>Education</td>
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<td>.22</td>
<td>.07</td>
</tr>
<tr>
<td>Yes</td>
<td>80</td>
<td>73</td>
<td></td>
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<td>81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td></td>
<td></td>
<td>2.24</td>
<td>.14</td>
<td>.09</td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>139</td>
<td>136</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 8.

*Follow-up Univariate Analyses Comparing Internet Usage Motivation and Gratification for Shy and Non-shy Groups*

<table>
<thead>
<tr>
<th>Internet Motivation and Gratification Scale</th>
<th>Shy ($n = 131$)</th>
<th>Non-shy ($n = 141$)</th>
<th>$F$</th>
<th>$P$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search for Information</td>
<td>15.42 (2.70)</td>
<td>15.51 (2.98)</td>
<td>0.07</td>
<td>.80</td>
<td>.00</td>
</tr>
<tr>
<td>Social/ Entertainment</td>
<td>10.99 (4.06)</td>
<td>8.34 (2.80)</td>
<td>42.55</td>
<td>&lt;.001</td>
<td>.13</td>
</tr>
</tbody>
</table>
5.3.7 Internet Attitudes and Behaviour Scale

Mean scores of the shy and non-shy groups on the six scales of the Internet Behaviour and Attitudes Scale and univariate analyses comparing internet attitudes and behaviour for shy and non-shy groups are presented in Table 10. A single-factor, between-subjects MANOVA was conducted to analyse differences between the two groups (shy and non-shy) on scores on the six Internet Behaviour and Attitudes scales. A significant multivariate effect was found, Wilks’ $\lambda = .20$, $F(6, 265) = 2167.64$, $p < .001$, multivariate $\eta^2 = .98$. Subsequent follow-up, univariate analyses of each dependent variable found a significant difference between the two groups on the following scales: Social confidence, socially liberating, disadvantages, and lurking. No significant differences were found between competency and ease of communication.

5.3.8 The Impact of Context

Levels of shyness were higher offline ($M= 55.81$, $SD = 20.06$) than online ($M= 39.35$, $SD = 11.18$). A two-tailed, paired samples $t$-test found a significant difference between levels of shyness offline and online, $t(303) = 11.51$, $p < .001$, $d = 1.44$, 95%CI (13.79, 19.47).

To examine Group x Context interactions, four separate 2 X 2 (Group X Context) mixed model MANOVAS were performed with Group (shy vs. nonshy) as the between-group factor and Context (online vs. offline) as the within-participants factor on the four dependent variables: shyness, initiating relationships, self-disclosure, and providing emotional support and advice. The results of these analyses are presented in Table 11. Group vs Context interaction was significant for all dependent variables. Compared to offline levels, shy respondents reported lower levels of shyness online, $t(148) = 17.42$, $p < .001$, and higher levels of self-disclosure.
online, $t(146) = -5.23, p < .001$, and increased ability to initiate relationships online, $t(146) = -7.95, p < .001$.

5.4 Discussion

The aim of this study was to compare shy and non-shy groups on Internet usage and behaviour, Internet motivation, attitudes of the Internet, and the impact of the Internet. There were four hypotheses in this study. (1) It was hypothesised that individuals who are shy would be more motivated to use the Internet for social reasons compared to non-shys. (2) It was also hypothesised that individuals who are shy would be more likely to perceive the Internet to have a positive influence on their lives. (3) It was predicted that individuals in the shy group would score lower on measures of initiating relationships, self-disclosure, and providing emotional support in an offline context compared to non-shy individuals, but there would be no differences between these two groups on these measures in an online context. (4) It was predicted that there would be no significant differences between levels of shyness between the shy and non-shy group when in an online environment. A further aim of the study was to investigate if there were any differences between shy and non-shy groups in Internet use and addiction.
Table 9.

*Cross-tabulations Comparing Shy and Non-shy Groups on Perceived Impact of the Internet*

<table>
<thead>
<tr>
<th>Measures</th>
<th>Shy $(n = 148)$</th>
<th>Non-shy $(n = 153)$</th>
<th>$\chi^2$</th>
<th>$p$</th>
<th>$V$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact of Internet on studies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>16  10.8</td>
<td>6  4</td>
<td>10.76</td>
<td>.030</td>
<td>.19</td>
</tr>
<tr>
<td>Neutral</td>
<td>30  20.3</td>
<td>20  13.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>102 68.9</td>
<td>127 83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact of Internet on routines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>28  19.9</td>
<td>10  7.4</td>
<td>15.69</td>
<td>.003</td>
<td>.23</td>
</tr>
<tr>
<td>Neutral</td>
<td>47  31.8</td>
<td>68  44.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>73  49.3</td>
<td>76  48.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact of Internet on health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>27  18.2</td>
<td>18  11.7</td>
<td>9.42</td>
<td>.057</td>
<td>.18</td>
</tr>
<tr>
<td>Neutral</td>
<td>75  50.3</td>
<td>101 65.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>47  31.5</td>
<td>35  22.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact of Internet on relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>9   4.1</td>
<td>14  9</td>
<td>12.03</td>
<td>.017</td>
<td>.20</td>
</tr>
<tr>
<td>Neutral</td>
<td>50  34</td>
<td>68  44.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>88  59.9</td>
<td>72  46.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact of Internet on parental relations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>23  15.4</td>
<td>12  7.9</td>
<td>5.33</td>
<td>.260</td>
<td>.13</td>
</tr>
<tr>
<td>Neutral</td>
<td>92  61.7</td>
<td>98  64.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>34  22.8</td>
<td>43  28.1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 10.

*Follow-up Univariate Analyses Comparing Internet Attitudes and Behaviour for Shy and Non-shy Groups*

<table>
<thead>
<tr>
<th>Subscales of the Internet Attitudes Scale</th>
<th>Shy $(n=131)$</th>
<th>Non-shy $(n=141)$</th>
<th>$F$</th>
<th>$p$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social confidence</td>
<td>20.85 (8.61)</td>
<td>13.24 (5.58)</td>
<td>75.85</td>
<td>&lt;.001</td>
<td>.22</td>
</tr>
<tr>
<td>Socially liberating</td>
<td>19.03 (7.31)</td>
<td>13.76 (4.34)</td>
<td>53.16</td>
<td>&lt;.001</td>
<td>.16</td>
</tr>
<tr>
<td>Ease of communication</td>
<td>12.33 (2.19)</td>
<td>11.80 (2.38)</td>
<td>3.60</td>
<td>.06</td>
<td>.01</td>
</tr>
<tr>
<td>Competency</td>
<td>13.04 (2.22)</td>
<td>12.99 (3.95)</td>
<td>0.01</td>
<td>.91</td>
<td>.00</td>
</tr>
<tr>
<td>Disadvantages</td>
<td>8.73 (2.12)</td>
<td>7.44 (1.93)</td>
<td>27.47</td>
<td>&lt;.001</td>
<td>.09</td>
</tr>
<tr>
<td>Lurking</td>
<td>2.24 (1.18)</td>
<td>1.94 (1.21)</td>
<td>4.29</td>
<td>.04</td>
<td>.02</td>
</tr>
</tbody>
</table>
Table 11.

*Results Comparing Shy and Non-shy Groups on Shyness, Initiating Relationships, and Providing Emotional Support*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Shy M (SD)</th>
<th>Nonshy M (SD)</th>
<th>Group</th>
<th>Context</th>
<th>Group x Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shyness</td>
<td></td>
<td></td>
<td>403.04*</td>
<td>266.67*</td>
<td>227.41*</td>
</tr>
<tr>
<td>Offline</td>
<td>72.23 (14.60)</td>
<td>39.91 (8.44)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online</td>
<td>40.09 (11.59)</td>
<td>38.63 (10.76)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initiating Relationships</td>
<td>82.25*</td>
<td>42.75*</td>
<td>86.02*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offline</td>
<td>18.98 (6.58)</td>
<td>30.50 (5.54)</td>
<td></td>
<td>42.75*</td>
<td>86.02*</td>
</tr>
<tr>
<td>Online</td>
<td>29.03 (9.91)</td>
<td>28.76 (8.06)</td>
<td></td>
<td></td>
<td>49.15*</td>
</tr>
<tr>
<td>Self-disclosure</td>
<td>6.70**</td>
<td>4.49*</td>
<td>49.15*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offline</td>
<td>21.68 (7.38)</td>
<td>29.12 (6.35)</td>
<td></td>
<td>4.49*</td>
<td>49.15*</td>
</tr>
<tr>
<td>Online</td>
<td>28.79 (13.36)</td>
<td>25.31 (9.26)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Support</td>
<td>18.66*</td>
<td>13.12*</td>
<td>14.50*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offline</td>
<td>30.32 (7.30)</td>
<td>35.58 (4.85)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online</td>
<td>30.39 (9.03)</td>
<td>31.29 (9.06)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* *p < .001
** **p < .05
5.4.1 Shyness and Internet Usage and Behaviour

There were more similarities than differences in the Internet behaviour of shy and non-shy groups. Individuals in the shy group did spend more hours online compared to non-shys and the percentage of participants classified as having Internet addiction was slightly higher in the shy group, however, these differences were not significant. In contrast to research by Carducci and Klapka (1999) where the majority of individuals were online between 0-5 hours per week, in the current study the majority of individuals who were shy spent between 5-10 hours online. The increase in the availability of the Internet and the lack of incorporation of shyness measures in the Carducci and Klapka study may account for these differences.

Research has found that shyness is a prominent characteristic associated with Internet addiction and that shyness may increase Internet usage (Chak & Leung, 2004; Engelberg & Sjoberg, 2004). These studies have found that shyness is a predictor of Internet addiction and the shyer a person is, the higher the tendency they have to becoming addicted to the Internet. The findings from the current study fail to support these findings. Individuals who are shy did show an increased amount of Internet addiction compared to non-shys but this was not statistically significantly.

Counter to research conducted by Chak and Leung (2004) and Engelberg and Sjoberg (2004), the results of this study imply that individuals who are shy do not show greater rates of Internet addiction. Despite there being no significant differences between the two groups on Internet addiction, 10.4% is a relatively high percentage. It may be that, similar to view put forward by Hesier et al. (2003), shyness may be associated with a range of psychological issues, including Internet addiction. As shyness has a relationship a range of psychological problems, it may be that shyness may be directly or indirectly related to Internet addiction.
However, shy individuals tend to display Internet behaviour very similar to non-shys. Individuals in the shy and non-shy groups were similar on measures of Internet confidence and Internet behaviour. These findings support the research conducted by Henderson et al. (2002) and Scealy et al (2002) and help clarify some of the major inconsistencies in the literature. The major differences between the shy and non-shy groups on Internet behaviour was that individuals who are shy tend to use the Internet more for chat and entertainment compared to the non-shy group. The differences in the use of chat may be explained by their attitudes to, and motivation for use of, the Internet.

5.4.2 Shyness and Internet Attitudes and Motivation

The hypothesis that individuals who are shy would be more motivated to use the Internet for social reasons compared to non-shys was supported. Individuals who are shy are clearly drawn to the social aspects of the Internet. This is reflected in the differences between the shy and non-shy groups on the social/entertainment measure of the Intention Motivation and Gratification Scale, the increased use of chat and the use of the Internet for entertainment purposes. Shy individuals clearly seek out social relationships online. Whether this is through chat, email or other methods, it is evident that individuals who are shy are motivated to use the Internet for social purposes. When individuals who are shy go online they feel a greater sense of self confidence and feel socially liberated. The factors that promote social confidence were not examined in this study, but previous research clearly shows that the anonymity of the Internet is a powerful factor that may facilitate social empowerment. The greater sense of empowerment afforded by the Internet may motivate individuals to use the Internet for social purposes which may facilitate greater social interactions.
The findings regarding social uses coincide with previous research (Birnie & Horvath, 2002) suggesting that individuals are motivated to go online for social purposes. It should be noted that, although individuals who experience shyness are more motivated to go online for social reasons compared to non-shys, going online for information purposes was still the strongest motivator for people who are shy. This means that shy individuals are not just using the Internet for social reasons, but that social reasons do represent an important and unique factor for them compared to non-shys. Taken together with the findings that individuals who are shy are not more likely to have Internet addiction, these results suggest that people who are shy are drawn to the social aspects of the Internet but, importantly, they are not using the Internet in a manner that may disrupt their everyday functioning. It should be noted, however, that participants in the shy group did show some symptoms similar to pathological Internet users as outlined by Morahan-Martin and Schumacher (2000). Individuals who are shy were also more likely to lurk online and focus on the advantages of the Internet. In their study, Morahan-Martin and Schumacher (2000) reported that pathological Internet users experience loneliness and obtain higher scores on social confidence and social liberation when online. In this study, shy individuals also obtained higher scores than non-shys on social confidence and social liberation when online. This means that when individuals who are shy go online they feel that they are able to make friends easier, open up more, find anonymity liberating, feel more themselves online and sometimes go online to escape pressures. These results imply that individuals who are shy may use the Internet to avoid perceived social deficits offline and, taken together with the elevated scores Internet use and addiction, may help explain why some previous studies that haven’t directly compared shys and non-shys have identified shyness as a factor associated with Internet addiction.
The hypothesis that individuals who are shy would be more likely to perceive the Internet to have a positive influence on their lives was not supported. Although findings were approaching significance on the measure of the impact of the Internet on relationships, there were no significant differences between the measures, with the exception of the impact of the Internet on routines. Individuals who experience shyness were more likely to perceive the Internet as having a negative impact on the routine of their lives. These findings are more difficult to interpret considering previous literature has found that individuals who are shy perceive the Internet to have a positive impact on their lives and the current study found that, compared to non-shys, individuals who are shy had higher social confidence and social liberation online. It is important to note, however, that individuals who are shy rated the Internet as having a positive impact on studies, relationships and routines but these ratings were not significantly higher than non-shys.

5.4.3 The Relationship between the Internet and Shyness

As predicted, there was a significant difference between the shy and non-shy groups in offline shyness but not online. The hypothesis that there would be a significant difference between shy and non-shys on the Interpersonal Competence measure offline was supported. Stritzke et al. (2004) reported no significant differences online for initiating relationships and self-disclosure and a significant difference for initiating relationships. In this study, however, there were no significant differences online between initiating relationships and providing emotional support, but individuals who were shy self-disclosed more online than non-shys. This suggests that going into an online environment is associated with being more open and more willing to share information online. This finding partially coincides with Stritzke et al. (2004). In this study, providing emotional support was also found to be similar when online between the
shy and non-shy group. Contrary to the findings by Stritzke et al. (2004), the findings from this study suggest that individuals who are shy perceive that they are able to provide advice and support online as well as non-shy individuals. It is important to note that non-shy individuals perceive that they can provide emotional support and advice much better offline, unlike shy people.

There is evidence to suggest that context plays an important role in shyness. The results of this study coincide with previous studies and suggest that the Internet may be a powerful tool for individuals who are shy. There are clear observable changes when an individual who is shy makes the transition from an offline to online environment. Individuals who are shy experience less of the debilitating symptoms when online and there is evidence to suggest that they have a greater sense of self-confidence. They also show changes in interpersonal competence when online which may be specially related to their increase in social confidence when online. This study also offers some support for the stimulation hypothesis proposed by Valkenburg and Peter (2007) suggesting that CMC increases social opportunities by reducing physical cues, encouraging self-disclosure and stimulating closeness.

5.4.4 Limitations and Suggestions for Future Research

There are several limitations to this study that need to be considered. First, this study has relied exclusively on self-report. There are numerous problems inherent in the use of self-reports, including self-presentation biases. The use of longitudinal research incorporating observational techniques would be beneficial. Although the Internet Addiction Questionnaire has good psychometrics, this eight item questionnaire may not have been sensitive enough to pick up problematic Internet use. This questionnaire was chosen due to its brevity; however, it may be beneficial to use more detailed measures of Internet use and addiction to ensure an accurate
picture of shyness online is obtained. In this study no examination was made between the
differences between online and offline friendships and if people who experience shyness have
fewer friends offline compared to online. It would be useful to investigate this area in more detail
as it would provide us with important information around the differences in social relationships
online and offline and how they compare to individuals who are not shy.

A further limitation of this study relates to the way shyness was categorised. In this study
individuals were classified as shy if they were above the population mean. Although this is an
accepted method to categorise shy groups, this procedure may not have provided an accurate
estimate of the rate of Internet addiction in shyness. As noted in chapter 1, shyness spans a
broad continuum so the percentage of people with online addiction is likely to be reduced if the
spread of scores is not evenly distributed. Other studies examining the comorbidity between
shyness and Internet addiction, such as Lorant et al. (2000), have focused on individuals who are
chronically shy. An examination focusing on specific categories, such as those suggested by
Zimbardo (1977), may provide a more accurate reflection of the rate of Internet addiction in
shyness.

5.4.5 Implications

The results of this study provide us with a clearer understanding of how and why
individuals who are shy use the Internet. The findings of this study have important implications
for the treatment of shyness. This study, together with previous findings, suggests that the
Internet appears to be important for shy individuals for five primary reasons: (1) the anonymity
of the Internet may play an important role in reducing physical cues that inhibit a shy individuals
ability to interact with others; (2) when online, individuals experience a reduction of shyness and
an increase in interpersonal competence; (3) these factors combined may provide shy
individuals with greater self-confidence and disinhibition online which can lead to an increase in self-disclosure; (4) greater self-disclosure is likely to lead to stronger formation of relationships online; and, (5) the combination of interpersonal competence and greater self-disclosure is likely to lead to a more positive experience online. Importantly, however, these experiences online do not necessarily lead to greater rates of Internet addiction. Despite the implications of these studies, further experimental research is needed in order to determine if there is a causal relationship between these variables.

Together these findings suggest benefits for the use of the Internet to treat shyness. Bruner and Schmidt (2006) suggest that the Internet, particularly applications such as instant messenger, may assist individuals who are shy to develop assertiveness in a less threatening situation. These results are promising for the online treatment of shy individuals as they show that individuals feel safer online and more able to communicate in an environment where judgment and evaluation is less likely to occur. The Internet appears to be an ideal environment for people who are shy to practice and develop their communication skills and develop skills to help them combat shyness (Robert et al., 2000). The Internet could also be incorporated into a gradual exposure program where a hierarchy of exposure might involve starting with complete anonymity and then gradually adding in cues until a webcam is used and individuals engage in face-to-face communications. Alternatively, pre-existing therapeutic treatments could be adapted online, similar to methods used in depression and bipolar disorder.

This study investigated shyness online by comparing shy and non-shy groups on measures of Internet usage, Internet motivation, attitudes of the Internet, and the impact of the Internet. Results showed that there were more similarities than differences between shy and non-shy groups. Individuals who are shy are drawn to the social aspect of the Internet and when
online they show a reduction in shyness and an increase in interpersonal competence. These findings have important implications for the online treatment of shyness.
Chapter 6: The Online Treatment of Shyness

Chapter Overview

This chapter focuses on the use of online interventions for the treatment of shyness and social phobia. The chapter begins with an examination of online treatment and how it is typically administered. This is followed by an examination of some of the affordances and limitations of using the Internet as a medium for treatment. A review of the published studies examining online treatments for shyness and social phobia is then provided, suggesting six major points in regards to the administration of interventions online. The chapter concludes with suggestions for future research.

6.1 Online Treatment

The advent of the Internet has brought with it changes in the way in therapy can be administered. Studies have been investigating the use of the Internet for the administration of therapy since the late 1980s. There are a broad range of different online treatment options; however, a complete review of the history and range of online treatments is beyond the scope of this thesis. The focus of this review will be on providing an overview of the ways in which treatment can be administered online, a discussion of the affordances and limitations of online treatment and a review of the published studies evaluating shyness and social phobia online treatment.

There are a range of different terms that have been used in the literature to describe Internet based treatment interventions. Common terms include online counseling, E-therapy, Internet delivered self-help and online treatments. E-therapy is the administration of therapy in an online environment. It is a form of self-help often guided by a clinician and generally involves communication with a clinician via email, chat or video-conferencing (Andersson, 2010; Kraus,
Zack & Stricker, 2004). Computer-aided cognitive-behavioral therapy (CCBT) is another common term used in the literature that refers to CBT based programs that are delivered in an online environment. Although the term e-therapy and CCBT adequately describe the studies mentioned in this thesis, the term online treatment will be used in this thesis as it is a broader term that encompasses any type of treatment that is placed in an online environment.

There are also different levels of therapeutic involvement online. Online treatments can be conducted adjacent to face-to-face therapy or independently (Barak, 2004). Figure 4 shows the different levels of therapist intervention for online treatments. Online treatments are generally administered via email or chat, group discussion, weekly emails or independently with no therapist contact.

![Figure 4. A continuum of therapist intervention for online treatments](image)

Research investigating the optimum amount of therapist involvement has found mixed results. Andersson and Cuijpers (2008) suggest that some input and guidance from a therapist is needed. There are likely to be increased drop outs and lower treatment outcomes when no therapist contact is offered. The therapist plays the important role of providing support, encouragement and guidance (Andersson, 2009). Without therapist support online treatments may not be as effective. The time spent with using online treatment varies depending on the treatment and
psychological problem. Online therapies can range from 20 minutes to several hours or months of treatment (Marks & Cavanagh, 2007).

A number of different online programs have been developed. These treatments range in their level of interactivity. For example, the Swedish group, including Andersson and Carlbring, has developed numerous efficacious online interventions for a range of psychological problems using minimal therapist contact and predominately text based programs (Andersson, 2009). These programs are relatively simple in their design and do not rely heavily on interaction. Other programs have incorporated more interaction with the technology. For example, in Australia, the programs Mood Gym and Moodswings involve functions that promote interaction with the user. The Shyness programme is a six module online program that presents an illustrated story of man with social phobia who learns to cope with it with the help of a clinical psychologist. It appears that level of interaction does not impact treatment outcomes and text-based treatments are equally effective as programs with high levels of interaction. However, Andersson (2009) suggests that in order for online treatments to be effective the text needs to be clear and accurate.

6.2 Affordances of Online Treatment

There are a range of benefits associated with the use of online therapy. Affordances include: efficacy, anonymity, cost, and accessibility. Each of these affordances will be discussed in detail.

6.2.1 Efficacy

Online treatment interventions have been developed for a range of complex mental health conditions. Efficacy studies suggest that online treatment is applicable to a range of psychological disorders. Successful treatment interventions have been developed for eating disorders (Celio, Winzelberg & Taylor, 2002), depression (Christensen, Griffiths, & Jorm, 2004),
post-traumatic stress disorder (Hirari & Clum, 2005), panic disorders (Kiropoulos et al., 2000) and pathological gambling (Carlbring & Smit, 2008). Online treatments continue to grow at a rapid pace each year (Andersson & Cuijpers, 2008). Barak, Hen, Boniel-Nissim and Shapira (2008) conducted a meta-analysis of 92 studies of online treatments and found that overall effect sizes were similar to face-to-face treatments. These studies suggest that online treatments are effective for a range of psychological problems and that the Internet is a useful tool for therapeutic delivery.

The majority of efficacy studies examining online treatments have been controlled, employing random control designs and including direct comparisons between online and face-to-face treatments. A model of the way in which RCT designed studies are typically administered is presented in Figure 5.

The use of online treatments is now widely accepted. In the United Kingdom the National Institute for Health and Clinical Excellence recommend and endorse CBT based online programs for the treatment of depression and anxiety (National Institute for Health and Clinical Excellence, 2006). Other countries are also beginning accept and incorporate online treatments into clinical practice.

6.2.2 Anonymity

Many people who require treatment for anxiety do not seek the help needed (Clark, 1999). Despite the distressing symptoms experienced by individuals with shyness and social phobia and the efficacy of the treatments available, studies show that many people do not obtain the help they require. Olfson et al. (2000) found that people with social phobia were more likely than people without social phobia to not seek treatment due to a fear of what others might think or say. Attempting to encourage individuals who are shy to seek treatment can be extremely
difficult. Individuals who experience shyness and have a diagnosis of social phobia often experience shame and embarrassment about their symptoms. Seeking treatment can feel daunting and overwhelming and individuals who are shy frequently feel ashamed to disclose their difficulties to friends, family and clinicians (Olfson et al., 2000). Statistics from the Shyness Clinic in Palo Alto suggest that the number of people with shyness and social phobia seeking treatment has been declining. These findings suggest that the fear and embarrassment associated with shyness and social phobia reduce the likelihood of pursuing psychological treatment.

As was noted in chapter 3, the anonymity of the Internet has numerous benefits for individuals who experience shyness. Although it is difficult for online intervention programs to offer complete user anonymity due to legal and ethical reasons, the Internet minimises physical cues and is associated with disinhibition and self-disclosure. In an online environment individuals have an enhanced opportunity to feel at ease when around others (King & Moreggi, 1998). Individuals feel more comfortable using the Internet and experience reductions in shyness from going online. The Internet may therefore be an ideal setting for the treatment of shyness. Providing access to therapy in a safe and accessible environment may increase the likelihood that people will attempt to seek help and may be the first step for continued treatment (Tillfors et al., 2008).

6.2.3 Cost

Cost of treatment is often another barrier to accessing treatment. Compared to people without social phobia, those with social phobia are more likely to report economic problems, such as lack of insurance and inability to afford treatment, as barriers to seeking treatment (Olfson et al., 2000). In their study, Andersson, Ljotsson, Andersson, Ruck and Lindefors (in press) examined the cost effectiveness of IBCT compared to offline CBT. They examined costs
of treatment at pre-treatment, post-treatment and six months after treatment. Results indicated that gross total costs were less in the ICBT group compared to the offline group. The estimated cost for ICBT was $464 compared to the offline treatment which cost $2687. Similarly, Titov, Andrews, Johnston, Schwencke and Choi (2009) calculated the cost-effectiveness in years lived with disability and found that online treatment was one-quarter the price of face-to-face treatment. These findings suggest that the Internet may be a cheaper alternative for treatment compared to offline treatments. It is also likely that costs may continue to decrease as technology increases and infrastructure expands (Marks & Cavanagh, 2007).

6.2.4 Accessibility

Another positive aspect of the Internet relates to accessibility and convenience. Often individuals are restricted by their ability to access clinics. If individuals are not in close proximity to clinics then obtaining the required psychological treatment may be difficult. This is particularly relevant to specific syndromes such as shyness and social phobia that benefit from specialised treatment. People in rural areas or isolated communities may have particular difficulty accessing treatment. Others who may benefit include those who are disabled or elderly or those who are in counties who do not have access to psychological treatment (King & Moreggi, 1998).

The accessibility of the Internet means that individuals are able to access the Internet at times that are convenient for them. The Internet is available 24 hours a day and is accessible from a variety of locations (Taylor & Luce, 2003). This means that people who work night shift or shift work are not disadvantaged. Individuals are therefore able to access treatment at a time that is convenient for them and less time is needed travelling and organising sessions (Anderssson, 2009).
The accessibility of the Internet also allows for information to be easily updated. Therapists can therefore easily change and alter information available to consumers as required. This provides greater access to resources for consumers (Taylor & Luce, 2003).

6.3 Limitations of Online Treatment

Although there are numerous benefits associated with online treatment, limitations of this mode of intervention have been identified. Limitations discussed here include attrition, confidentiality, treatment satisfaction, and lack of verbal cues.

6.3.1 Attrition

Studies have also found that online interventions tend to have higher attrition rates compared to offline interventions. Attrition rates for online treatments for shyness and social phobia are discussed in the next section. According to Eysenback (2005), attrition is a distinct and common feature of online treatment. High drop-out rates have been reported in the majority of online treatment efficacy studies. The anonymity of the Internet may make it easier for participants to leave the program. A further problem is that it may be more difficult to follow up participants and get an understanding as to why they have left the program. A major issue associated with attrition is that it makes the treatment less believable (Eysenback, 2005).

A further problems associated with attrition is appropriately managing data where drop-out has occurred. There have been various methods suggested to help manage attrition (such as Eysenbach, 2005). Intention to treat analyses can help reduce some of the statistical problems associated with attrition. However, intention to treat analyses may not always provide an accurate reflection of the effectiveness of the treatment program and currently no statistical method exists to solve the problems associated with attrition (Andersson & Cuijpers, 2008).
6.3.2 Confidentiality

The use of the Internet raises a number of ethical concerns. Confidentially, in particular, presents a major issue for online treatments. Information on the Internet may be easily accessed and disseminated (Taylor & Luce, 2003). Protection of data is more difficult on the Internet and there are always risks associated with the possibility of hackers. There are often difficulties around controlling information. The use of discussion boards, for example, may raise problems. Allowing participants to communicate with one another may promote interaction but there are also issues around what clients disclose on discussion boards. Vulnerable clients may disclose sensitive information. Maheu and Gordon (2000) suggest that further legislation and ethical guidance for practitioners regarding online treatments is needed.

6.3.3 Treatment Satisfaction

Studies have found comparable results in regards to efficacy for online and offline treatments, however, a common theme in the literature is that online interventions tend to have lower satisfaction with relationship development compared to offline treatments. Anonymity can be empowering but not all participants may find it useful (Barak, 1999). In their study, Kiropoulos et al (2008) found that participants in both the offline and online groups rated their treatments as equally satisfying. However, participants who underwent the face-to-face CBT intervention rated face-to-face therapy as leading to greater enjoyment in the communication they had with their therapist compared to the participants who underwent the Internet based CBT intervention. Offline interventions involve more therapist interaction and have the advantage in that participants are more easily able to ask questions to clarify issues. Although treatment satisfaction does not appear to impact treatment outcomes, it may be associated with problems such as attrition.
Numerous authors have suggested that online based therapy may not be beneficial for everybody (de Graaf, 2009). It may be that some participants simply prefer face-to-face interaction. Further, participation in online treatments is also limited by required computer expertise and comprehension of text (Andersson, 2009). These factors may make online treatments less appealing for some and could potentially reduce treatment satisfaction.

6.3.4 Lack of Nonverbal Cues

A lack of verbal and nonverbal cues is another limitation associated with online treatment. Some therapists and participants may find it difficult to provide therapy without having access to verbal and nonverbal cues (Barak, 1999). Individuals are often used to communicating with voice and body expressions. The lack of verbal cues may make it difficult to communicate effectively and cause misinterpretation. A therapist communicating via online treatments requires clear and succinct writing skills to be able to effectively interact with clients.

6.3.5 Conclusion

There are numerous benefits associated with use of online treatments. Online treatments make treatment more accessible, reduce costs and may be particularly beneficial for people who may find it difficult to seek treatment, such as people who are shy. Taken together with the findings from chapter 5, online treatments may potentially be an ideal medium for the treatment of shyness and social phobia. Online treatment does, however, present some problems. Attrition, confidentiality, treatment satisfaction and non-verbal cues are some limitations that impact online treatment and research. Nevertheless, the studies conducted thus far suggest that online treatments are an effective way to reduce psychological problems. In the next section, studies investigating the online treatment of shyness and social phobia are discussed.
Figure 5. RCT design study for online treatment.
6.4 The Online Treatment of Shyness and Social Phobia

The research examined thus far suggests that there is a rapidly growing body of clinical research exploring the use of the Internet for the treatment of mental health issues. Since the 1990’s the online treatment of mental health problems has expanded, particularly for psychological disorders such as depression, panic disorder and eating disorders. Research has also examined the efficacy of online treatment programs for shyness and social phobia and, over the last five years, research in this area has been gaining momentum.

It may be argued that an online intervention for shyness and social phobia may reinforce avoidance of contact with people (Andersson, 2010); however, available research suggests that there are various positive implications associated with using the Internet for the treatment of shyness. As noted previously, figures clearly indicate that there are a high number of people who require treatment but don’t seek assistance. An online intervention may help remove some of the shame, stigma and embarrassment associated with seeking therapy and alleviate some of the pressure that socially anxious people feel when requesting assistance. From this perspective, an online environment may represent the ideal environment that is needed before change can occur. Further, as discussed in chapter 3, shy individuals already appear to be online, so adapting treatment to popular forums seems a logical step. There are also qualities of the Internet that make it an ideal environment for people who experience shyness. Andersson (2010) argues that for an online intervention to be successful exposure and modification of behaviours offline is important. Based on a review of the literature, to date there are approximately 15 controlled trials that have examined the efficacy of shyness/ social phobia programs developed for online delivery.
The following review will chronologically examine the available published reports on online treatment programs for social phobia and shyness. A chronological analysis is used in this review as it gives an indication of how Internet-based treatments have developed over time. A chronological analysis also reveals how research has gradually reduced therapist involvement. The majority of this research has been conducted in Sweden, Australia and Germany. Similar to the majority of online clinical programs developed for other mental health problems, all of these programs are CBT based. The reasons that CBT appears to be the predominant mode of therapy for online delivery relates to the efficacy of CBT for the treatment of shyness offline. As discussed in chapter 2, CBT is the most efficacious treatment for shyness and social phobia. CBT is also the predominant approach in all online interventions. This is likely to be due to the efficacy of CBT for a range of different psychological disorders but also because CBT lends itself more readily for online adaption. CBT is a directive and highly structured therapy which, compared to other forms of therapy, may be easier to adapt online. It is likely that once the Internet is regarded as an efficacious environment for therapy then a broader range of other alternative therapies will be tested online.

Andersson et al. (2006) were one of the first groups to develop and test a program aimed specifically at treating social phobia. Andersson is from Linkoping University in Sweden and has been one of the leaders of online interventions, developing interventions for a range of psychological problems including depression, panic disorder, headaches and social phobia. Andersson and his colleagues devised a 9 week program of social phobia for online delivery. The program was based on CBT methods as described in a range of self-help books, including Rapee (1998) and Antnoy and Swinson (2000), as well as other articles on social phobia. The content covered in the modules included: education about the symptoms and causes of social phobia, the
relationship between thoughts, feelings, behaviour and cognitive symptoms, cognitive distortions, challenging cognitive thoughts, reality testing, conversing skills and assertiveness. Each module included information, quizzes and exercises and ended with 3 to 8 essay questions that were required to be completed before moving on to the next module. The 9 week online program was also combined with two face-to-face in vivo group exposure sessions. The researchers anticipated that a text based treatment for social phobia would not be adequate and thus incorporated the exposure sessions to enhance treatment outcomes (Andersson, 2009). For the exposure sessions, participants were required to attend the university where the research was being conducted and take part in 2 separate 3 hour group sessions led by two therapists. In conjunction with the therapist contact in the exposure sessions, participants had email access to a trained clinical psychologist who would provide responses to questions and feedback on homework within 24 hours.

A total of 237 participants were recruited and asked to complete 5 primary measures: Social Anxiety Scale (SAS), Social Phobia Scale (SPS), Social Interaction Anxiety Scale (SIAS), Social Phobia Screening Questionnaire, Personal Report of Confidence as a Speaker, as well as 3 secondary measures: Montgomery Asberg Depression Rating Scale (MADRS), Beck Anxiety Inventory (BAI) and the Quality of Life Inventory (QOLI). To be included in the study participants needed to have: (1) a diagnosis of social phobia; (2) be afraid of giving a public speech (as this was what the exposure exercises focused on); (3) have a lowered score on the measure of depression with no suicidal thoughts; (4) have no history of using CBT and undergo no other psychological treatment whilst taking part in the study; (5) if taking prescription drugs, to have not changed the dosage within the last 3 months and keep the dosage constant during program; (6) have access to a computer and the Internet; and (7) be over the age of 18. Of the
237 participants, 64 participants fit the inclusion criteria and were randomly allocated to either a treatment or waiting list group. Significant improvement was found on the SAS, SPS, SPSQ, PRCS, BAI and QOLI. Treatment gains were maintained at one year follow up.

There were, however, some limitations to this study. The sample in this study had higher rates of education compared to the general population. This may have biased the results. Inclusion of a sample more representative of the population would be beneficial. There were also methodological issues, in that participants received a mixed treatment (such as only completing one exposure) and there were differences in the proportion of treatment modules finished by participants and some of these were completed at different times. Nevertheless, this was the first study to examine the efficacy of incorporating an online treatment for social phobia with face-to-face exposures and results show reductions in social phobia symptoms.

Based on the findings of Andersson et al. (2006), Carlbring et al. (2007) conducted further investigations to determine if they would obtain similar findings when the live exposures were omitted and replaced with weekly telephone support from a therapist. The researchers were gradually reducing the face-to-face elements of the program with the intention of identifying what the crucial elements of the intervention were and, essentially, determining if the program could function in a more independent and online format. The same study was rerun, using the same measures, inclusion criteria (with the exception of one added: does not meet diagnostic criteria for psychosis or substance misuse) and 9 modules to be completed over 9 weeks. The important difference in this study was that, compared to their previous study, the face-to-face exposures were excluded and replaced with one weekly telephone call from a therapist whose purpose was to provide positive feedback and answer any questions. The average length of each weekly telephone call was recorded as being 10.5 minutes. Similar to their previous study,
participants could contact a trained psychologist via email. In this study, 62 participants were included in the study and divided into treatment or wait-list control. Results were strikingly similar to those found in their previous study with significant differences found for all the primary measures. Similar to the study by Andersson et al. (2006), treatment gains were maintained at the one year follow up.

There are some limitations of this study that need to be considered. Similar to the study by Andersson et al. (2006), participants in this study had higher levels of education compared to the general population. Carlbring et al. (2007) reported that another problem relates to the exclusion of suicidal participants. Although this is common in online interventions, it may have reduced the number of depressed participants in the sample. Anxiety and depression often co-exist and the exclusion of these participants raises questions about whether the treatment would be effective for depressed participants.

Long-term follow-up for this study was conducted by Carlbring, Nordgren, Furmark, and Andersson (2009) 30 months post-treatment. The wait-list group in this study received the same intervention as the treatment group but without the weekly telephone support. This enabled the researchers to compare the Internet intervention with/without telephone support over the 30 month period. Results showed improvements in both groups from pre-to post, post to follow up on all the primary measures with no major differences between the two groups. These results are similar to those found in face-to-face delivered CBT and indicate that telephone support appears to add little effect for the online treatment of social phobia.

Further trials from this same Swedish group were again conducted to determine if there would be differences between an Internet delivered cognitive behaviour therapy with five group exposure sessions and an Internet program alone. Tillfors et al. (2008) used the same measures
and CBT Internet program as used in the two previous studies. The main difference in this study, compared to the previous study, was that the participants in the online treatment group did not receive any weekly telephone support. Instead, participants received email contact with Internet-therapists spending an average of 35 minutes per week providing email support to each participant. Further, in this study, the online treatment and exposure group was included to enable a direct comparison to the online treatment group. The only difference between these two groups was that individuals in the online treatment and exposure group attended five exposure sessions where they were required to gradually expose themselves to public speaking. They were required to videotape themselves whilst providing a 5 minute oral presentation and then take this video home and rate the quality of the presentation and visible signs of nervousness. In the last session participants were required to give a 5 minute presentation in front of 11 staff members at the university.

In this study there were a total of 65 participants who were randomly allocated to the online treatment ($n=19$), online treatment and exposure ($n=18$) or wait-list ($n=28$) group. On the primary outcome variables, as well as depression ratings, both groups showed significant pre-to post, and pre- to-follow-up improvement. No differences were noted between the online treatment and online treatment exposure groups.

In an Australian study, Titov et al. (2008) used The Shyness Programme as their mode of treatment. The Shyness programme consists of 6 online lessons which were written for a separate online program and modified for the Shyness programme. The six lessons consisted of: education about symptoms and treatment, development of an exposure hierarchy, cognitive restructuring and relapse prevention. The six lessons are built around an illustrated story of a young man with social phobia and with the help of his Aunt (a clinical psychologist) learns about
social phobia. Participants were required to do homework assignments and make regular email contact with their therapist. They were expected to complete one lesson every 7-10 days and to complete the six lessons within 10 weeks of starting. Another major difference in this study compared to the previous studies mentioned was the incorporation of an online discussion forum. Participants were expected to contribute to online discussions.

In order to take part in this study, participants were required to: (1) be a resident of Australia; (2) be at least 18 years of age; (3) have access to a computer, the Internet, and use of a printer; (4) not currently participating in CBT; (5) not using illicit drugs or consuming more than 3 standard drinks per day; (6) not experiencing any psychotic symptoms or severe symptoms of depression (suicidal ideation); and (7) been taking the same dose for at least 1 month and did not intend to change that dose during the course of the program. Similar to the previous studies, Titov et al. (2008) used the SIAS and SPS. They also incorporated the Kessler-10, the PHQ-9, and the World Health Organisation Disability Assessment Schedule.

Of the 333 people who applied to take part in the study, 130 met the inclusion criteria. The Social Phobia section of the Composite International Diagnostic Interview Version was then administered via telephone interviews. A total of 105 participants were randomized to either treatment (50) or waitlist control (55). Results showed that there was a significant reduction in the symptoms of social phobia (SIAS and SPS). Change was also observed in the waitlist control group across time; however, the reduction was much greater in the treatment group. The magnitudes of the effect sizes for the symptoms of social phobia were comparable to those in face-to-face groups.

Titov et al. (2008) reported that high levels of self-disclosure and personal observations were made in the discussion forums.
In order to attempt to replicate their findings, Titov et al. (2008) conducted the same study with no changes to the inclusion criteria or treatment program. The Anxiety Change Expectancy Questionnaire and Credibility/Expectancy Questionnaire were also included to explore whether expectations or perception of treatment credibility are related to outcomes. 88 participants took part in the study (43 in the treatment group, 45 in the wait-list control group). Results were similar to those reported in their first study. A reduction in symptoms were noted in all primary measures but no differences were found for depressive measures or psychological distress.

Titov, Gibson, Andrews, and McEvoy (2009) also examined if the treatment impacted comorbid symptoms of depression and generalised anxiety disorder. Participants were divided into four different groups comprising social phobia only, social phobia with elevated depression symptoms, social phobia with elevated symptoms of generalised anxiety and social phobia with elevated symptoms of depression and generalised anxiety. Significant improvements in all four groups were noted. These results suggest that Internet based treatments are effective for reducing social phobia and comorbid symptoms. These results are promising as they suggest that, similar to offline therapies, online treatments can be used for a wide range of presentations. This is particularly important for shyness and social phobia, considering their high comorbidity.

In a third study conducted by Titov, Andrews, Choi, Schwencke and Mahoney (2008), they explored if participants were able to complete the Shyness program without clinician assistance. This study was also an RCT designed study with participants being allocated to one of three groups: a clinician-assisted CBT online treatment group, a self-guided online treatment group or a waitlist control. Results found that the clinician assisted treatment group was superior
to the self-guided group. Nevertheless, a decrease in symptoms were found for the self-guided group.

In another RCT study examining the online treatment of social phobia, Titov, Andrews, Choi, Schwencke and Johnston (2009) investigated the differences between an online treatment and online treatment with weekly reminder telephone calls. There were 84 participants in each treatment group. Results showed high completion rates and improved treatment for both groups, however, the group that had additional telephone reminders and support had higher completion rates and better outcomes compared to the standard online treatment. Titov et al. (2009) reported that between post-treatment and 6 month follow up participants continued to make improvements in symptoms of social phobia, while making improvements in mood, psychological distress and disability, with effect sizes increasing from 2.2 to 2.4 at 6 month follow up.

In the sixth study conducted by Titov et al. (2009) the efficacy of online treatment with weekly telephone calls and access to an online discussion board were compared. Forum group members were invited to post messages about progress and questions to an online discussion group that was moderated by a therapist. Results found that both groups completed a similar number of modules (79% of participants completed all 6 modules). Both groups were equally effective in the treatment of social phobia.

Titov et al. (2010) replicated their earlier RCT trials showing that an online intervention is an efficacious treatment for social phobia and examined if the inclusion of motivational enhancement strategies helps to improve completion rates. Motivational strategies included reflective questioning about participation, techniques, obstacles and strengths and cost/ benefits analyses. There were 108 participants with a diagnosis of social phobia. Results found significant
treatment gains in both groups that were comparable to face-to-face treatment. There was no evidence to suggest that the inclusion of motivational strategies was more beneficial than the online treatment. No significant differences were found between the two groups at post-treatment. There was, however, less attrition in the motivational strategies group, suggesting that the inclusion of these techniques may improve completion.

Berger, Hohl and Caspar (2009) investigated an online CBT based intervention for social phobia in Switzerland. Berger et al. (2009) used a 10 week program partly based on a guide used by Clark and Wills (1989). 52 individuals were randomly assigned to an online treatment or a waiting list control group. Significant differences between the two groups were found at post treatment on all the primary outcome measures. Berger et al. (2009) also included discussion groups, however, how these functioned is not clear and no results about the impact of discussion boards were reported.

In two trials Furmark et al. (2009) examined the efficacy of various forms of treatment for social phobia. In the first trial, an online intervention was compared with and an offline self-help manual and a wait list control. The online intervention was a 9 week CBT based program with email access to a therapist. Individuals in the self-help group received the same manual in book form with instructions. Both the online and offline group showed significant improvement compared to the wait-list control on all social phobia measures. The offline and online group did not significantly differ on any measure after treatment completion. In follow up, however, the online treatment group had higher treatment outcomes on measures of social phobia. In the second trial, two further groups were included in the intervention: an internet-delivered applied relaxation group and an offline self-help group that also had access to an online discussion group. Significant differences were not found across the different groups. Effect sizes were,
however, higher in the offline self-help group that had access to the online discussion group compared with the offline self-help group alone. The number of completed modules was also higher in this group. This suggests that the incorporation of discussion groups may facilitate treatment.

Berger et al. (2011) compared the use of three online treatment groups: unguided self-help with no contact with a therapist, guided self-help with weekly email contact and Internet self-help with participants able to request telephone or email contact form the therapist. Improvements in symptoms were found in all three treatment groups. No difference was found between the three treatment groups on change or drop out. These results suggest that even without support online treatment is still highly effective.

Andrews, Davies and Titov (2011) conducted a RCT designed study to examine the effectiveness of an online CBT program with face-to-face CBT for 37 participants with a diagnosis of social phobia. The online treatment consisted of 6 sessions completed over an 8 week period. Content was presented as a story with a man who has social phobia. The content covered in the sessions included education, exposure hierarchy, graded exposure, cognitive restructuring and relapse prevention. In contrast to online treatment, the face-to-face sessions were conducted weekly in a group setting over a seven week period. Each session went for 4 hours. All participants completed the SIAS, SPS, and World Health Organisation Disability Assessment Schedule pre and post intervention. Results showed that both the online and face-to-face group produced similar benefits in symptom reduction. The benefit of the online intervention was noticeable in that participants in the online intervention spent 13 times less time in treatment compared to the face-to-face group (Andrew et al. 2011). This study is important as
it is the first known study to directly compare an online and offline CBT group. The sample size for each group was, however, relatively small.

Similarly, Hedman et al. (2011) compared the effectiveness of cognitive behavioural group therapy and an online CBT based treatment. There were 126 participants with a diagnosis of social phobia who took part in the study. Both groups made large improvements. The treatment was the same one used by Andersson in his previous RCT studies. Participants had access to a therapist via an online messaging system and replies were given by the therapist within 24 hours. Offline group treatment involved 14 group sessions. The sessions lasted for 2.5 hours per session and were conducted over 15 weeks. At follow up, 65% of participants in the online group responded to treatment and 45% in the offline group responded to treatment. Treatment gains were sustained after follow-up.

In the most recent known publication, Andersson et al. (2012) compared guided online treatment with a moderated online discussion group rather than a pure waitlist control group. There were 204 participants with a diagnosis of social phobia who took part in the study. The online group showed superior outcome on the social phobia scales compared to the moderated online discussion group. The results show that online treatment for social phobia is as effective as face-to-face treatment and treatment gains are sustained at follow up. The authors also investigated if online treatment led to an increase in knowledge of social phobia. Small but statistically significant gains in knowledge of social phobia were found.

Taken together these studies suggest six key ideas about treating shyness and social phobia online: (1) CBT based online interventions are effective for treating social phobia. The published studies report significant reductions in primary measures of social phobia symptoms.
The reductions reported are comparable to offline CBT treatment; (2) minimal therapist contact leads to symptom reductions. The studies by Andersson, Carlbring and colleagues demonstrate that face-to-face exposures or telephone calls from therapists are not needed in order for change to occur. Although some research by Titiov suggests that telephone contact, other research suggests that online treatment can be just as effective without it. This is an important finding considering that exposure is regarded as being an important element of offline treatment and is difficult to replicate in an online setting. It appears that with the correct information, participants are able to successfully conduct their own exposures. Weekly email contact with participants appears to be the ideal amount of contact; (3) the number of modules in each program generally ranges from 6-10. This appears to be the optimum number of modules. Using over 10 models may lead to further drop-out; and (4) attrition rate. The attrition rates for the treatment group for the studies ranged from 1-60%. Interestingly, interventions with some of the highest drop-out included two face-to-face exposures; (5) online treatment for shyness and social phobia appears to be effective across different samples and cultures and for different social phobia symptoms. Research has found a significant reduction in social phobia symptoms in different countries, including Sweden, Australia and Germany, and ages. Tillfors et al. (2011) reported improvements in high-school students with social phobia following the completion of an online program; (6) the effects of online treatment are long lasting. In their follow-up examination of 80 participants who had completed online treatment, Hedman et al. (2011) found significant improvements after 5 years. Mean scores on the Liebowitz were reduced from 71.3 to 40.3.

The studies presented in this section demonstrate the efficacy of CBT based online treatments for social phobia and contribute substantially to our understanding of online treatments. Nevertheless, this is a relatively new area of research and more studies are needed to
support and replicate these findings and to help provide us with a clearer understanding of online treatment.

These studies also raise further questions about the way in which online treatments can be successfully implemented. First, there are questions around the treatment guides used. All of the studies presented here are CBT based and incorporated similar techniques. Nevertheless, there is room for variation in the way in which these techniques can be communicated and the way material is presented. For example, the research group in Sweden is predominately text-based, whilst Berger et al. (2009) incorporate more multimedia. Further details about how these online treatment programs were constructed would be useful for future developers. How the program was developed and the process involved is important as this material forms a key component of the intervention. Adapting an offline manual for online delivery has many potential benefits. Research investigating an adaption of an offline model into online may tell us similarities and differences between the two mediums. It may also allow for a more direct comparison between the two.

The use of a discussion board also raises a number of questions. Titov et al. (2010) and Furmark et al. (2009) reported benefits from incorporating a discussion board forum, however, details regarding the use of discussion boards remain unclear. Are discussion boards an important component of treatment? Does incorporating discussion boards lead to better treatment gains? It would be beneficial for future research to investigate this area.
Chapter 7: Adaption of a Treatment Manual into an Online Environment

Chapter Overview

This chapter examines the approach and processes involved in adapting an offline treatment manual into an online context. The chapter begins with a discussion around manualised treatment. This is followed by a description of the Social Fitness manual and a justification as to why this manual was chosen to be adapted for online delivery. The process of adaption is described in detail, including a comparison of the online and offline manual, the structure of the online manual and the steps taken to convert the offline manual into an online environment.

7.1 Manualised Treatment

There are a number of manuals that have been developed for the treatment of shyness and social phobia. The Social Fitness model is one manual that has been used to treat shyness and social phobia. This manual is an ideal manual for online adaption as it is a CBT based treatment with exposure, has been found to successfully reduce shyness and social phobia and includes both a client and a therapist manual. This is also the first online treatment that has been developed to specifically treat the symptoms of shyness. Other online interventions have predominately focused on treating social phobia.

7.1.1 The Social Fitness Model

The Social Fitness manual was developed by Dr Lynne Henderson in 1994. The manual was based on treatment programs and research conducted at the Stanford Shyness Clinic. The term ‘Social Fitness’ refers to the idea that, similar to physical fitness, in order to stay in social shape we need to be constantly exerting effort and working out by making social contact with others. The purpose of the manual is to teach individuals not to avoid social situations and that, just like physical fitness, time and effort is required to yield results. The term social fitness is
also used to reduce the labelling and dichotomising of individuals into categories such as “socially phobic” and “socially anxious” (Henderson & Zimbardo, 2002). Social fitness suggests that all of us benefit from exercising social skills. Rather than pathologising individuals experiencing shyness, the Social Fitness manual aims to guide individuals to empower and help themselves (Henderson & Zimbardo, 2002).

The offline manual was developed for both individual and group treatment and consists of 14 weekly sessions. The manual is a CBT exposure based therapy that incorporates psycho-education, cognitive restructuring, role-playing and addressing and challenging of attributional styles.

Studies examining the Social Fitness manual have shown that it is successful for the treatment of shyness. Results have been based on data obtained from clients attending the Shyness Clinic. Henderson (2009) reported significant reductions in shyness, depression, fear of negative evaluation, self-blame, other blame and socially avoidant behaviour. Negative thoughts about others and anger have been shown to decrease and self-assertion and self-expression increase. A follow-up study of 44 clients indicated that they maintained gains for up to five years post treatment on the Anxiety Disorders Interview Schedule (Henderson, 2006).

7.2 Adaption of the Offline Manual Online

The adaption of the manual for implementation in an online context conversion was a two stage process. First, the offline manual needed to be reduced and rewritten for online delivery. Second, the online manual needed to be converted into webpages. There were few resources and little research to guide the adaption of offline treatment manuals into an online environment. This review is divided into two sections: the process of converting the offline Social Fitness
manual into an online manual is firstly described; this is followed by a description of how the online manual was transferred to the web.

### 7.2.1 Construction of Online Social Fitness Manual

When adapting the Social Fitness manual for online delivery, it was crucial to stay faithful to the original manual. A comparison of the offline and online treatment manuals is presented in Table 12. Validity of the online manual was checked by Dr Lynne Henderson, who developed the offline Social Fitness manual. Once the online manual was written it was sent to Dr Henderson for approval. Dr Henderson provided feedback regarding the faithfulness to the original manual and the perceived adaptability of the manual online.

### 7.2.2 Overview of Social Fitness Manual

The Social Fitness manual was developed by Dr. Lynne Henderson whilst facilitating shyness group programs at Stanford University. The manual was developed after 20 years of interaction and treatment of individuals who experience shyness. The manual was first implemented at The Shyness Clinic at Stanford University and is now used at The Shyness Clinic at Palo Alto, California as well as at various clinics throughout the US (Henderson, 2002). There is a Social Fitness therapist manual and a client manual. These manuals have similar content but the client manual is written as if directly talking to the client. Both manuals were used in the construction of the Social Fitness online manual but there was a stronger focus on the client manual. The client manual targets the same audience as the Social Fitness online manual.
Table 12.

*Comparison of Offline and Online Social Fitness Manuals*

<table>
<thead>
<tr>
<th></th>
<th>Offline Manual</th>
<th>Online Manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Population</td>
<td>American (well-functioning)</td>
<td>General population</td>
</tr>
<tr>
<td>Sessions</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Sessions</td>
<td>Structured</td>
<td>Structured</td>
</tr>
<tr>
<td>Key areas</td>
<td>Psycho Education</td>
<td>Psycho Education</td>
</tr>
<tr>
<td></td>
<td>Fear Hierarchy</td>
<td>Fear Hierarchy</td>
</tr>
<tr>
<td></td>
<td>Cognitive Restructuring</td>
<td>Cognitive Restructuring</td>
</tr>
<tr>
<td></td>
<td>Exposure</td>
<td>Exposure</td>
</tr>
<tr>
<td></td>
<td>Attributional Style</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Self-Concept Restructuring</td>
<td>Self-Concept Restructuring</td>
</tr>
<tr>
<td></td>
<td>Negative Thoughts about Others</td>
<td>Negative Thoughts about Others</td>
</tr>
<tr>
<td></td>
<td>Negative Thoughts about Self</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Anger Management</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Self-Assertion</td>
<td>Self-Assertion</td>
</tr>
<tr>
<td></td>
<td>Goal Review</td>
<td>Goal Review</td>
</tr>
<tr>
<td>Questionnaires</td>
<td>Social-Interaction Log</td>
<td>Social-Interaction Log</td>
</tr>
<tr>
<td></td>
<td>EOS</td>
<td>EOS</td>
</tr>
<tr>
<td></td>
<td>ShyQ</td>
<td>ShyQ</td>
</tr>
<tr>
<td></td>
<td>BSShyQ</td>
<td></td>
</tr>
<tr>
<td>Exposure</td>
<td>Role plays and In vivo</td>
<td>In vivo</td>
</tr>
<tr>
<td>Homework</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Group Interaction</td>
<td>Yes</td>
<td>Only in Group Treatment</td>
</tr>
</tbody>
</table>
7.2.3 Target Population

The Social Fitness manual is aimed specifically at treating symptoms of chronic shyness and social phobia. Henderson (2002) reported that at the Palo Alto Shyness Clinic 96% of patients met the criteria for generalized social phobia and 70% for avoidant personality disorder. The manual was originally developed for individuals living in and around the Stanford/Palo Alto area. Individuals attending shyness groups developed by Dr Henderson were often working in the field of IT in Silicon Valley. The manual has been used predominately in college populations and in community treatment centres.

The target population for the Social Fitness online manual is anyone over the age of 18 who is able to speak English. As the offline manual was developed in America and the adapted online version in Australia, the manuals may have cultural biases. The target population is broader than the offline manual which meant that changes needed to be made to the way language was expressed in the manual.

7.2.4 Transferral of Sessions into Modules

In the offline Social Fitness manual there are 12 weekly one and a half hour sessions. Each session focuses on a specific subject area. Attempts were made to maintain the session format but for the purpose of online delivery sessions were converted into modules. The term modules was seen as more appropriate than sessions as individuals work through each module individually, with each module representing an important segment of the entire program. It was recommended that each module would take approximately 50 minutes to complete. As part of each module participants were required to complete additional readings, activities and homework tasks. It is suggested that one module should be completed per week.
7.2.5 Language

As previously noted, the offline manual was originally intended for a specific target audience. As the target audience was broadened for the online version, some changes in the expression of language were deemed necessary. Andersson (2009) suggests that attempts should be made to include simplified language and multimedia presentations (such as videos) to improve text comprehension. Attempts were therefore made to use ‘common language’ to ensure that participants would be able to understand the material.

7.2.6 Structure of Modules

The original Social Fitness manual consists of structured sessions whereby each session typically consists of the following:

- Monitor progress (completion of the Between Sessions Questionnaire)
- Set agenda for the session
- Review assigned homework
- Discuss new concepts
- Build cognitive Skills
- Build behavioral Skills
- Provide feedback to therapist or coach
- Assign homework

During sessions it is important that all these aspects are covered, however it is not seen as problematic if, at times, focus deviates from the content specified in the manual. The aim of the Social Fitness groups is to be flexible and adaptable to the needs of the participants.

Attempts were made to ensure that this structured format was transferred onto the online version of the Social Fitness program. Incorporating structure into the format of sessions
provides participants with some predictability over the sessions and helps to ensure that they understand what is expected of them. The structured format for sessions also allows the participant to get into a regular routine of completing the questionnaires and activities. The structure for the online version of the Social Fitness manual was made as similar as possible to the offline version. Each module was structured in the following format:

- Review assigned homework (completion of Homework Quiz)
- Module agenda
- Present new concepts
- Build cognitive skills
- Build behavioral skills
- Module summary
- Homework
- Share ideas (if in the Discussion Group)
- Contact facilitator (if required)

There are few differences between the structure of the online and offline treatment programs. In the online program the “monitor progress” section has been removed as the Between Sessions Questionnaire was not adaptable online. The “review assigned homework” has been placed before “module agenda” to ensure that: (1) participants have an understanding of the previous material before commencing the latest module; and (2) that participants have attempted to complete their homework over the previous week. Although homework was not directly reviewed, participants were asked to complete an online quiz before starting a new module. If participants did not get all of the questions correct they were encouraged to go back and read the previous modules again. Each module focuses on a specific subject area. When a new concept is
introduced, the concept is described and then instructions are provided on how to use the skills taught. A summary of the material presented in the modules was also provided at the end of each module.

7.2.7 Reducing Content

The offline Social Fitness client manual is 178 pages long (excluding references) and covers areas including social skills training, exposures to feared situations, cognitive restructuring, attributional styles, self-concept distortions, communication training and assertiveness training. The content is purposely broad and aims to bring about change in four key areas: behaviour, reducing physiological arousal, changing unhelpful thinking patterns, and recognising and addressing negative emotions (Henderson, 2002). Changes in these four areas are seen as crucial for a reduction in shyness to occur.

Maintaining the four areas of change was seen as important. Permission and direction was obtained from Dr. Lynne Henderson when deciding what material should be incorporated or edited. A review of previous social phobia interventions indicated that the average number of modules on these sites was 8. 12 modules was deemed too long and too much of a commitment for an online intervention so it was agreed that the Social Fitness online manual would be reduced to 9 modules.

A list of the titles of each module is presented below:

- Module 1: Understanding shyness
- Module 2: Identifying goals and construction of a fear hierarchy
- Module 3: The three vicious cycles and cognitive restructuring
- Module 4: Challenging unhelpful thoughts
- Module 5: Breaking the shyness cycle
• Module 6: Self-concept distortions
• Module 7: Negative thoughts about others
• Module 8: Self-assertion
• Module 9: Goal review and evaluation

The three main areas that were not included in the online manual were: attributional styles, negative thoughts about self and anger-management. The offline manual incorporates both cognitive restructuring exercises and attributional style and self-concept restructuring exercises. Henderson (2002) reports in her manual that the attributional and self-concept distortions are important because self-blame and shame become highly salient after exposures, as group members frequently denigrate their performance, distorting both their recent behavior and rehearsing and elaborating negative beliefs about the self. Although attributional styles was viewed as important and valuable to the intervention, it was removed from the online version because: (1) the material is complex and difficult to communicate in limited words; (2) the number of modules needed to be reduced; (3) participants were already required to complete numerous forms and homework sheets so including attributional styles would have increased burden on participants; and (4) other online CBT interventions have not included attributional styles and still been successful in reducing social phobia. For these reasons the section on attributional styles was not included in the online Social Fitness manual.

7.2.8 Exposure

Exposure exercises represent a key component in the offline Social Fitness manual. First, participants take part in simulated exposures during the allocated sessions with the facilitator and other group members present. The simulated exposures are similar to role plays and involve group members acting out various anxiety-provoking social interactions. Group members are
then required, as homework, to practice these skills in-vivo, or in real life. The exposure exercises represent an important component of treatment as they teach participants to confront anxiety-provoking situations and to challenge any unhelpful thoughts that they may experience.

Incorporating exposure training into the online treatment manual was viewed as fundamental. There were, however, various difficulties associated with adapting the exposure exercises online. In particular, creating simulated exposures (role plays) to occur in a virtual world was problematic. Some studies have used virtual exposures in their interventions to effectively reduce anxiety. However, purchasing the necessary software to conduct virtual exposures can be expensive and attempting to virtually simulate anxiety provoking situations for social anxiety can be extremely difficult due to the diversity of what people find anxiety provoking. For example, some individuals who are shy may find talking to the opposite sex anxiety provoking, whilst others may feel comfortable in this situation.

Requesting participants to record themselves role playing their anxiety provoking situations and then posting it online to obtain feedback from other group members is one method that could be used to attempt to capture the simulated exposures in an online environment. There are, however, various problems associated with incorporating videos into an online intervention. In particular, the uploading of personal videos online raises fundamental ethical issues around confidentiality and protection from harm. It may be difficult to control what happens to the videos once they are posted online. Even with a secure server that is password protected, it is difficult to guarantee that this information will be kept safe from hackers. Further, as group participants would have access to each other’s video, the confidentiality of group members is reduced. This poses an ethical risk for the participants, particularly when such personal visual information is being disclosed. Another problem with the use of videos is getting participants to
actively post them online. Participants cannot be forced to post videos and the anonymity associated with the Internet may increase the likelihood that participants will simply not post them.

Based on the ethical difficulties associated with managing the confidentiality of the videos online and the accumulation of evidence from research investigating online social phobia treatments (see previous section), it was decided that participants would be provided with detailed instructions on how to create a fear-hierarchy, how to conduct an exposure and then be asked to conduct the exposure themselves. Participants were asked to complete the same exposure form after conducting an exposure that was used in the offline manual. Similar to the offline manual, instructions on how to conduct an exposure was provided in module 3. From this module onwards participants were asked to complete a minimum of one exposure per week and to gradually work their way up their fear-hierarchy.

7.2.9 Homework

In the offline version of the Social Fitness manual homework is assigned at the end of each session and participants have one week to complete the homework. Participants create their own goals for what they would like to achieve for homework but in each session there is usually an expected level of homework to be completed. For example, in the first session participants are asked to choose some anxiety provoking social situations and expose themselves to at least three of these situations. Participants are therefore given the freedom and flexibility to create their own achievable goals but are still required to meet the number of exposures set for the week. Similarly, in the online program participants are required to do homework every week and participants play an active role in creating their own homework tasks. Homework gradually increases in complexity over the sessions.
Online treatment programs for shyness and social phobia also typically include quizzes or essays to ensure that participants comprehend the material they are reading. Quizzes were also incorporated into the Social Fitness online program. Participants were asked to do the quizzes before starting each module and if they got any questions wrong they were asked to go back and read the module again.

7.2.10 Forms

In the offline manual participants are asked to complete numerous forms throughout their treatment. Attempts were made to include all of these forms, with only one major form (The Between Sessions Questionnaire) being excluded. In both the online and offline manuals participants are asked to complete the Social Interaction Log, Challenges to Automatic Thoughts Form and Strategies for Social Situations form. The same forms were included online, however, some alterations were made to the design of these forms in an attempt to make them more user friendly.

7.2.11 Facilitator Contact

Participants completing the Social Fitness online program completed the modules individually. Participants had access to a registered clinical psychologist who facilitated the group. Participants were able to contact the facilitator via email as frequently as necessary; however, participants were informed that they would only receive a reply from the facilitator once per week. The decision to use minimal contact was based on the research by Andersson (2009). Participants also received a weekly email from the facilitator reminding them what module they should be up to.
7.3 Conversion of Online Manual to Web

Once the online manual had been written and feedback from Dr. Henderson was obtained, the manual was then converted to web pages.

7.3.1 Software

The course management site, Blackboard, at RMIT University was used to deliver the online Social Fitness program. Blackboard is a secure site that can only be accessed with a username and password obtained by the RMIT University Information Technology Helpdesk. Adobe Dreamweaver CS4 was used to convert the Social Fitness online manual into web pages. Links to the Social Fitness modules were made from Blackboard.

7.3.2 Navigation

The importance of ease of navigation has been emphasised by numerous authors and is described in more detail in the next chapter. Attempts were made to ensure that participants were able to easily navigate each of the Social Fitness modules. To simplify navigation, buttons were placed on the left hand side. These buttons represented the subject matter covered in the module and when clicked on the user would be led directly to the page. Users could also use the arrow in the bottom right hand side to move to the next page. There were always seven buttons on the left hand side and each module included a module summary and homework button. The Social Fitness banner was present on every web page to assist with orientation and all of the modules had the same format and design.
Attempts were made to ensure that the site was consistent throughout the nine modules. Images were used as indicators of the content and the design was consistent throughout the modules. For example, the image below was the indicator for the tips box throughout the modules.
7.3.3 Text

When adapting the manual online a major consideration was the amount of text displayed on screen. Readability and the amount of text presented on each web-page is considered an important factor in the website usability literature (Bock et al., 2004; Nielsen, 2000). Attempts were made to shorten sentences, limit the amount of information in each paragraph, break information into smaller chunks and limit the amount of detail on each web page.
Figure 8. Example of online Social Fitness webpage.

7.3.4 Short Films

Short films were incorporated into the Social Fitness website to help convey information, show how to complete forms and help normalise symptoms experienced. Andersson (2009) suggests that multimedia may help information be more accessible. There were a total of 14 films included throughout the Social Fitness website. The short films focused on three different characters (Casey, Ben and Helen) that experience shyness. Scripts for the short films were based on material and examples used in the Social Fitness offline manual wherever possible. Excerpts from the therapist manual that provide examples of interactions between a therapist and a client as well as descriptions on how to fill out forms were used as the basis for three scripts. The remainder of the scripts were written by the researcher. Backgrounds of the characters and their experiences of shyness were developed by the researcher based on symptoms presented in the
shyness literature. In the first two modules the characters discuss the symptoms of shyness they experience, how their shyness impacts them and what it was like for them growing up with shyness. Below is a screen shot of the short film of the character Ben who is introduced in the first module.

Figure 9. Example of online Social Fitness webpage.

As the participant progresses through the Social Fitness modules the three characters move through the treatment with them. The characters demonstrate how to fill out the Social Fitness forms, how to complete a fear-hierarchy and discuss problems they encountered conducting exposures and challenging thoughts. Short films were included for a range of purposes. Short films were used to help reduce the amount of text needed and promote interaction with the
program. The objective of the short films was to help model behaviour to participants and provide participants with solutions to potential problems they may be experiencing. Attempting to address potential difficulties that may arise was seen as particularly important because when the Social Fitness manual is used offline any questions or problems can be immediately addressed, however, when online, participants must email the facilitator and wait for a reply. The films aimed to address any likely questions the participants may have. Below is a screen shot of a short film presented directly after instructions for the development of a fear hierarchy have been provided.

![Figure 10. Example of online Social Fitness webpage.](image-url)
7.3.5 Review and Security of the Site

Once the web pages had been created Dr. Henderson was again asked to review the pages to ensure that she was satisfied with the material. The webpages were then linked to the RMIT Blackboard site. The Blackboard site is a secured site that requires a username and password for access.
Chapter 8: Study 2: Usability Study of the Social Fitness Program

Before software can be reusable it first has to be usable.

Ralph Johnson

Chapter Overview

Following the adaptation of the offline Social Fitness manual into an online environment, research investigating the interactivity and functionality of the site is needed. This chapter focuses on the usability of the Social Fitness website. First, the importance of conducting usability research is discussed and then the results from the usability study are presented. The chapter concludes with the idea that the Social Fitness site has adequate usability and that the designed website is appropriate for further investigation into the effectiveness of the site to treat shyness.

8.1 The Usability of the Social Fitness Program

The advent of online interventions presents challenges not seen in offline interventions. The construction of an online treatment intervention requires consideration not only of how therapeutic the material is but also how the material is accessed, communicated, and understood. The effectiveness of online interventions and websites in general is dependent upon its usability. Usability refers to the measure of the quality of the user’s experience when interacting with a system, such as a website (Bock et al., 2004). Usability relates to the entire website experience from first accessing the web page, understanding and interpreting the content, the way information is presented with regards to font size and multimedia and how the user is able to navigate their way around the site. The purpose of this study was to explore the usability of the
Social Fitness website and to make design change recommendations based on the feedback received.

The usability of a site has important implications for performance and the future use of that site. Research shows that the usability of websites is associated with performance improvement (Took, 1990). Palmer (2002) found that the success of a website is associated with usability factors, such as navigation, content and interactivity. If users are able to interact with websites and information is communicated effectively then individuals will use the website more successfully. If a site has design or a navigation problem then it is less likely to be accessed (Buschke, 1997). Identifying and assessing issues such as navigation and interaction forms a crucial part of the website development process.

A number of aspects relating to the usability of websites have been identified. Key aspects of usability that have been applied to web design include: navigation, content, and accessibility (Bock et al., 2004; Nielsen, 2000). Navigation refers to the ability to move easily around the website, navigate from one page to the next and to find what one is looking for. The content of the website should be ordered in a way that feels logical to the user and all aspects of the site should be easily accessible. Bock et al (2004) suggest providing consistent navigation bars and using descriptive text for links to increase ease of navigation. The content of the website refers to the quality of the material that is presented on each web page. The content should be organised, consistent and high quality. The website should incorporate interactive components such as media that take advantage of the capabilities of the medium (Nielsen, 2000). Another aspect of usability is accessibility. This refers to the technical aspects of the site. A website is seen as being accessible if users are able to easily enter the site, download material from the site,
view pages in alternative formats and scroll down the web page (Bock et al., 2004). It is important to consider these three usability aspects when developing and testing a website.

There are a number of different ways that usability can be tested. Usability can be tested by observation, videotaping and audio-taping (Nahm, Preece, Resnick & Mills, 2004). These methods, however, are often time-consuming and expensive. The administration of questionnaires is viewed as a convenient and inexpensive method of usability analysis.

The aim of the current study was to examine the usability of the Social Fitness website by asking reviewers to evaluate the site using a questionnaire. An examination of the usability of the Social Fitness website is crucial for the successful delivery of the program. The Social Fitness manual has been shown to be effective in treating shyness offline; however, as this is first time that the manual has been adapted online a review of its usability is necessary. There were limitations to the amount of creative control over the construction and design of the Social Fitness website as the program was accessed via Blackboard through RMIT University. The navigation tools in Blackboard were pre-developed and were unable to be altered. However, the modules containing the Social Fitness information were developed from the beginning, therefore consideration of usability procedures when constructing this section was particularly important.

8.2 Method

8.2.1 Reviewers

There were 6 reviewers (3 females and 3 males) recruited to take part in the usability study. Reviewers were selected to reflect a variety of different professional backgrounds. Reviewers included: the author of the Social Fitness manual, one participant who was a registered psychologists with specialist training in CBT, one participant who was an information
technology consultant and three members of the general public. With the exception of Dr Henderson, no reviewer had any previous involvement with the Social Fitness manual or had any financial interest in the program.

8.2.2 Measures

Participants completed a usability survey package that consisted of the Social Fitness Usability and Function Questionnaire and the Questionnaire for Assessing Website Usability.

*Social Fitness Usability and Function Questionnaire.* This questionnaire was designed by the researcher specifically for this study. The questionnaire consisted of a table for each module which was divided into categories for each of the webpages. Reviewers were asked to note any issues regarding spelling, grammar and navigation for each of the web pages. Space was provided underneath the webpages for participants to provide any comments they had about the module.

*Questionnaire for Assessing Website Usability.* This questionnaire was developed by Tullis and Stetson (2004) and was designed to measure the perceived usability of interactive systems. The questionnaire was chosen due to its perceived ability to address the three aspects of usability discussed in the introduction. The questionnaire consists of nine statements regarding the usability of the website, such as “the website is visually appealing” and “terminology in the website is clear.” Website users respond by rating each statement on a seven-point scale ranging from “Strongly Disagree” to “Strongly Agree”. Each of the points on the scale is numbered from -3 to 3, with 0 representing the neutral point. Participants completed the questionnaire separately for each of the nine modules in the Social Fitness program. Two of the items of the Questionnaire for Assessing Website Usability were altered to reflect the use of the Social
Fitness program. Item 7, “I would be likely to use the website in the future” was altered to “If necessary I would use this website in the future.” Item 8, “I was able to complete my tasks in a reasonable amount of time” was changed to “As a user I understood what was expected of me at each stage.” Each module of the Social Fitness program was deemed to have adequate usability if the average score on each statement was between 0-3. A score below 0 would suggest inadequate usability and changes would therefore need to be made to increase usability. Little research has been conducted on the psychometrics of this questionnaire, however, Tullis and Stetson (2004) found that the questionnaire was able to reliably distinguish between ratings of different sites.

8.2.3 Procedure

Reviewers were requested by the experimenter to take part in the usability study. Reviewers were chosen to take part in the study based on their background and availability. Reviewers who consented to take part in the usability study were then emailed the usability survey and instructions on how to complete the survey. A request was sent to the RMIT University Information Technology Helpdesk to provide participants with a username and password and the RMIT University Helpdesk then privately sent these details to each of the individual reviewers. Reviewers were then able to access the 9 modules on the Social Fitness site. They were asked to provide feedback on each of the modules and rate each module individually. Participants were asked to complete the usability survey within 8 weeks of receiving access to the site. Participants were asked to complete as much of the modules as possible, but did not have to complete all modules to be included in the study. Once participants completed the survey package they were then emailed back to the experimenter. Data was graphed and analysed using Microsoft Excel.
8.3 Results

The results are presented in two sections. First, the key themes identified in the Social Fitness Usability and Function Questionnaire are presented. This is followed by an examination of the nine statements from the Questionnaire for Assessing Website Usability.

8.3.1 Social Fitness Usability and Function Questionnaire

Key themes were developed based on the comments left by the reviewers. Key themes are divided into strengths and limitations.

Strengths

1. Informative. Some reviewers commented that the material was informative and interesting. Numerous reviewers commented that material was engaging.

2. User-friendly. Some reviewers commented that the site was easy to use and navigate around. Reviewers commented that the structure was clear and simple.

3. Videos. Numerous reviewers reported positively on the use of videos to convey information. Reviewers commented that the videos appeared realistic, were relative to the text and helped make information easier to understand.

4. Design. Some reviewers commented that they found aspects of the design appealing, such as the colours and images used.

Limitations

1. Spelling and grammar. Numerous spelling mistakes and grammatical errors were identified by the reviewers throughout the modules.
2. Language. Some reviewers noted that there were times when the language of the modules was too “academic.” Reviewers suggested changing phrases and words to make them more conversational and to ensure that the writing appeals to a broader audience.

3. Amount of text. All of the reviewers stated that they felt there was too much text and that this should be reduced. Suggestions to improve this included using diagrams where possible, reducing words, grouping text in consumable sections and deleting some sections.

4. Problems with navigation pane. Reviewers reported that the navigation pane did not go down when they scrolled down so they were unable to easily move to each webpage.

5. Problems with video. Reviewers reported that there were problems with the volume on one of the videos.

8.3.2 Questionnaire for Assessing Website Usability

Average ratings of the participants for each of the nine questions on the Questionnaire for Assessing Website Usability on each module are presented in Table 13. Reviewers were able to rate each question between -3 and +3. As suggested by Tullis and Stetson (2004), scores below 0 indicate inadequate usability. Examination of these graphs shows that none of the average scores fell below the 0 cut off point for any of the questions on any of the modules. Scores ranged from 0.6 - 3. Average scores for each of the different modules were as follows: Module 1 - 1.95, Module 2 - 1.95, Module 3 - 1.75, Module 4 - 1.95, Module 5 - 2, Module 6 - 2.34, Module 7 - 1.9, Module 8 - 2.4, Module 9 - 2.6.
Table 13.

*Average Rating for Each Question and Module*

<table>
<thead>
<tr>
<th>Question</th>
<th>Module Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>The website is visually appealing</td>
<td>1.8 1.6 2.6 1.5 1.8 1 1.8 2 2.3</td>
</tr>
<tr>
<td>It was easy to move from one page to another</td>
<td>1.5 2 0.6 1.5 1.8 1.8 1.3 1.7 2</td>
</tr>
<tr>
<td>The overall organisation of the site is easy to understand</td>
<td>2.3 2.2 2 2.3 2.5 2 2.5 2.3 2.7</td>
</tr>
<tr>
<td>Individual pages are well designed</td>
<td>1.6 2.2 0.6 2.3 1.8 1.5 1.8 1.7 2.3</td>
</tr>
<tr>
<td>Terminology used in the website is clear</td>
<td>2.2 2.2 2.4 1.8 1.8 2.5 2 2.7 2.7</td>
</tr>
<tr>
<td>The content of the website met my expectations</td>
<td>2.2 2 1.8 2.3 2 2.5 2 2.7 3</td>
</tr>
<tr>
<td>If necessary, I would use this website in the future</td>
<td>2 2.2 1.6 1.8 2 2.3 2 2.7 3</td>
</tr>
<tr>
<td>As a user I understood what was expected of me</td>
<td>1.8 1.6 2.2 1.8 2.3 2.5 2 3 2.7</td>
</tr>
<tr>
<td>Overall, the website is easy to use</td>
<td>2.2 1.6 2 2.3 2 2.5 2 2.7 3</td>
</tr>
</tbody>
</table>
8.4 Discussion

The aim of this study was to examine the usability of the Social Fitness website. Reviewers were asked to provide quantitative and qualitative feedback on the usability of the Social Fitness website. Results found that, based on reviewers scores, the Social Fitness website has adequate usability. All of the items on the Questionnaire for Assessing Website Usability were above the pre-determined cut off score for all of the nine modules based on the criteria suggested by Tullis and Stetson (2004). The usability of the Social Fitness website was not re-examined as the scores were above the acceptable level.

Feedback from the questionnaires provided various strengths and limitations regarding the websites usability. These comments were important in helping to assess the usability of the study. The comments were considered and all of the limitations were addressed. Changes to the modules included: (1) all of the spelling and grammatical errors identified by the reviewers were corrected; (2) changes were also made to the language used in the modules. Attempts were made to make the language used in the modules seem less “academic” by incorporating more commonly used words, shortening the length of sentences and deleting any psychological jargon; (3) the amount of text within all of the modules was reduced. This involved editing information by deleting repetitive points, reducing the number of words in each paragraph, presenting more information in dot point form and including more images; (4) the navigation pane used throughout the modules was also adjusted so that it could be viewed in its entirety and would fit in different screen sizes; and (5) one of the videos was re-edited so that the sound could be heard.

There are some limitations of this usability study. The sample size of this study was small as there were only 6 reviewers who took part in this study. It would have been beneficial to have increased the number of reviewers to 10 as this would allow for a greater variation in responses.
Tullis and Stetson (2004) reported that the Questionnaire for Assessing Website Usability has increased reliability as the sample size increases. However, trying to obtain more reviewers with competence in the area who are willing to commit their time without payment was difficult. There may have also been some problems with the sample of reviewers. All of the reviewers were known to the researcher which may have led to a more positive evaluation of the website. Another limitation relates to the use of the Questionnaire for Assessing Website Usability. There is little research investigating the psychometrics of this questionnaire. There are, however, few usability measures available and this questionnaire was chosen for the study as it addresses key usability principles identified in the literature (Bock et al. 2004; Nielsen, 2008).

This study assessed the usability of the Social Fitness website by asking reviewers to provide feedback of the website and by completing the Questionnaire for Assessing Website Usability. Results showed that the nine modules had adequate usability based on the usability criteria. These findings suggest that users were able to effectively interact with the Social Fitness website and that the site is an appropriate medium for presenting the treatment manual.
In this chapter, the findings from a randomised controlled trial examining the efficacy of the Social Fitness online program are presented. Previous research has examined the online treatment of shyness; however, this is the first study to investigate the efficacy of the Social Fitness program in an online environment. First, the important reasons for treating shyness and social phobia online are discussed. The research aims and hypotheses of the study are then presented, followed by the methodology and analysis of the results. The findings of the study are then evaluated, suggesting that, although the online Social Fitness program is effective in reducing shyness and social phobia, limitations, such as lack of diagnosis, may limit the generalisability of the findings.

9.1 Social Fitness Online

Shyness is a form of excessive self-focus, a preoccupation with one’s thoughts, feelings, and physical reactions. Prevalence rates suggest that 40% of people suffer from shyness. The impact of shyness can be severely debilitating and can lead to a decrease in quality of life and functioning. There is a range of different treatment options for shyness, however, only a small portion of people obtain treatment. The aim of the current study was to determine if an offline treatment manual could be effectively developed into an online intervention for the treatment of shyness.

9.1.1 Offline Treatment of Shyness and Social Phobia

There is a range of offline treatments available for shyness and social phobia. Efficacy studies suggest that CBT is the first-line psychological treatment for shyness and social phobia (Ballanger et al., 1998). CBT can be administered with or without exposure and in individual or
group formats. Studies suggest that exposure combined with CBT is the most efficacious psychological treatment for reducing symptoms of shyness and social phobia (Taylor, 1996).

Despite the efficacy of CBT for the treatment of shyness and social phobia, there are numerous barriers that may reduce access to treatment. Barriers to treatment include cost (Andersson et al., in press), embarrassment (Olfson et al., 2000) and availability. Online treatments are an alternative to offline interventions that reduce some of these barriers.

9.1.2 Online Treatment of Shyness and Social Phobia

A number of RCT efficacy studies have shown that Internet-based treatments are effective for treating a range of psychological problems. CBT-based online treatments, in particular, have been shown to successfully reduce symptoms of depression and anxiety (Produfoot et al., 2004). There have been a limited number of studies evaluating the effectiveness of the online treatment of shyness and social phobia. However, research in this area appears to be expanding. The studies conducted thus far suggest promising results (Berger, et al., 2009). Andersson et al. (2006) examined the efficacy of an online self-help cognitive-behavioural treatment package in 64 individuals with a diagnosis of social phobia. Results from pre and post test scores revealed that participants in the treatment group showed significant improvement in social anxiety, general anxiety, depression and quality of life compared to controls. Similarly, Titov et al. (2008) examined whether an online CBT-based program could be used to reduce anxiety in 105 individuals with social phobia. Significant post-treatment differences between the treatment and waitlist controls were found. Overall, the studies investigating online interventions suggest that, similar to face-to-face treatment programmes, online treatments can be effective in reducing shyness and social phobia.
In the study conducted by Titov et al. (2008), discussion board groups were incorporated into treatment. The incorporation of discussion boards enables participants to make posts regarding the content of modules and allows limited interaction between participants. Titov et al. (2008) reported that participants in this group displayed high levels of self-disclosure and made personal observations. These findings suggest that the incorporation of a discussion board may potentially increase communication and self-disclosure, which may lead to a greater reduction in symptoms. Group CBT therapy for shyness and social phobia has been found to have numerous benefits with some studies reporting treatment gains exceeding individual therapy. Although there are some limitations in attempting to mirror a group therapy setting in an online environment, the use of discussion boards may potentially capture some of the strengths evident in group therapy where individuals are able to communicate with one another and share difficulties and symptoms experienced. Interaction between participants may help consolidate material learnt and provide participants with an opportunity to practice skills discussed in the modules. Further research incorporating discussion boards would be beneficial.

The studies investigating online treatments for shyness and social phobia have provided important information. There are, however, some limitations of these studies. First, a consistent limitation of online treatments is that participants are generally highly educated. Further, participation in online treatment studies is generally restricted to people within the same country. For example, the studies conducted in Sweden only allow participants within the country to participate. Although there are benefits to this procedure, including accurate initial diagnosis of participants and reduced ethical concerns in relation to risk, it would be beneficial to include participants from other countries. One of the main strengths of the Internet is that it has the potential to provide treatment to people who may not be able to access treatment. Taking
advantage of the global nature of the Internet is an important next step for online interventions. Designing studies that incorporate participants from across the globe also provides a measure of the cross-cultural usefulness of the program.

The limited research available suggests that the Internet is an environment that may assist with the treatment of shyness. Despite these positive implications, more research is required to support these studies and examine the effectiveness of online treatments across cultures. Another issue regarding online treatment relates to the way in which it is developed. Few online interventions for shyness have been based on established offline manuals.

9.1.3 Social Fitness

The Social Fitness Manual is a CBT-based intervention that has been shown to reduce shyness offline. Henderson (2008) reported reductions on measures of shyness, social phobia, estimations of others, shame and depression following implementation of the 14-session treatment. Numerous studies have examined the efficacy of using online interventions for the treatment of shyness, however, no research has been conducted on the Social Fitness manual in an online environment. The use of an adapted offline manual for online delivery has numerous benefits. It may help to provide a comparison of online and face-to-face treatment and allow for future adaptions.

9.1.5 Research Aims of the Current Study

The aim of the current study was to evaluate the effectiveness of an online shyness intervention using a randomised control design. The study uses the adapted version of the Social Fitness Manual. The research conducted has independently examined samples in Sweden, Switzerland and Australia but there has be no studies to the writer’s knowledge that have
included samples from different countries. Participants from all countries were therefore able to take part in this study provided they met the inclusion criteria.

Based on the findings from other studies investigating Internet administered CBT programs for the treatment of social phobia and the results from the offline social fitness model, it was predicted that, compared to a wait-list control, there would be a reduction on all primary measures of shyness and social phobia post-treatment. It was further predicted that there would be a reduction on secondary measures of fear evaluation, estimation of others, and depression post-treatment in the individual treatment group compared to wait-list control. It was also predicted that there would be an increase in quality of life post-treatment compared to the wait-list control.

A further aim of the study was to examine the differences between a standard online intervention and an intervention that allows participants to communicate with one another via an online discussion board. It is suggested that allowing participants to communicate, share experiences and understand that others suffer from similar experiences will be akin to an offline group format and will assist in reducing shyness. It was therefore hypothesised that there will be a reduction of symptoms on all outcome measures and an increase in quality of life in the discussion board group compared to the wait-list control group and that these differences in the discussion board treatment group would also be greater compared to the individual treatment group.

9.2 Method

9.2.1 Participants

To be included in the study, participants were required to fulfill the following criteria:
(1) to be at least 18 years of age;

(2) to have access to a computer with an Internet connection;

(3) to have basic computer/ Internet knowledge;

(4) to have a total score above 3.1 on the Henderson/ Zimbardo Shyness Questionnaire;

(5) if taking psychotropic medication, to have stayed on the same dosage for the last 3 months and to stay on that dosage whilst completing the treatment program; and,

(6) to not undergo any other treatment or intervention during the course of the program.

If participants failed to meet the criteria, they were excluded from the study. Participants who were excluded from the study were sent an email thanking them for their time and were encouraged to seek further help from their GP.

Demographic information for the two treatment groups as well as the wait-list control group is presented in Table 14. There were 325 participants who completed the online survey. However, 29 of these participants were ineligible (24 respondents were below the 3.1 cut off score on the Henderson/ Zimbardo Shyness Questionnaire and 5 respondents had commenced taking medication within the last 3 months). The number of participants at each point, randomisation, and dropouts at each stage of treatment are shown in Figure 11.

Of the 296 participants who were eligible to take part in the study, 63.9% (189) were female, 31.7% (105) were male, and 0.7% (2) identified their sex as other. Participants ranged in age from 18 to 67 (M= 30.29, SD = 10.33).
Table 14.

Demographic description of the participants

<table>
<thead>
<tr>
<th>Variables</th>
<th>Individual Group (n = 99)</th>
<th>Discussion Group (n = 99)</th>
<th>Waitlist (n = 98)</th>
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<tr>
<td>Gender</td>
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<tr>
<td>Female</td>
<td>69 (69.7%)</td>
<td>59 (59.6%)</td>
<td>61 (62.2%)</td>
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<td>Male</td>
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<td>40 (40.4%)</td>
<td>36 (36.7%)</td>
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<tr>
<td>Other</td>
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<td>1 (1%)</td>
</tr>
<tr>
<td>Age M (SD)</td>
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<td>30.2 (11.2)</td>
<td>30.4 (9.6)</td>
</tr>
<tr>
<td>Range</td>
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<td>18-67</td>
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<td>17 (17.4%)</td>
</tr>
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<td>Australasia</td>
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<td>40 (40.4%)</td>
<td>41 (42.8%)</td>
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<td>Europe</td>
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<td>8 (8.1%)</td>
<td>10 (10.2%)</td>
</tr>
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<td>North America</td>
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<td>30 (30.3%)</td>
<td>22 (22.5%)</td>
</tr>
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<td>South America</td>
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<td>2 (2%)</td>
<td>2 (2%)</td>
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</tr>
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<td>37 (37.4%)</td>
<td>39 (39.7%)</td>
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<tr>
<td>Postgraduate Qualification</td>
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<td>42 (42.4%)</td>
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<td>Missing</td>
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<td>0 (0%)</td>
<td>1 (1.6%)</td>
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<tr>
<td>Employment status</td>
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<td>Employed</td>
<td>61 (61.6%)</td>
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<td>64 (65.3%)</td>
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<td>Student</td>
<td>27 (27.3%)</td>
<td>29 (29.3%)</td>
<td>25 (25.5%)</td>
</tr>
<tr>
<td>Unemployed</td>
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<td>3 (3%)</td>
<td>5 (5.1%)</td>
</tr>
<tr>
<td>Missing</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>4 (4.1%)</td>
</tr>
</tbody>
</table>
Figure 11. Flow chart of RCT designed study.
9.2.2 Measures

The measures utilised in the current study were chosen for three main reasons: their good psychometrics; their use in previous online interventions studies; and, their use in offline evaluations of the Social Fitness program. The measures of social phobia were chosen for this study due to their good psychometric properties and because these two measures have been used in all of the studies evaluating online treatments for shyness and social phobia. Attempts were also made to try and incorporate the measures that have previously been used to evaluate the Social Fitness training program into the current study. It was decided not to use the Beck Anxiety Inventory and Beck Depression Inventory, however, as the distributors of these tests suggested that they are not able to be used in an online environment.

Some researchers have suggested that focusing exclusively on symptom reduction is not an effective method of treatment intervention evaluation (Ossman et al., 2006). It is suggested that incorporating measures such as quality of life provide a broader picture of behavioural functioning. For this reason the Quality of Life Inventory (QOLI) was used in this study.

A questionnaire package was developed and made available online via SurveyMonkey™ (http://www.surveymonkey.com/s/9JLBHMD). The questionnaire package consisted of respondent demographics, Internet usage and behaviour, primary measures and secondary measures. The questionnaire was divided into the following sections:

Respondent Demographics. This included six questions regarding age, sex, occupation, education, and country of birth.

Medication. Respondents were asked if they were currently prescribed medication. If they were taking medication, they were asked to include the name of the medication(s) they were
taking, dose and how long they had been taking it. If the respondent was not taking medication then they were requested to leave this section blank.

**Internet Usage.** Participants were asked four questions regarding their use of the Internet. Questions included: how long they had been using the Internet, confidence using the Internet, hours spent on the Internet, and what they use Internet applications for.

**Henderson/Zimbardo Shyness Questionnaire (ShyQ).** This is a self-report questionnaire that was developed by Henderson and Zimbardo (2000). The 35 items measure shame, negative attributions, and resentments. Items are expressed as statements, such as ‘It is hard for me to approach people who are having a conversation,’ and responses are given on a scale ranging from 1 (Not at all characteristic) to 5 (Extremely characteristic). Means for Stanford students’ ranged from 2.52 to 2.54 (SD’s= .55 to .57). The ShyQ has good psychometric properties. Internal consistency has been found to be .92 and test-retest reliability is .87. Cronbach’s alpha for six samples was between .92 and .93 (Henderson & Zimbardo, 2002). Concurrent validity is evidenced by correlations of .59 with the Revised Cheek and Buss Shyness Scale (Melchior & Cheek, 1990). In this study, the pre-treatment Cronbach’s alpha coefficient was .87 and .96 at post-treatment.

**Social Interaction Anxiety Scale (SIAS).** The SIAS was developed by Mattick and Clarke (1989). The SIAS is a self-report measure that consists of 20 items designed to measure social interactional anxiety which is anxiety concerning interpersonal interactions, such as initiating and maintaining conversations. Items are self-statements describing reactions in social situations. Responses are given on a scale ranging from 0 (not at all characteristic or true of me) to 4 (extremely characteristic or true of me). Total scores range from 0 to 80 with higher scores representing higher levels of social anxiety. The SIAS has been found to have good
psychometric properties (Osman, Gutierrez, Barrios, Kooper, & Chiros, 1998). Internal consistency has been reported to be between .85 and .90, Cronbach’s alpha between .88 and .93, and test-retest correlations above .90 (Mattick & Clarke, 1989). In the current study, Cronbach’s alpha coefficient at pre-treatment was .91 and at post-treatment it was .96.

**Social Phobia Scale (SPS).** The SPS is generally used in conjunction with the SIAS as, whilst the SIAS measures social interactional anxiety, the SPS assess anxiety when anticipating being observed or actually being observed by other people, such as public speaking and writing (Heimberg, Mueller, Holt, & Hope, 1992). The SPS was also developed by Mattick and Clarke (1998) and is a 20-item questionnaire. Similar to the SIAS, responses are given on a scale ranging from 0 (not at all characteristic or true of me) to 4 (extremely characteristic or true of me). The scale has good psychometric properties (Osman et al., 1998). Cronbach’s alpha ranges between .89 and .94, internal consistency has been found to range between .87 and .93 and test-retest correlations exceed .90 (Mattick & Clarke, 1989). In this study, Cronbach’s alpha was .86 at pre-treatment and .95 at post-treatment.

**Fear of Negative Evaluation Scale (FNE).** This scale consists of 30 true or false items measuring anxiety around others and apprehension about being negatively evaluated by others (Watson & Friend, 1969). Items are expressed as statements, such as “I feel that you can’t help making social errors sometimes, so why worry about it” and “I am usually worried about what kind of impression I make.” The FNE has good psychometric properties. The FNE has a strong correlation with other social anxiety measures, and Cronbach’s alpha has been reported at .90, and four-week test-retest reliability at .75 (Leary, 1983; Watson & Friend, 1969). In this study, the Cronbach’s alpha for the pre-treatment scores was .86 and .93 for the post-treatment scores.
The Estimations of Others Scale (EOS). The EOS was developed by Henderson and Horowitz (1998) and is designed to measure the extent to which an individual overestimates that people are being critical of them. The questionnaire has 12 items that are presented as statements, such as “if people see my discomfort they will feel contempt for me” and “people do not care about me.” Responses are rated on a 7-point scale (1 = not at all, 4 = moderately, 7 = very much). The Cronbach’s alpha at pre-treatment was .90 and at post-treatment it was .95.

Quality of Life Inventory (QOLI). This scale is a shortened version of the original QOLI and consists of eight items that measure life satisfaction. The areas measured include: love, work, and recreation. Internal consistency coefficients range from .77 to .89 and test-retest coefficients range from .80 to .91 (Frish, 1994; Frish, Cornell, Villanueva, & Retzlaff, 1992). The Cronbach’s alpha in this study was .84 at pre-treatment and .91 at post-treatment.

Center for Epidemiologic Studies Depression Scale (CES-D). The CES-D was originally developed by Radloff (1977) to measure symptoms of depression: depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance. The CES-D consists of 20 questions with responses given on a 0 to 3 scale (0 = Rarely, none of the time (less than 1 day), 3 = Most or all of the time (5-7 days). Research has found the CES-D to have good psychometric properties. Test-retest estimates have been reported ranging from .45 to .70 and Cronbach’s alpha coefficients ranging from .85 to .90 (Hann, Winter, & Jacobsen, 1999; Radloff, 1977, 1991). In this study Cronbach’s alpha was .80 at pre-treatment and .75 at post-treatment.

9.2.3 Therapist/Facilitator

The facilitator of the study was a male registered psychologist with clinical experience. During the 9-week program, participants were able to email their facilitator as frequently as
required. However, participants only obtained responses to their questions from their facilitator once per week. This was to ensure minimal therapist involvement. Participants were sent emails reminding them to complete homework and what module they should be up to on a weekly basis. All contact was via email and participants were unable to contact their facilitator in any other way. Strategies were put in place in the event of risk situations. For example, if participants reported that they were having problems they were encouraged to contact their general practitioner and were provided with the number of support lines.

9.2.4 Treatment Groups

There were two treatment groups: Individual Treatment and Discussion Treatment. Participants in the individual treatment group had complete access to the program. They were asked to complete one module per week and complete all of the nine modules. Individuals in this group had access to the program but had no contact with any other participants and did not have access to the discussion boards. They were able to contact the facilitator but otherwise they worked through the modules individually.

Participants in the discussion group completed the same program as those in the individual group and were asked to complete the program in the same time period. The only difference between the individual and discussion group was that participants in the discussion group had access to the discussion board. Participants in the discussion group were informed that they would be in this group before the commencement of treatment. Participants were asked to make a post to the discussion board after completing each module. Participants were given a topic to talk about on the discussion board. For example, in module one, participants were asked to do the following: “Post a brief description about yourself on the discussion board. A good way to introduce yourself is to talk about how your feelings of shyness have impacted you (similar to
some of the people you have seen in the videos). Feel free to comment on other people's posts but remember to always be non-judgemental and respectful of others.” Participants were encouraged to make posts on the discussion board and were able to reply and make comments to other participants’ posts. Participants were not required to make posts to take part in the intervention.

There were 99 participants who were allocated to the discussion group; however, 65 participants commenced the program. Participants completed the program in three different groups. There were 21 participants in group 1, 28 participants in group 2 and 16 participants in group 3. Participants were provided with usernames and once allocated gender was not identifiable. The highest number of posts in group 1 was 12, the highest number of posts in group 2 was 7 and the highest number of posts in group 3 was 14.

9.2.5 Procedure

Recruitment

Information about the Social Fitness online program was posted on the Shyness Clinic website (http://www.shyness.com/index.html), Hannover College website, Facebook and social research sites. Advertisements were also placed in the Melbourne newspaper MX and an article on the intervention was written in the Herald Sun newspaper. Individuals interested in the treatment program were directed to a website that provided information about the study, a copy of the plain language statement and a link to the questionnaire package posted on SurveyMonkey. Participants then completed the questionnaire and were asked to provide their email address for communication purposes at the end of the questionnaire. Participants who did not meet the inclusion criteria were sent an email thanking them for completing the survey but informing them that they were ineligible to take part in the program. If participants were eligible
to take part in the study then they were randomly allocated to one of three treatment groups: individual group, discussion groups or wait-list control group. Participants were emailed with a date to start the program. If participants agreed to this date, they were emailed instruction on how to access the site and a username and password from RMIT University Helpdesk. Participants were able to withdraw from the program at any time.

*Treatment Program*

The intervention was the Social Fitness online treatment program. This is an adapted version of the offline Social Fitness manual and consists of 9 modules that are completed once weekly. The online Social Fitness program includes psychoeducational material, fear hierarchy/exposures, cognitive restructuring, self-concept restructuring, negative thoughts about others and assertion skills. Participants were asked to download and print forms to complete each week. Before commencing each module participants were asked to complete an online quiz. There were online quizzes for each module. Each online quiz consisted of 8 multiple choice questions that would ask questions about material previously presented in other modules. If participants got any of the questions wrong then they were told that they would need to go back to and re-read the previous module. A complete description of the online Social Fitness program can be found in Chapter 6.

*9.2.6 Statistical Analyses*

To address the problems associated with the large attrition rate, data were examined in three separate sets of analyses. First, data were investigated using the entire sample when randomly allocated (*n* = 296). Analyses were based on the intention-to-treat (ITT) principle with last data point carried forward when data was missing. Although there are some problems
associated with this technique it has been commonly used in the literature (Newell, 1992; Nich, 2002).

Group differences in demographic data and the Internet behavior of the three groups (individual, discussion and wait-list control) were tested using single-factor, between-subjects ANOVAs and contingency chi-squared analyses where the variables were measured on a nominal scale. To examine any differences in participants’ pre-treatment and post treatment scores on the primary measures (Henderson/ Zimbardo Shyness Questionnaire, SIA, SPS) and secondary measures (CES-D, EOS, FNE and QOLI), single-factor, between-subjects analysis of covariance (ANCOVA), with pre-treatment scores serving as covariates and post treatment results used as the dependent variable, were used to compare the data from the individual, discussion, and wait-list control groups. Planned comparisons were used to examine differences between individual and discussion group and individual/ discussion and wait-list control.

The second set of analyses was only based only on those participants that completed the entire nine week program (n = 102). ANOVAs were used to examine differences at pre-treatment and one-way analyses of covariance (ANCOVAs) with pretreatment scores as covariates were again used to identify differences between groups at post-treatment, followed by planned comparisons. Clinical significance was determined according to principles outlined by Jacobson and Truax (1991). Results were considered clinically significant if post-treatment scores were within two standard deviations of the mean of the normal population. Normative data were all based on American samples. Normative data used were as follows: Henderson/ Zimbardo Shyness Q: 87.5 (M) 21 (SD); SIAS: 18.8 (M) 11.8 (SD); SPS: 14.4 (M) 11.2 (SD); CES-D: 10.24 (M) 9.67 (SD); FNE: 15.47 (M) 4.07 (SD). Differences in the proportion of participants in
each group reaching clinically significant improvement were determined by chi-squared analyses.

To examine why participants did not complete the program, participants were then divided into three groups: those who were randomly allocated to groups but did not commence the program \((n = 88)\), those who obtained passwords and commenced the program but did not complete \((n = 106)\), and those who completed the program \((n = 102)\). Contingency chi-squared analyses and ANOVAs were then conducted on all demographic, Internet behaviour and primary and secondary measures to determine if there were any differences between these three groups.

9.3 Results

The results of analyses are presented in eight separate sections: attrition, pre-treatment evaluation, Internet behaviour, intention to treat analyses, participants who completed entire program, clinical significance, attrition, and discussion board.

9.3.1 Attrition

The 296 participants were randomly allocated to either of the individual \((n= 99)\), discussion \((99)\) or wait-list control \((98)\) groups. In the individual group, 21 (21%) participants did not commence the online program. In addition, 44 (44%) participants in the individual group did not complete all the modules. In the discussion group, 34 (34%) participants did not commence the online program and a further 38 (38%) participants did not finish all the modules. In the wait-list control group, 57 (59%) participants did not complete the post-test measures.

9.3.2 Pre-treatment Evaluation

Pre-treatment evaluation involved testing for differences among the three groups in demographic information and outcome measures. The groups did not differ significantly with regard to age, \(F(2,292) = .008, p = .99, \eta^2 = .00\). Similarly, the groups did not differ significantly

The means for the primary and secondary pre-treatment evaluation measures are presented in Table 15. On the primary measures, no significant differences were found at pre-treatment on the Henderson/Zimbardo Shyness Questionnaire, $F(2,293) = 2.97, p = .053, \eta^2 = .020$; the SPS, $F(2,293) = 1.27, p = .285, \eta^2 = .009$; or the SIAS, $F(2,293) = 0.996, p = .371, \eta^2 = .007$. With regard to the secondary measures, no significant differences were found at pre-treatment evaluation on the CES-D, $F(2,293) = 2.98, p = .052, \eta^2 = .020$, EOS, $F(2,293) = 0.69, p = .501, \eta^2 = .005$; FNE, $F(2,293) = 0.87, p = .421, \eta^2 = .006$; or the QOLI, $F(2,293) = 1.01, p = .37, \eta^2 = .007$.

The primary measures were all significantly correlated ($r = .57$ to $r = .68$, $p < .05$). Significant intercorrelations were also found between all the secondary measures ($r = -.22$ to $r = .327$, $p < .05$).

9.3.3 Internet Behaviour

The mean number of years spent using the Internet by participants in the three different groups (individual, discussion, and wait-list control) is presented in Table 16. Examination of these results reveals the comparability of the groups on this variable. A single-factor between-
Table 15

*Outcome measures at pre and post treatment for individual, discussion and wait-list control groups using intention to treat analyses*

<table>
<thead>
<tr>
<th>Measures</th>
<th>Individual <em>(n = 99)</em></th>
<th>Discussion <em>(n = 99)</em></th>
<th>Wait-list <em>(n = 98)</em></th>
<th>F</th>
<th>P</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEN/ZIM SHY Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre- treatment</td>
<td>134.81 (17.03)</td>
<td>133.41 (15.54)</td>
<td>129.47 (15.20)</td>
<td>2.97</td>
<td>.053</td>
<td>.020</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>125.09 (25.70)</td>
<td>124.59 (20.88)</td>
<td>126.88 (17.31)</td>
<td>4.29</td>
<td>.015</td>
<td>.029</td>
</tr>
<tr>
<td>SIAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>51.00 (10.90)</td>
<td>48.98 (11.62)</td>
<td>49.21 (10.47)</td>
<td>1.00</td>
<td>.37</td>
<td>.007</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>44.67 (14.93)</td>
<td>44.19 (13.38)</td>
<td>47.99 (10.66)</td>
<td>6.47</td>
<td>.002</td>
<td>.042</td>
</tr>
<tr>
<td>SPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>37.23 (16.35)</td>
<td>39.16 (14.82)</td>
<td>40.77 (15.68)</td>
<td>1.26</td>
<td>.29</td>
<td>.009</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>32.57 (17.69)</td>
<td>34.73 (16.40)</td>
<td>41.03 (17.08)</td>
<td>8.02</td>
<td>&lt;.001</td>
<td>.052</td>
</tr>
<tr>
<td>CES-D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>24.78 (9.01)</td>
<td>24.36 (8.65)</td>
<td>21.98 (8.33)</td>
<td>2.98</td>
<td>.052</td>
<td>.020</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>23.88 (8.69)</td>
<td>23.42 (8.79)</td>
<td>21.65 (7.52)</td>
<td>0.12</td>
<td>.89</td>
<td>.001</td>
</tr>
<tr>
<td>EOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>51.86 (14.97)</td>
<td>49.72 (16.09)</td>
<td>49.61 (14.27)</td>
<td>0.69</td>
<td>.50</td>
<td>.005</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>47.56 (16.79)</td>
<td>46.49 (17.45)</td>
<td>49.43 (15.46)</td>
<td>3.33</td>
<td>.037</td>
<td>.022</td>
</tr>
<tr>
<td>FNE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>26.01 (4.36)</td>
<td>25.42 (5.24)</td>
<td>25.17 (4.04)</td>
<td>0.87</td>
<td>.42</td>
<td>.006</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>23.17 (7.08)</td>
<td>22.86 (6.74)</td>
<td>25.00 (4.447)</td>
<td>10.24</td>
<td>&lt;.001</td>
<td>.066</td>
</tr>
<tr>
<td>QOLI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>36.80 (14.77)</td>
<td>38.88 (15.21)</td>
<td>39.71 (14.54)</td>
<td>1.01</td>
<td>.37</td>
<td>.007</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>39.71 (15.05)</td>
<td>40.36 (15.62)</td>
<td>39.86 (15.25)</td>
<td>1.84</td>
<td>.161</td>
<td>.012</td>
</tr>
</tbody>
</table>

*Note. HEN/ZIM SHY Q= Henderson/ Zimbardo Shyness Questionnaire, SIAS= Social Interaction Anxiety Scale, SPS= Social Phobia Scale, CES-D= Center for Epidemiologic Studies Depression Scale, EOS= Estimations of Others Scale, FNE= Fear of Negative Evaluation Scale, QOLI= Quality of Life Inventory.*
Table 16

ANOVA Results Comparing Number of Years Using the Internet for Individual, Discussion and Wait-List Groups

<table>
<thead>
<tr>
<th>Scale</th>
<th>Individual (n = 95)</th>
<th>Discussion (n = 92)</th>
<th>Wait-list (n = 82)</th>
<th>F</th>
<th>P</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years using Internet</td>
<td>11.77 (3.17)</td>
<td>11.49 (3.33)</td>
<td>11.22 (3.68)</td>
<td>0.58</td>
<td>.56</td>
<td>.004</td>
</tr>
</tbody>
</table>
subjects ANOVA found no significant difference between the number of years spent using the Internet across the three treatment groups, \( F(2, 266) = 0.58, \ p = .56, \ \eta^2 = .004. \)

The majority of participants in all three groups felt confident or very confident using the Internet: individual (93.9%), discussion (90.9%), and wait-list (90.6%). A contingency table analysis of group by confidence using the Internet revealed no significant relationship between these variables, \( \chi^2 (6, N = 296) = 12.44, \ p = .053, \ V = .15. \)

Each group spent a similar number of hours using the Internet per week. In the individual group, 32.3% spent 0-10 hours on the Internet, 36.3% spent 10-20 hours, and 31.3% spent 20+ hours on the Internet per week. In the discussion group, 27.3% of participants spent 0-10 hours on the Internet, 44.4% spent 10-20 hours, and 28.3% spent 20+ hours on the Internet per week. In the wait-list group 32.6% of participants spent 0-10 hours on the Internet, 40.2% spent 10-20 hours, and 29.1% spent 20+ hours on the Internet per week. A contingency chi-squared analysis found no significant relationship between group membership and Internet usage, \( \chi^2 (4, N = 296) = 8.67, \ p = .545, \ V = .122. \)

The majority of participants used the Internet primarily for research (81.8%) and entertainment (80.1%), however, a large proportion of participants also used the Internet for education (69.9%) and communication (63.9%) purposes. Only a small number of participants used the Internet for sales and marketing (5.1%).

9.3.4 Intention to Treat Analyses

Differences between the three groups (individual, discussion and wait-list control) were examined using intention to treat analyses. Mean pre- and post-test scores on the primary (Henderson/Zimbardo Shyness Questionnaire, SIAS and SPS) and secondary (CES-D, EOS, FNE, and QOLI) outcome variables and results from the analyses of covariance (ANCOVA) are
presented in Table 15. After partialling out the variance associated with pre-test scores, results show significant differences among the three treatment groups at post-treatment on all of the primary measures \((F= 4.3\text{-} 8.0)\). On the secondary measures, significant differences were found on the EOS and FNE. No significant differences were found on the CES-D. Although there was an increase in scores on the QOLI for the individual and discussion group, these differences were not significant.

To further examine the differences in post-treatment scores across the three treatment groups, planned comparisons were conducted. The results of these analyses are presented in Table 17. Examination of this table reveals that the individual and discussion groups were more improved than the wait-list controls after the 9-week intervention on all of the variables, except the Henderson/ Zimbardo Shyness Questionnaire and EOS. There were no significant differences between the individual and discussion group on any of the variables.

\textit{9.3.5 Participants Who Completed the Entire Program}

The same analyses used in the intention to treat analyses were used to identify any differences in those who completed the program. Mean pre- and post-test scores on the primary and secondary measures and results from the ANCOVA on those participants who completed the entire program are presented in Table 18. ANCOVAs on post-treatment measures using pre-treatment scores as covariates yielded significant differences on all primary and secondary measures with the exception of the CES-D. Planned contrasts, comparing the combined individual and discussion groups and the wait-list control group and comparing the individual and discussion groups are presented in Table 19. Significant differences were found on all primary and secondary measures when comparing individual/ discussion and wait-list control groups.
Table 17.

*Planned comparisons of primary and secondary measures for all participants who were randomly allocated*

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Contrast Value</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HEN/ZIM SHY Q</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-4.09</td>
<td>-0.85</td>
<td>.40</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>0.49</td>
<td>0.15</td>
<td>.88</td>
</tr>
<tr>
<td><strong>SIAS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-6.38</td>
<td>-2.17</td>
<td>.05</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>-0.24</td>
<td>-0.12</td>
<td>.91</td>
</tr>
<tr>
<td><strong>SPS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-12.77</td>
<td>-3.50</td>
<td>.001</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>-2.16</td>
<td>-0.89</td>
<td>.37</td>
</tr>
<tr>
<td><strong>EOS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-4.81</td>
<td>-1.17</td>
<td>.24</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>1.06</td>
<td>0.45</td>
<td>.65</td>
</tr>
<tr>
<td><strong>FNE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-3.97</td>
<td>-2.98</td>
<td>.003</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>0.31</td>
<td>0.32</td>
<td>.75</td>
</tr>
</tbody>
</table>

*Note.* HEN/ZIM SHY Q = Henderson/Zimbardo Shyness Questionnaire, SIAS = Social Interaction Anxiety Scale, SPS = Social Phobia Scale, EOS = Estimations of Others Scale, FNE = Fear of Negative Evaluation Scale.
### Table 18.

**Outcome measures of those participants who completed program at pre and post treatment for individual, discussion and wait-list control groups**

<table>
<thead>
<tr>
<th>Measures</th>
<th>Individual ($n = 34$)</th>
<th>Discussion ($n = 27$)</th>
<th>Wait-list ($n = 41$)</th>
<th>F</th>
<th>P</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M (SD)$</td>
<td>$M (SD)$</td>
<td>$M (SD)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEN/ ZIM SHY Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>132.91 (17.94)</td>
<td>132.33 (14.78)</td>
<td>128.15 (14.40)</td>
<td>1.01</td>
<td>.367</td>
<td>.020</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>104.62 (27.76)</td>
<td>102.48 (15.16)</td>
<td>123.29 (18.70)</td>
<td>16.34</td>
<td>&lt;.001</td>
<td>.250</td>
</tr>
<tr>
<td>SIAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>53.06 (9.09)</td>
<td>46.78 (11.67)</td>
<td>50.68 (9.01)</td>
<td>2.90</td>
<td>.060</td>
<td>.055</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>34.65 (15.52)</td>
<td>32.74 (10.01)</td>
<td>48.32 (10.69)</td>
<td>16.34</td>
<td>&lt;.001</td>
<td>.304</td>
</tr>
<tr>
<td>SPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>36.17 (16.30)</td>
<td>36.00 (15.13)</td>
<td>38.66 (15.16)</td>
<td>0.33</td>
<td>.717</td>
<td>.007</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>22.59 (15.72)</td>
<td>20.89 (11.72)</td>
<td>39.41 (18.51)</td>
<td>18.72</td>
<td>&lt;.001</td>
<td>.278</td>
</tr>
<tr>
<td>CES-D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>24.97 (9.05)</td>
<td>22.59 (6.77)</td>
<td>23.34 (8.71)</td>
<td>0.67</td>
<td>.516</td>
<td>.013</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>22.35 (7.84)</td>
<td>19.36 (5.72)</td>
<td>22.57 (6.63)</td>
<td>2.42</td>
<td>.09</td>
<td>.05</td>
</tr>
<tr>
<td>EOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>49.12 (15.95)</td>
<td>46.52 (15.97)</td>
<td>47.32 (14.47)</td>
<td>0.24</td>
<td>.789</td>
<td>.005</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>36.59 (15.78)</td>
<td>35.89 (16.94)</td>
<td>47.68 (17.44)</td>
<td>7.45</td>
<td>.001</td>
<td>.132</td>
</tr>
<tr>
<td>FNE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>25.91 (3.39)</td>
<td>25.19 (4.02)</td>
<td>25.47 (4.07)</td>
<td>0.28</td>
<td>.754</td>
<td>.006</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>17.65 (7.48)</td>
<td>16.22 (4.44)</td>
<td>25.12 (5.10)</td>
<td>31.57</td>
<td>&lt;.001</td>
<td>.392</td>
</tr>
<tr>
<td>QOLI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>35.85 (15.77)</td>
<td>40.30 (13.91)</td>
<td>38.80 (12.99)</td>
<td>0.80</td>
<td>.454</td>
<td>.016</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>44.32 (15.51)</td>
<td>45.30 (14.69)</td>
<td>38.34 (14.83)</td>
<td>3.30</td>
<td>.041</td>
<td>.063</td>
</tr>
</tbody>
</table>

*Note. HEN/ZIM SHY Q= Henderson/ Zimbardo Shyness Questionnaire, SIAS= Social Interaction Anxiety Scale, SPS= Social Phobia Scale, CES-D= Center for Epidemiologic Studies Depression Scale, EOS= Estimations of Others Scale, FNE= Fear of Negative Evaluation Scale, QOLI= Quality of Life Inventory.*
No significant differences were found on any of the primary and secondary measures when comparing the individual and discussion groups.

**9.3.6 Clinical Significance**

To examine if changes in the participants who completed the program were clinically significant, post-treatment scores were evaluated to determine if they were within two standard deviations of the mean of the normal population. Data concerning clinically significant treatment outcomes at post-test are presented in Table 20. At post-test, the majority of participants in both treatment groups obtained a clinical significant improvement. Chi-squared cross tabulation revealed significant differences between the groups on all the measures.

**9.3.7 Attrition Characteristics**

To determine if there were any differences between the participants who dropped out and those who completed treatment, participants were divided into one of three groups: those who were randomly allocated to groups but did not commence the program ($n = 88$), those who obtained passwords and commenced the program but did not complete ($n = 106$), and those who completed the program ($n = 102$).

ANOVA and chi-squared cross tabulation were used to investigate if there were differences between the three groups on all variables at pre-treatment. No significant differences were found between the three groups on any of the demographic variables: age, $F(2, 41) = 1.27$, $p = .14$, $\eta^2 = .170$; sex, $\chi^2 (2, N = 294) = 0.46$, $p = .79$, $V = .04$; education, $\chi^2 (4, N = 294) = 7.63$, $p = .11$, $V = .11$; occupation, $\chi^2 (4, N = 292) = 6.59$, $p = .16$, $V = .16$; or continent of birth, $\chi^2 (10, N = 295) = 6.91$, $p = .73$, $V = .11$. 
Table 19.

Planned comparisons of primary and secondary measures for participants who completed the program

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Contrast Value</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HEN/ZIM SHY Q</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-39.49</td>
<td>-4.5</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>2.14</td>
<td>2.14</td>
<td>.70</td>
</tr>
<tr>
<td><strong>SIAS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-29.25</td>
<td>-6.24</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>1.91</td>
<td>0.58</td>
<td>.56</td>
</tr>
<tr>
<td><strong>SPS</strong></td>
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<td></td>
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</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-35.35</td>
<td>6.77</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>1.70</td>
<td>3.51</td>
<td>.63</td>
</tr>
<tr>
<td><strong>EOS</strong></td>
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<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-22.89</td>
<td>-3.37</td>
<td>.000</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>0.70</td>
<td>0.16</td>
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<tr>
<td><strong>FNE</strong></td>
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<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-16.37</td>
<td>2.22</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>1.42</td>
<td>0.92</td>
<td>.36</td>
</tr>
<tr>
<td><strong>QOLI</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual/Discussion Vs Wait-list</td>
<td>-12.94</td>
<td>2.12</td>
<td>.04</td>
</tr>
<tr>
<td>Individual Vs Discussion</td>
<td>-0.97</td>
<td>-0.25</td>
<td>.80</td>
</tr>
</tbody>
</table>

Note. HEN/ZIM SHY Q= Henderson/ Zimbardo Shyness Questionnaire, SIAS= Social Interaction Anxiety Scale, SPS= Social Phobia Scale, EOS= Estimations of Others Scale, FNE= Fear of Negative Evaluation Scale, QOLI= Quality of Life Inventory.
Table 20.

*Data for the proportion of participants reaching the criteria of clinical significant improvement as defined by Jacobson and Truax (1991)*

<table>
<thead>
<tr>
<th>Measures</th>
<th>Individual (n = 34)</th>
<th>Discussion (n = 27)</th>
<th>Wait-list (n = 41)</th>
<th>χ²</th>
<th>p</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%  n</td>
<td>%  n</td>
<td>%  n</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEN/ZIM SHY Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-treatment</td>
<td>82.4 28</td>
<td>96.3 26</td>
<td>63.4 26</td>
<td>10.87</td>
<td>.004</td>
<td>.33</td>
</tr>
<tr>
<td>SIAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-treatment</td>
<td>73.5 25</td>
<td>88.9 24</td>
<td>24.4 10</td>
<td>32.92</td>
<td>&lt;.001</td>
<td>.57</td>
</tr>
<tr>
<td>SPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-treatment</td>
<td>85.3 29</td>
<td>92.6 25</td>
<td>46.3 19</td>
<td>21.84</td>
<td>&lt;.001</td>
<td>.46</td>
</tr>
<tr>
<td>EOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>49.12 (15.95)</td>
<td>46.52 (15.97)</td>
<td>47.32 (14.47)</td>
<td>0.24</td>
<td>.789</td>
<td>.005</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>36.59 (15.78)</td>
<td>35.89 (16.94)</td>
<td>47.68 (17.44)</td>
<td>7.45</td>
<td>.001</td>
<td>.132</td>
</tr>
<tr>
<td>FNE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-treatment</td>
<td>70.6 24</td>
<td>92.6 25</td>
<td>29.3 12</td>
<td>29.62</td>
<td>&lt;.001</td>
<td>.54</td>
</tr>
<tr>
<td>QOLI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>35.85 (15.77)</td>
<td>40.30 (13.91)</td>
<td>38.80 (12.99)</td>
<td>0.80</td>
<td>.454</td>
<td>.016</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>44.32 (15.51)</td>
<td>45.30 (14.69)</td>
<td>38.34 (14.83)</td>
<td>3.30</td>
<td>.041</td>
<td>.063</td>
</tr>
</tbody>
</table>

*Note.* HEN/ZIM SHY Q= Henderson/ Zimbardo Shyness Questionnaire, SIAS= Social Interaction Anxiety Scale, SPS= Social Phobia Scale, EOS= Estimations of Others Scale, FNE= Fear of Negative Evaluation Scale, QOLI= Quality of Life Inventory.
In regards to Internet behaviour, there were no significant differences between the three groups on number of years using the Internet, $F(2, 266) = 0.06, p = .94$, $\eta^2 = .000$, or hours spent on the Internet per week, $\chi^2 (10, N = 296) = 9.28, p = .51$, $V = .13$. There was a significant difference between the three groups in level of confidence in using the Internet, $\chi^2 (6, N = 296) = 13.10, p = .042$, $V = .15$. 94.1% of participants who completed the program felt very confident or confident using the Internet, compared to 93.4% of participants who obtained passwords but did not complete the program and 83% if participants who were randomly allocated but did not start the program.

Importantly, there were no significant differences between the three groups on any of the primary pre-treatment measures (Henderson/Zimbardo Shyness Questionnaire, $F(2, 293) = 1.10, p = .34$, $\eta^2 = .007$; SIAS, $F(2, 293) = 0.73, p = .48$, $\eta^2 = .005$; SPS, $F(2, 293) = 2.08, p = .13$, $\eta^2 = .014$) or secondary pre-treatment measures (CES-D, $F(2, 293) = 0.67, p = .51$, $\eta^2 = .005$; EOS, $F(2, 293) = 3.03, p = .050$, $\eta^2 = .020$; FNE, $F(2, 293) = 1.93, p = .15$, $\eta^2 = .013$; QOLI, $F(2, 293) = 1.10, p = .33$, $\eta^2 = .007$).

### 9.3.8 Discussion Board

There were three separate discussion groups that started the program at different times. The number of posts made for each module in each of the three discussion groups is presented in Table 21. The majority of posts in each group were made in the first week. In discussion group 1 55% of participants made a post for the first module, 21% made a post for the first module in discussion group 2 and 64% made a post for the first module in discussion group 3.

In their posts participants made thoughtful observations and openly disclosed aspects about themselves:
I think I have been shy all my life. After watching the first video and reading some introductions I've realised that my parents were also quite strict. My siblings and I were always told to be quiet and behave. I can remember being very loud and outgoing during primary school. School was always a time to have fun and laugh with my mates. I can remember being afraid to answer questions in class though I knew the answer. At the time I felt that I didn't want to be looked at as a geek or know it all, but I'm not sure now. Once I got to high school I was no longer outgoing at all. With close friends I could loosen up a little, but anyone else I would be silent.

The actions of my parents taught me I had little worth, and that if I made extreme effort and contribution I might just be bearable, temporarily. As a young adult, I found myself in a succession of controlling and abusive relationships, which would begin with me being surprised and grateful for any attention.

Ever since I was a young kid I was always quiet and it always bothered me. I felt like a lot of people made fun of me because I didn’t talk a lot. I never had very many friends because I was just the quiet girl that no one ever got to know.

I have dealt with my shyness all my life. I believe as I'm older now I know why I have it. Dad left when I was young, my sisters were older and I felt alone from
them. I was bullied at school and outside of it for being very slim. I have had poor relationships with men in my life.

Some participants also reported that they found it beneficial to read other participants posts:

I am enjoying reading all of the posts. It's comforting to know I am not alone in my shyness and many of you share the same fears. I also like the anonymous format. I'm guessing many of us are expressing these fears for the first time. It feels liberating to vent about it.

Some participants reported that it was easier to disclose aspects about themselves via posts compared to offline:

I am embarrassed to even put this into words....good thing we are not face to face… After doing this exercise I realize that my distortions are just that, not rational!

Participants also reported developing insight from completing the modules:

I realized that from these exercises, a lot of my feared situations had a lot to do with situations where I am hanging out with groups of friends. I’m often afraid to tell a story to the group, make a comment, tell a joke or make a suggestion. I’m also afraid to engage in a lot of social activities.
This was a good exercise for me to do, even though I felt I was not being very precise, in actually acknowledging that I spend much time and emotional energy in avoidance of situations.

Having those distortions pop up in front of me, make me be more conscious about my thoughts and how they affect my behavior.

Over the course of the treatment program some participants reported that they had made noticeable changes in their lives:

Over the past few weeks, I've noticed my interactions with my work colleagues becoming more spontaneous, and with less anxiety involved. Afterwards I will think to myself, "Hey, I just had a conversation/asked a question without thinking about it beforehand!". Instead of subconsciously thinking that people will be judging me when I talk to them, and getting myself worked up, I've just been able to talk without thinking about it.

I made my hierarchy list and I noticed the situations I was avoiding. That was a good exercise, because even I really knew about them, putting them in the paper made me aware of those situations.

I've noticed that I have the tendency to assume that people are the ones that should come talk to me (not me go talk to them) so if they never do, then I just
think that they are stuck up or rude or I think that I am not good for them. Its unreasonable for me to think this about people.

Participants were able to post replies to other participants’ comments. There were a total of 11 reply posts for all modules in all three discussion groups. There were 5 reply posts in module 1, 2 reply posts in module 2 and 4 reply posts in module 3. The reply posts that were made were encouraging and supportive:

I could relate to a lot of what you said about your shyness. I always hated shopping malls too but until reading your post, hadn't connected it to shyness. After all, the mall is a place where you are constantly stimulated by new faces as you walk along… It sounds like you are taking positive steps to improve yourself. You go!

Participants also reported being able to identify with other participant’s posts and offer constructive advice:

I know exactly what you mean about not asking for what you're worth. I have the same problem! Maybe it's best to blurt out what you're charging before you do the work, then it's over and done with? I can actually talk people out of giving me work and could kick myself for weeks afterwards! Does being creative just never equate with having the detachment to see your own value?
I was very interested to read these two posts. I had put 'talking to girls' and 'making female friends' towards the top of the list of things that make me anxious or uncomfortable…. I guess this would be an example of jumping to conclusions in terms of the automatic thinking - believing that girls are thinking negatively about me even though I have no real evidence to support it.

Participants who had people reply to their posts were grateful and encouraged:

Thank you very much… It is very warm and can make me brave when I know someone is supporting me.
<table>
<thead>
<tr>
<th>Module</th>
<th>Content</th>
<th>Discussion Group 1 (n = 21) Number of posts</th>
<th>Discussion Group 2 (n = 28) Number of posts</th>
<th>Discussion Group 3 (n = 16) Number of posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>12</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>Goals</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Cognitive Distortions</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Unhelpful Thoughts</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Exposures</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Self-concept Distortions</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Negative Thoughts about Others</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>Self-Assertion</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
9.4 Discussion

This study examined the efficacy of an online adapted version of the Social Fitness program for the treatment of shyness. It was predicted that, compared to a wait-list control, there would be a reduction on all primary measures of shyness and social phobia and on secondary measures of fear evaluation, estimation of others, and depression post-treatment. It was also hypothesised that there would be an increase in quality of life post-treatment compared to the wait-list control. A further aim of the study was to examine the impact of incorporating a discussion board into treatment and to compare this to individual treatment and a wait list control. It was hypothesised that there would be a reduction of symptoms on all outcome measures and an increase in quality of life in the discussion group compared to the wait-list control group and that these differences in the discussion treatment group would also be greater compared to the individual treatment group.

9.4.1 Reduction in Symptoms of Shyness and Social Phobia

As hypothesised, there was a reduction in shyness and social phobia in both the individual and discussion groups compared to the wait-list control after completion of the Social Fitness program. Results showed a reduction on all primary measures in the intention to treat analysis. These results coincide with the findings from Andersson et al. (2006), Carlbring et al. (2007, Tillfors et al. (2008), Titov et al. (2008) and Berger et al. (2009) and offer further support for the use of online interventions for the treatment of shyness and social phobia. Moreover, the reductions in shyness and social phobia were comparable to results from the offline manual. Together these results suggest that the Internet is a useful tool to deliver clinical interventions.

The participants in other online treatments studies have typically been higher educated and live in the same country where the study has been conducted. In this study there was higher
variability in the education level of the participants and participants from all countries were eligible to take part. The results of this study show that online treatments can be effectively used to assist individuals from a range of different countries. The participants in this study were located in countries across the globe. Country of origin did not impact attrition. This finding indicates that online treatments can be effective for different people from varying cultures. This is an important finding as it implies that treatment could potentially be offered to people from different countries who do not have access to treatment.

9.4.2 Improvement on Secondary Measures

The hypothesis that there would be improvements on all secondary measures was partially supported. In the intention to treat analyses, significant improvements were found on the EOS and FNE, but not on measures of depression or quality of life. These results suggest that the online Social Fitness program is effective in reducing fear evaluation and anxiety around others. These findings coincide with the results on the primary measures. Changes were not significant on quality of life in the intention to treat analyses, however, a significant increase was found in the participants who completed the entire program.

Although there was a decrease in depression scores, similar to Titov et al. (2008), these reductions were not significant. It is not clear why there were significant reductions in anxiety but no significant changes in depression. Reported reductions have been found in the offline Social Fitness program. First, it may be due to the differences in measures used. The BDI has typically been used to evaluate the offline Social Fitness program, whilst the CES-D was used in this study. Another more likely explanation is that important material from the offline Social Fitness program was not included in the online program. Attributional styles from the offline program were not included in the online program because the information was difficult to
explain and present. Self-attributions play an important role in maintaining self-blame. The failure to include a module on attributional styles may help explain why depression was not reduced; however, further research is needed to determine if there are benefits in including attributional styles into the treatment program.

9.4.3 Discussion Board

The results found a reduction in all primary measures in the discussion group; however, differences between the discussion and individual group were not significant. Although posts on the discussion board showed insight and self-disclosure, similar to those reported by Titov et al. (2008), the lack of significant differences between the discussion and individual group suggests that the discussion board did not act as intended.

The purpose of the discussion board was to facilitate discussion and mirror aspects of group therapy. Compared to the individual group, a slightly higher dropout rate was found in the discussion group. Therefore, the main objective of the group, to help retain numbers, interest in the program, and increase support, was not attained. The small number of posts suggests that engagement with the discussion board was low. The low level of activity also suggests that there may have been problems with how the discussion board was implemented. While it may have been beneficial to have asked specific questions about the usefulness of the discussion board, given the amount of time taken for participants to complete the existing questionnaires and complete the program, putting this burden on participants did not seem appropriate.

There are number of possible reasons why benefits of using the discussion board were not found in this study. First, as can be seen from the number of posts made across the modules, participants did not make frequent use of the discussion board. Attempts were made to encourage
discussion board use in the following ways: (1) the random allocation email clearly stated to the participants that they were in the discussion group and would need to make regular posts; (2) weekly emails were sent reminding the participants to make a post to the discussion board; and (3) requests, at the end of each module, were made to make a post on the discussion board as part of homework.

Second, the technology may not have been advanced enough. The discussion board may have been used more if it incorporated easier methods to communicate. For example, instant messaging as used in MSN may have promoted communication and interaction. It may also be useful if participants could be sent, like social networking sites such as Facebook, emails informing them about details, such as when somebody has made a post or commented on their post. Stronger emphasis could also be placed on getting participants into the site more often and prompting them to check things, such as the discussion board, more regularly. This would require further monitoring by the facilitator, but may lead to stronger bonds being built and more support from participants.

Third, it is possible, but unlikely, that participants encountered problems when trying to post on the discussion board. Participants were provided with step-by-step instruction on how to make a post and were able to ask assistance from the facilitator at any time.

Fourth, participants may not have received enough mutual support. Participants may not have been provided with adequate instructions or guidance on how to use the discussion board. Without adequate guidance participants may not have felt comfortable or confident using the discussion board.
Finally, the allocated usernames may have been another reason as to why the discussion board was not used regularly. This is discussed in the limitation section.

The results of this study found that the inclusion of a discussion board does not increase treatment outcomes. However, benefits may not have been found in this study because participants failed to regularly use the discussion board and they were not provided with enough guidance and support.

9.4.4 Attrition

The attrition rate was high. In this study, 65% of participants in the individual group who were randomly allocated did not complete the program and 72% in the discussion group did not complete. Other studies of online treatments for shyness and social phobia have generally had much less attrition. In comparison, attrition rates have ranged from 1% to 44% in the other published online interventions for shyness and social phobia. It is not clear why attrition was higher in this study compared to other treatments. It may be related to the sample of participants used or the factors associated with the Social Fitness program.

Investigations into differences between those who completed and those who didn’t showed that the only variable that the two groups were significantly different on was confidence in using the Internet. Those participants who obtained passwords and went on to complete the program had higher levels of confidence in their ability to use the Internet. This would suggest that confidence, not level of distress, is an important factor when determining who is appropriate to use the Social Fitness program. However, the differences in confidence using the Internet were not large and it is likely that other factors may play a role in attrition.
Based on the results, attempting to obtain a clear picture of who is ideally suited for this program is somewhat difficult. We know that confidence plays an important role, but there may be numerous other variables that impact drop out that were not measured in this study. Some participants mentioned factors such as time and work commitments as factors that hindered them from completing the program. Identifying exactly why participants dropped out is a difficult but important task.

Considering that a number of online interventions treating a range of different psychological problems have now been developed, working on ways to reduce attrition and increase compliance is an important next hurdle. Although anonymity is one of the Internet’s most powerful characteristics when treating shyness, paradoxically, it is also a factor that increases drop out and reduces compliance. The lack of accountability (being able to simply not respond to emails) may reduce compliance and lead to drop out. It would be beneficial to attempt to investigate how to reduce this problem in the future.

There are different methods that could potentially be used to reduce attrition in the future. Khadjesari et al. (2011) examined the use of incentives for increasing response rates. They found that offering a low level incentive (a £5 Amazon gift voucher) had no significant impact on responses, however, when a higher-level incentive was offered (£10 Amazon gift voucher) response rates improved by 9%. There are, however, some ethical problems associated with the use of offering incentives to participants and, inevitably, an incentive based program would increase the cost of conducting an online intervention. Incentives may also affect the integrity of an online intervention and encourage false participant responses. The advantages and disadvantages of an incentive based program needed to be carefully weighed up and considered before incorporating it into online interventions.
In their examination of attrition, McCabe and Price (2009) reported a 70% drop out for their online CBT program for erectile dysfunction. Similar to the current study, no significant differences between participants who completed treatment and those who dropped out of treatment were found on any of the variables. The authors suggest that the level of motivation of participants may explain the large proportion of men who discontinued treatment. It may be that attrition is lower in face-to-face treatments than online interventions because therapists have the ability to address motivation more easily in offline therapy. In online interventions participants may commit without fully comprehending the time, effort and work involved (McCabe & Price, 2009). Motivation could potentially be addressed by increasing email communication between therapist and participant and increase participant confident and engagement in the program. Another alternative could be to incorporate motivational strategies into the modules as previous research suggests that these techniques may facilitate completion (Titov et al., 2010).

Attempts could be made to try to increase participant confidence in using the Internet. For example, the program could use other sources of information, links and interactive tools to attempt to engage the participant. If participants are able to stay engaged and complete the program then they clearly benefit. However, the studies by Andersson suggest that interactivity is not an important component in online interventions. Nevertheless, interactivity and technology is an important part of this medium that makes it separate and unique from face-to-face therapy. Thus, it may be beneficial to make use of the technology the Internet has to offer.

Identifying predictors of attrition can be difficult. Even with an examination of demographic and behavioural variables numerous studies have failed to find differences between participants who complete and drop out (McCabe & Price (2009). Neve, Collins and Morgan (2010) identified specific characteristics of individuals, such as age, who were more likely to
drop out of an online weight loss program. In other studies, factors such as internal locus of control, flexible timing and focus on positive cognitions rather than negative cognitions have been found to be important in reducing attrition (Geraghty, Wood & Hyland, 2010; Hilvert-Bruce, Rossouw, Wong, Sunderland & Andrews, 2012). It would be beneficial if potential predictors were identified for shyness so these issues could be addressed prior to the commencement of the intervention. Further, research could attempt to obtain suggestions from participants as to how to enhance engagement and treatment completion. In an online intervention for problem drinkers, participants reported that an increase in email reminders and flexibility in the intervention may increase participation (Postel et al., 2011).

It may be beneficial to include a mechanism to request participants to provide information as to why they are leaving. Before leaving the program participants could be asked to complete a brief survey. This may reduce some of the difficulties of attempting to follow up the participant. Attempting to reduce attrition and maintain participant engagement is an important next step for this program and, indeed other Internet interventions.

9.4.5 Limitations and Future Directions

There are a number of limitations of this study that impact the generalisability of the results. The first issue relates to the randomisation procedure used in this study. Once participants had completed the survey online and were found to be suitable for the program they were then randomly allocated to one of the three groups. An email was sent to the participant informing them that they had been allocated to a group and they were provided with a potential date to start the program. This procedure was used to simplify the process of obtaining a password, limit the amount of communication provided by the facilitator, and because the two different groups were allocated to two completely separate sites that required separate
usernames. The problem with this procedure was that in a number of cases, participants did not respond to this email and therefore never commenced the program. Although the procedure implemented aimed to limit the amount of communication necessary to start the program, it also limited the interpretation of data, as they were then categorised as dropouts and there were unequal numbers in each group who actually commenced the program. This limitation could be overcome by not randomly allocating until after usernames and password had been provided. This procedure would ensure that equal numbers are in each group at the start of the program, however, it would involve more time from the researcher and increased communication with the participants.

A second limitation of this study related to technological problems. Overall, there were few technological problems of the running of the site. Over the 6-month period that the program ran there was only one incident where the site was unavailable due to works conducted on Blackboard by RMIT University. There were, however, some difficulties regarding the allocation of user-names and passwords. User-names were provided by the RMIT University Help Desk. Initially, the researchers were advised that user name and password allocation would take a maximum of two days; however, as the program began running sometimes password allocation would take up to two weeks. This delay in user-name and password provision may have decreased participant involvement and resulted in a delay in commencing the program. This meant that some participants commenced the program at different times. This would not have been a major problem in the individual treatment group, however, in the discussion treatment group it meant that posts were being placed at different times and some participants were up to a week behind the majority in the group. There are benefits from using an external source to
allocate user names and passwords, such as ensuring confidentiality of passwords, however using external sources reduces the control of the researcher which may cause difficulties.

A third limitation of the study was problems with user name allocation. As the allocation of user names was done externally (through the RMIT University Helpdesk) there was little control over the user names participants could obtain. Participants were given usernames in the form of letters and numbers that looked very similar. When posting on the discussion board it was often difficult to differentiate each participant due to the numbers looking so similar. It may have been beneficial if participants could create their own pseudonym. The creation of own pseudonyms would have not only personalised their user names but it may have also made each participant more identifiable to each other. For example, rather than just seeing a post by SSS333, participants would have seen Jenny. This may have encouraged more interaction between participants and may have allowed for a stronger construction of identity in the online forum.

A fourth limitation was that there were also some difficulties regarding the tracking of participants. Blackboard allows you to track when participants enter the site but does not indicate when each module is completed. It was therefore difficult to track participants as they worked through the modules. Completion of homework quizzes was one way that participants could be monitored, but this method was unreliable because some participants did not finish all the homework quizzes, but did complete the entire program. Some participants also tended to complete numerous homework quizzes at one time. This poses a limitation to the study as important information regarding module completion that could assist with understanding the drop-out rate was not available. In future studies, it would be beneficial to ensure that participants can be tracked whilst completing the program, particularly in large-scale studies.
A fifth limitation relates to problems with diagnosis. Participants were classified as being shy if they scored above a cut-off score based on self-report. No structured clinical interviews were used in this study. This raises some limitations around the findings of the current study. In their review, Andersson and Cuijers (2008) raise a number of issues around the importance of accurate diagnosis. They emphasise the importance of obtaining an accurate diagnosis of participants when conducting online research. The efficacy of an online treatment cannot be clearly interpreted if an accurate diagnosis is not obtained. This presents some challenges for the understanding of shyness and some limitations in the studies conducted in this thesis. As discussed in Chapter 1, shyness is not a diagnosable condition, although psychometrically sound measures have been developed to identify shyness. We have a clear understanding of the symptoms of shyness and what it comprises, but how it fits in relation to diagnosable conditions such as social phobia is still not certain. The difficulties associated with diagnosing shyness therefore impact the generalisability of the current results. Although structured interviews were not used in this study, psychometrically sound measures were used and only participants demonstrating shyness symptoms were included. It may be beneficial for future research to have more stringent inclusion criteria and to incorporate face-to-face interviews. Other directions for future research are considered in Chapter 10.

9.4.6 Conclusions

The aim of the current study was to evaluate the efficacy of an online shyness intervention using a randomised control trial and to examine if a discussion board would increase treatment outcome. The findings of this study support the efficacy of the online Social Fitness Program. The results found that the nine-week program was successful in reducing shyness. The incorporation of CBT, exposure, cognitive restructuring, self-concept distortions and
assertiveness training presented in module form online can effectively reduce symptoms in people experiencing shyness. The Social Fitness Program was found to reduce symptoms on all primary measures for both the individual and discussion group. There were, however, no significant changes in depression which may be due to the omission of information about attributional styles in the program. Although further research is needed to replicate these findings and address some of the limitations of this study, the findings support the use of the Social Fitness Program in an online environment.
Chapter 10: Final Conclusions

Chapter Overview

This final chapter provides an opportunity to return to the research aims of the thesis and examine how these aims were addressed. This is followed by a discussion of the key issues raised in the thesis. The limitations of the thesis are summarised, followed by potential areas for further investigation. The implications of the studies presented in this thesis are explored and the chapter concludes with an overall summary of the thesis.

10.1 General Discussion

There were three broad research aims of this thesis: (1) to examine the online behaviour, motivations and attitudes of people who are shy and determine what impact context has on shyness; (2) to adapt the an offline shyness treatment manual for online delivery; and, (3) to conduct an RCT to examine the efficacy of the Social Fitness online intervention.

The first aim was addressed using a survey (Chapter 5). The results from this study suggest that individuals who are shy have similar Internet behaviour as non-shys. They tend to use Internet applications in the same manner and spend a similar amount of time online as non-shys. Individuals who are shy are drawn to the Internet partly for social reasons. The Internet affords the ability to socialise without necessarily being watched. The major difference between shy and non-shy individuals is the impact the Internet has on them. For shy people, the Internet is empowering. Individuals who are shy experience less shy symptoms online, are more willing to self-disclose, and are open to sharing information. The context of the Internet reduces self-consciousness and fear evaluation. Similar to George wearing his mask, results from this Study I suggested that the Internet may be a form of protection that allows people to communicate in a
more comfortable environment. People who are shy can communicate with less fear of evaluation online than offline. An implication from this study was that the Internet may be a powerful context for the delivery of online treatment.

The second aim, to adapt an offline shyness treatment manual for online delivery, was addressed in Chapters 7 and 8. The offline manual was successfully adapted for online delivery. Sessions were converted into modules and content was reduced and altered to be more usable online. Attempts were made to make use of some of the interactivity functions available on the Internet by incorporating films and a discussion board. Although some changes to the online Social Fitness program had to be made, the findings from the usability study suggested that users were able to effectively interact with the website and the site was an appropriate medium for presenting the treatment manual.

The third aim, to conduct an RCT to examine the efficacy of the Social Fitness online intervention, was addressed in Chapter 9. Reductions were noted on measures of shyness and social phobia in both treatment groups compared to the wait-list control. Significant improvements were not found on depression and quality of life. This study supported the effectiveness of the online Social Fitness program for the treatment of symptoms of shyness and social phobia. There were, however, no differences between the individual and discussion groups, suggesting that incorporating communication facilities offered no further benefits in terms of treatment outcome.

In the following section, key issues raised in the thesis are readdressed as core themes and discussed. Key issues discussed in this section include: shyness and the Internet, online treatment, the relationship between shyness and social phobia, and the definition of shyness.
10.1.1 Shyness and the Internet

The impact of context on shyness was a major focus of this thesis. Past research and the results of the studies presented in this thesis suggest that the Internet is an environment that appeals to people who experience shyness. Similar to findings from research by McKenna et al. (2002), Russell et al. (2000) and Stritzke et al. (2004) the results from the present studies suggest that anonymity is one of the key components of the Internet that can decrease shyness levels and lead to more positive experiences online. The hyper-personal nature of the Internet may further increase the appeal of the Internet for shy people and may make the medium an ideal context for interaction. The findings from the studies presented in this thesis support Valkenburg and Peter’s (2007) stimulation hypothesis of CMC, suggesting that CMC encourages self-disclosure and closeness through the reduction of physical cues.

Although the Internet is a powerful context that has clear benefits for people who experience shyness, the relationship between shyness and the Internet is not completely straightforward. In the current sample, 10.4% of participants met the criteria for Internet addiction as suggested by Young (1996). Further, individuals in the shy group demonstrated some similar symptoms as pathological users and results suggest that individuals who are shy may use the Internet to avoid perceived social deficits. Given the range of comorbid conditions with which shy people present, the Internet may not always be a positive medium. The Internet is a complex tool that can be used for a range of purposes. To simplify the Internet as having either a positive or negative impact on people who are shy would be inappropriate. Nevertheless, there are clearly aspects of the Internet that may be beneficial and appealing for people who are shy. There is now a large body of evidence to suggest that shyness decreases online and people who are shy feel more comfortable communicating in an online environment.
10.1.2 Online Treatment

Since Robert et al. (2000) first published their research on the reduction of shyness online, research examining the relationship between shyness and the Internet has increased. There are now seven RCTs that have investigated use of online treatments for shyness and social phobia. All seven studies have reported reductions in symptoms of shyness and social phobia. These studies suggest that online treatments are effective for the treatment of shyness and social phobia.

The findings presented in this thesis contribute to our understanding of shyness and the Internet in several ways. First, the findings presented in Chapter 5 suggest that individuals who are shy do not have higher rates of Internet addiction than non-shys. This is an important finding as it demonstrates that people who are shy do not use the Internet as a form of avoidance to the extent that they become addicted to the Internet. Second, the findings presented in this thesis demonstrate that an efficacious treatment manual can be successfully adapted for online delivery. To the author’s knowledge this is the first study that has developed an online intervention based on an offline manual. Third, this study included participants from various countries. This is an important step in online treatment as one of the benefits of placing interventions online is that they are accessible to individuals from all over the globe. The current study suggests that online treatments can be administered to individuals of varying education levels and that education does not impact attrition.

Together with the previous research conducted on online treatments, this study suggests that websites need not be too complex or interactive. The Social Fitness site was developed using basic web development software. Attempts were made to make the site appealing and engaging by incorporating images and videos but, nevertheless, the site was limited in interactivity.
Similar to Andersson (2009), these results suggest that content is more important than interactivity.

There was more interest in the Social Fitness program than expected. It was anticipated that there would be up to 30 participants in each treatment group but the number of participants wanting to take part in the program exceeded expectations. There were 325 people who completed the online survey. The high number of participants who wanted to take part in the online intervention provides an indication of the need for online interventions in this area. Since completion of the research program there has been continued interest in the online Social Fitness program. The majority of interest has come from individuals wanting help to reduce their shyness, parents seeking help for their children and clinicians wanting to refer their clients to use the program. For example, the email below is from a mother hoping to seek treatment for both herself and her child:

I am interested in learning about your online program. Lifelong shy now have a 4 year old who is just like me! I'd like to learn to help myself and her!

The response to the online program and the continued interest in it suggests a number of things. First, it suggests that people need assistance with their shyness. The interest in the program for all over the world indicates that shyness is distressing and people want to seek help for it. The email below suggests that some individuals may not be able to seek help in their own country.

I'm one of those people who suffers from shyness, and on the website shyness.com your name and e-mail are mentioned. So I want to ask you a few questions about
treatment. I'm not a citizen of USA and there is no such institutions as Shyness Clinic in my country, so the only choice I have is individual work without help of any therapist. Taking this into account - what can you recommend to use?

Interest in the program also shows that people are willing to try online treatments. Taken together with the findings supporting the effectiveness of online treatments, they emphasise the importance of continued development of online interventions for people who are shy.

10.1.3 The Relationship between Shyness and Social Phobia Revisited

In Chapter 1 the relationship between shyness and social phobia was discussed. In this section, the relationship between these two labels is revisited, taking into consideration the findings from the studies presented in this thesis.

In the RCT reported in this thesis reductions following the intervention were higher on the social phobia scales than on the shyness scale. The scales measure different constructs, but as this was an intervention targeted specifically at people who experience shyness, it would be expected that there would be a greater decrease in shyness measures. This was not the case. There are a number of potential reasons for this. First, this study relied on self-report. Structured interviews were not used in this study. There are various problems associated with the use of self-report and they may be an unreliable. Second, the social phobia scales measure specific symptoms such as interactional anxiety in social situations, whilst the ShyQ provides a broader measure of shyness symptoms. Third, as it was not a requirement to have a diagnosis of social phobia to take in the RCT study, it is not clear how many participants would meet the criteria for a diagnosis of social phobia. However, scores on both social phobia scales were elevated and comparable to those seen in social phobia studies. Again this raises questions about the
similarities and differences of shyness and social phobia. The sample all had moderate to chronic shyness, but showed greater reductions in social phobia symptoms.

In Chapter 1, three hypotheses were suggested to help explain social phobia. The first hypothesis proposed that shyness is a developmental precursor to social phobia. The second hypothesis suggested that the relationship between shyness and social phobia can be understood as existing on a continuum where there is an overlap between chronic shyness and social phobia. The third hypothesis proposed that shyness is more heterogeneous and covers a broader continuum than social phobia and may be a risk factor for developing a range of psychopathology.

The purpose of this thesis was not to test the various hypotheses suggested. However, having a clear understanding of shyness and how it relates to psychopathology is important for the development of future treatment interventions and thus needs to be addressed. The results of the RCT study do not support the second hypothesis. The theory that social phobia is chronic shyness does not fit. If this were the case, greater reduction on the shyness measure would be anticipated. Based on the findings from the studies presented in this thesis, it would appear that the third hypothesis is the most appropriate way to describe the relationship between shyness and social phobia. Although research would be needed to examine this, based on previous research and the studies conducted in this thesis, it appears that shyness has a high overlap with a range of other psychological problems. Shyness also appears to have a strong relationship with social phobia. They are similar conditions with comparable symptoms and characteristics, but they are not the same condition. Shyness is also related to a range of other psychological problems. In the research by St. Lorant et al. (2000) and Heiser et al. (2003), shyness was found to be related to a range of Axis I and Axis II disorders, including dysthymia, generalised anxiety, specific phobia
and avoidant, dependent and schizoid personality disorders. In the survey conducted in this thesis, it was found that 10.4% of participants in the shy group met criteria for Internet addiction. In the RCT, the majority of shy participants had clinical levels of depression and social phobia. These findings suggest that shyness is related to a range of psychopathologies.

More research into shyness and its relationship to other psychological problems is needed. Although shyness appears to have a relationship to psychopathology, it is not clear if shyness causes individuals to become more vulnerable to psychopathology or if shyness is a consequence of a combination of these conditions (Heiser et al., 2003).

10.1.4 Understanding Shyness

The reviews and studies conducted in this thesis suggest that shyness is a complex condition. Our notion and understanding of shyness has changed over time. Shyness was originally seen as a type of descriptor, a common language statement used to describe reticent, withdrawn behaviour. Over time, particularly over the last thirty years, our understanding and conception of shyness has changed. This evolution in understanding shyness is due to the large amount of research, driven partly by Zimbardo, which has been conducted in the field. Shyness has changed from merely being a descriptor of behaviour to a measurable, observable condition that, although distressing, can be successfully treated. It is likely that as research continues to develop, our understanding of shyness will further change. The research in this thesis suggests that shyness is not a benign emotional state but should be taken seriously. Shyness is measurable and observable but because it is associated with a range of psychological problems it makes understanding and defining shyness very difficult. Although some people experience shyness and can cope reasonably well, others can be severely debilitated. As research into shyness progresses, the relationship it has to other conditions will become clearer.
10.2 Limitations

The limitations of each study have previously been proposed. In the survey reported in Chapter 5, problems identified included the use of brief measures, the method used to categorise shyness and the reliance on self-report. In the RCT, limitations included problems with tracking participants, the method of randomisation and technological problems. In addition, there were several other broader limitations associated with the manner in which the research was conducted. One of the major limitations of this study was the lack of accurate diagnoses. Not properly diagnosing participants compromises the generalisability of the results. However, given the difficulties associated with understanding and diagnosing shyness and the main aims of the thesis, this was a difficult problem to overcome. It would be beneficial for future research to attempt to address some of these limitations.

10.3 Directions for Future Research

The studies presented in this thesis have addressed a number of issues. However, these studies also raise further questions. These areas include: follow-up, replication, online and offline program comparisons, comorbidity, discussion boards, cost-effectiveness, and predictors of efficacy.

10.3.1 Follow-up

The longer-term outcomes of the online Social Fitness program will be better understood through treatment follow-up. Six-month and twelve-month follow-ups have been planned to examine the long-term efficacy of the online Social Fitness program. This data will provide important information as there has been little follow-up data reported in the literature.
10.3.2 Replication

The study presented in this thesis is the seventh RCT to show that shyness and social phobia symptoms can be reduced through online treatment. There is now strong evidence to support the use of online treatments for shyness and social phobia. Further research, however, needs to be conducted on the online Social Fitness program to determine the reliability of the current study’s findings. There were a range of limitations in this study that need to be addressed. In particular, issues around randomisation, name allocation and participant tracking need to be addressed.

As the Social Fitness program has already been developed, changes to the components of the program can easily be made to determine which parts of the online intervention are therapeutic. For example, attributional information could be added to the program and further studies be conducted to determine if levels of depression change. Attempts could be made to adjust the material in the modules to obtain optimum treatment outcomes.

10.3.3 Online and Offline Program Comparisons

Comparisons of offline and online programs are an important area for further investigation. The current study is the only study, to the author’s knowledge, that has adapted an offline manual for online treatment. There is now an offline and online treatment program based on the same manual. Direct comparisons between online and offline treatment can now be made. For example, it would be beneficial to conduct an RCT comparing the online and offline approach. This would allow for a direct comparison between online and offline treatment approaches to determine the comparative efficacy and strengths and weaknesses of each medium. This is an important area for future research, as it is difficult to make comparisons of each offline and online mediums without having a similar treatment program for comparison.
Studies using this method would not only provide information about each medium but may also provide important details about characteristics of patients who may best benefit from online treatment. In Chapter 5 participant characteristics were discussed. Authors have suggested that online treatment may not be beneficial for everybody (de Graaf, 2009). Currently, however, very little is known about who would benefit most from online treatment. Individual characteristics of participants in the online and offline programs could be compared to determine possible differences. This may increase our understanding of online treatments and allow for future treatments to adapt their programs to target participants most likely to respond positively.

10.3.4 Comorbidity

The proposal that shyness is a manifestation of varying symptoms is particularly important as it may impact treatment methods. In their research, Titov, Gibson, Andrews, and McEvoy (2009) reexamined their data to determine how treatment impacted comorbidity. This is useful considering that shyness has a high comorbidity and is related to numerous other issues and, as Heiser et al. (2003) suggests, may involves a range of Axis I and II disorders.

10.3.5 Cost-Effectiveness

The cost-effectiveness of online treatment is viewed as one of the medium’s main advantages. However, surprisingly little research has been conducted in this area. Andersson et al. (in press) have done some research into the cost of online treatments but more studies are required. It is important that consumers are aware of the cost of treatments and what treatments are available. The comparative cost of treatments is important not only to consumers, but also to government and health agencies. Given the efficacy of online treatments, there is potential for clinics to make further use of online treatments to help reduce costs. However, more research into cost-effectiveness needs to be conducted to provide further evidence.
10.3.6 Predictors of Efficacy

There has been little research investigating the predictors that may increase efficacy of treatment. As discussed in Chapter 6, online treatment may be beneficial for particular individuals. For example, demographic factors and personality characteristics may play a role. As yet, however, there is limited evidence to suggest who may be appropriate for online treatment. Results in the current study suggested that confidence using computers may have played a role in attrition. It would be beneficial for future research to investigate this area further.

In both the survey and RCT, sub-types of shyness were not identified. Participants were either categorised as being shy or non-shy. Zimbardo (1977), however, identifies different categories of shyness raging from situational to chronic shyness and has shown that the characteristics and behaviour of individuals who are shy vary. In the RCT, participants were included if they met a cut-off point. In future studies it may be useful to differentiate the categories of shyness suggested by Zimbardo and determine if the online program is more suitable for individuals with different shyness levels.

Self-presentation theory, discussed in Chapter 1, is a theory explaining why shyness may change in different situations and contexts. This theory suggests that levels of shyness may be related to motivation to make a desired impression and perceived probability of being able to make a desired impression (Leary, 1996). The relationship between shyness and self-presentation can be conceptualised in the following model:

\[ \text{SHYNESS} = M \times (1 - p) \]
Based on the findings presented in this thesis it would appear that people who are shy have a greater perceived probability of making a desired impression. Due to the lack of physical gating features online it would appear that people who are shy feel a greater sense of control over their self-presentation and this reduces their shyness levels. This model offers a useful formula to understand shyness and how it changes in different contexts. The findings presented in this thesis offer some support for this theory, however, it would be useful to directly examine if this theory can be applied online and if it can help differentiate those for whom the Internet may be more appropriate.

10.4 Implications

There are a number of implications of the studies presented in this thesis. There is now a substantial body of literature to support the use of online treatments for shyness and social phobia. This has important implications for clinical intervention. Online treatments have been shown to be effective, but there are still only a limited number of online treatment programs that are regularly available for users. Given the efficacy of online treatments, it would be beneficial for more programs to be available for the public. GPs, psychologists and psychiatrists could potentially take advantage of online treatments and reduce waiting lists by referring individuals for treatment. Clients could potentially be prescribed online treatment and be monitored by therapists. Similarly, public clinics with limited resources could make use of online treatments. Clients could initially make contact with services and then be referred for online treatment, depending on their needs. A stepped care model could be developed where clients are initially seen and assessed face-to-face are offered online treatment. Clients could maintain contact with their therapist via email whilst completing online treatment incase symptoms worsened. This could reduce treatment time and provide cheaper access for clients. Although there are positive
implications for the use of online treatments, further guidelines are needed to help ensure that treatments are monitored and ethically delivered.

The finding that offline interventions can be adapted online with minimal interactivity has important implications for future development of online treatments. Online treatments could be developed using previously written offline manuals. Time may be saved from having to write the content of the modules and this could reduce the costs of program development and allow for more online treatments to become available. This may encourage the development of more online treatments and enable better access to health care for clients.

10.5 Overall Summary

In this thesis, the relationship between shyness and the Internet was investigated. The studies presented in this thesis show that the Internet is a powerful tool for people who are shy and that this medium can be successfully used for treatment. Context plays an important role in shyness and aspects of the Internet may assist in a treatment intervention. Although these results are promising and have positive implications for the future treatment of shyness, future research should attempt to address some of the limitations discussed in the thesis to increase the treatment possibilities of the Internet. The studies in this thesis have shown that an efficacious treatment manual can be modified for online delivery and individuals with shyness, such as George, can be successfully treated in environment which can be easily accessed and where they feel safe and comfortable.
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Appendices
Appendix A: Plain Language Statement (Study 1)

**RMIT UNIVERSITY**

**INVITATION TO PARTICIPATE IN A RESEARCH PROJECT - PROJECT INFORMATION STATEMENT FOR FIRST YEAR STUDENTS**

*Project Title:* Online Interactions and Behaviour

**Investigators:**
- Mr Peter Saunders (Psychology PhD student, Health Sciences, RMIT University, peter.saunders@student.rmit.edu.au)
- Professor Ken Greenwood (Senior Supervisor, Health Sciences, RMIT University, ken.greenwood@rmit.edu.au, 9925 7360)
- Dr Andrea Chester (Project Supervisor: Lecturer, Health Sciences, RMIT University, andrea.chester@rmit.edu.au, 9925 3150)

You are invited to participate in a research project being conducted by RMIT University. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

**Who is involved in this research project? Why is it being conducted?**

The research project titled *Online Interactions and Behaviour* is a student project, being undertaken at the City campus at RMIT University. The project is to be conducted by Peter Saunders under the supervision of Prof. Ken Greenwood and Dr. Andrea Chester from the School of Health Sciences. The project is part of a Doctor of Philosophy degree and has been approved by the RMIT Human Research Ethics Committee.

**Why have you been approached?**

You have been approached as part of the recruitment process for this study.

**What is the project about? What are the questions being addressed?**

The purpose of this study is to examine the relationship between internet use and shyness. More specifically, the study aims to explore what impact the internet has on social communication and to determine the motivations for spending time online.

**If I agree to participate, what will I be required to do?**

If you decide to take part in this research you will be asked to complete a questionnaire relating to your internet use and personality. For example, some questions require you to think about how long you spend online and how you think you are in social situations. The questionnaire should take about twenty minutes to complete. Feel free to examine the survey before you decide whether you would like to participate.
What are the risks associated with participation?

By taking part in this survey you will be required to think about your internet use and how you think you behave in social situations. There are no perceived risks outside your normal daily activities. However, if you are unduly concerned about your responses to any of the questionnaire items or if you find participation in the project distressing, you should contact Peter Saunders as soon as convenient. He will discuss your concerns with you confidentially and suggest appropriate follow up, if necessary.

Security of the website

Users should be aware that the World Wide Web is an insecure public network that gives rise to the potential risk that a user’s transactions are being viewed, intercepted or modified by third parties or that data which the user downloads may contain computer viruses or other defects.

Security of the data

This project will use an external site to create, collect and analyse data collected in a survey format. The site we are using is SurveyMonkey.com. If you agree to participate in this survey, the responses you provide to the survey will be stored on a host server that is used by SurveyMonkey. No personal information will be collected in the survey so none will be stored as data. Once we have completed our data collection and analysis, we will import the data we collect to the RMIT server where it will be stored securely for a period of five (5) years. The data on the SurveyMonkey host server will then be deleted and expunged.

What are the benefits associated with participation?

While there may not be direct benefit to you as a result of participating in this research project, your participation will serve to enhance our knowledge and understanding of offline and online communication. Therefore, your participation is valued and very much appreciated.

What will happen to the information I provide?

All the information you provide will be treated confidentially. Only the investigators will have access to the data. You will not be asked to put your name on the questionnaire so any information you provide will be anonymous. Any information that you provide can be disclosed only if (1) it is to protect you or others from harm, (2) a court order is produced, or (3) you provide the researchers with written permission. All data will be kept securely at RMIT for five years before being destroyed.

What are my rights as a participant?

Participation in the study is voluntary and you have the right to withdraw your participation at any time, without prejudice. You have the right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified and you have the right to have any questions answered at any time. If you are an RMIT student, your decision to participate or not in the project will not affect the way you are graded.

Who should I contact if I have any questions?

If you have any questions about any aspect of the study please feel free to contact Peter Saunders on peter.saunders@student.rmit.edu.au
Any complaints about your participation in this project may be directed to the Secretary, RMIT Human Research Ethics Committee, University Secretariat, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 1745.

Details of the complaints procedure are available from the above address.
Appendix B: Informed Consent Form (Study 1)

RMIT HUMAN RESEARCH ETHICS COMMITTEE

Prescribed Consent Form For Persons Participating In Research Projects Involving Interviews, Questionnaires or Disclosure of Personal Information

PORTFOLIO OF
Science, Engineering, and Health

SCHOOL OF
School of Health Sciences (Division of Psychology)

Name of participant: ____________________________

Project Title: Online Interactions and Behaviour

Name(s) of investigators:

   (1) Peter Saunders (Student Researcher)
   (2) Assoc. Prof Andrea Chester (Project Supervisor) Ph: 9925 3150
   (3) Professor Ken Greenwood (Project Supervisor) Ph: 99257360

1. I have received a statement explaining the tests/procedures involved in this project.

2. I consent to participate in the above project, the particulars of which - including details of tests or procedures - have been explained to me.

3. I authorise the investigator or his or her assistant to use with me the tests or procedures referred to in 1 above.

4. I acknowledge that:
   (a) The possible effects of the tests or procedures have been explained to me to my satisfaction.
   (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied (unless follow-up is needed for safety).
   (c) The project is for the purpose of research. It may not be of direct benefit to me.
   (d) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
   (e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to RMIT University. Any information which will identify me will not be used.

5. I am over 18 years of age.

Participant’s Consent

Please tick the box to consent to take part in this study

☐

Participants should be given a photocopy of this consent form after it has been signed.

Any complaints about your participation in this project may be directed to the Secretary, RMIT Human Research Ethics Committee, University Secretariat, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 1745.
Details of the complaints procedure are available from the above address.
Appendix C: Plain Language Statement (Study 3)

**INVITATION TO PARTICIPATE IN A RESEARCH PROJECT - PROJECT INFORMATION STATEMENT FOR FIRST YEAR STUDENTS**

*Project Title: Social Fitness: The Online Treatment of Shyness*

**Investigators:**
- Mr Peter Saunders (Psychology PhD student, Health Sciences, RMIT University, peter.saunders@rmit.edu.au)
- A. Prof Andrea Chester (Project Supervisor, Health Sciences, RMIT University, andrea.chester@rmit.edu.au, 9925 3150)
- Professor Ken Greenwood (Project Supervisor, Health Sciences, RMIT University, ken.greenwood@rmit.edu.au, 9925 7360)

You are invited to participate in a research project being conducted by RMIT University. This information sheet describes the project in straightforward language, or 'plain English'. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

**Who is involved in this research project? Why is it being conducted?**

This research project titled *Social Fitness: The Online Treatment of Shyness* is being undertaken at RMIT University. The project will be conducted by Peter Saunders under the supervision of Assoc. Prof Andrea Chester and Prof. Ken Greenwood from the School of Health Sciences. The project is part of a Doctor of Philosophy degree and has been approved by the RMIT Human Research Ethics Committee.

**Why have you been approached?**

You have been approached as part of the recruitment process for this study as you have identified yourself as shy. You must be over 18 years of age to participate in this study. If you are currently enrolled in any of Peter Saunders’ classes you will be unable to participate in this study.

**What is the project about? What are the questions being addressed?**

The purpose of this study is to evaluate the effectiveness of a program designed to help you cope better with shyness. This project uses the Social Fitness program, developed by Lynne Henderson from the Shyness Clinic at Stanford University. The term 'social fitness' refers to the idea that, similar to physical fitness, in order to stay in social shape we need to put in effort and work out by making social contact with others. The idea is not to avoid social situations. Just like physical fitness, time and effort is required to yield results. The Social Fitness program has been found effective for the face-to-face treatment of shyness. The proposed research aims to examine the effectiveness of the online version of the treatment in reducing shyness.

**If I agree to participate, what will I be invited to do?**

If you decide to take part in this research you will initially complete an online questionnaire that asks you questions relating to your internet use, shyness, mood, quality of life and ability to interact
with others. For example, some questions require you to think about how you act and behave in social situations. Most questions simply require you to click on an appropriate box. The questionnaire will take approximately 30 minutes to complete.

Once the questionnaire is complete, some individuals will be invited to participate in the second phase of the study. If you agree to participate you will be randomly allocated into one of three treatments: individual treatment, group treatment, or a control. The following paragraphs describe these three groups in detail.

If you are allocated to the individual treatment, you will be provided with a username and password and will be given access to the Social Fitness website. You will be required to complete nine modules over a nine week period. Each module will take approximately 50 minutes to complete and you will be asked to complete one module per week at a time that is convenient to you. As part of each module you will be required to complete readings, activities, and homework tasks. If you choose to take part in this study it is important that you are able to commit yourself for nine weeks. During the nine weeks you will have email contact with your facilitator who is a registered psychologist. You will be able to email your facilitator as many times as you like but you will only get one response from your facilitator each week.

If you are allocated to the group treatment you will be provided with a username and password and will be given access to the Social Fitness online site. You will complete the same nine modules in nine weeks as the individuals in the individual treatment group. However, participants in this group will also be asked to contribute to an online discussion board, interacting with the small group of other individuals in this group.

Individuals in the control will not be asked to complete the 9 modules until after the waiting period (approximately 3 months). After this period you will be required to complete the original online questionnaire and will then undertake the individual treatment.

To take part in this study you will require:

- Ownership or access to a computer
- Access to the internet
- Basic computer/internet knowledge

**What are the risks associated with participation?**

As part of the treatment you will be required to consider and challenge aspects about yourself which may be confronting and embarrassing. The sensitive nature of the data collected may potentially cause some psychological discomfort to you. Exposing yourself to anxiety provoking situations is an important element in the treatment of shyness. By taking part in this study you will be explicitly invited to put yourselves in anxiety provoking situations (such as talking to a work colleague) and to post videos of yourselves onto the Social Fitness site but at no time will you be asked to engage in any dangerous behaviour. The situations you will be exposed to will not be situations outside normal everyday life and you will be responsible for determining the situations you expose yourself to.

If you are concerned about the project, or find participation in the project distressing, please contact Peter Saunders as soon as convenient. Peter will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary.

**Security of the website**
Every effort will be taken to ensure the confidentiality of the information you provide online, however, users should be aware that the internet is an insecure public network that gives rise to the potential risk that a user’s transactions are being viewed, intercepted or modified by third parties or that data which the user downloads may contain computer viruses or other defects.

**Security of the data**

This project will use an external site to create, collect and analyse data collected in a survey format. The site we are using is SurveyMonkey.com. If you agree to participate in this survey, the responses you provide to the survey will be stored on a host server that is used by SurveyMonkey. No personal information will be collected in the survey so none will be stored as data. Once we have completed our data collection and analysis, we will import the data we collect to the RMIT server where it will be stored securely for a period of five (5) years. The data on the SurveyMonkey host server will then be deleted and expunged. If you are invited to participate in the study you will be given a username and password and provided access to the Social Fitness website. This website is password protected so people outside the study will not access to this information.

**What are the benefits associated with participation?**

The online program is based on an offline treatment manual that successfully reduces shyness, depression, and concerns about others. The treatment program has also been found to increase self-esteem and quality of life. It is anticipated that if you undertake this 9 week program and commit to the treatment, you will obtain similar results.

**What will happen to the information I provide?**

All the information you provide will be treated confidentially. Only the investigators will have access to the data. All identifying details, such as your name, will be stored separately from the rest of the questionnaire data you provide, and you will not be personally identified in any publication arising from the study. The information that you provide will only be accessible to authorised individuals within the Discipline of Psychology at RMIT University for 5 years before being destroyed. You will be asked to upload videos of yourself. Videos from people in the individual treatment will only be accessed by the experimenter. If you are in the group treatment you will be asked to share your videos with other participants in this group. All electronic data will be stored on a secure server and videos and data will not be able to be accessed by people outside the treatment group. Individuals in both treatment groups will not be forced to upload videos of themselves and will not be excluded from treatment if they choose not to upload their videos. Any information that you provide can be disclosed only if (1) it is to protect you or others from harm, (2) a court order is produced, or (3) you provide the researchers with written permission. All data will be kept securely at RMIT for five years before being destroyed. Data may be used in aggregate form or published in journals and/or more widely.

**What are my rights as a participant?**

Participation in the study is voluntary and you have no obligation to be involved. You have the right to withdraw your participation at any time, without prejudice. You have the right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified. You have the right to have any questions answered at any time.
Who should I contact if I have any questions?

If you have any questions about any aspect of the study please feel free to contact Peter Saunders on peter.saunders@rmit.edu.au.

Peter Saunders  
PhD Student  
RMIT University

Professor. Ken Greenwood  
PhD  
RMIT University

Dr. Andrea Chester  
PhD  
RMIT University
Appendix D: Informed Consent Form (Study 3)

RMIT HUMAN RESEARCH ETHICS COMMITTEE

Prescribed Consent Form For Persons Participating In Research Projects Involving Interviews, Questionnaires or Disclosure of Personal Information

PORTFOLIO OF Science, Engineering, and Health
SCHOOL OF School of Health Sciences (Division of Psychology)
Name of participant: ________________________________
Project Title: Social Fitness: The Online Treatment of Shyness
Name(s) of investigators:
(1) Peter Saunders (Student Researcher) Ph: 9925 3150
(2) Assoc. Prof Andrea Chester (Project Supervisor) Ph: 9925 3150
(3) Professor Ken Greenwood (Project Supervisor) Ph: 99257360

5. I have received a statement explaining the tests/procedures involved in this project.

6. I consent to participate in the above project, the particulars of which - including details of tests or procedures - have been explained to me.

7. I authorise the investigator or his or her assistant to use with me the tests or procedures referred to in 1 above.

8. I acknowledge that:
   (d) The possible effects of the tests or procedures have been explained to me to my satisfaction.
   (e) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied (unless follow-up is needed for safety).
   (f) The project is for the purpose of research. It may not be of direct benefit to me.
   (d) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
   (e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to RMIT University. Any information which will identify me will not be used.

5. I am over 18 years of age.

Participant’s Consent

Please tick the box to consent to take part in this study

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Participants should be given a photocopy of this consent form after it has been signed.

Any complaints about your participation in this project may be directed to the Secretary, RMIT Human Research Ethics Committee, University Secretariat, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 1745. Details of the complaints procedure are available from the above address.