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# **Social Anxiety; A Question of Theory of Mind?**

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Dissertation submitted in partial fulfilment of the Doctorate top-up in  
Counselling Psychology, Department of Psychology, City University, London.

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# **DECLARATION**

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## ABSTRACT

Twenty-four participants with a diagnosis of social anxiety were compared with fourteen participants with anxiety disorders other than social anxiety and twenty-nine comparison participants. Participants were matched on IQ and read strange stories to assess second-order false belief understanding. On the basis of previous research it was hypothesised that participants with social anxiety would spend significantly longer responding to non-mental and mental state questions compared to the other two groups and would give significantly poorer responses. As hypothesized, the social anxiety group did spend significantly longer responding to the mental state questions than both the other groups and the quality of their responses was poorer. The longer response times and poor quality of response were conceptualised as having a poor Theory of Mind. This link to Theory of Mind suggests a new understanding of the cycle of anxiety in social anxiety, and suggests the future of counselling with these clients may be altered to further improve effectiveness of treatment. There was also an unexpected finding for all groups, which showed that on the whole the faster a participant responded the more accurate they tended to be. The implications for this will also be discussed.

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## SECTION A: INTRODUCTION

The idea for my hypothesis came to me about ten years ago whilst sitting on a bus travelling home from my behavioural work with children diagnosed on the autistic spectrum. The social impairments seen in autism, otherwise known as the triad of impairments (Wing & Gould, 1979), which are seen in the way these individuals socialise, communicate and rigid think (lack of imagination) made me wonder if this was only something seen in autism or whether it could be applicable to other disorders as well. The impairments would show themselves in the following ways:

<b>Socialisation</b>	<b>Communication</b>	<b>Imagination</b>
<ul style="list-style-type: none"> <li>• Inappropriate touching of other people.</li> <li>• Difficulty in understanding and using nonverbal behaviour</li> <li>• Standing too close to people</li> <li>• Lacking awareness of the different ways to interact with friends</li> <li>• Having a desire to have friends and relationships but struggling to initiate and maintain these</li> </ul>	<ul style="list-style-type: none"> <li>• Asking repetitive questions</li> <li>• Inability to 'read between the lines' of what people mean</li> <li>• Talking about one's own interests regardless of the listeners response</li> <li>• Making factual comments inappropriate to the context</li> <li>• An absence of desire to communicate</li> <li>• Communication for one's own needs, rather than for 'social' engagement.</li> </ul>	<ul style="list-style-type: none"> <li>• Not understanding other people's points of view or feelings</li> <li>• Becoming agitated by changes in routine</li> <li>• Inability to generalise information</li> <li>• Having special interests</li> <li>• Taking everything literally</li> </ul>

*(Wing & Gould, 1979)*

Although I hadn't started working with clients diagnosed with social anxiety, it made sense to me that these impairments might be present in that disorder too. If a person cares about socialising, unlike individuals on the autistic spectrum, but like people with social anxiety, then having these social impairments would most certainly lead to the person feeling anxious. In order to make this a testable hypothesis I decided to use the concept of a 'theory of mind' to represent all of the impairments in the triad. Theory of mind represents an individual's ability to see things from another person's perspective. Theory of mind is a concept often referred to in the autism literature as it is believed that individuals with autism have a poor theory of mind if any at all (Baron-Cohen, 1985). This has been tested in children with autism using among other tests, Happe's strange stories (1995) which requires children to understand the difference between what they know and what the people in the stories know combined with an understanding of social context. Research findings have shown that individuals on the autistic spectrum either miss the point all together, respond based on what they know, not what the people in the stories know or at the very least respond much slower than comparison groups (Bowler, D,1997).

I started testing the hypothesis that individuals diagnosed with social anxiety have a worse theory of mind compared to comparison groups for my counselling psychology master's dissertation. Unfortunately due to time constraints (only having one year) the sample size was too small to be significant to the population. My results did indicate however that the social anxiety group was taking longer to respond to the strange stories and responding less correctly than the comparison group. For my doctoral research I decided to change Happe's strange stories to contain more adult themes, pilot tested them to make sure I was getting consistent responses and then aimed to test 90 participants, 30 in a comparison, anxiety and social anxiety group respectively. As is often the case in research, unforeseen difficulties arose in recruiting participants and my final numbers did not quite reach the 90 I was aiming for but was a respectable 67, which still meant the results would be significant to the population. Again the results supported the experimental hypothesis that individuals with social anxiety do have a worse theory of mind.

Throughout the last six years of testing this hypothesis I have also been practicing as a qualified counselling psychologist, working oftentimes with clients suffering from social anxiety both in individual and group settings. This work has provided some interesting

insight into where this lack of theory of mind has originated from and what treatment seems to be most effective. From my personal experiences it seems that the poor theory of mind has originated from traumatic social experiences in the past, including being overly criticised by parents, abused, criticised at school, bullied or have had very negative first romantic relationship experiences, leading to the conditioned response of anxiety to social situations. This clinical work has changed my original belief that like autism there was possibly a strong genetic component and has led me to believe that instead there is a strong learned one. The conditioned response of "social situation + anxiety = poor theory of mind" is supported by feedback from these clients reporting social fluency when they are relaxed and is evidenced by the fact that they become more socially skilled in the therapy room as they become more comfortable with me in therapy. This then led to me thinking about anxiety as the cause of a poor theory of mind, not only in social anxiety per se. Previous research on the effects of anxiety on cognitive functioning has demonstrated that it slows people down and makes them less accurate in their responses. If research findings continue to replicate the results from this dissertation, then the implications this has to therapeutic work would be for us clinicians to focus more on exposure work to foster social confidence, getting the client to recognise their social skills, not encourage them to believe they are socially inadequate, which an approach like social skill streaming would do.

There was also an accidental research finding from this work which has implications not only for social anxiety but psychology as a whole. When looking at how quickly each group responded and the quality of the response given, a negative correlation was found for all groups. In other words, the quicker the participant responded the more accurate the response given. Recent literature from cognitive and behavioural theorists have already started suggesting as much in books such as "Blink" by Malcolm Gladwell, who points out the power of listening to our intuition when schemas for how something works have already been established. He uses examples like the fireman who upon entering a building that is on fire suddenly gets the 'sense' that the building is going to collapse. Sure enough seconds later it does. If you were to ask the fireman why he thought the house was going to collapse, he wouldn't be able to say, because he is not conscious of the reason. Malcolm Gladwell points out that the reason is because there was a backdraft. The fireman has enough knowledge about fires to know that backdrafts mean buildings collapse and although he might not be conscious of this knowledge at the time of seeing the backdraft, it is stored

knowledge and once the information of the backdraft matches the stored knowledge his brain will feedback information about needing to get out of the building, which if he listens to will save his and other people's lives. In comparison to this, social information could be seen in the same way. Think about the number of people we come into contact with on a daily basis over our lives. All of the social interactions we observe and are a part of. Also consider the fact that we are social beings and that we rely on others to survive. Surely one of the first schemas we are going to develop is one for socialising. As we get older and understand more about relationships it adapts, but it must be one of the most sophisticated schemas we have. Social learning experiences that are negative, such as growing up with overly critical parents gives the individual faulty information about how people generally behave. Because parental feedback is so important to the development of self-esteem, the person is likely to develop a core belief about not being good enough, and will interpret what other people say according to that belief. However, the person will also get a lot of social information that others are not as critical but because parents are such significant people in our development it seems the person is most likely to opt for interpreting current social interactions according to the original 'trauma' where others are critical and they are not good enough. An example of this that I often see in my therapy room is where I praise a client for doing well on a homework task. The praise is met with silence and a confused look from the client. When I ask the client what this is about, the client responds, "Well you have to say that don't you...You are my therapist". It is no wonder therefore that individuals who have had disruptive social experiences start to doubt which schema (belief system about the world) to resort to, being understandably afraid that the abuse might re-occur, they are more likely to opt for the faulty schema, therefore disrupting the everyday flow of a social interaction. The slower response would have to do with competing schemas being activated and the poor response has to do with opting for the negative schema. Encouraging clients to recognise that the stored social schema of the majority is in fact accurate and that they have all of this information already must be a goal of therapy combined with exposure to practice and reinforce this which will reduce anxiety. The client study that I have decided to present in this doctorate looks at a piece of work I did with a client presenting with social anxiety. This is a way of demonstrating the link between what is discussed in the research and how it actually works in practice.

Isabel, my client whom I write about presented with classic social anxiety and due to being highly motivated and establishing a positive therapeutic relationship with me, worked hard at challenging her negative beliefs, established through faulty social learning in childhood and ended up completing all of her exposure homework tasks. The therapeutic outcome was very good.

For my critical literature review I have chosen to present and compare three treatment options for post-traumatic stress disorder. As mentioned previously, social anxiety quite often results from traumatic social experiences in the persons past, and as PTSD is classified as an anxiety disorder it felt fitting to present something slightly different to social anxiety but which often overlaps and is a part of the development of social anxiety.

It was very important to me to be researching something that could be used in practice. I have already altered the psycho educational part of my therapy with this client group. I have started challenging my clients to notice when their social skills are intact (when they are relaxed) to reinforce the idea that they are not socially impaired, just anxious. The initial exposure work I set out to do with my clients (where I perform the tasks) aims to get my clients to notice how little people pay attention and how non-critical they actually are. Finally, I will very often ask my clients where they learned their faulty/negative beliefs. I emphasise the word 'learned' because what can be learned can be unlearned and we all know that we learn incorrect information at times, so it opens the client up to the possibility that what they have learned is incorrect and can be changed.

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## SECTION B: CLIENT STUDY

## Part I – Introduction and the Start of Therapy

### Introduction/Implicit rationale for the choice of the case

I have chosen to present a client (whom I will name Isabel for confidentiality purposes) where therapeutic theory and research fit well with the practice application. It can at times be one of the frustrations of the practitioner to apply therapeutic techniques within a model to ones work and then find that the client does not respond as predicted. It is also one of the on-going challenges for practioners to look at when theory works and does not and to understand why. I hope to give an insight into how and why I believe it worked so well with Isabel, which continues to affect my work with similar clients today.

### Summary of Theoretical Orientation

Cognitive-Behavioural therapy was used with Isabel. Cognitive-Behavioural therapy derives from early behavioural experiments, in which behaviours were found to either increase or decrease based on the principles of classical and operant conditioning (Pavlov, Thorndike, Tolman & Guthrie). Classical conditioning involved creating a conditioned response to a previously unconditioned stimulus. The principles of Operant conditioning show how behaviours can be increased based on the type of response received, whether that is positive or negative reinforcement. Behaviours were also shown to be extinguished by ignoring them or through forms of punishment.

The behavioural therapies assumed that people are part of the animal kingdom and therefore will respond as other animals do. Aaron Beck (1976) and later Albert Ellis (1977) saw a flaw with this type of thinking. They believed that humans are more complex than other animals and that an individual's cognitions affect feelings and behaviours. Early philosophers such as Descartes had suggested as much. Was not our ability to think proof of

our existence? To discount cognitive processes suggested humans just responded to outside environmental cues, whereas there is a whole internal world that humans are responding to.

Cognitive-Behavioural therapy uses a combination of these two different theoretical models so that the person previously struggling with a certain situation may begin to think about their situation in more adaptable and realistic ways. The exposure is used as a way of providing the person with evidence that the new thinking style is true, not to just replace previous long-standing negative beliefs with new positive ones. If the client does not believe the new cognition they will not feel and behave differently and therefore the therapy is ineffective. The only way a client will be prepared to consider a new thinking pattern is if they have enough evidence to suggest their previous thinking pattern is faulty.

Isabel presented with social anxiety, a fear of social interactions in which she perceives other people as threatening. Cognitive-behavioural therapy is effective with this type of presenting problem because new adaptive thoughts about people being neutral are demonstrated well with exposure tasks in which the client predicts negative outcomes and then realises after doing them that the predictions are way off the reality of what actually happens.

Using Cognitive-Behavioural therapy effectively with Isabel involved a process of primarily forming a strong therapeutic relationship, educating the client about the model, understanding and identifying the negative automatic thoughts and which negative core beliefs they were linked to and where Isabel had learned these beliefs. The next step was to start challenging the negative automatic thoughts and use exposure tasks to support the new alternative beliefs. Some of these exposure tasks were initially carried out by me with Isabel watching how other people responded. Throughout therapy I asked Isabel to work on two workbooks, one on Overcoming social anxiety and the other on Self-esteem. Homework

tasks were given weekly to continue exposure tasks and thought challenging outside of session times. This was to enable Isabel to become more independent in her ability to carry out the CBT on her own, and also, to generalise the new alternative beliefs to all social contexts. Relaxation techniques were also learned to help control the levels of anxiety when carrying out the exposure tasks. The main relaxation technique was applied relaxation (Ost, 1987), which is more commonly known as progressive muscular relaxation. This technique teaches the client to become aware of when muscles are tense and how to become more mindful and in control of releasing unnecessary tension. This helps the brain process trigger events as safe when used during exposure.

### The Context of the Work

The work with Isabel took place at Cygnet Hospital Harrow. Cygnet Hospital is a private psychiatric hospital that offers inpatient and outpatient care. Most referrals come through psychiatrists working at the hospital who are referred patients from a number of general practitioners in the area. There are a number of psychiatrists, an addiction team and sessional psychologists that work there. It is quite often the case in private practice, that the client's motivation is higher than those in the public sector. This is possibly due to the financial investment that goes into funding a course of counselling.

### The Referral/ the Presenting Problem

Isabel was referred to me by a consultant psychiatrist at the hospital. The referral letter outlined a history of social anxiety that was so severe at times that it often led to avoidance of almost all social interactions, leaving Isabel in a very isolated and depressed mood. The referral letter did not explain why Isabel was seeking help at this point however it did suggest that motivation for change was high and that she would like therapy to commence as soon as possible. The referral letter also outlined a brief history, which included a story of an African/Caribbean family immigrating to the United Kingdom when Isabel was six. Isabel is an artist and met her husband at University and has three children, who are all now young

adults. Isabel's husband was seen as her main support as were her children. It was recommended by the psychiatrist that she start a course of Prozac however Isabel had opted not to take any medication and wanted to try therapy first.

As is the case with anyone suffering from an anxiety disorder, exposure to the feared situation (in Isabel's case people), led to panic like symptoms. She experienced heart palpitations, dizziness, sweating and a fear that she would pass out or make a fool of herself in public. The avoidance of social situations led to increased levels of anxiety when next confronted with a social event and depressed mood because ultimately human beings are social and when the social need of belonging is not met negative beliefs about oneself are inevitably triggered.

#### Convening the first session

When Isabel came into the room I had an immediate sense of how difficult this was for her due to how anxious she was feeling. She spoke in a very soft/low voice and looked down almost the whole time. She did not take off her jacket and kept taking out a tissue to wipe her forehead. As is quite often the case when I see anxious clients, I end up feeling anxious myself, although this transference is not described or discussed within the cognitive-behavioural model, there is no doubt that it is a very real part of the therapeutic process. As a way of compensating for my clients anxiety, I often take more of a lead in the first session. I discuss what previous clients presenting with social anxiety have experienced and how I have worked with them. This led to Isabel feeling less anxious by normalising what she had and gave her positive expectations of the outcome.

## Initial Assessment and Hypothesis Formulation of Problem

Isabel's social anxiety was seen as the presenting problem by the GP, Psychiatrist and myself. Isabel displayed all of the common features of social anxiety outlined by Clarke and Wells (1995): Firstly, when Isabel described going into social situations she began detailed monitoring and observations of herself. Secondly, she engaged in a number of safety-behaviours to reduce the possibility of rejection. She avoided the social events outright or hardly spoke, only talked about certain topics, and waited for others to approach her and hardly spoke about herself. Thirdly, Isabel showed an anxiety-induced performance deficit, which included over-estimating how negatively others would perceive her and her 'performance'. Finally, there was the pre and post- catastrophising of social events. This is when Isabel would go through each social event in a detailed way, picking out anything that could have been perceived negatively by others. This is of course "a trap" because even neutral situations could be perceived as negative, and someone like Isabel is more likely to assume the worse.

According to the DSM-IV, Isabel would be classified in the generalised social anxiety group because her fears were related to most social situations and not specific ones such as public speaking which tends to be the most common one.

When looking at Isabel's past it was clear that she had grown-up in a strict household in which her parents had been overly critical of her. She would often receive feedback from her mother about not wearing the correct clothes, not behaving appropriately in social situations, and suggestions that her mother was embarrassed by her. At school Isabel was bullied for being quiet and had few friends. Her father on the other hand, was austere and cold. If Isabel 'misbehaved' it was not uncommon for her to get hit.

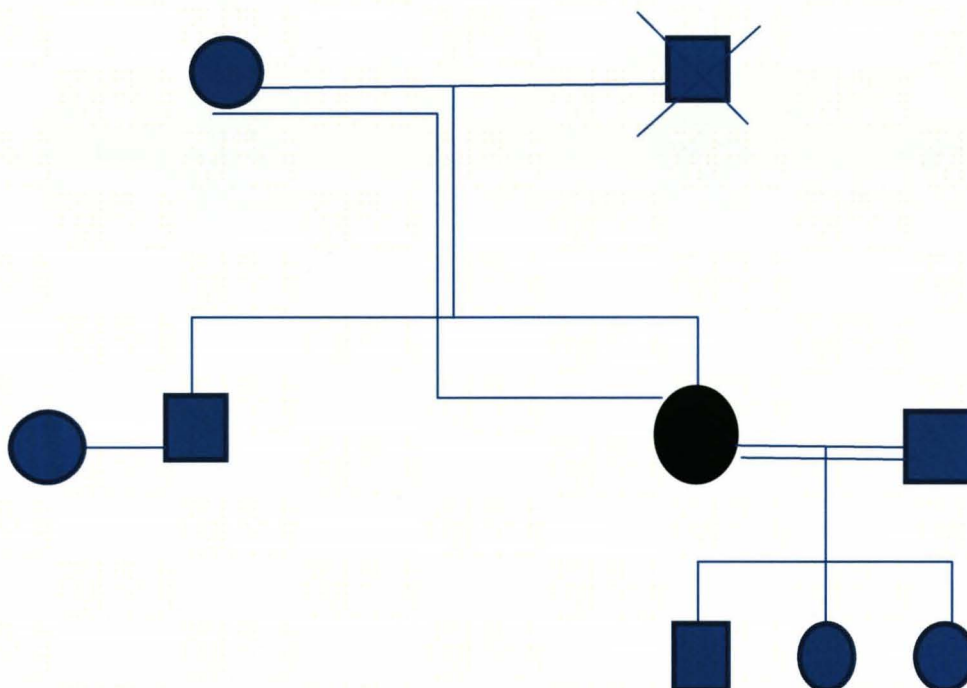
It was hypothesised that Isabel's upbringing had led to core beliefs about being an outsider, not likeable and generally not good enough. The belief about being an outsider mainly developed due to her anxiety, which led to her being quiet and therefore always being on the outside of social interactions and events. The negative automatic thoughts which Isabel and I were able to identify in the first session were around others thinking she was strange or stupid and believing she would be rejected suggested these would be the underlying beliefs. Isabel had therefore avoided most social interactions or had pushed herself through them with high levels of anxiety. Both these situations leading to her brain pairing social events with a high level of perceived threat which had maintained her social anxiety throughout her life. Her love of art and desire to complete an art class and attend art groups suggested that there would be high levels of motivation to engage in the therapy. This is especially important when conducting exposure tasks as it is so difficult for the client initially.

#### Negotiating a Contract and Therapeutic Aims

A contract of twelve sessions with a review half way through was agreed on by Isabel and me. Isabel was coming to see me on private health insurance and the insurance providers tend to agree to twelve sessions as a standard number. It is then possible to apply for further sessions if it is needed. Research suggests any number between 8 and 16 sessions are needed (Hoffmann & Otto, 2007). However in my experience it can take longer to really generalise the new cognitions and behaviours. The agreed goal was for Isabel to be able to join art groups and classes without feeling a huge amount of anxiety and to eventually be able to present her work to others without fearing rejection. This would be achieved by initially educating Isabel about social anxiety and understanding how her experience related to the model. Once the cognitions were identified we agreed we would challenge her beliefs and then conduct a number of exposure tasks to reinforce that the new cognitions were in fact true. The sessions would take place on a weekly basis and confidentiality was discussed.

## Biographical Details

Isabel is a 48-year-old Afro-Caribbean woman. Her genogram can be seen below. Isabel has been married for twenty-four years and has three children, two twin daughters and a son. Her father died seven years ago and her mother is still alive. Isabel has been suffering with social anxiety since she can remember, initially believing it was just shyness until it became so severe that she realised she was occasionally not leaving the house and it was interfering with her functioning. Her husband is extremely supportive and tries on every occasion possible to encourage Isabel out. She often joins him for business dinners, but as he is socially confident she relies on him to make conversation and take the lead in all social events, which effectively is one of her safety behaviours. Since her father's death seven years ago, her mother has become very reliant on Isabel to take care of her. This will be discussed later in this report but is difficult given the history. There are no reported psychiatric illnesses in the family history. Isabel could be classified as suffering with moderate depression, which as mentioned previously is secondary to her anxiety.



## ***Part 2- The development of the therapy***

### The Pattern of Therapy

Isabel had eighteen sessions in total. Isabel and I continued to feel anxious in the first three sessions but then started to get used to each other and formed a strong therapeutic alliance. This developed from an ability to display the three basic principles of the person-centred approach: unconditional positive regard, congruence and empathy (Rogers 1957). Isabel visibly became less anxious, started making more eye contact, took off her jacket, spoke in a more audible volume, and became more expressive. Our sessions would often be filled with laughter as well as tears, which initially Isabel was too anxious to express. When we began the exposure sessions I asked Isabel to watch me and how others responded. This helped Isabel to pay attention to what other people really were doing and helped her to build trust in me and the therapy. By demonstrating that the exposure tasks were in fact not that bad, Isabel was able to have more confidence in trying them out herself. By the end of therapy Isabel was going to art groups, classes and displaying her work. She continued to have some negative beliefs about social events before attending them but realised that these were just part of her previously held automatic thoughts and that in reality these events were always positive. Alongside challenging the negative beliefs and behaviours around social anxiety, Isabel and I also worked on self-esteem and looked at ways in which she could set new boundaries with her mother and recognise her strengths as an artist, mother and wife.

### Therapeutic Plan and Main Techniques Used

Initially an open and trusting relationship was developed using, as mentioned, the principles of the person-centred approach. Relating my previous experiences of working with clients

suffering with social anxiety to Isabel, helped to normalise her experience and conceptualise how therapy could be effective. I clearly communicate to all of my clients their responsibility in the process. It's all very well challenging thoughts and behaviours inside the session, one hour a week, but unless that is maintained outside of the session there will be very little change, if any. Isabel seemed to understand this and her willingness to carry out homework exercises was evidence of this being the case. The therapeutic plan was then to draw out a hierarchy of feared situations and gradually work through each level by initially restructuring thoughts about the events and then carrying out exposure tasks to evaluate whether the alternative thoughts were true.

The main techniques used as mentioned above were cognitive restructuring and exposure for the social anxiety. Having lived with these negative and threatening beliefs most of her life, Isabel's self-esteem/ confidence was not surprisingly low. By challenging the negative beliefs around the social anxiety, Isabel's self-esteem was also challenged in a positive direction. However, we spent a few sessions looking at what it means to be good enough and also asserting boundaries with her mother, who was constantly demanding unreasonable amounts of attention from Isabel. In exploring where her negative core beliefs came from, Isabel, like most clients, began to feel angry with her parents and how they had behaved towards her. The angrier she was allowed to be, the less anxious she communicated being. This emotional consequence is looked at in James Pennebaker's (1997) book, and is an interesting observation I have had with most clients. It seems the more a client is able to see what is their responsibility and what is others, the less guilty/shamed the client feels and the less anxious they express being. This is likely to be due to the cognitions changing around "I am not good enough" to one in which the client was always good enough but the parents, friends, teachers etc. had their own issues that were expressed in unhelpful ways to the client. It also helped Isabel to see that she had learned these beliefs and that there wasn't something inherently wrong or bad with her. The fact that beliefs and behaviours are learned means they can be unlearned, something which is helpful to the client in increasing motivation for change.

The exposure tasks followed the hierarchy that Isabel had written up at the beginning of therapy. Her level 1 social situations were the least anxiety provoking with each level becoming increasingly more difficult. Isabel had 7 levels. For Isabel level 7 was presenting her work, which was perceived as the most threatening and which was always avoided. Using graded exposure has always been a useful strategy when working with clients suffering with social anxiety. It means that the anxiety levels are controlled and low enough for the exposure to be effective. With each level we would spend the session time challenging the thoughts around the situation in a thought chart (see Appendix 1) and then Isabel would go away and try to do the exposure without her safety behaviours. Paying attention to how others actually responded and reporting back to me in the next session. To give Isabel the confidence to do this we set up three exposure tasks within session time for me to carry out and for her to observe.

The first in-vivo exposure task was for me to drop my keys. I asked Isabel to predict how many people would look at me if I dropped the keys in front of them. I also asked her to predict how they would respond. Isabel predicted that at least 8 people out of 10 would look at me and most of them would be annoyed, probably even making sounds indicating as much. So off we went down the high street with me dropping the keys and Isabel watching the people. To her amazement only two people looked and neither of them seemed annoyed. In fact, she wondered if they had even registered what they were looking at and perhaps had just looked because they heard a noise. The second exposure task was for me to eat something in a messy way. Again, how many people would pay attention and what would they be thinking? Isabel predicted that almost everyone who walked past me would pay attention and would give me 'what is she doing?!' disapproving looks. In reality, hardly anyone bothered looking and no one gave me any disapproving looks. Isabel was so surprised by this that she actually laughed for several minutes in the session when debriefing. Finally, what would happen if I walked down the street speaking gibberish? This was meant to be perceived as the most embarrassing task by Isabel and it was. When I told her what I was going to do, her eyes went all wide and she said, "you wouldn't?!" and again off we went down the high street and Isabel watched as no one seemed to notice or care.

These in-session exposure tasks were helpful in getting the exposure work started. They not only challenged Isabel's faulty beliefs about how much people pay attention and how negative they are, but it helped to build trust between the two of us. If I was correct about these three situations then she was more likely to believe my challenges when it came to her own situations that she was going to do exposure on for homework. Her homework tasks included: asking a new acquaintance to a museum, joining an art group, presenting her work and off of her own back Isabel joined the art society. Before each new exposure task Isabel and I would challenge her negative thinking in the session using a thought chart. Isabel's thoughts usually revolved around other people thinking she didn't belong there and that she wasn't good enough/ an outsider. The challenges that most helped Isabel were reflecting on who was 'good enough' what was bringing them all there together, when had she ever thought someone else wasn't good enough to be in a group, and what were her thoughts when other people asked her to museums or other social events. The more Isabel did the exposure tasks following these sessions, the more she began to access information about the alternative beliefs regarding them, until she was eventually feeling much less anxious doing them.

Other than the standard thought charts and exposure work, I also taught Isabel breathing techniques and applied relaxation (Ost, 1987). Applied relaxation has been shown to be as effective as standard CBT techniques. This is because if one is relaxed in the previously feared situation the brain starts to pair the situation. In Isabel's case, speaking to a stranger as safe, which just makes exposure more effective. It also helps the client to feel more in control in a real way. All of the safety-behaviours set up in any anxiety disorder are done by the client with a misconception that it will lead to feeling more in control, when in fact it makes the client feel less in control because it makes them more anxious. By finding real ways of being in control, the client can hopefully feel more able to give up their safety-behaviours.

## The Key Content Issues

Initially the content issue of the sessions was to understand how Isabel's negative thoughts were leading to anxiety and how her behaviours were perpetuating the anxiety. The sessions quickly moved onto where she had learned these faulty core beliefs and then how we were going to challenge them.

As Isabel and I worked through the hierarchy, the content issue also started to revolve around her relationship with her mother and how she could manage her boundaries better. Her mother had become very reliant on Isabel since the death of her father and was requesting that she spend more and more time at her house until she was there almost the whole week. How could Isabel learn to say no without believing she was a bad person? In turning the situation around by asking her what her expectations of her children were, and what were reasonable and unreasonable requests, Isabel was able to begin a process of re-establishing boundaries. She realised that by not doing everything for her mother, her mother started becoming more active. This in turn, made her feel better and therefore she was more pleasant to be around.

Finally, the effect the social anxiety had had on her self-esteem was looked at and goals for building her self-esteem. This partially included the work on the social anxiety and assertiveness with her mother. I also asked that she start looking at all of the things she was doing well, positive feedback she had received about her work, the positive relationships she had built with her family and encouraged her to join societies and art groups to continue building on this evidence.

## The Therapeutic Process

It is not surprising that I chose to do my research on social anxiety. I have suffered with it mildly throughout my life. I have challenged it as I do with my clients and gradually I have become less anxious and built-up my self-esteem in similar ways. I am aware of my own struggles with anxiety and have worked on them in my personal therapy.

When Isabel began talking about her fears of others and how embarrassing certain situations, especially in the exposure tasks would be, I recognised that these beliefs resonated with my previously held beliefs. I know how uncomfortable it is to be anxious in unthreatening situations and I am aware that I sometimes have thoughts around fear of losing control in the sessions like, "I can't be anxious now when my client is anxious because that would make me look like I wasn't a good therapist", this of course inevitably leads to me feeling anxious, so in a sense I am mirroring the exact same process as my client. After so many years of being a psychologist I am able to quickly challenge these thoughts, but they do appear occasionally none-the-less.

The more Isabel opened up and learned to trust in me and the process, the less concerned I felt about proving myself and the less anxious we felt around each other. When discussing boundary issues, I could hear myself being quite insistent, which is probably helpful to Isabel in that it helped her to recognise how important it is. The forcefulness however derives from my own previous difficulties in setting boundaries. I was aware of this and was able to use one of my own experiences with boundary setting and the consequences to Isabel in a session. I know all psychologists have different views on whether or not to divulge personal information to the client. My belief is that if it is relevant to the client then it can be very useful. Firstly it helps the client see the practitioner as a person. Secondly, it backs up what I

am saying along with other clinical examples, and finally, it helps show the client advanced empathy for what they are going through.

As Isabel and I worked through her hierarchy, there were several sessions filled with tears, as she was so anxious about taking the chance on the exposure tasks. It is incredibly brave for anyone to really stand up to their fears and perform the action that the body is indicating not to. I found myself taking on a 'nurturing mother' role of encouragement and helping her to access previous successes with exposure. This was of course the type of mother that she had not grown-up with and helped to give her a new experience she could learn from and hopefully internalise.

### Difficulties in the Work

Other than managing my own anxiety in the sessions, the only other difficulty was Isabel's insurance running out due to her husband leaving his current employment and their insurance therefore being cut off. Isabel had made significant progress and she knew how to continue challenging her thoughts and behaviours, but in an ideal world she would have had on-going support. The cognitive-behavioural research often indicates that anything from 8 to 16 sessions can 'cure' someone of their anxiety or depression. This number of sessions is cited in the National Institute for Health and Clinical Excellence (NICE) and therefore used as a guideline for practice in the National Health Service. In my clinical experience however, 8-16 sessions is a good start, but change takes time and generalising new schemas of the world takes on-going work. If given more sessions, I will often start spreading out the sessions, so that the client continues to stay focused on their goals and exposure work and gives them a space to continue reflecting on progress made.

As a client, Isabel was an ideal candidate for cognitive-behavioural therapy. She was motivated to take on the challenge because she loved her art work so much that her goal was very personal to her. She is very intelligent and insightful and was able to understand

the social anxiety model and immediately put theory into practice. She also had a very good support group that continued to encourage her outside of session times.

### Making Use of Supervision

In supervision I looked at how some of my processes were mirroring my client's. We looked at the concept of control and anxiety. What if I become anxious in a session? Does this mean that I should not be helping someone else with their anxiety? Believing that to be a good therapist I must be serene, calm, and in control at all times, is of course "a trap". My supervisor helped to challenge me to see that as a human I too experience all ranges of emotions. It was helpful to accept that I cannot always be in control because no one can. The more I accept this fact the less anxious I become. I was able to use the exact same challenges with Isabel. Individuals who are socially anxious always hold all-or-nothing beliefs about what is and is not acceptable to others and themselves. Due to the fact that there is no room for mistakes or fallibility it means the individual effectively believes that they must always be perfect. This condition or rule for living is not achievable and keeps the individual consistently anxious.

When it came to the exposure tasks, my supervisor wisely reminded me that I must make sure to communicate that the task should ideally feel about 45-70% anxiety provoking. If the anxiety is higher than this then exposure is ineffective because the individual's brain is still associating the situation as a threat and is unable to take in other important pieces of information. Such as what other people are actually doing and how they are responding.

Finally, just using the supervision hour every few weeks was important for me in order to reflect on where I was going with the sessions, and remaining focused on the goals each week. It gives me a space like my personal therapy to voice my concerns and recognise what is working well so that I may implement the same strategies again with future clients.

### Changes in the formulation and therapeutic process

The formulation did not change throughout the therapy. Isabel had been diagnosed by her general practitioners and psychiatrist with social anxiety, so this is perhaps not surprising. The therapeutic process started out as quite 'clinical'. We were identifying thoughts and behaviours according to the model to help Isabel make sense of the overall picture of her social anxiety and how it was being maintained. The thought charts were used throughout the therapy, but in the beginning of therapy were the main focus of the sessions.

Towards the middle sessions, when Isabel and I had done a few exposure tasks, the relationship dynamics between us became more significant and therapeutic. This could be viewed in a psychodynamic and systemic way. Isabel had grown-up with critical/negative parents. By demonstrating a positive/nurturing dynamic, I was demonstrating something different to Isabel. I hoped that this new feedback/dynamic would become internalised and replace the old pattern of self-critical thoughts. To emphasise this, we looked at the importance of being compassionate with oneself (Compassionate Minds). Being able to be compassionate with one self involves understanding where one has learned irrational thoughts and patterns of behaviour. It is a process by which one recognises the lack of choice one had in ending up in a family and having the childhood experiences one had, therefore blaming oneself for them is senseless and unhelpful when learning how to change them.

I was genuinely pleased to see the progress Isabel was making in therapy, my joy was shared by Isabel who was now able to attend art groups and display her own work. She decided to apply for membership to a well - respected art society that she would have to be interviewed for by a panel of established artists. She went, and was given honorary membership because the panel was so impressed by her work. It is the most pleasing and

exciting part of being a psychologist, when one gets to be a part of such positive change in an individual's life.

## **Part 3 - *The conclusion of the therapy and the review***

### The Therapeutic Ending

Isabel's husband had decided, due to changes in the company that he worked for, to leave quite abruptly. So Isabel and I only had a few sessions to wrap up the work and plan for the future. I ask all of my clients to reflect on what they have learned from the sessions, what they will continue to work on and how they will do this (thinking about what support systems are available to them once therapy has finished). As mentioned earlier, Isabel was very psychologically minded and motivated she was able to reflect well on what she had learned about social anxiety and how she would continue to challenge her negative beliefs and safety-behaviours.

Isabel made significant progress, and we looked at how she had been able to do that. We wrote-up a continuation plan, what the next steps of exposure would be and how she would keep herself on track. Again, Isabel seemed very aware of herself and what needed to happen.

I always remind my clients that should they need a follow-up session in the future that this is always available and remind them of other counselling and support services in their area. When Isabel left she became slightly tearful, she expressed how much this process had meant to her and it left me feeling grateful as I always feel that I was able to play a part in that change.

## Evaluation of the Work

I felt that the counselling was successful in achieving what it realistically could in eighteen sessions, considering Isabel had been living a lifetime in fear and isolation. By the end of therapy Isabel was socialising with different art groups, a member of a well-established art society and displaying her work at different exhibitions. Isabel continued to feel anxious about these events, but the reported amount of time Isabel spent feeling anxious in social situations reduced significantly from the whole way through to the first ten minutes, and more importantly at least she was going! Isabel reported that her whole family had noticed the changes, although her mother was less pleased about the newly established boundaries.

## What I Learned About Psychotherapeutic Practice and Theory

As with every client I learned yet again how important it is to be aware of my own issues in the therapy room. This is important because it could be mirroring what my client is going through and therefore helpful to the client, but also important for my self-awareness, to be able to distinguish between what are my issues and what are my clients.

I learned yet again that if I just take a little extra time at the beginning of therapy to review the model of whatever anxiety/depressive disorder I am working with and identify the thoughts and behaviours that match the model then the client and I both seem to have a clear direction in terms of the stages that the therapy needs to head in.

Finally it is worth reflecting on what all the research suggests about the importance of the therapeutic relationship regardless of which model one is working in. It was obvious that the more comfortable Isabel and I became with each other, the more she trusted me, the more of an impact the work had. As mentioned previously, the therapy gave Isabel a safe place not only to explore her fears and make sense of where they came from, but to experience a

new relational dynamic, one in which she was being encouraged and not criticised. She did have other relationships in her life that were like this, like the one with her husband, but she had no female ones with another adult in a position of what she would perceive as 'authority'. Very often in social anxiety the perceived 'authority' figure is imagined to be more critical. This opportunity gave Isabel the evidence to realise that this is not the case.

### What I Learned About Myself

I realised through working with Isabel that I too am not totally over my social anxiety. Through the supervision and personal therapy that I have, I was able to look at my issues around perceived control, acceptance of myself as a fallible human being and self-esteem issues. I suspect there is a function at this point to me holding on to a small amount of social anxiety, it keeps me quite focused in the therapy room. I wonder if I would be as effective without it. I find that a little bit of anxiety keeps me motivated, it is only once it reaches a certain level that it no longer stays functional. I only very rarely experience those high levels of anxiety, so on the whole it seems to have more of a positive consequence than a negative one.

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# APPENDIX 1



## CBT ANXIETY GROUP ABC CHART

Actual Event A	Belief B	Consequence C	Alternative Belief Alt.B	Alternative Consequence Alt. C
Going to art group	The others will not like my art work ↓ They think I don't belong here ↓ Maybe I don't belong here ↓ I am not good enough	Anxious  Behaviour:  Avoidance	<ul style="list-style-type: none"> <li>• Anyone who is an artist belongs in the art group. I am an artist therefore I belong.</li> <li>• Art is subjective: I don't like everyone's work but that doesn't mean I don't think they should be in the group.</li> <li>• They will probably appreciate another artist joining.</li> </ul>	*Go to the group and drop safety behaviours.  Start talking to people as soon as I get there and write down all of the evidence I get that others are pleased I am there.

## SECTION C: CRITICAL LITERATURE REVIEW

### PTSD

## Introduction

Post-Traumatic Stress Disorder is estimated to affect approximately 8% of the adult population of the United States (DSM-IV, 2000). Although the exact numbers are unknown in the United Kingdom, it could be assumed to be equally high based on the recent Iraq war and the number of asylum seekers in the UK. It is estimated that 1 in 8 soldiers returning from war are suffering from PTSD (Associated Press, 2004). PTSD is a disorder that most of the counselling services will come into contact with, and as such need clear guidelines on how to manage. The National Institute for Clinical Excellence recommends that,

“More severe or persistent PTSD symptoms should be offered trauma focused psychological therapy such as CBT or Eye movement desensitisation and reprocessing” (NICE, 2010)

With an ever decreasing budget for the National Health Service in our current economic climate, the government is interested in finding ever more efficient short-term counselling solutions to severe anxiety disorders. It is therefore important for practitioners to not only be trained in these techniques if they are proven to be effective, but to understand how and why they work. This paper will be looking at three short-term techniques known as Eye Movement Desensitisation and Reprocessing (EMDR), The Rewind technique and Cognitive-Behavioural Therapy. This paper will first examine what PTSD is, then what these three different techniques are, how they work in practise, an evaluation of the techniques compared to each other, what factors they have in common and finally as a way of putting theory into practice, the writer of this paper was trained in each approach and will provide a personal account of how effective each approach has been to date.

## **Post-Traumatic Stress Disorder**

Post-traumatic stress disorder was only recognised as an independent anxiety disorder in 1980 and included as an anxiety disorder in the DSM-III (Lilienfeld, S., 1998). Before this time however, the cluster of symptoms had been recognised in relation to veterans coming home after World War I and II, in which it was discussed as “shell shock” or “battle fatigue”. It is defined as the development of characteristic symptoms following exposure to an extreme traumatic stressor involving direct or indirect personal experience of an event that involves actual or threatened death or serious injury, or a threat to one’s personal integrity or to that of another person, or learning about an unexpected or violent death (DSM-IV, 2000). Among the most frequent precipitants of PTSD are military combat, rape, physical assault, motor vehicle accidents, natural disasters and the witnessing of a murder or accidental death. The resulting symptoms fall into three categories: The psychological re-experiencing of the traumatic event, avoidance of stimuli that remind the individual of the event and heightened arousal. What sets PTSD apart from the other anxiety disorders is that it always originates from an actual traumatic event even if it is through vicarious learning, in other words hearing about another person’s traumatic experience, whereas a phobia of spiders (arachnophobia) for example does not need to originate from an event in the past. The symptoms that result are set apart from other anxiety disorders by the reoccurring flashbacks that lead to the sufferer feeling as if they are re-experiencing the traumatic event continuously and the increased startle response. It is estimated that about thirty percent of individuals that are exposed to an event that could be classified as ‘traumatic’ go on to develop PTSD (NICE, 2010). Based on the research it appears as if previous family stressors predispose an individual to developing PTSD, including depression, alcoholism and unemployment (Emery, O., & Emery, P., 1991).

In the revised DSM-IV definition of PTSD more emphasis is placed on the way in which the individual interprets the perceived threat as a determinant of whether the symptoms develop or not. It is important to consider cultural variants, for example what may be considered ‘traumatic’ in one country may not in another. This has to do with what has been normalised within one society versus another. For example, upon hearing an

explosion, someone in Iraq is unlikely to develop PTSD given the non-stop wars that have been taking place there, whereas someone walking down the middle of Oxford Street in London is more likely to develop PTSD given the rarity of the occurrence.

The way in which trauma memories are stored versus non-traumatic memories has been shown to vary. Joe Griffin (2003), a research psychologist sees PTSD as resulting from traumatic memories being stored in the amygdala, the emotional centre of the brain as opposed to the neo-cortex, the rational centre of the brain. He believes that when memories are stored in the amygdala, the brain constantly scans the environment for any matching stimuli that was experienced in the original traumatic event. The result is a constant state of arousal, as the body is always in fight-or-flight mode prepared for the repeated threat. Joe Griffin uses the example of a butcher who upon smelling perfume, lemon oil, banana oil or ether would have 'strange spells' where his heart would beat quickly, he would vomit and then lose consciousness. It turned out that during the Great War of 1914-18, the butcher had experienced the traumatic event of being gassed in the trenches whilst asleep. The perfumed smells were enough of a match to the amygdala, and so the resulting fear response would emerge.

PTSD is only diagnosed if the person has been exposed to an event that qualifies as traumatic, has been repeatedly re-experiencing the trauma, avoids activities and stimuli associated with the trauma and emotional numbing, experiences heightened arousal, irritability or an exaggerated startle reflex and the symptoms have persisted for at least one month (DSM-IV, 2000).

As with any disorder there are a number of therapeutic approaches available. Research has shown EMDR and CBT to be the most effective (NICE, 2010) and will therefore be explored in this paper alongside the Rewind technique that has yet to prove itself through research but which its creators claim to have equal efficacy. Is it possible to cure PTSD in only a few sessions and if so how does it work?

## Eye Movement Desensitisation and Reprocessing

The eye movement desensitisation and reprocessing (EMDR) procedure was developed by Francine Shapiro (1987), an American psychologist, who recalls having fortuitously “discovered” that when she moved her eyes back and forth it reduced her own anxiety. EMDR involves getting clients to recall traumatic episodes whilst tracking the movement of the therapists hand back and forth. Several episodes of tracking the hand movements may be required for a single traumatic event to be reprocessed. The research on EMDR is convincing although even Francine Shapiro couldn't fully explain why it works. Possible explanations such as it might work on the same principles as REM sleep has yet to be proven. There are eight phases to EMDR which will be described below and are from the EMDR training manual designed by Shapiro (1998):

The first phase involves taking a history of the traumatic event, in which the therapist documents symptomology, recent distressing events that elicit emotional disturbance, related historical incidents and the specific skills and behaviours that will be needed by the client in future situations.

The second phase is about building rapport, explaining what EMDR is, and ensuring that the client has methods of handling emotional distress and good coping skills. The therapist also wants to assess that the client is in a relatively stable state.

In phases three through six, a target is identified and processed using the back to forth hand movements. This involves formulating a picture along with a statement representing the worst part of the incident (for example, the picture is as the car hit another car. The negative belief is, “I am bad”). EMDR is non-directive, so after each set of hand movements the therapist asks the client what came up for them, in other words where did their brain (processing) take them. The client responds and the therapist asks them just to notice it and identify where in their body they feel the emotion that is associated with the statement. Then another round of hand movements until the client reports no longer experiencing any anxiety with the negative picture/belief.

Phase five is all about installation of the new positive/neutral statement to replace the previously held negative one (i.e. "I am good enough").

Phase six teaches the client how to body scan for any heightened state of arousal and how to systematically relax.

Phase seven is the closure stage, when the client and therapist debrief, the client is asked to keep a log, and a follow-up session is scheduled.

Phase eight is a re-evaluation, when the client is asked for a follow-up session and again is asked to reassess the picture that was associated with the original traumatic event, thoughts and emotions are assessed and the review log is looked at.

### **Research supporting EMDR**

Francine Shapiro's original research looked at PTSD in 22 participants that were Vietnam veterans. The results indicated that a single session of EMDR procedure successfully desensitized the participant's traumatic memories and dramatically altered their cognitive assessments of the situation, the effects were found to be maintained at a 3-month follow-up. The therapeutic benefit was accompanied by behavioural shifts which included the alleviation of the participant's primary presenting complaints (Shapiro, 1988). Since Shapiro's research there have been a number of other findings to support the use of EMDR.

The journal of EMDR Practice and Research lists several studies not surprisingly supporting the use of EMDR, when taking a closer look at sample sizes however several of these studies are case reports (Barker, Randolph T., & Sandra B., 2007) or pre and post- effectiveness studies on work with for example Tsunami survivors that were only carried out on five participants (Jayatunge, Ruwan M., 2008). These numbers are too small to be considered significant to the population.

Of the few studies with significant sample sizes, 124 children who experienced disaster related trauma during a massive flood found that significant improvements continued at a

3-month follow-up with the use of EMDR (Aduriz, M.E., Bluthgen, C. & Knopfler, 2009). Another convincing piece of research looked at a sample of 1500 earthquake victims whom underwent five sessions of EMDR which successfully eliminated PTSD in 92.7% of those treated, with a reduction of symptoms in the remaining participants (Konuk, E., Knipe, J., Eke, I., Yuksek, H., Yurtsever, A., Ostep, S. (2006).

### **Non-supportive Research**

Some of the research of EMDR has not been as complementary. One study for example found no drop in the pre and post-therapy subjective units of disturbance (SUD) and a greater psycho-physiological responding in an exposure condition (Boudewyns, Stwertka, Hyer, Albrecht & Sperr, 1993).

Although EMDR technically requires the use of eye movements, Shapiro (1994) claimed that she had successfully used the technique with blind clients by substituting the visual movements for auditory tones (a headset administering a beep in the left ear and then the right).

There are a number of studies that have shown EMDR to be no more effective than exposure control conditions (Refrey & Spates 1994, Sanderson & Carpenter, 1992). Some writers have argued that there are few controlled outcome studies on EMDR (Lilienfeld, 1998) and that one might wonder whether the fact that Shapiro elicited the SUDs and validity of cognitions from participants lent her findings to be attributed to the experimenter expectancy effect (Rosenthal, 1967). Specifically, Shapiro might have unwittingly delivered treatment more effectively or convincingly to the EMDR group or subtly influenced participants in this group to report greater improvements.

From my own clinical experience, I have had three successful outcomes using this technique and two that have made no difference. In fact I wondered with one of the non-successful clients if it actually made her worse for a certain period of time, but it was impossible to be

certain as I couldn't control the other variables in her life, such as dissatisfaction with employment and relationships. In the success group I used EMDR only after trying CBT with some success, from these experiences it seemed as if the EMDR tapped into the more emotional component of the trauma that helped the client 'experience' the fear more. It is impossible again from such a small sample size to make any absolute conclusions about the use of EMDR but certainly I will continue to explore its use.

The research seems to provide mixed support for EMDR's effectiveness. Despite some of the negative findings, there still appears to be enough research supporting its use, which is why the NICE guidelines recommend it as one of two options in the treatment of PTSD. It is therefore important for practitioners to understand what it is about EMDR that works, so that it may be used in practice. Before breaking down EMDR into its component parts, this paper will consider another up and coming technique in the treatment of PTSD called the rewind technique.

## **The Rewind Technique**

The rewind technique (also known as the fast phobia cure or visual-kinaesthetic dissociation technique) was first developed by Richard Bandler, one of the co-founders of Neurolinguistic Programming (NLP), after observing films of Milton Erickson detraumatizing people in hypnosis. The technique works by allowing the traumatised individual in a relaxed state to reprocess the traumatic event by pretending to watch the trauma incident in fast forward and rewind motion. The technique is said to reprocess the trauma memory in the neocortex instead of the amygdala (which triggers the fight-or-flight response).

The procedure works in the following way; once the client is fully relaxed through the use of progressive muscle relaxation he/she is asked to imagine a television screen in front of them (if it helps to put a chair or box in front of them to do this then that is placed in front of them). The client is told that they have the remote control for the dvd/vhs recorder and the film inside the dvd/vhs is a film of the trauma. The client is told that when they are ready they can press the fast forward button and watch the traumatic incident in fast forward

motion only. When they have reached the end of the film the client is instructed to tell the psychologist, an anxiety rating is taken and then the same procedure is followed only in rewind motion. This is carried out until the client reports experiencing no anxiety around watching the incident. If it is desirable to instil confidence in the future, for instance, driving a car or using a lift, then the client is asked to imagine a scenario in which they are doing so and are feeling confident and relaxed. Once accomplished, clients are brought out of the trance and the work is complete. Besides being safe, quick and painless and side effect free, the technique has the advantage of being non-voyeuristic. Intimate details of the traumatic incident do not need to be voiced and it is the client that watches the film, not the counsellor (Griffin & Tyrell, 2004).

### **Research supporting the rewind technique**

The rewind technique has a surprisingly sparse amount of research to support its use. Proponents of the technique state that it reduces post-traumatic symptoms in over 70% of patients in one session (Dr George Simon, 2009) but the actual studies to back up these claims seem non-existent or scientifically flawed.

One piece of research that looks scientifically sound asked 30 participants with PTSD to rate the technique. 40% of clients rated it as extremely successful, 53% as successful and 7% as acceptable. No one rated the method as poor or as a failure (Guy & Guy, 2004).

The only other research noted was set up by Barnardo's charity whom support individuals and families who have been traumatised, primarily as a result of their experiences in Northern Ireland. This is a quote regarding the research:

“The team worked with forty seven people, 57% of whom were treated with the rewind technique only. Twenty six would have met the criteria for PTSD. The results show

that after treatment none of the forty-seven people treated met the criteria for PTSD. There was also a significant reduction in all sub symptoms associated with PTSD, five categories had zero reports after the treatment” ( Murphy, 2007).

This all sounds very good but when taking a closer look what does it actually mean? The dubious wording of ‘would have met the criteria for PTSD’ suggests the participants weren’t properly screened for PTSD. If half of the participants were treated with the rewind technique only, what were the other halves treated with as well? Could the positive results be attributed to the other treatment? All of this ‘research’ is inconclusive. In my own clinical experience I have used the technique twice with success. Again it remains to be seen with further use whether it is a trusted technique.

It should be noted that a trusted colleague of mine as said,

“The rewind technique is in my opinion the best technique I have for the treatment of PTSD. I have trained in EMDR and CBT approaches, but believe the rewind technique is most effective because it combines exposure without getting into the traumatic event and therefore not re-traumatising the client. It is also more short-term. Often the technique only requires one session.” (Felix Economakis, Chartered Counselling Psychologist and hypnotherapist, 2010).

All of this is of course only hearsay and without the proper research to back it up there is no further conclusion that can be reached other than to note it appears promising.

### **Cognitive-behavioural therapy**

Cognitive-behavioural therapy derives from the early behavioural experiments in which behaviours were found to increase or decrease based on the principles of classical and operant conditioning (Pavlov, Thorndike, Tolman & Guthrie). Classical conditioning involved

creating a conditioned response to a previously unconditioned stimulus. The principles of Operant conditioning show how behaviours can increase or decrease depending on the type of response received, whether that is positive reinforcement (praise) or through negative reinforcement (punishment/ignoring behaviour).

The behavioural therapies emphasised the link between animal behaviour and human behaviour. Many behavioural experiments in the past and present use animals as their research subject and then use the outcomes to describe human behaviour. Aaron Beck (1976) and later Albert Ellis (1977) saw a flaw with this type of thinking. They believed that humans are more complex than other animals and that the school of behaviourism leaves out the crucial element of cognitions and the part cognitions play on feelings and behaviour. If one is effectively going to change dysfunctional behaviours in other words then one must first change the beliefs that lead to them.

Aaron Beck suggested that using the principles of cognitive therapy with the behavioural therapy would have the best outcome. Using these two therapeutic approaches effectively together involves a process of primarily forming a strong therapeutic relationship, educating the client about the model, understanding and identifying the negative automatic thoughts and which negative core beliefs they are linked to. The next step is to look at the automatic thoughts and see if there is stronger evidence for an alternative belief (a process known as cognitive restructuring), homework tasks to find the alternative evidence (by doing something different) and to try out the new thoughts and behaviours together. Finally the aim is to generalise the new set of beliefs and behaviours to all situations which is continued once therapy has concluded. To control the physical elements of anxiety relaxation techniques and guided imagery are often used.

As mentioned previously, only thirty percent of those who experience what could be considered a "traumatic" event go on to develop PTSD. This means that it is the way in which the individual thinks about the traumatic event that will determine whether PTSD results or not. Catastrophic thoughts such as, "I am going to die" that may have been present during the trauma will continue to be re-experienced and so keep the individual in a heightened state of arousal known as the fight-or-flight response. Through cognitive

restructuring, the client will be able to put a new perspective on the trauma, for example “It was dangerous but I did cope and I am safe now”.

Recent CBT work in the treatment of PTSD has looked at using virtual worlds which recreate the environments that the client is phobic of in order to conduct exposure treatments safely (under the therapists control) (Rothbaum, 2005). This can be especially useful if the trauma originated from war, where outdoor exposure would be impossible, for example there is currently an Iraq programme (see: [www.virtuallybetter.com](http://www.virtuallybetter.com)).

### **Research supporting CBT**

Two studies looking at the efficacy of cognitive-behavioural therapy (CBT) to prevent the development of chronic and severe post-traumatic symptoms in vulnerable individuals focused on ten victims of sexual assault. The victims were offered a four-session, multi-component CBT programme. Two months post treatment results showed the women had significantly less severe PTSD symptoms relative to a matched, untreated group (Foa, Hearst-Ikeda & Perry, 1995). As a clinician and researcher myself I wonder how these victims were matched and note a word of caution with studies such as these as all variables outside of the assault are very difficult to match (for example how much support someone has or whether they have gone through a previous trauma, both of which are variables shown to greatly effect recovery outcome).

In the other study 24 victims of various civilian traumas, all of whom met the DSM-IV criteria for acute stress disorder, were randomly assigned to receive five sessions of either CBT or supportive counselling within two weeks of the traumatic event. Compared with the supportive counselling group, participants treated with CBT had fewer symptoms and lower rates of PTSD at both post treatment and at the six months post trauma (Bryant, 1998).

Resick et. al (2002) compared CBT with a strong cognitive restructuring focus to CBT with a strong exposure focus and to waiting list of controls in rape survivors. Both therapies were superior to the waiting list condition. Approximately 80% of the clients who completed either form of CBT no longer met the criteria for PTSD and most showed a marked

improvement in depressive symptoms. In contrast only 2% of the women in the waiting list condition had lost their PTSD symptoms.

There was no evidence reported against the use of CBT and most of the studies looking at CBT suggest that it is as effective as EMDR and in some instances more so (Davidson & Parker, 2001). In my clinical experience I have used CBT with eight clients presenting with PTSD and it has been effective in six cases. CBT was the technique I learned first and it has consistently been effective with other anxiety disorders so I tend to use it initially and only try EMDR or the rewind technique after a failed attempt unless the referring consultant specifically requests EMDR. It appears as if all three approaches to the treatment of PTSD are effective, and although they all go under different names, there seems to be commonalities between the approaches that could account for their effectiveness in treatment.

### **What are the commonalities between treatments?**

These three approaches all involve an element of exposure. This includes exposure to the distressing thoughts, images and memories associated with the trauma. In EMDR this is done in the beginning stages, in which the client has to come up with an image that represents the most critical phase to the trauma and a sentence or phrase that goes with that. The client is then asked to visualise the trauma whilst tracking the finger of the therapist. This serves to expose the client to the trauma and at the same time distract them from fully engaging in it. In the rewind technique the client is indirectly exposed to the trauma by imagining watching it in fast forward or rewind motion. Again this serves to distract the client sufficiently whilst at the same time exposing them to the traumatic event. In CBT the client will end up being asked to drop safety behaviours around the traumatic event (for example never going out at night time) and will be encouraged to do so in order that the client may re-learn that it is safe and therefore not experience such high levels of anxiety.

So what is it about exposure that helps facilitate the client with PTSD to recover? Learning theorists stress habituation of classically-conditioned fear responses, whereas cognitive theorists stress the modification of internal fear structures. As discussed at the beginning of this paper, it is also possible that what is happening during exposure treatments is that the

memories of the traumatic event are being restored into the neo-cortex so that the amygdala is no longer scanning the environment to match the original traumatic event. For this to happen, the client needs to be in a rational/relaxed state of mind, therefore associating the trauma with a new sense of control, this can be seen working in the well-established use of applied relaxation (progressive muscular relaxation) and extinguishing panic attacks. The client with the panic attack teaches them self to physically relax in the anxiety provoking situation, therefore re-programming the brain not to associate the stimulus with the response (Ost, 1987).

All of the approaches involve a form of cognitive restructuring. In EMDR the negative catastrophic belief is replaced by a positive alternative. If the client starts to 'loop', in other words is not able to access alternative beliefs on their own the practitioner will eventually ask a question that steers the client in a different direction. For example, if a client keeps getting stuck on, "I thought I was going to die" the therapist might say, "but did you die?" and let the client take it from there. In the rewind technique the client is directed to rewind and fast forward from one place of safety to another, therefore emphasising that although the trauma was frightening, they are safe now. In CBT the clients negative/catastrophic thoughts are challenged in order that the client may access alternatives that are more functional in being able to move forward.

The client suffering from PTSD often feels out of control. They believed themselves to be out of control and helpless at the time of the trauma and continue to think of themselves as helpless currently (Seligman, 1975). Cognitive restructuring helps to emphasise and enhance the client's sense of their own coping strategies and to put the trauma into perspective. Ways in which the client can feel a sense of control are explored and tested, perhaps taking up a self-defence class or something similar. The common belief that "I am going to die" which often comes up in trauma work is challenged with "but did you die?" which the client realises they didn't and a new perspective of "how did you cope?" is looked at. Once the client feels in control again, the fear of dealing with a new threat will not seem as overwhelming or catastrophic.

There are factors common to all types of therapy that will affect the outcome results. These include the expectations of the counsellor and client, and the relationship formed between

client and counsellor. Southworth and Kirsch (1988) randomly divided agoraphobic patients into two exposure conditions. One group was defined as the “treatment” group and the other as the “assessment” group. Both groups received ten identical in vivo exposure sessions. The outcome showed that the participants provided with therapeutic expectancies demonstrated greater and more rapid improvement than those in the assessment expectancy condition.

The importance of the working alliance, or relationship, between counsellor and client has long been known to be a good predictor of outcome. Provided the client feels safe, empathised with and not judged, the client is likely to form a positive relationship with the counsellor. Again the expectations the client has of the counsellors ability will come into play as will the counsellors perceptions of the client’s problem solving abilities (Wei & Heppner, 2005). The counsellors understanding of PTSD and the expected prognosis will also come into play when looking at recovery rates. Biological psychiatrists attempt to legitimise PTSD as a “real” medical condition by searching for biological markers associated with the condition. This attempt creates an expectation among clinicians that even relatively traumatic events produce quasi-permanent pathological symptoms mediated by scarring of the brain, which will result in severe and long-lasting impairments in functioning. Some research has found significantly smaller hippocampal volumes however group differences were moderated by MRI methodology (Kari, A. et al. 2005). What interventions should aim to do is normalise the reactions to trauma and foster expectations that the individual will be able to cope effectively without an elaborate intervention.

### **What differentiates the approaches?**

EMDR is different from the other two approaches in that it uses eye tracking, auditory tones or taps as an integral part of the technique. Clients are asked to visually track the therapist’s finger as it sweeps rhythmically from right to left in sets of 12 to 24 strokes, alternated at a speed of two strokes per second.

Although there is no convincing evidence that EMDR is more effective for PTSD than standard exposure treatment, Joe Griffin (2003) argues that what the finger tracking is useful for is keeping the client present, whilst at the same time recalling the past trauma, therefore it may aid in re-programming the trauma memory. This has been supported by

research findings that suggest vividness and distress during imagining are lower during eye movements than exposure alone (Kavanagh, Freese, Andrade & May., 2001).

The rewind technique is different from the other two approaches in that it does not ask the client to recall the specific details of the traumatic event with the therapist. It also uses the idea of watching the trauma on a television screen which distances the client from the trauma and can be removed one-step further by imagining them self watching them self watching the traumatic event. The idea of rewinding and fast-forwarding could lead to the client feeling more in control of the trauma as the recall of the trauma will not have been stored at such speeds it is an interesting option to exposure.

CBT is different from the other two approaches in that it may use thought charts and more of a psycho educational element. The exposure will happen outside of the session room as well whereas the other two happen within the session. The client is expected to do homework tasks outside of session time (filling in thought charts, carrying out exposure tasks and signing up for classes that will enable the client to feel more in control). The homework tasks aim to make the client more self-reliant and pro-active in their recovery, whereas the other two approaches rely on the therapist being present.

Although there are differences between the different approaches, there is no convincing evidence for one approach being any better than the other in treating PTSD. Perhaps it is not down to one approach being most effective, but rather, which approach is best suited to the client and therapist. As mentioned previously, if the therapist and client believe in the approach and practice it correctly, then surely the recovery of the client is more likely.

### **Conclusion**

Eye movement desensitisation and reprocessing, the rewind technique and the conventional cognitive-behavioural therapy were all explored in this paper. From the writer's perspective it was initially assumed that CBT would be the most effective approach, and the other two approaches something of a con. This however turned out not to be the case. What the writer realised while researching these approaches was that each provided a means of exposure and restructuring just in different forms.

It seems that provided there is a good working alliance and an expectation that the treatment leads to recovery they can be equally effective. EMDR and the rewind technique require more imagination, not surprising considering they derive from a hypnotherapeutic background and the CBT approach relies more on the rational brain. Perhaps counselling and clinical practitioners would benefit from learning the different approaches and then make a decision based on the client as to which approach to use, or if one is unsuccessful to have another as a back-up plan.

As a final comment, it might be that the only benefit that any of the approaches have over the others is the rewind technique because it does not demand for details of the trauma to be recounted. As debriefing has previously been shown to either have no effect or a harmful one in the treatment of PTSD (Szumilas, M et. al., 2010) it is possible that any type of re-living the trauma, even much later on is harmful or might delay recovery. More research remains to be done and as of yet is inconclusive.

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## SECTION D: RESEARCH STUDY

Social Anxiety; A Question of Theory of Mind?

## **I. Introduction**

Social anxiety is the most common occurring phobia listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, 2000), affecting three to thirteen percent of the population at any given time (DSM-IV, 2000). Given that human beings are social beings and that the need for social support has been so closely linked to physical and mental well-being (Cohen, S., & Willis, T.A., 1985) the consequences of having this disorder can be devastating. This phobia presents itself as either general or specific and always involves an irrational fear of social situations (DSM-IV, 2000). The literature so far suggests an aetiology that is both environmental and genetic, however, more recently there have been suggestions that there could be different types of Social Anxieties that may perhaps originate either through critical home/school environments (environmental) or through a genetically-mediated social skills deficit (Hofman, S., & DiBartolo, 2010). The research and understanding of this to date however is inconclusive and the categorisation of Social anxiety disorder (SAD)/ Social Phobia is still seen as a single disorder.

From a counselling psychologists perspective social anxiety is seen as a consequence to a number of negative/irrational beliefs about social situations that result in varying levels of anxiety depending on how negative/extreme the belief about the social situation is. The anxiety is perpetuated through a number of safety-behaviours most markedly outright avoidance of social interactions of any kind. Considering the high prevalence of this disorder and the knock-on consequences it has to the persons functioning and second order disorders that the health services see as a result, such as depression and substance abuse, it is very important that clinicians supporting individuals with this disorder understand what they are dealing with. They need to understand how social anxiety comes about and what treatment methods work and why. This paper attempts to take one step further in explaining what social anxiety is and how it could possibly be linked to a particular social skills deficit known as theory of mind.

Theory of mind refers to the ability to attribute independent mental states to one self and others in order to explain behaviour (Baron-Cohen, 1985). It is the ability to predict what someone else is thinking based on information available to that person, what motivates someone, and thus what another person is likely to do with that information. If someone.

has a good theory of mind it would suggest they have more control over their social environment. The importance of control whether perceived or real is a predictor of how much anxiety one experiences (Seligman, 1975).

The hypothesis that individuals diagnosed with social anxiety have a poor theory of mind originated from my work with children on the autistic spectrum. One of the main diagnostic criteria for autism is a poor or non-existent theory of mind (Baron-Cohen, 1985). I started wondering whether theory of mind was something only pertinent to autism or whether it could be used as a diagnostic criterion for other disorders too. Theory of mind shows itself behaviourally in autism through the social skills deficits that can be observed in that group. I therefore made the link that perhaps it had something to account for in social anxiety disorder as well. For my masters dissertation I looked at three socially anxious participants on a second-order false belief test devised by Happe (1994) and compared them to fifteen comparison participants. The results showed that the social anxiety group did spend longer responding to questions and the responses given were negatively biased (Schjelderup, 2005). As the participant number was too low to yield statistically significant results, I decided to extend the research using three groups instead of two and increase participant numbers to increase the statistical power of the study.

If someone has a poor theory of mind they may well take longer to analyse social interactions if they analyse them at all. An individual with autism is not aware of this deficit, but if an individual was aware of the deficit and how important it was in order to be able to engage positively with others then it should lead to the individual feeling anxious. The question this piece of research does not unfortunately answer but which is important in understanding the function of theory of mind in social anxiety is whether the individual is born with this deficit or whether through faulty learning experiences a poor theory of mind develops. Is the anxiety creating a poor theory of mind or is a poor theory of mind creating the anxiety? Whichever may be the case this piece of research attempts to make a link between theory of mind and social anxiety. In order to understand the rationale behind making this link the current literature on social anxiety will be discussed followed by an explanation of theory of mind. The link between theory of mind and control and the importance of control in predicting anxiety will help further explain the hypothesis.

## 1.1 Defining Social Anxiety

Most researchers in Western nations adopt the most current DSM-IV definition of social anxiety which, highlights as an essential feature the clinically significant anxiety provoked by exposure to certain types of social or performance situations often leading to avoidance behaviours (American Psychiatric Association, 2000). Clinically significant anxiety would be considered in individuals whom report that the anxiety is interfering with their life significantly (American Psychiatric Association, 2000). As most human beings suffer with some social anxiety, it would only be considered a disorder when it hinders the individual from functioning in their daily life. This can be seen as hindering job opportunities, relationship development, or on the more extreme end of the spectrum stopping the individual from even leaving the house. Worryingly the ICD-10 classification of Social Anxiety only holds between a 39 and 66% diagnostic concordance rate with the DSM-IV (Andrews, Slade, Peters, & Beard, 1998) and as social anxiety disorder is found in all cultures it is important that an agreed general definition of the disorder is reached. For the purpose of this research the DSM-IV criteria has been used to define the disorder. Social anxiety is labelled as Social Phobia in the DSM-IV but in the DSM-V will be re-defined as Social Anxiety disorder, which again will be the term used throughout this paper. The DSM-IV (2000) lists a number of associated descriptive features which include: hypersensitivity to criticism, negative evaluation, or rejection; difficulty being assertive; and low self-esteem or feelings of inferiority. Below is a list of all the DSM-IV criteria for a diagnosis of Social Anxiety to be made:

### *Diagnostic Criteria for Social Anxiety (DSM-IV):*

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- A. A marked and persistent fear of one or more social or 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 situationally predisposed Panic Attack.
  - C. The person recognises that the fear is excessive or unreasonable.
  - 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, social activities or relationships, or there is marked distress about having the phobia.
  - F. In individuals under the age of 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 behaviour in Anorexia Nervosa or Bulimia Nervosa.
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Social Anxiety has a generalised and specific type. Generalised social anxiety is diagnosed in individuals where anxiety is evoked in all social contexts and the specific in only one context, which most commonly is public speaking (DSM-IV, 2000). As in the case with all phobias, social anxiety is a special fear in that the responses are excessive in relation to the situation. Exposure to the social or performance situation always provokes an immediate anxiety response. The response often resembles that of a panic attack. Symptoms include

palpitations, tremors, sweating, gastrointestinal discomfort, diarrhoea, muscle tension, blushing and confusion. Individuals with social anxiety disorder exhibit more severe depression, greater anger, and poorer anger expression skills than non-anxious comparisons (Erwin, B, Heimberg, R, Schneier, R & Liebowitz, M, 2003).

Individuals with social anxiety disorder report impaired academic functioning (84.6%), occupational functioning (92.3%), and general social relationships (69.2%). On top of this 50% of single participants rated their heterosocial relationships as impaired (Turner, Beidel, Dancu, & Keys, 1986).

Social anxiety disorder is unlike all other anxiety disorders in that there are a fairly equal number of females and males presenting for treatment, whereas in all other anxiety disorders females are more prevalent (Craske, 2003). As a clinician working with these individuals it seems possible that this is due to the way in which social anxiety interferes with work, and as men are still generally seen as the 'breadwinners' within traditional family units, it seems that when they recognise that the anxiety is interfering with their employment it is too important to be ignored and therefore they will seek out help. It is uncertain how much of the gender differences reported in other disorders are actual gender differences or just gender differences in the acceptance of seeking out help.

The DSM-IV suggests a genetic component to social anxiety and that it is commonly diagnosed alongside other anxiety disorders. Social anxiety occurs more commonly in first-degree relatives especially the generalised sub-type (DSM-IV, 2000). There is also a considerable overlap between social anxiety, agoraphobia, illness phobia, mood disorders, substance-related disorders, depression and bulimia nervosa (Emmelkamp, 1982). Usually the diagnosis of social anxiety precedes all of these associated disorders.

Social anxiety and shyness are often thought of as the same thing although research into the two conditions suggests that they may be different. Many people for example who say they were excessively shy as children do not meet the criteria for any psychiatric disorder as adults. Furthermore 50% of individuals suffering with social anxiety disorder did not view themselves as very shy when younger (Cox, MacPherson & Enns, 2005). Other recent research has revealed a substantial proportion of highly shy people who report no social fears in diagnostic interviews (Heiser, Turner, Beidel, & Robertson-Nay, 2009).

Social Anxiety can be a lifelong condition. It was reported that 6% of the children referred for behavioural therapy were suffering from a phobia, social anxiety being the most commonly occurring in the form of a fear of going to school (Graziano & De Giovanni, 1979). In adolescence, social fears are the most common phobia, affecting 13% of the adolescent population (Abe & Masui, 1981).

In terms of social skills the research remains inconclusive. If viewed as a performance anxiety research looking at other performance anxieties have shown that socially anxious individuals possess the necessary skills but the anxiety interferes with their skills, as in the cases of males experiencing sexual dysfunction (Bruce & Barlow, 1990), musical performance (Clark & Agras, 1991) and athletes in competitive sport (Smith & Smoll, 1990).

Social anxiety may be the root cause of depression, alcoholism and a number of other psychiatric disorders but low self-esteem is commonly seen by psychologists as the root cause of social anxiety (Butler, G., 1999). This helps to explain the curious (but relatively common) cases of clients who have a sophisticated set of social skills but are extremely anxious nonetheless and who evaluate their performances negatively. The tendency for individuals with low self-esteem to have perfectionistic expectations is part of what maintains the low self-esteem as it is effectively a trap, as no one can be perfect, and so it is only a matter of time before the individual returns to believing they are not good enough. Social anxiety is one of the most debilitating disorders because of how it interferes with an individual's social support. A lack of social support and its detrimental effects on health will be looked at next.

## **1.2 Importance of Social Support/ Associated Disorders**

The National Institute of Health funded a 30 year longitudinal study in the United States looking at 400 participants from the age of 9 to 18 and reviewed them on a number of variables linked to social support and the consequences of having sufficient social support. The study found a number of results including:

1. The participants who believed they could rely on family members for advice at 9 positively predicted the child's scholarly achievement by 18. It more specifically

predicted a significant reduced risk for failing courses, dropping out of school, being suspended or expelled from high school, alcohol abuse, drug abuse, thoughts of suicide, suicide attempts and delinquent and aggressive behaviour.

2. The availability of parents or siblings as confidants at age 15 impacted late adolescence by positively predicting a high grade average and more specifically reduced risk for failing courses, being suspended or expelled from high school, alcohol or drug abuse, suicide attempts, interpersonal problems and delinquent and aggressive behaviour.
3. Perceptions of being valued by family members at age 9 played a significant role in promoting good social, psychological, and behavioural functioning at age 18 and greatly reducing the risk for current mental disorders and suicidal behaviour. It positively predicted high self-esteem and reduced the risk for depression, drug abuse, thoughts of suicide, interpersonal problems, withdrawn and anxious-depressed behaviour and delinquent and aggressive behaviour.
4. Feeling valued by the family at age 15, also positively predicted self-esteem by age 18.
5. Finally higher mother ratings of family cohesion positively predicted high grade averages, intent to attend University, achieving scholastic honours and awards and self-esteem and reduced risk for failing courses, dropping out of high school, being suspended or expelled from school, alcohol abuse and delinquent and aggressive behaviour. (Reinherz H., Giaconia, R &Paradis, A., 2007)

The Stockholm Female Coronary Risk Study (2009) examined 131 women aged 35 to 65 and found that women with little or no social support were two and a half times more likely to have serious coronary artery disease than women with strong social support. This research was backed up by the Honolulu Heart programme (2009) that studied 4,653 men asking about their social interactions with relatives and co-workers. The study found that the larger a man's social network was, the less likely he was to experience angina, a heart attack or any type of heart disease.

Marital loss has been shown to significantly decrease mental health and high levels of social support has the potential to improve widowed men's mental health immediately after the death of their spouse (Hewitt, B., Turrell, G., & Giskes, K., 2010).

In a 10-year follow-up of a survey from Oslo, 503 people were re-interviewed using the same questionnaire. The questionnaire included information about social support, 'locus of control' and mental health questions as well as negative life events and long-lasting mental strain during the year to the follow-up. The results provided positive evidence for the "buffer hypothesis", which is that social support protects against the development of mental disorders when the individual is exposed to stressors, like negative life events. The buffering effect was especially strong for depression. (Dalgard, OS, Bjork, S, Tambs, K., 1995).

A significantly greater proportion of people who are diagnosed with a mental illness and are currently experiencing distress report having no one to talk to when they feel lonely (53%) compared to those who are diagnosed with a mental health illness but are not experiencing distress (19%) and those who do not have a mental illness (10%) (Mental Health Association, Sydney, Australia, 2010).

The DSM-IV states;

*"Persons with social phobia often have decreased social support networks and are less likely to marry. In more severe cases, individuals might drop out of school, be unemployed and not seek out work due to difficulty interviewing for jobs, have no friends or cling to unfulfilling relationships, completely refrain from dating, or remain with their family of origin."*

It is perhaps therefore no surprise that alongside a diagnosis of social anxiety it is common to find depression, other anxiety disorders, substance-related disorders and eating disorders. As social beings we rely on our ability to form meaningful relationships in order not only to survive but in order to enjoy life. Suffering from social anxiety becomes such a major threat to an individual's well-being both physically as has been demonstrated above and psychologically because it leads to a lack of social support, feelings of loneliness and not meeting the human need to love and belong (Maslow, 1943)

### 1.3 Children/Adolescent Diagnostic Criteria

An adjusted form of the DSM-IV (APA,1994) diagnostic criteria are used for anyone under the age of 18. The adjustments require that the child must be able to demonstrate age appropriate interpersonal relationships with people familiar to them. The anxiety must be present in interactions with both adults and children but unlike the adult diagnosis, children are not required to recognise that their fear is excessive.

When exposed to a feared situation, typical reactions in children include crying, tantrums, freezing, or avoiding social situations. Heimberg, Liebowitz, Hope and Schneider (1995) outline the behavioural, physiological and cognitive responses associated with social anxiety in children and adolescents (See Table 1):

Table 1: Behavioural, Physiological and Cognitive Responses associated with Social Anxiety in Children and Adolescents

<b>Behavioural</b>	<b>Physiological</b>	<b>Cognitive</b>
Crying	Palpitations	Thoughts of:
Whining	Nausea	Escape
Clinging to parent	Sweating	Negative Evaluation
Stuttering	Shakiness	Failure
Fidgeting	Breathlessness	Humiliation
Poor eye contact	Headaches	Embarrassment
Mumbling	Increased Pulse	Inadequacy
Trembling Voice	Muscle tension	Self-Criticism
Nail Biting	Butterflies in Stomach	
Avoidance		
Nervous Habits		

### 1.4 A Developmental Perspective

Social anxiety develops in childhood and often continues throughout adulthood unless treatment is sought out. Therefore a developmental perspective to social anxiety will be looked at in this section. Social anxiety most commonly begins in late childhood or adolescence typically at around age 13 and rarely after the age of 25 (Beesdo et al., 2007). Traditionally the lifetime prevalence rate is somewhere between 5 and 15% (Comer & Olfson, 2010). A number of factors appear to influence the development of social anxiety some of which are mentioned in the aetiology section of this paper but will also be mentioned in this section.

Attachment theory suggests that the quality of the bond between a caregiver, usually a parent and baby may serve as a contributing factor to the development of future social anxiety (Brumariu & Kerns, 2008). Children with insecure attachments are viewed as less socially competent and are less well liked than those that are securely attached (Cohn, 1990). Clark (2003) found that a secure attachment style was positively correlated with a child's positive self-esteem which had positive implications for positive social behaviour. Finally Warren, Huston, Egeland, & Sroufe (1997) looked at adolescents whose attachment styles had been assessed as one-year-olds. Although some of the secure attachment children went on to develop anxiety disorders as teens, those with insecure attachment styles doubled the risk of doing so.

A study by Bogels (2004), using the family system test (a spatial representation of cohesion and structure of the family and subsystems), found that a sample of high anxious children (aged 8-12 years) represented their family as being more unbalanced than low anxious children. A lack of family sociability was also found to predict social anxiety in children and adolescents. Parenting styles has been shown to directly correlate with anxiety levels, which is outlined in the aetiology section.

The timing of the onset of puberty may be a contributing factor to social anxiety. Early-maturing girls and late-maturing boys tend to report lower self-esteem than those whose puberty development happens at approximates of the mean (Berk & Shanker, 2006). It is assumed that this is the result of the negative attention received as a result of outward appearance i.e. the questioned machismo of less physically developed boys and the unwanted romantic attention given to more physically developed girls. During puberty a surge in a number of different hormones means that individuals are more likely to develop acne. School-aged children with acne are often teased (Mallon et al., 1999). Given that adolescence is a time of heightened self-consciousness it is not surprising that there is a jump in the prevalence of social anxiety concerns at this stage. Clients presenting with adult social anxiety are often able to identify a number of trigger events from their adolescence in which they were teased at school for either blushing, not looking right or making a mistake, which signifies just how important this stage of development is. This also suggests that social anxiety is something that is learned through difficulties in an individual's social development which results in a negative cognition bias, which will be discussed next.

## 1.5 Information Processing Accounts

A common feature found in all phobias is a tendency to think catastrophically about neutral events and social anxiety is no exception (Amir, Foa & Coles, 1998). Stopa and Clark (2000) conducted an experiment comparing clients with generalised social anxiety, equally anxious clients with other anxiety disorders, and non-client comparisons. The groups were asked to interpret a number of hypothetical social events, some of which were mildly negative and others that were ambiguous. In the ambiguous event condition, the social anxiety group were more likely than the other groups to believe negative interpretations of social events. They were also more likely than both comparison groups to infer that the mildly negative condition would have catastrophic consequences. This negative bias was shown in another study in which socially anxious participants were not shown to differ in memories for details about a situation but made less positive and more negative interpretations of details than non-anxious participants (Brendle, J & Wenzel, A., 2004). Eysenk et al. (1991) had a comparison group and an anxiety group listen to a number of neutral sentences such as "Everyone giggled at Sandy's speech" and asked them to interpret the meaning of them. It was found that the anxious group endorsed more negative interpretations than the comparison.

People suffering with social anxiety show enhanced self-focused attention when anxious. Fenigstein, Scheier and Buss (1975) defined public self-consciousness as paying attention to aspects of the self that are observable to others and also reported a significant positive correlation between public self-consciousness and social anxiety. Clients with social anxiety report higher levels of self-focused attention than low socially anxious individuals (Mellings & Alden, 2000). The problem is that the individual is spending so much time analysing their internal processes (i.e. how much they are blushing, what they imagine they sound like, how stupid they imagine what they are saying is) that they neglect to analyse external stimuli (i.e. the body language of others, how little others in fact pay attention, the fact that other people are looking elsewhere). This negative/threatening perception of how they imagine other people perceiving them is what maintains the anxiety (Clark, Hirsch, Mathews & Williams, 2003). This lack of understanding of external factors not surprisingly leads to poorer memory recall of the social events (Hope, Heimberg & Klein, 1990). The poorer memory results in biased interpretations being made regarding the social event.

Zimbardo (1977) has conducted a large amount of research into shyness and social anxiety. After his Stanford Prison and guard experiment, he set up the Shyness institute. From years of research into what shyness is, he concluded that the cognitive components of shyness and social anxiety are tendencies to 1) worry 2) regard normal experiences of shyness as shameful and unacceptable 3) be preoccupied to the point of interference with performance and empathic behaviour 4) appraise interpersonal situations in threatening ways and 5) make maladaptive attributions for social behaviour.

People who experience social anxiety generate observer-perspective images of how they think they appear to others. These images are significantly more negative than they actually appear (Hackman, Surawry & Clark, 1998). These images are recurrent, in that they occur in similar form in many different social situations. Another unfortunate processing mistake is that people with social anxiety use the way they feel as evidence for the way they imagine they appear to others. Due to high levels of anxiety being so uncomfortable, the sufferer will often imagine that they appear awkward, stupid and be devalued as a human being by others because of this (Clark et al., 1998). In one study a high and low fear of blushing group were compared in two social tasks which varied in levels of embarrassment. The results showed that the more embarrassing task resulted in more blushing, and although there was no significant difference in the colour of blushing between the two groups, the high fear group overestimated how red they actually were (Mulkens, 1999).

The reduced processing of external cues is also biased in favour of detection and recall of cues that could be interpreted as signs of disapproval from others. Valjaca & Rapee (1998) asked high and low socially anxious individuals to detect audience reactions whilst giving a speech. Compared to the low socially anxious individuals the high group were better at detecting negative audience behaviours like yawning and coughing, even though the audience was instructed to do exactly the same behaviours for all participants.

There is also a tendency for people suffering with social anxiety to engage in prolonged, negatively biased anticipatory processing before entering a feared social situation. Compared with the low-socially anxious individuals the high socially anxious will report recalling and dwelling on past social failures when anticipating a difficult social task (Clark, 2000). They will also engage in negatively biased, post-event processing after the social

situation, which will then be recalled for the catastrophic anticipatory processing later (Mellings & Alden, 2000).

Part of the negative bias in social anxiety is the perceived audience that the sufferer imagines is evaluating their “performance” on a regular basis. This audience can be anyone from the person sitting across from them on a train, to a stranger walking past them on the street to an actual acquaintance. Usually there is a hierarchy of feared people with those in authority usually being the most “dangerous” for example a boss, manager or employer. In response to the perception of the audience, the person with social anxiety forms an internal mental representation or image of how they imagine appearing to others, which is negatively distorted. The person with social anxiety, then also greatly overestimate the consequences of the social interaction and judgement of others. Very often in clinical work the meaning of others deeming the client as having poor social skills means that they are not fundamentally good enough as a human being, which of course is a massive threat to their sense of worth and leads to high states of anxiety and a continued prediction that future events will be just as disastrous.

These negative beliefs lead to ideas that in order to be deemed as good enough the individual must perform perfectly. These perfectionistic beliefs and standards are of course not realistic and therefore the person ends up gathering evidence on almost a daily basis confirming their beliefs of inadequacy, which perpetuates the cycle of social anxiety. Early research on perfectionism focused on the combination of high personal standards and overly critical self-evaluations (Frost et al. 1990). This is the typical pattern of someone with social anxiety – they must perform perfectly but their audience is so critical that it is impossible. A number of studies have examined the relationship between perfectionism and social anxiety disorder. Juster et al. (1996) compared 61 clients who requested treatment for SA to a group of 39 comparisons. All participants completed the Frost MPS as well as multiple measures of social anxiety. Three interview-based measures of social anxiety were included in the study. Results showed that participants with social anxiety scored higher on concern over mistakes, doubts about actions, and parental criticism than the comparisons. Consistent with this finding was a study by Bieling and Alden (1997) that found people suffering with social anxiety rated themselves as less socially competent than comparisons. A strong link has been established between perfectionism and social anxiety, but how does

this operate in every day contexts? Frost and Marten (1990) created a study in which participants high and low in overall perfectionism were assigned to high or low threat conditions. The threat involved a writing task in which the evaluative nature of the task was emphasised. Under low evaluative threat, participants high in concern over mistakes did not differ from those low in concern over mistakes in their level of negative affect. However, under high evaluative threat, the high perfectionism group reported significantly more negative affect and were judged to be poorer quality than that of participants low in concern over mistakes. In looking at how perfectionism affects sports performance, which can be viewed as similar to social anxiety in that it is a performance anxiety, concern over mistakes and doubts about actions highly correlate with a number of negative reactions to mistakes made during competition. Specifically, the negative beliefs around: social concerns ("I let them down"), personal disappointment ("I feel like I let myself down"), attentional focus ("I feel pressure to overcome my mistake"), forgetting ("I have a difficult time forgetting about my mistakes"), and images ("Images of my mistake control my mind for the rest of the competition") (Bunker & Williams, 1986). How someone attributes failure and success has been found to vary in high-perfectionism versus low perfectionism participants. People suffering with social anxiety and therefore high perfectionism will often internalise failures, believing it is their fault but externalise success. It is not uncommon for example for me to hear one of my client with social anxiety say, "yeah but you have to say that...You're my therapist" after they have successfully completed an exposure task and I've praised them. The information in other words that maintains the person's belief that they are not good enough will be stored and the information that disproves the belief gets ignored or dismissed therefore maintaining the cycle of social anxiety.

## **1.6 Behaviours**

Safety-seeking behaviours perpetuate the anxiety and keep the perceived danger out of proportion. The most common safety-seeking behaviour is complete avoidance of the feared situation. Safety-behaviours occur before, during and after engaging in a social situation. Behaviours before the social situation, let's say going to a party could include things like rehearsing what one is going to say, timing ones arrival just in time to sit down so that mingling is avoided and wearing certain clothes so that one doesn't stand out or is accepted. Safety-seeking behaviours during an interaction will often include avoiding eye

contact, only talking to certain people, about certain topics and trying to ask questions so that one does not have to talk about oneself (Wells, 2000), only going to certain places, standing in a certain part of the room, helping out with the tasks at the party to avoid socialising, drinking alcohol or taking drugs, initiate new topics of conversations less often, show fewer facial expressions and make excuses to leave as soon as possible (Leary & Kowalski, 1995; Turner et al., 1990; Zimbardo, 1977). Safety-seeking behaviours after the social event include avoiding the people who one saw there (because of the negative bias beliefs) and possibly not going to the next event or waiting for the person to invite them back again (because initiating a social interaction could lead to rejection) and based on the faulty negative analysis from the party the individual is fairly convinced that the people they interacted with are never going to want to see them again.

What safety-seeking behaviours actually do is render it impossible for the individual suffering from social anxiety to disconfirm their negative beliefs. By engaging in all these behaviours one is communicating with oneself that the reason one needs all of these behaviours is to keep oneself safe which implies that the social situations must be dangerous. Human beings are programmed to get anxious when they are facing a threat, otherwise known as the fight-or-flight response (Walter Cannon, 1929). If there is an actual threat to a human being the fight-or-flight response gets triggered in which the heart accelerates, breathing increases, blood goes to the muscles, one becomes tunnel visioned (on the threat) and loses hearing so that one may stay completely focused on the threat and decide whether the best option will be to fight the threat or flee. Other more unpleasant effects are loss of bladder control, flushing, shaking and sweating which are all functional if there is an actual threat but when the "threat" is psychological as in the case with social anxiety, the body is responding with the fight-or-flight response to a perceived threat and not an actual one and therefore the person is engaging with a neutral environment but experiencing all of the symptoms mentioned above with nothing to actually fight or flee from, experiencing all of these symptoms is so unpleasant that the person starts associating the event with a threat, and so the vicious cycle continues and the person keeps engaging in more and more behaviours until there is hardly anywhere that is "safe" to go.

Non-verbal safety-behaviours include keeping others at a greater physical distance than those that are less anxious. The distance is greater with an opposite-sex stranger than with the same-sex stranger. There is little smiling and a “defensive” posture such as crossed arms, low speaking voice and constrained bodily movements with minimal hand and arm gesturing (Zimbardo, 1977).

These behaviours and high states of anxiety create odd behaviour that in a self-fulfilling way actually cause the person to be less appealing to others (Baker & Edelman, 2002). Safety behaviours make the person less appealing to others as the behaviours are out of place and odd. Many studies have shown that clients with social anxiety are viewed as less likeable conversational partners in first meeting situations and tend to be viewed as less sympathetic or less easy to talk to by their friends (Alden & Wallace, 1995). Socially anxious individuals are less visible and less assertive in the workplace, display less verbal fluency and fewer leadership skills. They also show less verbal creativity when faced with evaluation (Cheek & Stahl, 1986)

The impact of dropping safety-behaviours on the level of anxiety has been shown to consistently hold a positive correlation. The more that is dropped the less anxious the client. Morgan and Raffle (1999) set up a three week programme of standard group cognitive-behavioural therapy compared to another group where all safety behaviours were dropped. Clients with social anxiety whose treatment included dropping safety behaviours showed significantly greater improvements on the Social Phobia and Anxiety Inventory. By dropping the safety behaviours, the individuals were faced with their worst fear and then realised the situation was not as bad as initially imagined.

### **1.7 Aetiology**

Research on the aetiology of social anxiety suggests two possible theories, a learning theory and a biological theory. The learning theory originates from early behavioural studies, such as those by Pavlov (1927). It assumes that social anxiety arises through a sequence of negative learning experiences, where the social stimulus that should be neutral is paired with a negative stimulus and thus through the process of classical conditioning the person learns to fear social interactions. Another possibility is that people with social anxiety have developed a fear of these situations through vicarious learning. This is the process in which

one learns through observation of others fears, most typically ones parents. The high concordance rate of social anxiety in first degree relatives could easily be attributed to this. Especially the evidence that children's fears are often similar to their parents (Emmelkamp, 1982).

Research that supports the learning theory includes evidence that parenting characteristics that are found in households with socially anxious children are shown to be controlling, insensitive, or overprotective styles that involve frequent correcting and shaming (Bruch, 1989). The self-critical tendencies mentioned in the information-processing section may be the result of restrictiveness and rejection by parents because these parental behaviours have been shown to be related to the development of self-criticism in adolescents more generally, particularly when received from the same-sex parent (Koestner, Zuroff, & Powers, 1991). Lundh and Ost (1996) compared participants with social anxiety and matched comparisons on intelligence and found that participants with social anxiety showed greater concern over mistakes, doubts about actions and parental criticism. The SA group also scored higher on parental expectations than comparisons. Other studies have shown not surprisingly that socially anxious participants show a greater tendency towards perfectionism as a result (Bieling & Alden, 1997). The socially anxious person imagines that others expect them to behave perfectly, which often was the perceived expectation at home, and devalues their ability to perform to the imagined standard.

From a developmental perspective, nonanxious toddlers have been shown to display anxious and avoidant behaviour to strangers after observing their mother behave fearfully towards the stranger (Gerull & Rapee, 2002). Through adolescence it has been shown that parents of teenagers with social anxiety maintain pessimistic expectations about their children's functioning in different domains (Cobham, Dadds, & Spence, 1998). Turner, Beidel, Roberson-Nay, and Teno (2003) showed anxious parents to be more physically withdrawn from their children and display more subjective anxiety when the children are engaging in neutral activities. The parents display less emotional warmth, more catastrophic interpretations and openly criticise their children. It should be mentioned that most of the research done on parenting styles with children suffering with social anxiety have focused on the mother and it remains unknown what the fathers parenting style is like, the impact

of the paternal relationship, and how single-parent households differ to two-parent households.

Parents are not the only source of learning. The individuals peer group plays an important role especially as teens spend nearly double their time with peers than they do with parents or other adults. Sadly there is often a correlation between youth who are victims of bullying at school and physical, sexual, and/or emotional abuse in the home (Baldry, 2003). Several studies on the relationship between bullying and social anxiety have been published. It's not surprising that aversive conditioning experiences such as bullying can have unique social consequences that make it a potent impetus for social evaluation concerns.

The learning theory does suffer from some criticism however, especially from research that provides evidence that traumatic experiences per se do not necessarily lead to the acquisition of fear. Only 4 out of 32 patients suffering from agoraphobia reported an initial traumatic event (Goldstein & Chambless, 1978). The fact that children often suffer the same fears as parents could also be due to a genetic factor opposed to a learned one. It is also possible that these individuals did have an initial traumatic experience but just don't remember.

Biological theories suggest a preparedness theory and a genetic one. Biological preparedness states that certain objects are more likely to be feared than others, an example of this is a study carried out by English (1929), who tried to condition fear to a wooden duck but didn't succeed. Other studies have shown that conditioned electrodermal responses to fear-relevant stimuli showed much higher resistance to extinction than responses conditioned to neutral stimuli (Fredrikson, Hugdahl & Ohman, 1976). Although this theory helps to explain a fear of snakes or spiders, seeing as those who are more afraid of these animals hold a higher chance of survival (and helps explain evolution and the concept of survival of the fittest), it does not seem to make sense when it comes to fearing social interactions. Surely those who fear social situations are at an evolutionary disadvantage. As social beings we need each other in order to survive, but it is precisely the importance of social interactions that makes people so fearful when thinking about not being able to have it.

Genetic factors, which were briefly looked at in the general information section, look at family links to shared anxiety. Family prevalence of phobic disorders is higher in first and second-degree relatives (Pauls, Crowe & Noyes, 1979). Monozygotic twins have more similar patterns of anxiety than do dizygotic twins (Slater & Shields, 1969; Young, Fenton & Lader, 1971). Many researchers have been trying to identify a certain chromosome through molecular research, but nothing has to date been found that could be replicated. The question of how much of these familial patterns is genetic and how much are learned is an almost impossible one to separate. In order to identify some characteristics seen in social anxiety as either learned or genetic it is worth looking at other disorders that are known to be more genetic in origin. The two 'psychiatric disorders' that are known to be more genetic than learned are psychosis and autism. Autism is diagnosed primarily based on the social deficits seen which all stem from having a poor theory of mind, which will be discussed next. The importance of theory of mind and control will then be looked at and related back to our understanding of social anxiety.

### **1.8 Theory of Mind**

One of the features of Theory of Mind is the ability to see something from another person's perspective and the interpersonal difficulties that arise from a poor theory of mind is one of the diagnostic criteria for autism (Baron-Cohen, 1985). Observations of children with autism showed that they fail to engage in spontaneous pretend play, which most children do by the age of 18 months. Leslie (1989) suggested that pretend play involves two types of representation. Primary representation is the first, which involves understanding the way things really are in the world. The second type is metarepresentations, which are used to capture the concept of pretending. The ability to understand metarepresentations also allows for the individual to think about mental states, in other words 'theory of mind'. The hypothesis that autistic children lacked theory of mind and so were unable to think about mental states generated a testable prediction about the social handicap of autism.

In order to study theory of mind, false belief tasks were used such as the Sally-Ann test devised by Wimmer & Perner (1983). In this task the child is shown two dolls, one named Sally and one named Ann. Sally has a basket and Ann has a box. Sally has a marble in her basket but when she leaves the room Ann places the marble into her box. The child is then

asked where Sally will look for the marble on her return. Baron-Cohen (1985) found that 80% of the autistic children failed to appreciate Sally's false belief by replying that Sally would know what they knew and look in Ann's box.

At about year four, children begin to understand that other people have thoughts, knowledge, beliefs and desires that are different from their own and will influence their behaviours. People on the autistic spectrum have difficulty conceptualising and appreciating these. For example they will often not realise that something they say can be offensive and being too literal in their thinking will not appreciate the need to lie on occasion depending on the social context. Happe (1994) was able to demonstrate the difficulty that individuals on the autistic spectrum have with this using her Strange Stories test. The strange stories test was constructed so that the motivation behind the utterance would generally be interpreted by typically developing persons in just one way. The tasks consisted of 24 short mentalistic stories with two examples of each story type, comprising of pretence, joke, lie, misunderstanding, persuasion, appearance/reality, figure of speech, irony, double bluff, contrary emotions and forgetting. For each story there is a question about whether it was true what someone said and a justification question about why the participant thinks the person in the story might have said what they did. The following is an illustration of one of the questions;

"Helen waited all year for Christmas because she knew at Christmas she could ask her parents for a rabbit. Helen wanted a rabbit more than anything in the world. At last, Christmas day arrived, and Helen ran to unwrap the big box her parents had given her. She felt sure it would contain a little rabbit in a cage. But when she opened it, with all the family standing round, she found her present was just a boring old set of encyclopaedias, which Helen did not want at all! Still, when Helen's parents asked her how she liked her present, she said, "It's lovely, thank you. It's just what I wanted."

In response to being asked why Helen said what she did, children on the autistic spectrum will often respond with answers that miss the point and refer to how she could for example read about rabbits in an encyclopaedia.

Research following this study suggests a higher pass rate and some even suggest that there is no difference in the quality of answers given, but that there is a slower reaction time in

responding to these questions (Bowler, 1997). It is then perhaps not only about an inability to understand metarepresentations but rather for some an inability to access the meaning of these metarepresentations quickly enough within a social interaction. It is likely that an inability to access this information quickly enough creates unease for the individual as they are probably going to feel less in control than others who can access social information spontaneously. Everyone feels a need to have a certain amount of control in his or her life. Control over what is going to happen to you now and in the future means that one is able to predict the present and future to a relative degree. It is not surprising therefore that studies looking at perceived control have found that the less an individual feels in control the more anxious they feel.

### **1.9 Control**

Glass & Singer (1972) showed that when there was a random loud noise, people perceived it as frustrating and it impaired task performance. Yet, when the noise was predictable or perceived as controllable, its negative after effects were reduced. Donnerstein & Wilson (1976) found that an uncontrollable noise has been found to produce greater aggression and less helping behaviour.

The question posed by these studies is why does an unpredictable environment cause more aggressive behaviour and stress? Cohen (1978) proposed a theory of attentional overload. This theory assumes that the individual's capacity for attention is limited and that uncontrollable or unpredictable stimuli require more extensive monitoring than controllable events. The uncontrollable stimuli are therefore more likely to deplete attentional resources and result in impaired task performance and interpersonal relations.

Another theory is that of learned helplessness. Seligman (1975) proposed this theory based on results from animal studies in which dogs were administered electric shocks. One group of dogs had a lever that controlled the electric shocks, whereas the second group of dogs did not. Many of the dogs that did not have a lever displayed symptoms of clinical depression. This was further investigated with an electric shock and a box. When an animal learns that it does not control the door to a box it would not even try and escape the box when the door opened and it could escape the shocks. These experiments highlight that through exposure to uncontrolled events, individuals come to believe that personal

outcomes are independent of their behaviour, and consequently cease to reduce their attempts to influence the environment. Seligman says extreme effects of helplessness include fear, anxiety, depression, disease and even death. Research has also shown a link between stress and perceived control. Feeling one has control over one's environment is central to determining the effects of a stressor on behaviour and health (Averill, 1973). Sells (1970) argues that stress arises when one is called to respond to a situation for which one has no adequate response. He also argues that it only arises when the consequences of failure to respond effectively are important to one. These studies clearly demonstrate the importance of perceived control. With a poor theory of mind, a person's environment could be very unpredictable.

An inability to see the world from someone else's perspective must feel frightening. It is ironic that the 'backbone' as it were to cognitive-behavioural therapy is the rational idea that one can never really know what someone else is thinking (Ellis, 1961). As true and as rational as this may be, individuals could not survive if they did not make assumptions about what other people thought. It allows the individual to feel a certain amount of control over their social environment. Children with autism do not seem to care about what other people think, which probably links to their inability to see the global importance of being social. It seems reasonable to assume that human beings are social and place great importance of their social networks to survive. So what happens when someone does care about their social network and yet has a poor theory of mind? This was the question that led to a connection being made to social anxiety.

There is a similarity between theory of mind in autism and in social anxiety with regards to them both being viewed as a spectrum disorder. In autism this shows itself in the form of a diagnosis of Asperger's disorder in the high-functioning individuals with autism to the more severe autistic diagnosis. A spectrum view of social anxiety has also been established. In a 15-year longitudinal study looking at prevalence, risk factors, course and impact, showed that six percent met the lifetime criteria, 12 % at a sub-threshold level and 24% had symptoms alone (Merikangas & Avenevoli, 2002).

Theory of mind based on this research could be viewed as an inability to process metarepresentations. If an individual is to fully engage in a social interaction the processing

must happen within seconds. If theory of mind is on a spectrum then some individuals will process these interactions very quickly and others less so. Some will be unable to keep up and will therefore prepare for the worst (because they then assume they are under threat) and catastrophise what is happening. The person becomes so fearful of these social interactions that they avoid them at all cost, anticipating them negatively and remembering only the negative events from previous interactions. It seems theory of mind could play a very large part in understanding social anxiety.

### **1.10 Social Anxiety as a Deficit in Social Skills**

No evidence has emerged to link social anxiety consistently with “deficits of social skills”. Research has been able to show an observable difference but not an actual skill deficit. Pilkonis (1977) found only one significant difference between socially anxious and non-anxious groups of women and that was that the anxious women spoke less.

Sergin and Kinney (1995) divided 64 undergraduate students into socially anxious and non-anxious groups using the Social Reticence Scale (Jones & Briggs, 1986). All participants unwittingly took part in a five-minute unstructured interaction with a confederate while “waiting for the experiment to start”. People in the social anxiety group were considered by the confederate as having poorer social skills however, independent observers who rated tapes of the same interactions considered the groups equivalent in their social skills.

Strahan and Conger (1998) conducted a study looking at 333 undergraduate male students who were separated into socially anxious and non-anxious groups. All participants underwent a simulated interview conducted by a female confederate. Overall, no differences between the two groups were found in terms of either non-verbal or verbal performance.

Wenzel, Graff-Dolezal, Macho and Brendle (2005) investigated undergraduates who were anxious and non-anxious but in a romantic relationship. All couples were asked to discuss three topics that were either neutral, problematic or positive within their relationship. It was found that participants in the anxious group had greater difficulties in expressing themselves clearly during the problem discussion while fidgeting more and speaking more softly during all tasks. Additionally they smiled less and gave fewer compliments.

Alden and Wallace (1995) looked at how much of a difference it would make if the confederate interviewer was positive or negative. Both socially anxious and non-anxious groups performed better with an encouraging rather than negative confederate. In the negative condition the socially anxious participants were more visibly anxious, had fewer "verbal behaviours" and were found to convey less warmth and to be less likeable than comparisons. This research suggests that the social skills deficit we see in social anxiety is likely to be due to the anxiety and not the persons skills.

Hofmann, Gerlach, Wender, and Roth (1997) compared 24 socially anxious participants to 25 comparisons and asked them all to do role-plays including: speaking to an interviewer, telling the interviewer what they did the day before, preparing a talk with the interviewer, sitting in front of two people and a simulation of a speech prepared earlier. The results showed that participants in the socially anxious group showed less fluidity in speech than comparisons but did not allow the drawing of general conclusions as to the state of their communication skills.

Finally in another study Walters and Hope (1998) compared 22 socially anxious and comparisons on video-taped role-plays specifically looking at behaviours assumed to reflect cooperation, dominance, submissiveness and escape/avoidance. Results showed that socially anxious participants looked at their interviewer less, expressed less praise and engaged in less bragging and commanding, which was said to reflect dominance.

These studies are important in showing that socially anxious individuals behave somewhat differently from comparisons in simulated social interactions, but then who behaves like themselves when they are anxious? If one was to ask a person who is afraid of spiders to perform a task when a spider was in the room is it not likely that the person would show an impaired performance compared to someone who was not phobic of the spider? A number of studies have shown how anxiety impairs performance in other anxiety disorders. An example of this is in learning a second language. A demand to answer a question in a second language when the participant is anxious has been shown to diminish cognitive performance because of the divided attention that happens at that point. This has been shown to lead to negative self-evaluations and more self-deprecating cognition which further impairs performance. For some students, this is a frequent course of events and the anxiety

becomes reliably associated with any situation involving a second language through conditioning. Once established, this association leads students to become anxious at the prospect of second language learning or communication (MacIntyre, P., 2010).

The idea that a poor theory of mind might be able to account for the social skills deficits that clients with this disorder believe themselves to have, was a hypothesis I came up with many years ago and carried out a master's dissertation on. In my initial study I compared three individuals with a diagnosis of social anxiety with fifteen non-anxious comparisons. Everyone was matched on verbal IQ and read strange stories to assess their understanding of second-order false belief stories. The results showed that the social anxiety group took significantly longer responding to questions than the comparison group. The social anxiety group also responded with significantly poorer explanations leading to a conclusion that individuals with social anxiety do have a poor theory of mind, but with such a small sample size a recommendation that further research be carried out (Schjelderup, 2005).

### **1.11 Effect of Anxiety on Reaction Time**

It has long been established that high anxiety states effect information processing. As anxiety is designed to deal with threat there is an attentional bias towards threatening information (Eysenk, MacLeod & Mathews, 1987) which explains the negative bias seen in social anxiety. Several studies have used modified versions of the Stroop paradigm (Stroop, 1935) to examine cognitive processes in anxiety. The classic paradigm involves presenting participants with colour words written in different or the same coloured ink. It always takes less time for people to identify the written colour when it is matched with the colour of the ink. Ray (1979) found that pre-examination students took longer to name the colour of examination-related Stroop words compared to matched-neutral words. This suggests that even words that create some level of anxiety effect response times. Richards & Millwood (1989) found that high-trait-anxious participants took longest to identify the colour of threat related material. In one study participants high and low in trait anxiety were asked to identify the colour of anxiety-related, anxiety-matched neutral, happiness-related and happiness-matched neutral words. The participants high in trait anxiety took longer to identify the colour of anxiety-related compared to matched neutral words for blocked-trial presentation only. Analyses also showed that high trait anxiety participants exhibited

interference effects consistent with the induced mood. No such effects were observed for the low-trait-anxiety participants (Richards, A., French, C., Johnson, W., Naparstek & Williams, J., 1992)

High levels of anxiety about health issues have been found to interfere with disease detection by increasing the amount of time it takes. In a laboratory study of 82 participants assigned to read information designed either to increase or decrease anxiety about health the participants who read the information designed to increase anxiety responded slower when expressing their attitude to disease detection and health promotion behaviours (Millar, M & Millar K., 2008).

A study looking specifically at social anxiety and how quickly individuals are able to identify facial expressions found that socially anxious participants did not have a problem identifying facial expressions however, when the social anxiety participant was in the threatening condition it took them significantly longer to respond (Mullins, D & Duke, M., 2004).

Finally, results from a study comparing participants in a "relaxed" and "anxious" condition on a number of cognitive tasks, found that the more anxious participants were both the slower and less accurate than the less anxious participants. (Leon, M & Revelle, W., 1985).

The evidence from the previous section on social anxiety being viewed as a social skills deficit is not a theory strongly supported. Based on the evidence presented in this section it seems likely that should poor theory of mind be a feature in social anxiety it could be attributed to the effect anxiety has on information processing.

### **1.12 Treatment**

Current research looking at the efficacy of different treatments for social anxiety disorder have found cognitive behavioural group therapy and pharmacotherapy to have the best recovery rates (Clark, 1991; Rodebaugh, T. et al., 2004). These treatments have been found to be more effective than relaxation-based treatments and social skills training alone (Feske & Chambless, 1995). Cognitive-behavioural therapy includes identifying irrational beliefs, cognitive restructuring, manipulation of self-focused attention and safety-behaviours, video and audio feedback, and behavioural homework and in-vivo exposure tasks within the

session. Group therapy is likely to be slightly more effective than individual therapy because it provides the group members with the ability to do some exposure by just being in the group setting and helps to normalise the experience of the social anxiety. It helps the individual to recognise that they are not alone in experiencing this condition which helps them to form support within and between group members. The combination of antidepressant medications and CBT has been associated with few benefits over CBT, although a few studies suggest an ever so slightly better recovery rate when CBT is combined with fluoxetine (Davidson, 2004).

Cognitive-behavioural therapy is effective because it is able to challenge all of the cognitive processes involved in the development and maintenance of social anxiety. Clark and Wells (1995) provide a cognitive model of social anxiety in which they identify the perceived negative evaluation from others and themselves as key to social anxiety. According to the model individuals with social anxiety misinterpret social situations because they hold dysfunctional beliefs about themselves and their behaviour. People with social anxiety believe that they will act unacceptably in social situations and as a result will be rejected and will experience a loss of self-worth. Clark and Wells suggest a number of maintenance cycles. They suggest that such threatening beliefs activate an 'anxiety programme' which has physiological, cognitive, affective, and behavioural components. There are several reasons why the individual is prevented from disconfirming their beliefs, which are all of the safety-behaviours mentioned in the behaviour section. The model suggests that when the person with social anxiety enters the social situation they become hyper-vigilant and change their focus to detailed monitoring and self-observation. This attentional shift produces an increased awareness of anxiety responses and symptoms, interferes with processing the situation and other people's behaviour and produces introspective information such as bodily sensations and feelings which is used to construct an image of how they think they appear to others.

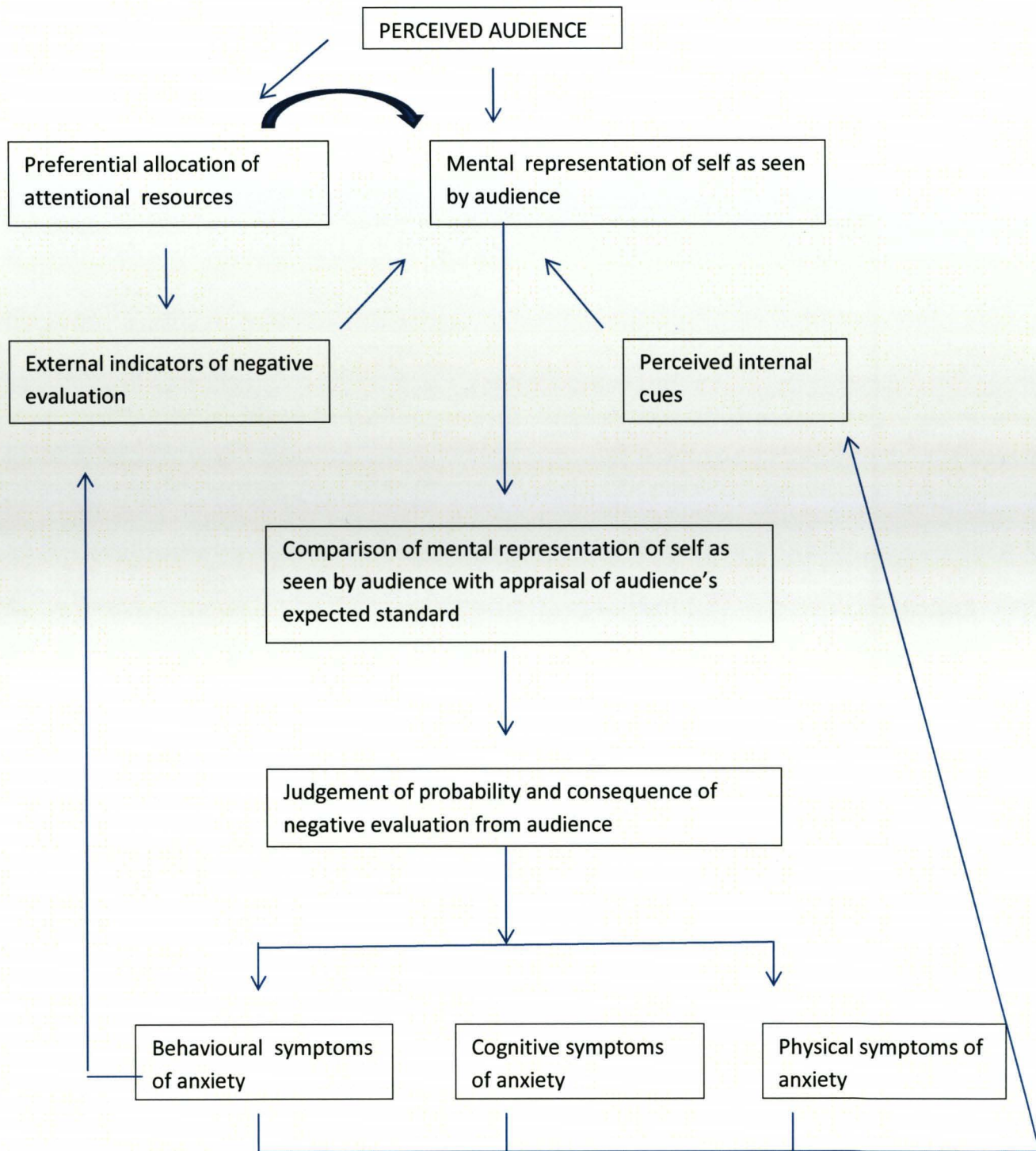
In treatment the individual will be asked about their beliefs regarding a number of different social situations. The negative automatic thoughts will fall into a number of classic 'Thinking Error' categories some of which have been identified in table 2.

**Table 2: Classic Thinking Errors in CBT**

<b>All-or-Nothing</b>	<b>Catastrophizing</b>	<b>Personalising</b>	<b>Negative Focus</b>	<b>Jumping to Conclusions</b>	<b>Living by Fixed Rules</b>
Seeing everything in absolute terms	Magnifying or exaggerating the importance of events	Taking responsibility and blame for anything unpleasant	Focus on negatives, ignoring or misinterpreting positives	Making negative interpretations without any definite facts	Unrealistic expectations.

Using a thought chart the client will start to challenge their irrational beliefs with the therapist coming up with alternative/rational beliefs about the social situations. The therapist will then ask the client to go away and for homework do some type of exposure experiment putting the new beliefs and behaviours to the test. Once the client has enough evidence that the alternative beliefs are true the negative automatic thoughts are replaced with the alternatives. The exposure element of the therapy is vital in order to provide the evidence, which is why research has shown that cognitive therapy on its own is not effective for social anxiety (Butler, G., 1999).

Rapee and Heimberg (1997) offer a useful cognitive behavioural model of the generation and maintenance of social anxiety taking into account the faulty information processing discussed and the safety behaviours:



Cognitive restructuring has four aims which include modification of: 1) the negative expectations that are present before and during exposure to social situations. 2) failure-focused attention to and overestimation of the cost of social failures 3) amplifying cognitions and associated dysfunctional interpretations of social performance and anxiety affect and 4) maladaptive self-evaluations following performance in social situations. In cognitive-behavioural therapy thoughts are treated as a hypothesis which the therapist helps the group or individual to identify and challenge. The challenges would use evidence in the client's life to support a more rational belief about the situation that is seen as problematic for the client. Table 3 lists a few examples taken from my own work:

**Table 3: Examples of cognitive restructuring from sessions with clients suffering with social anxiety (Vanessa Schjelderup, 2010)**

Dysfunctional Beliefs	Alternative Belief
<p>If I speak to the shopkeeper at the corner shop I will say something stupid</p> <p style="text-align: center;">↓</p> <p>The shopkeeper will think I am stupid which means I am stupid</p>	<ul style="list-style-type: none"> <li>• What would be something stupid to say to the shop keeper? - Something like, "do you sell elephants here"- I have never said anything like that, so based on previous evidence of what I do say it is much more likely that I will say something neutral like "where is the milk"?</li> </ul>
<p>My colleagues will notice me blushing</p> <p style="text-align: center;">↓</p> <p>They will think that I am weak, which means I am weak</p>	<ul style="list-style-type: none"> <li>• I don't think other people who blush are weak</li> <li>• I hardly ever notice when other people blush which is some evidence that others don't notice half as often as I do.</li> <li>• Blushing can happen for a number of reasons, like I am hot, during exercise, when we feel ill – blushing doesn't mean weakness.</li> <li>• I can't control it – so if I blush I blush</li> <li>• Evidence that others still like me even though I blush -</li> </ul>
<p>I don't want to give my presentation</p> <p style="text-align: center;">↓</p> <p>Everyone will notice that I am anxious and wonder what I am doing here.</p> <p style="text-align: center;">↓</p>	<ul style="list-style-type: none"> <li>• Anyone who can paint deserves to be on the course. The teachers evaluated my work to get accepted on the course in the first place which is my evidence that I belong there.</li> <li>• Even if someone else on my course got anxious presenting it wouldn't dictate what I thought about their art.</li> </ul>

<p>They won't like my work and think that I don't belong on the course</p> <p style="text-align: center;">↓</p> <p>Maybe they are right and I don't belong on the course</p> <p style="text-align: center;">↓</p> <p>I am not good enough</p>	<ul style="list-style-type: none"> <li>• The purpose for us all to be there is the art not to be professional presenters.</li> <li>• This is just a part of the course that I don't enjoy as much, but the more I do it the more comfortable I will become with it and it is a useful skill to have later.</li> </ul>
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In cognitive restructuring the therapist is always asking for evidence of the client's belief. How often it occurs and what predictions the client has about what will happen to self and others. Once cognitive restructuring has been effectively done the exposure starts. Exposure needs to be long enough for the anxiety level to come down. A decrease in anxiety during the exposure session is thought to allow integration of new information into the fear network. Sometimes to start out with I will ask my client to observe me carrying out a task and watch how few people seem to notice. Useful exposure experiments that have been carried out in my clinical work include:

\*Dropping keys in front of people and getting clients to watch how few pedestrians even notice.

\*Eating something in a really messy way and getting my client to notice other people's reactions (or lack of)

\*Walking down the street with ice cream on my face.

\*Walking a banana down the street and pretending it is a dog. This is based on the shaming experiments carried out by Albert Ellis (1966).

Wells et. al (1995) have suggested guidelines for maximizing effectiveness of exposure by taking into account safety behaviours and cognitive biases that may insulate clients from corrective feedback and thus interfere with anxiety reduction:

1. Client's feared catastrophes and their perceived likelihood should be assessed.
2. Safety behaviours that are rationally linked to these feared catastrophes should be identified.

3. A cognitive set focusing on active disconfirmation of negative beliefs should be established.
4. Safety behaviours should be eliminated or reversed during exposure.
5. The outcome of the assignment should be discussed in information-processing terms.

It is important that exposure to a feared situation is carried out several times in order for it to be effective. Exposure tasks need to happen closely together as well for it to be effective. If for example someone is worried about giving presentations and they only give one a year then it is not going to provide the client with enough evidence that it is in fact ok. If the person is forced to present every week for a number of months then the client will be provided with so much information that it is safe that there will often be no reported anxiety by the end. Exposure combined with cognitive restructuring provides a context for correcting dysfunctional thoughts, redirecting failure-focused attention and the elimination of safety behaviours. The research on a combination of medication with cognitive behavioural therapy has been mixed. An observation from my own clinical work is that the medication starts to become a safety-behaviour. The belief behind it being that the only reason the client was able to get through the difficult situation was because of a tablet and so all of the negative beliefs held about oneself is maintained.

### **1.13 Therapeutic Implications**

If a link were to be made between theory of mind and social anxiety it could be useful in several ways to the therapeutic process. Starting with the psycho educational element, clinicians would be able to explain that it is not about a lack of skills or intelligence, but rather about the internal judgement process the person suffering with the anxiety is going through before making a decision to speak or not (and usually the case is not). The internal judgement slows down the response time, and takes the persons attention away from the audience and important clues about the environment being much less threatening than how the sufferer is imagining it is. Added onto this the delayed response time and negative interpretation of this as being a social skills deficit becomes in a sense a self-fulfilling

prophecy in that the sufferer is out of synch with the tempo of the conversation and becomes even more anxious about that, convinced that their ability to cope with the social situation is much lower than the demands of the situation. The negative bias also means that even when the audience is saying something neutral the sufferer is still more likely to hear it in a negative way and therefore start avoiding the person(s) until the person in the audience probably starts to assume that the sufferer doesn't like them and therefore probably stops making an effort with the sufferer. In this way the vicious cycle of social anxiety becomes self-fulfilling. It also helps clinicians to be aware of what evidence the client has been using to support their theory of being socially inadequate.

The second implication would be to the exposure work. The experiments that have been mentioned above in which the therapist carries out the exposure work and gets the client to observe how other people respond is a very useful first step in the behavioural work. It helps the client to establish how little other people pay attention and also how little negative judgement there actually is out there. Some exposure on getting the client to write to the people nearest to them, friends, family and partners and explain what they are suffering with and why they have been behaving the way they have is another useful strategy to help the client re-establish their support network. This is also a nice way to challenge beliefs about other people perceiving the anxiety as unacceptable. Once the client realises through this exposure experiment that they are the only ones who have such a negative interpretation of the anxiety they will be more willing to talk to other people about their social anxiety, therefore it is no longer a dirty secret and with the extra understanding and support gained through this they are more likely to take chances socialising, which has a knock on effect to the rest of the cycle.

Finally in terms of cognitive restructuring helping the client to move away from the internal critiquing of what they spontaneously are about to say by challenging them to see how it's ok to make a mistake and really how everyone says boring and stupid things. Getting the sufferer to realise that it is more important to just talk as soon as the thought occurs so that the rhythm of the social interaction is more 'normal' and to give them evidence that they actually perform better when they do this as opposed to try and monitor everything they say.

### **1.14 Hypothesis**

The hypothesis of this study is that people experiencing social anxiety will have a worse theory of mind than both the comparison and anxiety group. Theory of mind will be viewed in terms of response time and interpretation of stories. It is proposed that the social anxiety group will take significantly longer to respond to non-mental and mental state questions and that the quality of the responses given will be significantly poorer due to the negative bias. In summary the hypothesis is testing three variables linked to theory of mind:

I. Non-Mental State Questions

II. Mental State Questions

III. Quality of Response

## II. Methodology

### 2.1 Design

This research has a between subjects design, where the independent variable is “anxiety status”. Within this variable there are three conditions:

- A) Socially Anxious Participants
- B) Anxious Participants excluding Social Anxiety
- C) Non-Anxious Comparison Group

This research is parametric using a 3 by 3 Analysis of Variance (ANOVA) when comparing response times to the non-mental state questions (First question to each story was a yes/no answer) and mental state questions. Due to the poor homogeneity of variance across groups, which violates the assumptions for a parametric ANOVA a Kruskal-Wallis non-parametric analysis of variance was used as well.

On an individual basis, the participants were matched based on their score on the AH5 (Heim, A.W. 1968), which is an abbreviated intelligence quotient test. All 14 participants that could be matched across groups were.

A revised version of Happe’s (1994) strange stories test was written up to contain adult themes because all of the participants were over 18 and Happe devised her test for assessing children. A pilot test was carried out on 24 comparison participants to assess the most common response to each story (see **Appendix 4**). Each strange story asked for a response to a non-mental state question (yes/no) and a response to a mental state question. The quality of response in the mental state questions were scaled from 0-2, with 2 being a completely correct response, a 1 a partially correct response and a 0 incorrect. All participants were audio taped so that the time it took each participant to respond could be calculated with a stop watch in the analysis.

## 2.2 Sample:

67 participants took part in the main research and 24 in the pilot study. There were 24 participants in the social anxiety group, 29 in the comparison group and 14 in the anxiety group. Participants in the research were matched on IQ, so that any differences found between groups would be due to anxiety state and not intelligence.

All participants were adults, over the age of 18 years. The experimental participants came through a number of different web sites including: Social Anxiety UK ([www.sauk.org.uk](http://www.sauk.org.uk)), Anxiety UK ([www.anxietyuk.org.uk](http://www.anxietyuk.org.uk)), and No Panic ([www.nopanic.org.uk](http://www.nopanic.org.uk)). I was also able to recruit some participants through Cygnet hospital where I work a few days a week. I recruited my comparison group through City University and friends. The participant's identities were withheld for the purpose of confidentiality and anonymity. The pilot study participants all came through City University and were undergraduate psychology students.

The total number of female and male participants in each group can be seen in Table 4.

	Females	Males	Total
Comparison	17	12	29
Social Anxiety	12	12	24
Anxiety	9	5	14

**Table 4: Gender of Participants in Each Condition**

## 2.3 Materials/ Test Questionnaires:

The research was conducted by giving each participant an information and consent form (see **Appendix 2**). This form described to each participant who the researcher was, who was supervising the study, the purpose of the study, what participation involved and the right each participant had to take part or withdraw from the study and reviewed confidentiality.

Once the participant signed the consent form they were asked to fill in a tick list of symptoms based on the DSM-IV criteria for social anxiety (see **Appendix 3**). Included in this

were a few questions about what diagnosis the participant had and who had diagnosed them.

Each participant was then asked to take the AH5 which is a group test of intelligence for adults with 36 items and 4 sub-scales including: directions, verbal analogies, numerical series and similar relationships. The total test time is 40 minutes which is why it was chosen over the Wechsler Adult Intelligence Test which takes much longer.

To assess Theory of Mind all groups were read a series of twenty-four stories. This part of the testing was audio taped. The recordings were initially done on a Dictaphone and transferred over to my old PC, but once I purchased the Mac book I carried out all of the recordings onto my computer directly because the sound quality was so much better. The stop watch on my phone was used to score the time it took each participant to respond.

The materials used in this study are summarised in the following points:

- The Confidentiality and Consent Form
- The DSM-IV check list
- The AH5 intelligence test
- A Dictaphone
- Mac Book Pro
- Mobile phone stop watch

#### **2.4 Procedure:**

Before commencing the research my doctoral proposal was handed in to the City University Ethics committee which approved the research (see **Appendix 1**). Each participant would also sign a consent form before testing commenced.

The next step involved acquiring the specific tests for the research. This was done via the psychometrics department at City University who with my supervisor's approval provided me with the AH5 intelligence test.

One of the suggestions made from my master's dissertation was to have a strange stories test that had adult themes seeing as I was testing adults and not children. So I changed each story and then tested out the stories in a pilot study which I carried out on undergraduate psychology students at City University thanks to Dr Marie Poirier. I ended up testing 24 students to make sure that the comparison population answered consistently to give me a base line measure. For the strange stories and the correct responses see **Appendix 4**.

The participants were then recruited in several different ways. As mentioned previously a number of advertisements were posted on a number of different web sites designed to support individuals with anxiety disorders. Each of the web sites asked for proof that I was in fact a doctoral student and for the contact details for my supervisor to confirm my placement. Once it had been approved I was allowed to recruit for participants in my anxiety groups through them. Outside of the sites, I also recruited a few participants through Cygnet Hospital Harrow, a private psychiatric hospital that I have been working in over the past three years. Due to the hospital being private all I had to do was get permission from the head of the hospital to recruit participants from my group that I run once a week. Information on my research was handed out at the beginning of each group and quite a few clients volunteered.

For my comparison group I asked friends and family to volunteer as well as going back to the undergraduate psychology students the year following the pilot study to recruit participants there. As long as the IQ's matched between groups it didn't matter if I recruited from a personal sample.

Once a participant volunteered I would arrange to see them individually at either City University or at the Heath, one of my practises in West Hampstead, depending on what was most convenient for the participant. Each participant was given the confidentiality and consent form (see **Appendix 2**) and diagnostic tick list (see **Appendix 3**) to sign before the testing commenced. The instructions given to each participant was identical in that they would first complete a 40 minute mini-IQ test. The test had two sections of twenty minutes each. After which I would read out twenty-four stories and ask them a number of questions to each story. I reminded them that the last section would be recorded. On each section of the intelligence test there were example questions and answers which the participant could

look at before starting the section and ask me questions if they had any. Once the participant felt confident that they could begin the first section I started timing them and left the room until their twenty minutes was up and they would then look at the second section. Each participant was told that they would only be read out each strange story once and that it could not be repeated. If for any reason they had zoned out and could not answer the question they were instructed to say "skip" and the result would be scored as a missing value. Each story in this test asks for an explanation to two types of questions: a non-mental state question (yes/no response), which is asking about the literal meaning of what someone said and the second asks for the implication of why the person in the story said what they did. The second question is a mental state question. The mental state questions look at the participants understanding of metarepresentations, which include "pretend", "lie", "white lie", "double bluff", "persuasion", "forgetting", "appearance/reality", "joke", "irony", "misunderstanding" and "figure of speech". The quality of the mental state answer was then scored on a level from 0-2, 2 being a complete explanation for why someone said what they did. All scores and responses can be seen in **Appendix 5**.

On completion of the tests, the IQ score was tallied up and the recordings analysed. The time it took each participant to respond was measured using a digital stop watch on my mobile which calculates to the hundredth second. Each response was measured three times and then a mean of the scores taken to be as precise as possible.

Each response given by the participants to the questions on the stories was written down and scored according to how accurate a response was given (the base line measure being the pilot study that was carried out). Scoring the quality of response was based on a correct, partial or incorrect mark (0-2). A response was scored as correct when a complete understanding of motivation was given for why someone in the story said or did what they had. A partial score of 1 was given if the respondent gave too general an explanation but one could infer that a total understanding was probably there. An incorrect response of 0 would be scored when the participant had missed the point, for example when taking what someone in the story said literally. To control inter-reporter reliability, another assessor was asked to mark the quality of response given by participants.

## **2.5 Ethical Issues**

There are no obvious risks or costs to the participants as the overall aim of the research was to raise awareness as to the origin and maintenance of social anxiety but not to impose value judgements. The research did not insult the integrity of any participant and confidentiality was assured verbally and written on the consent form.

The use of data was explained thoroughly in both verbal and written form. A question and discussion time was also left at the end for each participant. Each participant understood that withdrawing from the research was permissible.

This study aims to contribute to our understanding of social anxiety and hopefully lead to better development of counselling and a greater understanding both for professionals and those suffering with social anxiety about the disorder.

### **III. Results**

For all raw data relating to output see **Appendix 6**.

The analysis of the data examines the response time to the non-mental state questions (requiring a yes/no response), mental state questions (requiring an explanation) and the quality of response offered (scored from 0-2). Separate analyses will be reported for the matched and the unmatched samples.

To test the first hypothesis, that the social anxiety group would take significantly longer to respond to non-mental state questions, a One-Way ANOVA was conducted in order to see if there were any significant differences in response times to the first question on each story. The first question of each story involved simply giving a yes/no response. As can be seen from inspection of means in table 5, the social anxiety group spent almost double the amount of time responding compared to the other groups.

#### **Hypothesis 1:**

	Number of Participants	Response Mean (SD) In Seconds
Comparison	29	1.09 (0.55)
Anxiety	14	1.12 (0.37)
Social Anxiety	24	1.93 (1.19)

**Table 5: Summary of Mean Response Time to Non-Mental State Questions**

Because of the poor homogeneity of variance across groups (Levene's statistic = 8.273, df = 2,64,  $p < .01$ ), which violates the assumptions for a parametric ANOVA, a Kruskal-Wallis non-parametric analysis of variance was used. This analysis showed a significant difference among the groups ( $X^2 = 10$ , d.f. = 2,  $p < 0.007$ ). Follow-up, pair-wise comparisons using Mann-Whitney U Tests failed to show a significant difference between the comparison and anxiety group ( $z = -0.52$ ,  $p = 0.6$ ) but did show a significant difference between the anxiety

and social anxiety group ( $z = -2.27, p < 0.03$ ) and between the comparison and social anxiety group ( $z = -2.95, p < 0.03$ ).

When looking only at the 14 matched participants on the same measure, the homogeneity of variance across groups is sufficient to justify using a one-way ANOVA (Levene's = 1.936,  $df = 2,39$ , ns). A significant difference among the means was not found ( $F = 2.36, d.f. = 2$ , ns), although the social anxiety group still spent longer responding to the questions as can be seen by the table of means in Table 6.

Group	Response Mean (SD) in Seconds
Comparison	1.22 (0.57)
Anxiety	1.12 (0.37)
Social Anxiety	1.56 (0.72)

**Table 6: Summary of Mean Response to Non-Mental State Questions in Matched Condition**

The results from the whole group support the experimental hypothesis that the social anxiety group would spend longer responding to non-mental state questions but the matched results do not.

In order to test the hypothesis that the social anxiety group would spend significantly longer responding to mental state questions, the questions requiring an explanation, a One-Way ANOVA was carried out. As can be seen from the inspection of means in Table 7, the social anxiety group spent double the amount of time answering questions requiring an explanation. Due to the poor homogeneity of variance across groups (Levene's statistic = 5.532,  $df = 2,21, p < 0.001$ ), which violates the assumptions for a parametric ANOVA, a Kruskal-Wallis non-parametric analysis of variance was used. The results show a significant difference in reaction times between the three groups ( $\chi^2 = 18.47, df = 2, p < 0.001$ ).

## Hypothesis 2

Group	Number of Participants	Response Mean (SD) in Seconds
Comparison	29	1.29 (0.78)
Anxiety	14	1.28 (0.55)
Social Anxiety	24	2.62 (1.78)

**Table 7: Summary of Mean Time on Explanation to Stories**

To look at differences in response times in giving an explanation to the stories between the different groups, a series of Mann-Whitney tests were carried out. These showed no significant difference between the comparison and anxiety group ( $z = -0.29$ ,  $p = 0.78$ ) but did show a significant difference between the anxiety and social anxiety group ( $z = -3.1$ ,  $p = 0.001$ ) and between the comparison and social anxiety group ( $z = -4$ ,  $p < 0.001$ ).

When looking at the 14 matched participants, a Kruskal-Wallis non-parametric analysis of variance was used again because of the poor homogeneity of variance across groups (Levene's statistic = 3.405,  $df = 2,39$ ,  $p = 0.43$ ). This analysis showed a significant difference among the groups ( $X^2 = 9.47$ ,  $df = 2$ ,  $p = 0.009$ ). As can be seen from the inspection of means in table 8, the social anxiety group again spent almost double the amount of time responding.

Group	Mean Response (SD) in Seconds
Comparison	1.15 ( 0.46)
Anxiety	1.28 (0.55)
Social Anxiety	2.04 (1.02)

**Table 8: Summary of Means for Matched Participants to Response Times to Mental State Questions**

To look at differences in response times in giving an explanation to the stories between the different groups, a series of Pair-wise Mann Whitney tests showed no significant difference

between the comparison and anxiety group ( $z = -0.37, p = 0.71$ ) but did show a significant difference between the anxiety and social anxiety group ( $z = -2.3, p < 0.05$ ) and between the comparison and social anxiety group ( $z = -2.94, p = 0.002$ ). The results from both the matched and unmatched participants support the experimental hypothesis that individuals with social anxiety spend longer responding to questions.

To test the hypothesis that people with social anxiety respond significantly poorer to the questions, a One-Way ANOVA was carried out on the quality of responses given (scored 0 - 2). As the homogeneity of variance was low enough (Levene's statistic = 1.177,  $df = 2,64$ , ns) the results from the One-way ANOVA are applicable. The results show a significant difference in quality of responses between the three groups ( $F = 13.06, d.f. = 2, p < 0.001$ ). For all raw data on responses given, see **Appendix 5**. As can be seen from the table of means in table 9, the social anxiety group average a partially correct response, whereas the other groups are closer to providing a correct response.

### **Hypothesis 3**

Group	Number of Participants	Mean Quality of Response (SD)
Comparison	29	1.38 (0.31)
Anxiety	14	1.34 (0.21)
Social Anxiety	24	1.01 (0.25)

**Table 9: MeanQuality of Response for All Participants**

Similar results were found in the 14 matched participants, who also showed low enough homogeneity of variance (Levene's statistic = 1.964,  $df = 2,39$ , ns) to apply a One-Way ANOVA. Results showed a significant difference for the matched condition as well ( $F = 11.96, d.f. = 2, p < 0.001$ ) as can be seen in the table of means in table 10.

Group	Mean Quality of Response (SD)
Comparison	1.39 (0.37)
Anxiety	1.34 (0.21)
Social Anxiety	0.95 (0.16)

**Table 10: Mean Quality of Response for Matched Participants**

An accidental finding from this research was the difference in response time for all groups when giving a correct, partially correct and incorrect response. As can be seen from the inspection of means in Table 11, each group spent the most time responding when giving incorrect responses, were slightly faster when giving partially correct responses and quickest when giving correct responses.

Group	Incorrect Response	Partially Correct Response	Correct Response
Comparison	2.43	1.46	2.25
Anxiety	1.63	1.36	1.09
Social Anxiety	3.10	2.43	0.98

**Table 11: Mean response time in seconds for quality of response across groups**

A 3 \* 3 (response type by group) repeated measures ANOVA was carried out on these data. This revealed a significant main effect for group ( $F = 5.31, df = 2,64, p < 0.01$ ), and for response type (Greenhouse-Geisser corrected  $F = 11.73, df = 1.42, p < 0.001$ ). Paired sample t-tests revealed a significant difference for all the types of response. In other words, there was a significant difference between incorrect and partially correct response ( $t = 3.598, df = 66, p, 0.01$ ), incorrect and correct response ( $t = 4.473, df = 66, p < 0.001$ ) and partial and correct response ( $t = 2.693, df = 66, p < 0.001$ ).

## **IV. Discussion**

### **4.1 An Interpretation of the Results**

The findings of the present research are supportive of the experimental hypothesis: that is that individuals diagnosed with social anxiety have a worse theory of mind than both the anxiety and comparison group. The significantly slower response times and poor quality of response to the stories are seen as representing theory of mind.

The response times to the non-mental state questions which only required a yes or no response (Table 5) took all participants less time to respond to than the mental state questions requiring an explanation. Responses to the mental state questions showed the largest difference between groups with the social anxiety group spending double the amount of time giving explanations compared to both other groups. The greater response times to the questions requiring an explanation could be attributed to the fact that they require the participant to vocalise more than just a yes/no response. Further the explanation requires the participant to voice an opinion. The negative bias and self-doubt interferes more when the individual has to say more which is probably why one of the safety behaviours seen in social anxiety is to ask others questions so that they don't have to speak.

The results for the non-mental state questions (yes/no questions) was partially supportive of the experimental hypothesis which stated that the social anxiety participants would spend longer responding compared to both other groups. The results were only significant when looking at all participants but not in the matched participants condition, the results therefore remain inconclusive. It was hypothesised that the non-mental state questions would take longer for the socially anxious participants to respond to because an understanding how to respond to the non-mental state questions requires an understanding of what the story is really about, which the following question (the mental state question) asks for next. For example, in the story where Tom and Sarah go on a picnic and it starts to rain, Sarah says, "Oh yes a lovely day for a picnic all right!" The non-mental question that follows, "Is it true what Sarah says?" is already asking the participant for an understanding

of sarcasm, in being able to respond in the negative, the participant has demonstrated that Sarah is in fact not being literal. The social anxiety group did spend longer answering the non-mental state questions in both conditions (matched and unmatched) but further research would be needed to support a significant difference.

The response times for the mental state questions supports the experimental hypothesis that it would take the social anxiety participants significantly longer to respond. This was the case in both the unmatched and matched condition, where the social anxiety group took double the amount of time providing explanations for why people in the stories did or said what they did.

The poor homogeneity of variance within the social anxiety group could be attributed to the fact that certain participants were more anxious than others during the testing. Some of the participants with social anxiety were more severely socially anxious than others and therefore going into a situation where they are meeting someone new and getting tested (and recorded) would have triggered higher levels of anxiety than for the less severely socially anxious. Research has shown that anxiety only starts to interfere with response times when it is sufficiently high (Heimberg et al., 1997).

The results looking at the quality of response given was supportive of the experimental hypothesis. The social anxiety group provided poorer responses when answering the mental state questions (explanations). The explanations were either negatively biased or missing the point all together although the social anxiety group did not display more negative bias in their responses than the other two groups, they did get it wrong more of the time and included more self-doubting answers such as "I don't know" compared to the other two groups.

An accidental finding from this research which was not part of the experimental hypothesis was the response time's negative correlation with the quality of response. All of the groups spent longer responding when they answered incorrectly, slightly faster when responding partially correctly and fastest when responding correctly. This finding is not consistent with the Speed-Accuracy Operating Characteristic (Pew, R., 1969) which suggests a linear relationship between speed and accuracy of performance under a wide variety of task conditions. Research looking at this includes using the Stroop task mentioned in the

literature review, which for example shows the word “red” in either the colour red or a different colour, and which takes people longer to respond to correctly as the brain needs to process both the word and the colour and that this information-processing has a linear relationship with time and accuracy. What if the opposite is true for social interactions? Social information is stored throughout our lives from every interaction we have. When socially interacting we call on all of the information we have stored in long-term memory (a social template), and therefore if we are taking longer to recall this information it is being interfered with in some way, which means that it is more likely to be incorrect. This also explains why eyewitness testimony has been shown to be more accurate the quicker the response (College, W. et. al., 1991), because the information about the criminal is already in long-term memory and if the observer has a quick match then it is more likely to be correct.

#### **4.2 The Findings in Relation to Previous Work**

The significantly longer time it took the socially anxious participants to explain why someone in a story did or said what they did compared to both the other groups, could be assumed to represent what is happening during every day conversations outside of the testing environment. Seeing as most social interactions are experienced by the socially anxious individual as a test of their ability, it is reasonable to assume based on these results that the increased response time combined with the poor quality of response is interpreted by the individual as evidence for not being as socially skilled as others and is unlikely to be attributed to the effect of anxiety (remember personalising is one of the classic thinking errors). This belief could perpetuate the cycle of social anxiety. Stress, which is defined as arising when an individual believes their ability to cope with a situation, is less than the demands of the situation could help to explain this theory (Palmer, S., 1999). A perception that one has poor social skills would lead to a belief that the demand of a social situation outweighs the person’s ability to manage it, thus the person gets anxious and therefore responds slower and has less confidence in their analysis thus often doubting and changing their response. This leads to a poorer quality of interaction and longer response times, which is then used as evidence by the person to assume they are less socially skilled and so on. This theory is backed up by the evidence in the literature review that using social skills training has little therapeutic efficacy and why in other pieces of research the social anxiety group was able to identify expressions just as accurately as a comparison group but

it just took them longer. Other performance anxieties, such as the impairment of playing a musical instrument when highly anxious, also supports this theory.

This research supports previous research findings in relation to faulty information processing. Analysing both ambiguous and slightly negative events in a catastrophic manner (Stopa et al. 2000) would be due to processing social events based on how the individual feels (Mellings et al. 2000) during the interaction. The individual feels highly anxious and then the anxiety interferes with the information processing, engaging in prolonged, negatively biased, and post-event processing of the interaction (Clark, 2000). Having this faulty yet negative memory of how the individual was unable to respond appropriately, would lead to negatively biased anticipatory processing for any future social event (Veljaca et al., 1998). Anticipating anything as a threat will lead to anxiety (Clark, 1997). This 'performance anxiety' then leads to higher levels of self-focused attention (Mellings et al., 2000) which does not allow for external processing, thus directing attention away from faces (Chen et al., 2001) and a biased detection of cues that can be interpreted as signs of disapproval from others (Veljaca et al., 1998) this would be the result of expecting a negative response from others and in a self-fulfilling manner the cycle of the anxiety continues.

These findings could also be relevant to research findings in autism, which is how the hypothesis originated. Atypical amygdala development has been shown to play a key role in the emergence of social disability and other symptoms of autism (Baron-Cohen et al., 2000). The amygdala plays a crucial role in the development and expression of conditioned fear (Davis, M., 1992). Conditioned fear is where an initially neutral stimulus is paired with an aversive stimulus (social situation + anxiety/ threat), as is seen in social anxiety. Perhaps the social impairments in social anxiety displayed when the individual is highly anxious originates from the same place as the individual with autism, only the individual with autism is always socially impaired, whereas when the individual with social anxiety ceases to be impaired when the anxiety reduces, which is evidenced by feedback from my socially anxious clients who report 'normal' conversing when with familiar people in a 'relaxed' context.

The accidental finding that there was a negative correlation between response time and quality of response is supported by modern day cognitive theorists such as Gerd Gigerenzer (2002), who provides an alternative to the view of the mind as a cognitive optimiser. He claims that once we have a template for how something works, we look out for key clues and ignore the rest of the information in order to respond. In order to make good decisions in other words, one sometimes has to ignore information. He has called this construct the "fast and frugal strategy". An example of where this is applicable would be seen when someone is catching a ball, say for example in baseball. It may seem that they would have to solve complex differential equations in their heads to predict the trajectory of the ball, however what the catcher really uses is a simple heuristic, in other words, when a ball comes in high, the player fixates the ball and starts running. The heuristic is to adjust the running speed so that the angle of gaze remains constant, in other words the angle between the eye and the ball. The catcher can ignore all other information to respond appropriately. There are several examples like this documented in the book "Blink", which promotes the art of decision making without necessarily being conscious of why one is making the decision one is, but trusting ones intuition. With the amount of social information one accumulates over time there must be a fairly well established 'social template' which we all use to quickly make decisions about what is going on in a social interaction and how best to respond.

#### **4.3 Suggestions for Improvement of Design**

There are several ways in which the design of this study could be improved. If the researcher were to continue testing Theory of Mind in participants with social anxiety, the testing materials and control measures would be altered.

Firstly it would have been better to use a psychometric assessment that was able to give a graded measure for how anxious the participants were. A suggestion for such a measure would be to use the Liebowitz Social Anxiety Scale, which has been shown to be a reliable, valid and treatment sensitive measure of social anxiety both in samples with severe social anxiety and in community samples (Heimberg et al., 1997).

The design could have been further improved with a larger sample size, ideally all of which would be matched. A larger sample size might have shown a larger difference between groups regarding the non-mental state questions, which the total participant number comparisons did show.

Finally two conditions within the social anxiety group of 'relaxed' versus 'anxious' would have allowed for a more definitive conclusion as to how much of the poor theory of mind is an effect of anxiety and what if any is attributed to the condition otherwise. This could be tested by getting one group to conduct relaxation exercises and exposure before testing and measuring their 'anxiety' through skin tests.

#### **4.4 Outline of Further Studies**

Future research into social anxiety and theory of mind would hopefully use the suggestions above. It would be interesting to look further at other anxiety disorders and separate conditions into 'relaxed' versus 'anxious' to demonstrate that the delayed response and poor quality of response is an effect of anxiety generally and not specific to social anxiety.

Research looking at the question of whether Theory of Mind is genetic or environmental (as suspected) would be useful in backing the hypothesis that social anxiety is a conditioned response, not due to lack of social skills. Such a study would be looking to identify whether the individual grew up with critical parents, teachers, whether there was any bullying at school, abuse or a difficult relationship history. Qualitative research looking at how individuals with social anxiety perceive their own social skills would further validate this hypothesis.

Finally, further research comparing outcomes of cognitive-behavioural therapy groups using a variety of exposure work would help clinicians identify what are the most helpful tasks the client can engage in to gain evidence of their social skills. If the social deficits are due to anxiety then the exposure provided in the CBT groups will lead to a reduction of anxiety and therefore better treatment outcomes.

#### 4.5 Therapeutic Implications

Cognitive-Behavioural group treatment (CBGT) is considered the psychological treatment of choice for social anxiety (DeRubeis & Crits-Christoph, 1998). However, Heimberg, Salzman, Holt and Blendell (1993) reported that less than 60% of patients classified as treatment responders.

The treatment offered in CBGT is a programme developed by Clark & Wells (1995). As mentioned previously this therapy highlights four maintaining processes. The first is an increase in self-focused attention and monitoring with a linked reduction in observation of other people. The second is the use of misleading internal information. Thirdly, an extensive use of safety-behaviours which are intended to prevent feared catastrophes but actually maintain negative beliefs, increased feared symptoms which make clients come across to others in ways that are likely to elicit less friendly responses. Finally the client engages in negatively biased anticipatory and post-event processing. The procedures include manipulating self-focused attention and safety behaviours in role-plays in order to demonstrate their adverse effects. Extensive use of audio and video feedback to correct clients distorted observer perspective images; and behavioural experiments in which clients confront feared situations while redirecting attention and dropping safety behaviours in order to test out their fearful predictions. This type of treatment should be very effective in extinguishing social anxiety. Increasing its effectiveness based on the results of this research, could include the therapist conducting some behavioural experiments to get the client to see how little other people pay attention or care when they do. An increase in the number of exposure exercises will help reduce the anxiety and help to build-up evidence that the clients social skills are already there.

Incorporating the findings of this research could lead to a more thorough understanding for both clinicians and clients about the cycle that maintains social anxiety. It could look something like this:

Negative Early Experiences

- Bullying
- Critical Parenting
- Abuse
- Negative experience of first significant relationship



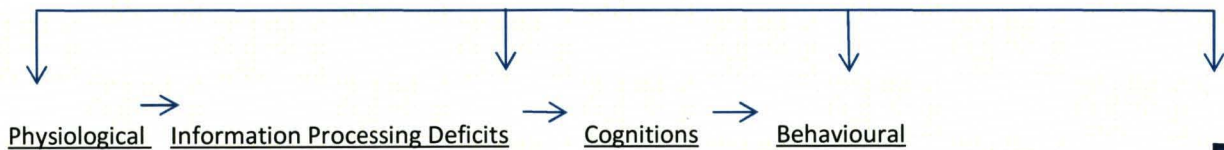
Negative Core Belief + Negative Expectations of Others

- I am not good enough
- I am an outsider



Critical Incidents (Trigger off the core belief)

- Any social occasion



\* Anxiety symptoms

\* Delayed response time  
\* Poor Quality of response

\* Negative thoughts

\* Safety Behaviour



Throughout the years of testing this topic and working with socially anxious clients I am more prone to believe that it is the high levels of anxiety that creates the poor theory of mind. When I ask my clients whether they are able to converse fluidly when they are with 'safe people' such as their families or friends they often report that their social skills are not a problem. If individuals suffering with social anxiety did in fact suffer with a worse theory of mind genetically such as in those individuals on the autistic spectrum then the poor theory of mind would be consistent regardless of context or anxiety level. Getting the client to recognise that their social skills are absolutely sufficient for any social context is an important part of treatment, in other words increasing their self-esteem and challenging the negative beliefs about not being good enough combined with challenging beliefs about others and how critical they actually are.

A suggested procedure for future therapeutic programmes would include the following recommended steps:

- Psycho educational introduction as to what social anxiety is and identifying early events that would lead to the conditioned response. An understanding of how it is currently maintained by identifying negative beliefs and safety-behaviours.
- Writing-up an exposure hierarchy and conducting some exposure experiments which the clinician carries out in order to provide evidence that other people do not pay attention or care.
- Level 1 task's in the hierarchy are challenged both cognitively and behaviourally.
- Level 2 task's etc.
- Challenge the client to recognise their social skills in situations where they are relaxed (whether in the session or when they are carrying out tasks) thus building on social confidence. This can be done with corrective feedback through the use of video feedback in role-plays or during exposure experiments
- Encourage clients to trust their 'gut instinct' and respond quicker – perhaps practicing this in the therapy room through role-play.
- Encourage mindfulness – accepting and normalising anxiety.

It is important to note that the behavioural steps are taken slowly. It would not be realistic to expect the client to go from complete avoidance to complete interaction. The researcher wonders whether there would be higher recovery rates for CBT and social anxiety if there were less restrictions as to the number of sessions that counselling services can often provide. The therapist and client must discuss the steps together and review each exposure homework task together looking at both successes and blocks to the work.

Learning relaxation techniques can be useful. Ost (1987) developed a relaxation technique called applied relaxation, which if practiced correctly can be used in exposure tasks to decrease anxiety, more commonly known as systematic desensitisation. The client learns how to scan their body for tension, and then how to release the tension, thus being able to pair the previously anxiety provoking situation with physical symptoms of being relaxed, which if paired together consistently enough will re-condition the client to store the information as 'safe' and therefore no longer fear the situation.

## **V. Conclusion**

The current research suggests a strong link between Theory of Mind and Social anxiety. The poor theory of mind displayed during social interactions explains what evidence individuals with social anxiety are using to reinforce their beliefs about being socially inadequate.

Should future research replicate these findings it would be important to include this information in the psycho educational section of treatment and to reinforce the idea that the person's social skills are perfectly adequate by pointing out the evidence from relaxed situations.

This research promotes the use of cognitive-behavioural therapy in the treatment of social anxiety. If social anxiety is not due to a lack of social skills but rather the interference of anxiety, then it is important to reduce the anxiety levels through cognitive restructuring and exposure to the feared situations.

The unexpected finding that there was a negative correlation between the response time and the quality of the response has implications for psychology as a whole. There have been

several books written recently about the power of listening to our intuition, such as the book "Blink", the examples illustrated in the book however are in relation to other contexts of decision-making outside of socialising. Being able to use this theory within the therapeutic application for social anxiety, shyness or building on self-esteem could prove useful in therapy and may increase positive treatment outcomes.

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# **APPENDIX 1**

ETHICS APPROVAL



**School of Social Sciences**  
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Tuesday, 15 March 2011

To Whom It May Concern

**Confirmation of Ethics Approval**

I am writing this letter to confirm that the project '**Social Anxiety; A Question of Theory of Mind?**' undertaken by the principle investigator Vanessa Schjelderup was granted ethical approval in accordance with the ethics committee protocol of the Department of Psychology, City University London, in June 2005.

Yours faithfully



Dr Malcolm Cross  
Dean of Students  
Reader in Psychology  
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# APPENDIX 2

## CONSENT FORM

## **Information sheet/ Consent Form**

My name is Vanessa Schjelderup and I am conducting research for my DPsych in Counselling Psychology at City University. My work is being supervised by Dr Dermot Bowler.

The purpose of this study is to look at the relationship between theory of mind and social anxiety/phobia. The findings of this study will have implications for the therapeutic practice.

Participation will involve putting your signature on the consent form, taking an IQ assessment, filling out a questionnaire and answering questions to 24 stories. The stories section will be recorded.

Participation is voluntary and you are free to withdraw at any time. All information obtained will be kept confidential and you are free to have your results disregarded from the data if you so wish. If you have any questions please feel free to ask.

Thank you for your participation.

Signature .....

Date.....

# APPENDIX 3

## DIAGNOSTIC CHECK-LIST

## **Diagnosis**

What if any diagnoses do you suffer from? -

Whom if anyone has diagnosed you with this? -

Please comment on the severity of your diagnosis (Is it general or specific) -

Please tick next to the symptoms that relate to you:

1. A persistent fear of social or performance situations in which embarrassment occurs –
2. Exposure to the social or performance situation almost invariably provokes an immediate anxiety response –
3. This response resembles a panic attack (heart palpitations, sweating, dizziness, blushing) –
4. A recognition that the fear is excessive or unreasonable –
5. The performance or social situation is often avoided or endured with dread–
6. The fear interferes significantly with your personal life (occupational functioning, social life and daily routine) –

Is your avoidance due to anything other than the social anxiety? For example a direct physiological affects of a substance or general medical condition?

Is your social anxiety the primary (In other words are you avoiding social situations because of the fear of the social demands of the situation ) or secondary (as might be the case if you are avoiding social situations out of a fear of panic attacks/ outdoor spaces)?

# APPENDIX 4

## STRANGE STORIES AND RESPONSE CRITERIA

## Strange Stories and Pilot Study Response Scores

There are 24 stories of 12 types: Pretend, lie, white lie, double bluff, persuasion, forgetting, appearance/reality, joke, irony, misunderstanding and figure of speech

1.

Bill has a shopping list of four items: milk, eggs, cheese and bread. When he goes to the shop he buys some milk, eggs and cheese. When Jane gets home and asks him whether he has bought some bread, Bill replies 'Yes'.

**Question 1:** Is it true what Bill said?

**Correct Response:** No

**Question 2:** Why did Bill say that?

**Completely Correct Response** (scored as a 2) : " Because he thought he had but had forgotten"

**Partially Correct Response** (scored as a 1) : He got confused

**Incorrect Response** (scored as a 0) : He was worried that he would get into trouble and so he lied to his wife (or any other type of response).

2.

David and Eric are not friends but work for the same company in different departments. Both men have applied for a more senior position within the company. During the annual assessments it is announced that Eric not David is to be given the position. David says to Eric, "Well done, I'm so happy for you!" David says to his wife, "I'm sad I didn't get that position!"

**Question 1:** Is it true what David says to Eric?

**Correct Response:** No

**Question 2:** Is it true what David says to his wife?

**Correct response:** Yes

**Question 3:** Why does David say he is happy and sad at the same time?

**Complete Response** (scored as a 2): Because he is trying to keep up a professional appearance and doesn't want to appear to be a sore loser. He is honest with his wife because he doesn't have to pretend in front of her.

**Partial Response** (scored as a 1): Because he is happy for Eric but sad for himself

**Incorrect Response** (scored as a 0): Because he is happy for his friend (or any other response)

3.

Adam convinces Rachel to go to the fun park with him during the summer holiday. Adam says it's going to be a lovely day for an outing but just as they get to the park it starts to rain and soon they are both soaked to the skin. Rachel is cross. She says, "Oh yes, a lovely day for an outing all right!"

**Question 1:** Is it true what Rachel says?

**Correct Response:** No

**Question 2:** Why does she say that?

**Complete Response** (scored as a 2): Because she is being sarcastic

**Partial Response** (Scored as a 1): Because she is angry

**Incorrect Response** (Scored as a 0): Yes because it is a lovely day for an outing (or any other response).

4.

Sara and Jim go on their first date. Jim tells Sara to 'live it up' because he just got his bonus. So the two of them order champagne and lobster. When the bill comes, Jim realises that he has forgotten his wallet at home and has to ask Sara to pay. When Jim gets home he tells his flatmate that the news of the absent wallet went down like a 'ton of bricks'.

**Question 1:** Is it true what Jim said?

**Correct Response:** No

**Question 2:** Why does he say that?

**Complete Response** (scored as a 2): It's a figure of speech, meaning it went down badly

**Partial Response** (scored as a 1): Sara was angry that she had to end up paying. It didn't go well.

**Incorrect Response** (scored as a 0): Because they went on a date and it's not good to not pay (or anything else).

5.

Erica is at a Halloween party when Ben offers her a drink with a gorilla mask on. Erica looks surprised and says, "Oh thank you! Who are you?" Ben answers, "A gorilla!"

**Question 1:** Is it true what Ben says?

**Correct Response:** No

**Question 2:** Why does he say this?

**Complete Response** (scored as a 2): Because he is pretending to be one.

**Partial Response** (scored as a 1): Because he is joking and dressed like one.

**Incorrect Response** (scored as a 0): Because he is flirting with her (or any other response)

6.

Jane is getting ready for a night out in her bedroom. Jane's little sister Sue comes in and watches her while she applies her lipstick. Sue makes the same motion with her finger over her lips and Jane says, "What are you doing?" Sue says, "Putting on lipstick like you!"

**Question 1:** Is it true what Sue says to Jane?

**Correct Response:** No

**Question 2:** Why does Sue do this?

**Complete Response** (scored as a 2): Because she is imitating her sister/ pretending

**Partial Response** (scored as a 1): She is copying

**Incorrect Response** (Scored as a 0): Because she wants to be like her sister (or anything else).

7.

Georgina and Cathy have a house warming party. During the party Cathy accidentally spills red wine on the carpet. The next day Georgina notices the stain and asks Cathy if she spilled wine on the carpet. Cathy says, "No, someone from the party must have spilled it".

**Question 1:** Is it true what Cathy told Georgina?

**Correct Response:** No

**Question 2:** Why does she say this?

**Complete response** (scored as a 2): she is lying to get herself out of trouble

**Partial response** (scored as a 1): She is trying to get out of trouble

**Incorrect response** (scored as a 0): She didn't realise (or any other response).

8.

Vanessa loves her chocolates. One day Michelle comes over for a visit. She knows how much Vanessa loves her chocolates and that she would do almost anything not to have to give them away. Michelle is very clever and knows Vanessa will most certainly lie about where the chocolates are. She knows that they are either in the kitchen or in the bedroom. Vanessa however is also very clever and knows what Michelle expects. The chocolates are really in the kitchen. When Michelle asks, "Where are the chocolates?" Vanessa answers, "In the kitchen".

**Question 1:** Is it true what Vanessa told Michelle?

**Correct Response:** Yes

**Question 2:** Where will Michelle look for the chocolates?

**Correct Response:** In the bedroom

**Question 3:** Why did Vanessa say that?

**Complete Response** (scored as a 2): Vanessa was double bluffing. She knew Michelle would look in the opposite location of what she said.

**Partial Response** (scored as a 1): To trick her

**Incorrect Response** (Scored as a 0): Because she wanted to share her chocolates (or any other response).

9.

Today Alexander is meeting his girlfriend Sara. She just had her haircut and it is way too short. Alexander does not like the haircut and thinks it looks really bad. When Sara asks him, "What do you think of my haircut?" He replies, "It's nice!"

**Question 1:** Is it true what Alexander says?

**Correct Response:** No

**Question 2:** Why does he say that?

**Complete Response** (scored as a 2): It's a white lie so as not to hurt her feelings.

**Partial Response** (Scored as a 1): He doesn't want her to be upset

**Incorrect Response** (Scored as a 0): Because it is nice (or any other response).

10.

Chloe has a few earrings left over from her last jewellery show. When Sam comes over to look at the earrings she isn't sure she wants one because she was looking for stud earrings not dangling ones. Chloe made enough money from her last sales, but she says to Sam, "if no one buys these earrings I don't know how I'm going to get through the month I'll just have to starve".

**Question 1:** Was it true what Chloe said?

**Correct Response:** No

**Question 2:** Why did Chloe say that?

**Complete Response** (Scored as a 2): To try and persuade her to buy the earrings

**Partial Response** (Scored as a 1): Because she wanted Sam to buy the earrings

**Incorrect Response** (Scored as a 0): Because she was going to starve otherwise (or any other response).

11.

One night Rebecca is walking home after being out with her friends in the pub. Her neighbourhood has a high crime rate and Rebecca always feels anxious walking back on her own. As she is approaching her flat a man walks up to her to ask for the time. When he reaches Rebecca though, she starts to scream and says if he doesn't leave her alone she will call the police.

**Question 1:** Was the man surprised by what Rebecca said?

**Correct Response:** Yes

**Question 2:** Why did she say that when he only wanted to ask for the time?

**Complete Response** (Scored as a 2): She misunderstood and thought he was going to hurt her. She didn't know what his intentions were.

**Partial Response** (scored as a 1): Because she was afraid

**Incorrect Response** (Scored as a 0): Because he might hurt her (or any other response).

12.

Tim is going to visit Charlotte. She has told him not to eat before coming over because she is preparing a huge meal. When Charlotte goes to open the door, Tim says, "I'm so hungry I could eat a horse!"

**Question 1:** Is it true what Tim says?

**Correct Response:** No

**Question 2:** Why does he say this?

**Complete Response** (Scored as a 2): It's a figure of speech meaning he is very hungry

**Partial Response** (Scored as a 1): Because he is hungry

**Incorrect Response** (Scored as a 0): Because he could eat a horse (or anything else)

13.

Monica goes shopping for a new outfit to wear to her boyfriend Rob's birthday party. She finds one that she really loves and tells Rob all about it. When Rob sees it at his birthday he thinks it is unflattering. Monica asks him, "What do you think of my top?" and he says, "yeah really nice!"

**Question 1:** Is it true what Rob says?

**Correct Response:** No

**Question 2:** Why does he say this?

**Complete Response** (Scored as a 2): It is a white lie. He says it so that he doesn't hurt her feelings.

**Partial Response** (Scored as a 1): He is lying.

**Incorrect Response** (Scored as a 0): The top is nice (or any other response).

14.

Julia and Beth are flatmates. While Beth is away on holiday, the BT bill arrives but seems to be wrong. Only Beth's name is on the bill, so when Julia calls up to query the bill she tells the BT operator that her name is Beth.

**Question 1:** Is it true what Julia says?

**Correct Answer:** No

**Question 2:** Why does she say this?

**Complete Response** (Scored as a 2): She is lying so that she can sort out the bill.

**Partial Response** (Scored as a 1): So she can sort out the bill.

**Incorrect Response** (Scored as a 0): Because it is true (or any other response).

15.

Henry is over at Jenny's house having cake and ice cream. Henry eats his slice very quickly, but Jenny still has half of her cake left on her plate. Henry looks at Jenny and says, "Please may I have some of your cake, if I don't have any more I'm afraid I might die!"

**Question 1:** Is it true what Henry says?

**Correct Response:** No

**Question 2:** Why does he say that?

**Complete Response** (Scored as a 2): He is trying to persuade her to give him some more.

**Partial Response** (Scored as a 1): Because he wants some more.

**Incorrect Response** (Scored as a 0): Because he hasn't had any food in a long time and he might die (or any other response).

16.

Jasmine goes to pick up food at a new restaurant which Penelope claims is fantastic. Once there, Jasmine thinks the place has a horrible smell and the food looks old. Jasmine says, "Oh yeah Fantastic!"

**Question 1:** Is it true what Jasmine says?

**Correct Response:** No

**Question 2:** Why does she say this?

**Complete Response** (Scored as a 2): She is being sarcastic.

**Partial Response** (Scored as a 1): She is annoyed

**Incorrect Response** (Scored as a 0): Because she likes the place (or any other response).

17.

Sue wrote a list on Monday of all the things she needed to buy for her desk. These included a new stapler, hole punch and tape. When Sue came back from Rymans, she had bought tape and a stapler. Her husband David asked her whether she had bought a hole punch and Sue said 'yes'.

**Question 1:** Is it true what Sue said?

**Correct Response:** No

**Question 2:** Why did she say that?

**Complete Response** (Scored as a 2): She thought she had but forgot.

**Partial Response** (Scored as a 1): She got confused

**Incorrect Response** (Scored as a 0): She was afraid her husband would get angry so she lied (or any other response).

18.

Maria organises a surprise party for Michael. He overhears her talking about it and knows it will be either the following Friday or Saturday. Maria is very clever and knows that Michael probably suspects something. The party is on Friday but they are doing nothing on Saturday. When Michael asks what they are doing this weekend, Maria says, "Nothing on Friday, but you have to be home Saturday".

**Question 1:** Is it true what Maria said?"

**Correct Response:** No

**Question 2:** When will Michael think the party is?

**Correct Response:** Saturday

**Question 3:** Why did Maria say this?

**Complete Response** (Scored as a 2): Double Bluff, she wants Michael to believe his party is a different day so that the actual birthday is a surprise.

**Partial Response** (Scored as a 1): She is trying to trick him

**Incorrect Response** (Scored as a 0): She got confused about which day it was (or any other response).

19.

Ben goes to wake-up his five-year-old son Alex in the morning. Alex is hiding under the sheets when Ben comes in. Ben says, "Alex time to wake-up". When Alex doesn't respond he says, "Alex time to wake-up" to which Alex jumps up with the sheet on his head and says, "I'm not Alex ooooooohhh... I'm a ghost!"

**Question 1:** Is it true what Alex says?

**Correct Response:** No

**Question 2:** Why does he say this?

**Complete Response** (Scored as a 2): Because he is pretending to be.

**Partial Response** (Scored as a 1): He is playing

**Incorrect Response** (Scored as a 0): He is dressed as a ghost (or any other response).

20.

Suzie always gets anxious about her exams, fearing she has failed. One day Suzie bumps into her teacher Gillian who wants to congratulate her on doing so well on her history exam. Suzie sees Gillian walking up to her and gets anxious, fearing the worst she becomes fretful and tearful and says, "Oh dear, am I going to have to redo the exam?"

**Question 1:** Was Gillian surprised by what Suzie said?

**Correct Response:** Yes

**Question 2:** Why did she say that when Gillian only wanted to congratulate her?

**Complete Response** (Scored as a 2): She misunderstood and thought because she was anxious that meant she had done badly.

**Partial Response** (Scored as a 1): She was afraid she had failed.

**Incorrect Response** (Scored as a 0): She might have needed to retake the exam (or any other response).

21.

Henry convinces Claudia to take a weekend break to Paris. Henry says it's going to be the best trip she has ever taken. When she gets to the airport however, she finds out her plane is going to be two and a half hours delayed. Claudia says, "Yeah the trip of a lifetime!"

**Question 1:** Is it true what Claudia says?

**Correct Response:** No

**Question 2:** Why does she say that?

**Complete Response** (Scored as a 2): She is being sarcastic

**Partial Response** (Scored as a 1): Because she is annoyed

**Incorrect Response** (Scored as a 0): Because going to Paris is a wonderful trip (or any other response).

22.

Danielle is going to be a bridesmaid at Ann's wedding. When she receives the dress she thinks it is pink and fluffy and really ugly. When Ann calls her to ask her what she thinks of the dress, Danielle says, "it's beautiful! It's exactly what I would have chosen".

**Question 1:** Is it true what Danielle says?

**Correct Response:** No

**Question 2:** Why does she say this?

**Complete Response** (scored as a 2): White lie- she doesn't want to hurt her friend's feelings

**Partial Response** (Scored as a 1): She doesn't want to upset her

**Incorrect Response** (Scored as a 0): She likes the dress (or any other response)

23.

When Henry gets up for work in the morning his flatmate Dave greets him in the kitchen and says, "Wonderful day for work! It's raining cats and dogs out there!"

**Question 1:** Is it true what Dave says?

**Correct Response:** No

**Question 2:** Why does he say this?

**Complete Response** (Scored as a 2): It's a figure of Speech meaning it is raining heavily.

**Partial Response** (Scored as a 1): Because it is raining

**Incorrect Response** (Scored as a 0): He is being sarcastic (or any other response).

24.

George eats a piece of the cake that his wife Sam has made. Sam is angry when she sees a piece of the cake missing as she had made it for a dinner party. When Sam confronts him in the evening and asks him whether he ate some of the cake George says, "no, one of the kids must have".

**Question 1:** Is it true what George says?

**Correct Response:** No

**Question 2:** Why does he say this?

**Complete Response** (Scored as a 2): He is lying to get himself out of trouble.

**Partial Response** (Scored as a 1): He is trying to get out of trouble.

**Incorrect Response** (Scored as a 0): He is scared (or any other response).

# APPENDIX 5

## ALL STRANGE STORY RESPONSES

## APPENDIX 5

*Answers in red = negatively biased*

*Answers in blue = positively biased*

*Answers in black and rated 0 or 1 = incorrect without bias*

### Comparison 1:

Strange Story 1: "Because he forgot to buy it" (2)

Strange Story 2: "He said he was happy to Eric because he was being a good sport and he told his wife the truth" (2)

Strange Story 3: "Because she's being sarcastic" (2)

Strange Story 4: "Because he feels guilty" (1)

Strange Story 5: "Because he is joking" (1)

Strange Story 6: "She's pretending/mimicking" (2)

Strange Story 7: "Because she didn't want to take responsibility for ruining the carpet" (1)

Strange Story 8: "Because she was trying to call her bluff" (2)

Strange Story 9: "Because he doesn't want to upset her" (2)

Strange Story 10: "Because she's trying to subtly make the other girl buy an earring" (1)

Strange Story 11: "Because she was inherently scared and expecting something horrible to happen" (2)

Strange Story 12: "Because it's a figure of speech" (2)

Strange Story 13: "Because again he just doesn't want to upset her at the party" (2)

Strange Story 14: "Because she wants to be able to access the bill" (2)

Strange Story 15: "Because he really wants some...he's trying to make her give it to him" (2)

Strange Story 16: "Because she's annoyed that she went there" (1)

Strange Story 17: "I think she felt a bit stupid that she had forgotten when she only needed three things" (2)

Strange Story 18: "Because she wanted to keep it a surprise and trick him" (1)

Strange Story 19: "Because he is just joking around with his dad" (1)

Strange Story 20: "Because she was fearing ... she was just expressing her inherent fear that she had failed it" (1)

Strange Story 21: "Because she's just annoyed that the flight is delayed" (1)

Strange Story 22: "Because she just didn't want to upset the bride" (2)

Strange Story 23: He's just being sarcastic and it's a figure of speech" (2)

Strange Story 24: "Because he's feeling a bit guilty for having done it and he's trying to blame someone else" (2)

## Comparison 2

Strange Story 1: "He forgot" (2)

Strange Story 2: "Because he didn't want his work colleague to think that he felt bad and he told his wife how he really felt" (2)

Strange Story 3: "She's angry that he hasn't looked into what he said he was going to do" (0)

Strange Story 4: "Because he left his wallet and there was a contradiction with him having his bonus and forgetting his wallet" (0)

Strange Story 5: "Because he was a gorilla" (0)

Strange Story 6: Missing Value

Strange Story 7: "Because she didn't want to take responsibility and get in trouble" (2)

Strange Story 8: "She was double bluffing" (2)

Strange Story 9: "Because he doesn't want her to feel bad" (2)

Strange Story 10: "Because she wants to sell her the earrings" (1)

Strange Story 11: "Because she was nervous that he approached her at that time" (1)

Strange Story 12: Missing Value

Strange Story 13: "Because he doesn't want to hurt her feelings" (2)

Strange Story 14: "Because she wants to find out the information about the bill" (2)

Strange Story 15: "He exaggerates to persuade her" (2)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "Either she forgot or she wanted to get out of trouble" (2)

Strange Story 18: Missing Value

Strange Story 19: "Because he is playing" (1)

Strange Story 20: "She didn't know" (2)

Strange Story 21: "Because she is being sarcastic" (2)

Strange Story 22: "Not to hurt her friend's feelings" (2)

Strange Story 23: "Because the weather is terrible" (1)

Strange Story 24: "Because he doesn't want to get into trouble" (2)

### Comparison 3

Strange Story 1: "Because it was true" (0)

Strange Story 2: "He says it to different people" (0)

Strange Story 3: "Because she is being sarcastic...yeah" (2)

Strange Story 4: "Because it is likely that Sara would have reacted in that way" (0)

Strange Story 5: "Because it is what he is pretending to be" (2)

Strange Story 6: "She's pretending" (2)

Strange Story 7: "Because she wants to avoid the disapproval from her flatmate" (2)

Strange Story 8: "Because she was trying to preserve her chocolates" (1)

Strange Story 9: "Because he does not wish to hurt her feelings" (2)

Strange Story 10: "She was trying to extract sympathy... a sympathy purchase from her friend" (2)

Strange Story 11: "Because she had primed herself with a schema for attack. The first rather thin evidence that arrived, she convinced herself that that was what was happening" (2).

Strange Story 12: "Because he knows this will please Charlotte" (0)

Strange Story 13: "He's wanting to preserve her feelings" (2)

Strange Story 14: "Because it is likely that the BT operator will not deal with her if she thinks she is not the owner of the account" (2)

Strange Story 15: Missing Value

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "Presumably because she was trying to hide the fact that she had forgotten one of those items" (1)

Strange Story 18: "To keep him off the scent" (2)

Strange Story 19: "For fun...or you could say to stay in bed because he claims not to be the recipient of the demand" (1)

Strange Story 20: "Because she had that in her mind and that was all she was expecting" (2)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "She wants to preserve Anne's feelings" (2)

Strange Story 23: Missing Value

Strange Story 24: "Because he's a coward who can't face responsibility for his actions" (2)

#### Comparison 4

Strange Story 1: "Either forgetful or trying to cover up" (2)

Strange Story 2: "One because he doesn't want to lose face and two because he is genuinely upset" (2)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "Because a ton of bricks is bad. It went down badly" (1)

Strange Story 5: "He's being funny" (1)

Strange Story 6: "She's mimicking her big sister" (2)

Strange Story 7: "Because she feels guilty and is covering up" (2)

Strange Story 8: "Double bluffing" (2)

Strange Story 9: "To make her feel good" (2)

Strange Story 10: Missing Value

Strange Story 11: "She felt vulnerable" (1)

Strange Story 12: "Because it is a figure of speech" (2)

Strange Story 13: "To make her feel better" (2)

Strange Story 14: "So that she can resolve the matter as quickly as possible" (2)

Strange Story 15: "Because he wants more and he's dramatizing it so that he can get it" (2)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "I don't know she has no reason to lie...She thought she'd bought it" (2)

Strange Story 18: "Either because she wanted him to get it wrong because she didn't want him to know about it or she forgot" (1)

Strange Story 19: "Because he is playing" (1)

Strange Story 20: "Because she felt insecure and thought the worst of herself" (1)

Strange Story 21: "Because she is being sarcastic" (2)

Strange Story 22: "She doesn't want to offend" (2)

Strange Story 23: "It's a figure of speech" (2)

Strange Story 24: "He doesn't want to get blamed" (2)

## Comparison 5

- Strange Story 1: "Maybe because he thought Jane would be cross at him for forgetting it" (1)
- Strange Story 2: "Because he was just being polite to his colleague" (1)
- Strange Story 3: "Because she was being sarcastic" (2)
- Strange Story 4: "Because he's ....um... what's he doing? Not sarcastic...because it's a saying" (1)
- Strange Story 5: "Because he is dressed as a gorilla" (2)
- Strange Story 6: "Because she is just mimicking her sister" (2)
- Strange Story 7: "Because she knew her friend would be cross so she blamed someone they couldn't find out who was" (2)
- Strange Story 8: "Because she was double bluffing her" (2)
- Strange Story 9: "Because he doesn't want to hurt her feelings" (2)
- Strange Story 10: "Because she wants her friend to buy some of the earrings" (2)
- Strange Story 11: "Because she assumed he was going to attack her" (2)
- Strange Story 12: "Because he knows she's prepared a big meal" (0)
- Strange Story 13: "Because he doesn't want her to feel bad about what she is wearing" (2)
- Strange Story 14: "Because she just needs to query the bill so she has to pretend to be the bill payer" (2)
- Strange Story 15: "Because he just wants her to give him some of the cake" (1)
- Strange Story 16: Missing Value
- Strange Story 17: "I don't know" (0)
- Strange Story 18: "Because she doesn't want him to suspect anything" (2)
- Strange Story 19: "Because he is playing at being a ghost" (2)
- Strange Story 20: "Because she just assumed that she must have failed the test" (2)
- Strange Story 21: "She's being sarcastic" (2)
- Strange Story 22: "Because she doesn't want to hurt her friend's feelings" (2)
- Strange Story 23: "Just because raining cats and dogs is just a saying" (1)
- Strange Story 24: "Because he doesn't want to get the blame" (2)

## Comparison 6

Strange Story 1: "Because it was on his shopping list" (0)

Strange Story 2: "Because he is happy for someone else to be successful" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "Because it didn't go down very well with his date" (1)

Strange Story 5: "Because he has a gorilla mask on" (1)

Strange Story 6: "Because she is pretending to put lipstick on" (2)

Strange Story 7: Missing Value

Strange Story 8: "Because she knows it is opposite from what the other person will think" (2)

Strange Story 9: "Because he doesn't want to offend" (2)

Strange Story 10: "She wants her friend to buy the earrings" (1)

Strange Story 11: "Because she was anxious she might get attacked" (1)

Strange Story 12: "Because he could eat a lot and a horse is large" (1)

Strange Story 13: "He didn't want to offend her" (2)

Strange Story 14: "Because she wanted to query the bill and it isn't in her name" (2)

Strange Story 15: "Because he wants more cake... he's just showing how much he wants the cake" (1)

Strange Story 16: "She thinks it's nice... I think I'm getting their names mixed up" (0)

Strange Story 17: "Because it was on her shopping list" (0)

Strange Story 18: "To confuse him...To surprise him" (2)

Strange Story 19: "Because he is playing" (1)

Strange Story 20: Missing Value

Strange Story 21: "Because waiting for the plane seems like a lifetime" (0)

Strange Story 22: "Because she didn't want to offend her friend" (2)

Strange Story 23: "Because it was raining really hard" (2)

Strange Story 24: "Because he didn't want to upset his wife" (0)

## Comparison 7

Strange Story 1: "He lied" (0)

Strange Story 2: "He puts on different faces for different people" (1)

Strange Story 3: "She's sarcastic and resentful" (2)

Strange Story 4: "Because he didn't get away with his story" (0)

Strange Story 5: "He's making a joke" (1)

Strange Story 6: "She's imitating her sister" (2)

Strange Story 7: "She doesn't want to take ownership for what she did" (0)

Strange Story 8: "Because she knew the other person would think she was lying" (2)

Strange Story 9: "Because maybe he really likes it" (0)

Strange Story 10: "She's over-dramatic and in a bad spot" (0)

Strange Story 11: "She was mistrusting and thought that he had other interests" (2)

Strange Story 12: "Because he knows she's put forth a big effort and wants to make her happy" (1)

Strange Story 13: "Because he doesn't want to hurt her feelings" (2)

Strange Story 14: "She did it to figure out cause she knew it was her phone" (0)

Strange Story 15: "Because he wants more cake" (1)

Strange Story 16: "Sarcastic" (2)

Strange Story 17: "She forgot that she didn't buy it" (2)

Strange Story 18: "Because she knew that Mike would think the opposite" (2)

Strange Story 19: "Because he wants to scare Ben" (0)

Strange Story 20: "Because she didn't have the self-confidence and thought she had failed" (2)

Strange Story 21: "Sarcastic" (2)

Strange Story 22: "Doesn't want to hurt her feelings" (2)

Strange Story 23: "He's sarcastic" (0)

Strange Story 24: "He wants to put the blame somewhere else" (1)

## Comparison 8

Strange Story 1: "Because he forgot" (2)

Strange Story 2: "Because he doesn't want anyone else to feel bad" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "Because she was angry that he had forgotten his wallet" (1)

Strange Story 5: "Because he is dressed like a gorilla" (2)

Strange Story 6: "Because she is mimicking her sister" (2)

Strange Story 7: "Because she doesn't want to get in trouble for spilling the wine" (2)

Strange Story 8: "She is trying to trick her" (1)

Strange Story 9: "He doesn't want her to feel bad" (2)

Strange Story 10: "She's trying to pressure her into buying the earrings" (2)

Strange Story 11: "Because she was frightened that he was a sketchy character" (1)

Strange Story 12: "Because he has not eaten because she told him not to" (1)

Strange Story 13: "Because he's trying to spare her feelings" (2)

Strange Story 14: "She's trying to help Beth by sorting out the bill while she is away" (1)

Strange Story 15: "He's trying to manipulate her" (2)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "Because she had forgotten" (2)

Strange Story 18: "She is trying to trick him into thinking its Saturday and not Friday" (2)

Strange Story 19: "He's playing around" (1)

Strange Story 20: "Because she was concerned that she had not done well" (1)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "To spare her friends feelings" (2)

Strange Story 23: "He's being sarcastic" (0)

Strange Story 24: "He's trying to not get into trouble" (2)

## Comparison 9

Strange Story 1: "Because he didn't want to lie... or he didn't want her to think he didn't do what he was supposed to" (0)

Strange Story 2: "Because he wanted to show support to someone else but at the same time he wishes he had gotten the position" (2)

Strange Story 3: "She says that because she is being sarcastic" (2)

Strange Story 4: "He says it because it didn't go well. The answer wasn't taken well" (1)

Strange Story 5: "Because he is dressed up as a gorilla" (2)

Strange Story 6: "Because she is trying to emulate what her sister's doing...trying to be her sister." (2)

Strange Story 7: "Because she doesn't want to get into trouble" (2)

Strange Story 8: "Because she knows that the other girl will think she is lying and that she's put it somewhere else" (2)

Strange Story 9: "He doesn't want to hurt her feelings" (2)

Strange Story 10: "Because she wants to make more money" (1)

Strange Story 11: "Because she is convinced that since it is a bad neighbourhood the man wanted to hurt her" (2)

Strange Story 12: "Because he wants her to realise hasn't eaten and he really does want her food" (1)

Strange Story 13: "He doesn't want to hurt her feelings" (2)

Strange Story 14: "So that she can get the information that they both need" (2)

Strange Story 15: "He really wants more cake...and he's being sarcastic" (1)

Strange Story 16: "She's being sarcastic to show her displeasure" (2)

Strange Story 17: "She doesn't want him to think she has forgotten" (1)

Strange Story 18: "So that he will be surprised on Friday when the party is" (2)

Strange Story 19: "Because he doesn't want to get up and he wants to just play." (1)

Strange Story 20: "Because she's convinced that she's going to do poorly whenever she has a test" (1)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "Because she doesn't want to upset the bride's day" (2)

Strange Story 23: "Well first he's being sarcastic and he's trying to show how much it's raining" (1)

Strange Story 24: "He doesn't want to get into trouble" (2)

## Comparison 10

Strange Story 1: "He thought he did" (2)

Strange Story 2: "Because he was genuinely happy for his friend but sorry he didn't get the job" (1)

Strange Story 3: "She is being sarcastic" (2)

Strange Story 4: "Cause he was using a...what are they called those?...um...those expressions to know how it looked for her" (2)

Strange Story 5: "Because he was dressed in a gorilla outfit" (2)

Strange Story 6: "She was copying her sister" (2)

Strange Story 7: "She was embarrassed and putting the blame on someone else" (2)

Strange Story 8: "Because she knew where the other person was going to look" (1)

Strange Story 9: "He didn't want to be mean" (1)

Strange Story 10: "She wanted to get rid of her stock" (1)

Strange Story 11: "She didn't know he was asking for the time. She was scared because of the neighbourhood she lives in" (2)

Strange Story 12: "Because he knew she had taken all that trouble and was using a figure of speech" (2)

Strange Story 13: "He didn't want to offend her...upset her feelings" (2)

Strange Story 14: "So that she's have access to the records because obviously Beth wasn't around to do it" (2)

Strange Story 15: "He's over exaggerating... being dramatic" (0)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "She didn't look in the bag" (1)

Strange Story 18: "So that he wouldn't know what day it was going to be" (1)

Strange Story 19: "Role-playing ...acting out...acting like a ghost"(2)

Strange Story 20: Missing Value

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "She was just trying to be kind because it was the other persons wedding and not hers" (2)

Strange Story 23: "Because he is using a figure of speech" (2)

Strange Story 24: "He wants to blame someone else rather than get into trouble for eating the cake" (2)

## Comparison 11

Strange Story 1: "Well he said it because he had bought it but he hadn't necessarily brought it back with him...he might have given it to someone else" (0)

Strange Story 2: "Because he is selfless" (0)

Strange Story 3: "She's being sarcastic...making a point basically" (2)

Strange Story 4: "Because she is obviously not delighted by the fact that she had to pay when he was going out to celebrate" (1)

Strange Story 5: "Because he is pretending to be a gorilla" (2)

Strange Story 6: "She's acting it out... to see what it feels like...pretend to" (2)

Strange Story 7: "She's lying" (1)

Strange Story 8: "Because she knew that...She was doing reverse psychology basically" (2)

Strange Story 9: "To make her feel better" (2)

Strange Story 10: "To sell more earrings" (2)

Strange Story 11: "Because she is afraid" (1)

Strange Story 12: "Because it is a metaphor" (2)

Strange Story 13: Missing Value

Strange Story 14: "She knows it is the only way to...if she didn't say it they wouldn't speak to her so she had to pretend" (2)

Strange Story 15: "So that he can get more cake" (2)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "Because she doesn't want him to buy a hole punch" (0)

Strange Story 18: "So he wouldn't know when the party was" (2)

Strange Story 19: "Because he is pretending to be a ghost" (2)

Strange Story 20: Missing Value

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "Because she doesn't want to hurt the feelings of the other person" (2)

Strange Story 23: "It's a metaphor" (2)

Strange Story 24: "Because he doesn't want to get the blame for it" (2)

## Comparison 12

- Strange Story 1: "Because he didn't buy bread" (0)
- Strange Story 2: "Changes...he might be happy but it changes" (0)
- Strange Story 3: "Because he told her something that didn't come true" (1)
- Strange Story 4: "It's just an expression... to express himself" (2)
- Strange Story 5: "Because he is in a gorilla mask" (1)
- Strange Story 6: "Because children like to play along" (1)
- Strange Story 7: "To cover herself" (2)
- Strange Story 8: "Because she didn't want to lie to her friend" (0)
- Strange Story 9: "To keep her happy" (2)
- Strange Story 10: "To make her want to buy the earring" (2)
- Strange Story 11: "Because she didn't trust that he only wanted the time" (2)
- Strange Story 12: "To express how hungry he is" (2)
- Strange Story 13: "To keep her happy" (2)
- Strange Story 14: "To find out what was wrong if it was in her friend's name" (2)
- Strange Story 15: "To make her want to give him some cake" (2)
- Strange Story 16: "Because she was promised it to be better than she thought it was" (1)
- Strange Story 17: "Because she may have bought it at a different shop" (0)
- Strange Story 18: "So that he doesn't expect anything on Friday" (2)
- Strange Story 19: "Because children like to play" (1)
- Strange Story 20: "Because she didn't know she was going to be congratulated" (2)
- Strange Story 21: "Because she's angry at him" (1)
- Strange Story 22: "To keep her happy" (2)
- Strange Story 23: "It's an expression" (2)
- Strange Story 24: "To cover his back" (2)

### Comparison 13

- Strange Story 1: "Because he didn't want to get told off by his wife" (0)
- Strange Story 2: "Maybe he is not being genuine" (0)
- Strange Story 3: "She's being sarcastic" (2)
- Strange Story 4: Missing Value
- Strange Story 5: "Because he is playing his role" (1)
- Strange Story 6: "She's admiring her sister" (0)
- Strange Story 7: "To defer responsibility and get someone else in trouble" (1)
- Strange Story 8: Missing Value
- Strange Story 9: "He doesn't want to upset her" (2)
- Strange Story 10: "Because she is greedy and she wants more money" (2)
- Strange Story 11: "Because it is a rough neighbourhood and she doesn't trust him" (0)
- Strange Story 12: "It's an expression" (1)
- Strange Story 13: "Because she was really excited and she really liked it and he didn't want to disappoint her" (2)
- Strange Story 14: "Because her friend is on holiday and she needs to sort it out" (1)
- Strange Story 15: "Because it is a figure of speech and he's manipulating her into giving her his cake" (2)
- Strange Story 16: "She's being sarcastic" (2)
- Strange Story 17: "I have no idea" (0)
- Strange Story 18: "To trick him" (1)
- Strange Story 19: "He is playing with his dad" (1)
- Strange Story 20: "Because it is not a core belief of hers that she did well" (1)
- Strange Story 21: "She's being sarcastic and she is disappointed" (2)
- Strange Story 22: "She's being selfless because it's her friend's special day" (1)
- Strange Story 23: "It's an expression. A figure of speech" (2)
- Strange Story 24: "He didn't want to get in trouble with his wife" (2)

#### Comparison 14

Strange Story 1: "Because he forgot the bread" (2)

Strange Story 2: "Because he wasn't happy about getting the job... Eric said he was happy for him...so he wasn't happy" (1)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: Missing Value

Strange Story 5: "So she'd carry on talking to him" (0)

Strange Story 6: "She looks up to her" (0)

Strange Story 7: "Because she wanted to get the blame on someone else" (2)

Strange Story 8: "So her friend could get the chocolates" (0)

Strange Story 9: "To spare her feelings" (2)

Strange Story 10: "To make more money" (2)

Strange Story 11: "Because he reached for her bag and so she got scared" (0)

Strange Story 12: "It's a phrase" (2)

Strange Story 13: "To spare her feelings" (2)

Strange Story 14: "To try and get a truthful answer" (0)

Strange Story 15: "To sound dramatic because he wants her cake" (2)

Strange Story 16: "To be sarcastic...to be rude" (2)

Strange Story 17: Missing Value

Strange Story 18: "Because she didn't want him at the party" (0)

Strange Story 19: "So he doesn't have to get up" (0)

Strange Story 20: "Because she gets anxious" (0)

Strange Story 21: "To be sarcastic" (2)

Strange Story 22: "Because she doesn't want to be rude and hurt her feelings" (2)

Strange Story 23: "To make a joke" (0)

Strange Story 24: "To save his...um...bum" (2)

## Comparison 15

Strange Story 1: "Because he forgot" (2)

Strange Story 2: Missing Value

Strange Story 3: "She didn't want to go" (0)

Strange Story 4: "Because he forgot his wallet" (0)

Strange Story 5: "Because he is dressed as one" (1)

Strange Story 6: "Because she is copying her" (2)

Strange Story 7: "She didn't want to get blamed for it" (2)

Strange Story 8: Missing Value

Strange Story 9: "Because he doesn't want to hurt her feelings" (2)

Strange Story 10: "Because she wants to make more money" (1)

Strange Story 11: "She was probably scared that he was going to attack her" (1)

Strange Story 12: "So that he's prepared for it. He doesn't want to upset her" (0)

Strange Story 13: "He doesn't want to hurt her feelings" (2)

Strange Story 14: "She doesn't want to pay" (0)

Strange Story 15: "Because he liked the cake and he wants some" (1)

Strange Story 16: "Because her friend thought it was really nice there" (0)

Strange Story 17: "Because she was supposed to get it" (1)

Strange Story 18: "To confuse him so he wouldn't know when the party was" (2)

Strange Story 19: "Because he is a child" (0)

Strange Story 20: Missing Value

Strange Story 21: "She's like being sarcastic" (2)

Strange Story 22: "Because it is her friend's wedding. It's like the biggest day ever" (1)

Strange Story 23: "To have a positive outlook really" (0)

Strange Story 24: "He doesn't want to be blamed for it" (2)

## Comparison 16

Strange Story 1: "Because he thought he had bought the bread" (2)

Strange Story 2: Missing Value

Strange Story 3: "Because it started to rain" (0)

Strange Story 4: "Because he didn't have the money to pay for the meal" (0)

Strange Story 5: "Because he has a gorilla mask on" (1)

Strange Story 6: "Because she wanted to put lipstick on" (0)

Strange Story 7: "To cover up her own mistake" (2)

Strange Story 8: "Because she knows what Michelle was thinking" (2)

Strange Story 9: "Just to make her feel better" (2)

Strange Story 10: "Because she wanted the other person to buy it" (2)

Strange Story 11: "Because she thought he was going to attack her" (2)

Strange Story 12: "Because he was told not to eat and he is hungry" (1)

Strange Story 13: "Just to make her feel better" (2)

Strange Story 14: Missing Value

Strange Story 15: "Because he wanted more cake" (1)

Strange Story 16: "Being Sarcastic" (2)

Strange Story 17: "Because she thought she had" (2)

Strange Story 18: "Because she knows he is going to work out when the party is" (2)

Strange Story 19: Missing Value

Strange Story 20: "Because she assumed that it was going to be bad news" (2)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "She doesn't want to spoil her wedding" (2)

Strange Story 23: "A figure of speech" (2)

Strange Story 24: "It's easier to put the blame on the children" (0)

## Comparison 17

Strange Story 1: "Either he believed he had or he was scared of the response of the person who asked him the question" (2)

Strange Story 2: "To show that he was not disappointed with someone he is in competition with and his true feelings to someone he loves" (2)

Strange Story 3: "She was being sarcastic" (2)

Strange Story 4: "Because obviously her response wasn't good to that news" (1)

Strange Story 5: "Because he is wearing a costume" (1)

Strange Story 6: "She was mimicking her sister" (2)

Strange Story 7: "Fear of the response" (1)

Strange Story 8: "She pre-empted her friends thinking" (2)

Strange Story 9: "Because he loves the person and doesn't want to see her upset" (2)

Strange Story 10: "Because she was manipulating her friend" (1)

Strange Story 11: "Because she is afraid of the neighbourhood and probably thinks she's being exposed to news and things" (1)

Strange Story 12: "It's a figure of speech" (2)

Strange Story 13: "Again to say something they want to hear" (1)

Strange Story 14: "In order to get information" (2)

Strange Story 15: "Just to manipulate" (2)

Strange Story 16: "Being sarcastic" (2)

Strange Story 17: "Either she believed she had bought it or she was expecting a particular response from her husband" (2)

Strange Story 18: "To pre-empt the thinking" (1)

Strange Story 19: "In the mind of a child he could actually believe it or um...or trying to hide from his father" (0)

Strange Story 20: "Her own expectations were failure" (1)

Strange Story 21: "Sarcasm" (2)

Strange Story 22: "Because she cared what her friend thinks and it's for her and put her before her" (1)

Strange Story 23: "Figure of Speech" (2)

Strange Story 24: "Fear of the reaction" (1)

## Comparison 18

Strange Story 1: "Because he forgot" (2)

Strange Story 2: "Because he is happy for his friend but sad he didn't get it himself" (1)

Strange Story 3: "Because she...it was raining so she is being sarcastic" (2)

Strange Story 4: "Because she was angry" (1)

Strange Story 5: "Because that's what he is wearing" (1)

Strange Story 6: "Because she's imitating her sister" (2)

Strange Story 7: "Because she didn't want to admit it was her" (2)

Strange Story 8: "To throw her off" (2)

Strange Story 9: "To keep her happy" (2)

Strange Story 10: "To get her to buy the dangling earrings" (2)

Strange Story 11: "Because she thought he was trying to do something else" (2)

Strange Story 12: "It's a phrase" (2)

Strange Story 13: "Because he didn't want to get her angry" (2)

Strange Story 14: "Because the other one is on holiday" (0)

Strange Story 15: "To persuade her to give him some cake" (2)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "She had forgotten" (2)

Strange Story 18: "So he doesn't expect it" (2)

Strange Story 19: "Just for a joke" (1)

Strange Story 20: "Because she's always anxious about her exams" (0)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "Because she wanted to keep her happy" (2)

Strange Story 23: "He's being funny" (0)

Strange Story 24: "He didn't want her to get angry" (2)

## Comparison 19

- Strange Story 1: "Because he thought that he had bought bread" (2)
- Strange Story 2: "Because he was happy that this other guy got the job and wanted to congratulate him" (0)
- Strange Story 3: "To be sarcastic" (2)
- Strange Story 4: "Because she obviously wasn't very happy with having to pay" (1)
- Strange Story 5: "To be funny" (0)
- Strange Story 6: "Because she is pretending" (2)
- Strange Story 7: "She doesn't want to get in trouble" (2)
- Strange Story 8: "Because she knows that Michelle thinks they'll be not where she says they are" (2)
- Strange Story 9: "He doesn't want to hurt her feelings" (2)
- Strange Story 10: "So that Sam would buy earrings" (2)
- Strange Story 11: "Because she didn't know what he was asking and she was afraid" (2)
- Strange Story 12: "Because it's a phrase...it's an expression" (2)
- Strange Story 13: "Because he doesn't want to hurt her feelings" (2)
- Strange Story 14: "Because otherwise they won't speak to you" (2)
- Strange Story 15: "So that he can get cake" (2)
- Strange Story 16: "She's being sarcastic" (2)
- Strange Story 17: "Because she thought she had bought it!" (2)
- Strange Story 18: "Because she knew that he would think it was the day he had to be home" (2)
- Strange Story 19: "To be funny" (0)
- Strange Story 20: "Because she didn't know what Gillian wanted to say" (2)
- Strange Story 21: "She's being sarcastic" (2)
- Strange Story 22: "She doesn't want to hurt her feelings" (2)
- Strange Story 23: "Because when you're at work you're inside and you don't want to be outside" (0)
- Strange Story 24: "He doesn't want to get into trouble" (2)

## Comparison 20

Strange Story 1: "He was lying" (0)

Strange Story 2: "Because he is sad that he didn't get the job...but they are not friends" (1)

Strange Story 3: "No she's being sarcastic" (2)

Strange Story 4: "He's presuming" (0)

Strange Story 5: "He's being funny" (1)

Strange Story 6: Missing Value

Strange Story 7: "Maybe she is unaware that she spilled it- she was pissed and wasn't aware that she spilled it"  
(1- a possible answer but more likely that she is trying to get out of trouble)

Strange Story 8: "Because she knew that Michelle would do the opposite from what she said" (2)

Strange Story 9: "He doesn't want to offend her" (2)

Strange Story 10: "So she wants to try and get her to buy the earrings" (2)

Strange Story 11: "Because she was scared" (1)

Strange Story 12: "He's exaggerating" (1)

Strange Story 13: "Because he doesn't want to offend her directly" (2)

Strange Story 14: "She wants to get to the bottom of the problem" (2)

Strange Story 15: "He's just being silly and wants the rest of her cake so he's appealing to her soft side" (2)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "Well maybe she's embarrassed because she forgot to buy the hole punch" (1)

Strange Story 18: "Because she knew that he'd do the opposite" (2)

Strange Story 19: "He's just playing and having fun" (1)

Strange Story 20: "Because she's just doubting... you know one of those people who thinks she's always done badly" (1)

Strange Story 21: Missing Value

Strange Story 22: "Because it was the brides dream, so she didn't want to offend her dream" (2)

Strange Story 23: "It's just a phrase" (2)

Strange Story 24: "He's just placing the blame" (2)

## Comparison 21

Strange Story 1: "He didn't want to get in trouble" (0)

Strange Story 2: "Because he still has to work with him but he can tell his wife the truth" (2)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "He's embarrassed" (0)

Strange Story 5: "He is dressed as one" (2)

Strange Story 6: "She's mimicking the behaviour" (2)

Strange Story 7: "Guilty probably" (0)

Strange Story 8: "So that she wouldn't find the chocolates" (1)

Strange Story 9: "He doesn't want to hurt her feelings" (2)

Strange Story 10: "To make more money" (1)

Strange Story 11: "She was probably scared" (0)

Strange Story 12: "Because you know, she's gone to a lot of trouble" (0)

Strange Story 13: "He doesn't want to hurt her feelings" (2)

Strange Story 14: "To find out what's going on with the bill" (2)

Strange Story 15: "He's greedy" (0)

Strange Story 16: "She doesn't want to upset her friend" (0)

Strange Story 17: "I don't know" (0)

Strange Story 18: "To throw him off" (2)

Strange Story 19: "He's just having fun" (0)

Strange Story 20: "Because she didn't know that was what she was going to say" (2)

Strange Story 21: "She's frustrated" (0)

Strange Story 22: "She doesn't want to upset her friend" (2)

Strange Story 23: "Being sarcastic I guess" (0)

Strange Story 24: "He feels guilty" (0)

## Comparison 22

Strange Story 1: "Because he didn't want to upset his wife" (0)

Strange Story 2: "Because he doesn't want to tell the guy that he doesn't like the truth, so he lies" (1)

Strange Story 3: "She was being sarcastic" (2)

Strange Story 4: "Because he lied that he didn't have his wallet but he purposefully did that" (0)

Strange Story 5: "Because he is wearing a gorilla mask" – (0= because she answered yes to the first question asking whether or not it was true that he was a gorilla)

Strange Story 6: "To imitate her sister" (2)

Strange Story 7: Missing Value

Strange Story 8: "I don't know" (0)

Strange Story 9: "He doesn't want to upset her" (2)

Strange Story 10: "Because she wanted to get rid of the earrings" (2)

Strange Story 11: "Because she knew the area has a high crime rate so she thought something was going to happen" (2)

Strange Story 12: "Because she told him that she's going to make something for him to eat" (1)

Strange Story 13: "To be nice and not upset her" (2)

Strange Story 14: Missing Value

Strange Story 15: "Because he wants more cake" (2)

Strange Story 16: "Being sarcastic" (2)

Strange Story 17: "I don't know" (0)

Strange Story 18: "So that he would have gone Friday...it was a trick" (1)

Strange Story 19: "So that he doesn't have to wake-up" (0)

Strange Story 20: "Because she gets anxious about her exams" (0)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "Because she doesn't want to be rude" (2)

Strange Story 23: "It's a figure of speech" (2)

Strange Story 24: "He doesn't want to get told off" (2)

### Comparison 23

Strange Story 1: "Because he didn't want to upset his wife" (0)

Strange Story 2: "Because he doesn't want to appear as though he's bothered about whether he got the position or not but to his wife he can be honest about how he feels" (2)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "Because the girl that he took out wasn't very happy that she had to pay for the meal when he said he would" (2)

Strange Story 5: "Because he is dressed as a gorilla" (2)

Strange Story 6: "She wants to copy her sister" (2)

Strange Story 7: "Because she doesn't want her flat mate to hate her" (2)

Strange Story 8: "Because she knew that the other one will go to the opposite place" (2)

Strange Story 9: "Because he doesn't want to hurt her feelings" (2)

Strange Story 10: "Because she wants her friend to buy the earrings" (2)

Strange Story 11: "Because she suspects him for an attacker" (2)

Strange Story 12: "To wind her up" (0)

Strange Story 13: "Because he doesn't want to hurt her feelings" (2)

Strange Story 14: "To find out the information from BT" (2)

Strange Story 15: "It's just a way to get the cake from her" (2)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "She might have thought she had bought it" (2)

Strange Story 18: "She doesn't want the surprise to be spoiled by her guessing" (2)

Strange Story 19: "Just to be funny" (0)

Strange Story 20: "Because she anticipated that she's failed" (2)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "So that she doesn't hurt her friend's feelings" (2)

Strange Story 23: "It's just a way of saying it's raining so hard" (2)

Strange Story 24: "Because he doesn't want his wife to be mad at him" (2)

#### Comparison 24

Strange Story 1: "I don't know" (0)

Strange Story 2: "Because he doesn't want to make the other guy feel bad for not getting the job" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "Because ...I don't know" (0)

Strange Story 5: Missing Value

Strange Story 6: "She's just imitating" (2)

Strange Story 7: "Because she doesn't want the blame put on her" (2)

Strange Story 8: "Because she knows that Michelle thinks she's lying...so it's like double bluff" (2)

Strange Story 9: "He doesn't want to make her feel bad" (2)

Strange Story 10: "She's just exaggerating but she doesn't really mean it" (0)

Strange Story 11: "Because she just assumed he was going to attack her" (2)

Strange Story 12: "He's exaggerating" (0)

Strange Story 13: "He doesn't want to make her feel bad" (2)

Strange Story 14: "To avoid complications" (1)

Strange Story 15: "Because he really wants cake so he's exaggerating" (1)

Strange Story 16: "I don't know" (0)

Strange Story 17: Missing Value

Strange Story 18: "The double bluff thing" (2)

Strange Story 19: "He's just playing around" (1)

Strange Story 20: "I don't know" (0)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "She just doesn't want to make her feel bad" (2)

Strange Story 23: "It's a metaphor" (2)

Strange Story 24: "Because he doesn't want his wife to blame him" (2)

## Comparison 25

Strange Story 1: Missing Value

Strange Story 2: Missing Value

Strange Story 3: "Because it started raining" (0)

Strange Story 4: "Because she had to pay" (0)

Strange Story 5: "He was avoiding the question" (0)

Strange Story 6: "Because she sees her sister putting on make-up" (0)

Strange Story 7: "Because she spilled it" (0)

Strange Story 8: "Because she knows she'll go looking for them" (0)

Strange Story 9: "Because he doesn't like her haircut, she cut it too short" (0)

Strange Story 10: "Because she just sold her jewellery" (0)

Strange Story 11: "Because she is scared at night" (0)

Strange Story 12: "Because she told him not to eat" (0)

Strange Story 13: "Because he didn't like the top so he thought he'd be nice by saying he did" (1)

Strange Story 14: "She doesn't know how much it is" (0)

Strange Story 15: "Because he is very hungry" (1)

Strange Story 16: "Because she knows how horrible it is but she just wants to be polite by saying oh it's nice" (0)

Strange Story 17: "She didn't buy a hole punch" (0)

Strange Story 18: Missing Value

Strange Story 19: "Probably to make fun of something" (0)

Strange Story 20: "Because she always worried about her exams" (0)

Strange Story 21: "Because she's having a really bad day" (0)

Strange Story 22: "Because she doesn't want to tell her friend the truth" (1)

Strange Story 23: "It's just an expression" (2)

Strange Story 24: "Because he doesn't want to get in trouble with his wife" (2)

## Comparison 26

- Strange Story 1: "Because he was supposed to buy bread and he's embarrassed or he has forgotten" (2)
- Strange Story 2: "Because you can be pleased for somebody whilst upset for yourself" (0)
- Strange Story 3: "She's being sarcastic" (2)
- Strange Story 4: "It's a euphemism" (2)
- Strange Story 5: "He's wearing a costume" (1)
- Strange Story 6: Missing Value
- Strange Story 7: Because she's embarrassed that she did it" (1)
- Strange Story 8: "She's doing a double reverse blind...she knows what the other girl knows" (2)
- Strange Story 9: "Because he doesn't want to hurt the girl's feelings" (2)
- Strange Story 10: "She's over-dramatising for pity" (0)
- Strange Story 11: "She was scared" (1)
- Strange Story 12: "Because he hasn't eaten...She told him not to eat" (1)
- Strange Story 13: "Not to hurt her feelings" (2)
- Strange Story 14: "She wants the information to check on it" (2)
- Strange Story 15: "He's greedy and he wants to convince the other person to give him more of her cake" (2)
- Strange Story 16: "She's being sarcastic" (2)
- Strange Story 17: "Because she'd asked to do it and she didn't do it" (0)
- Strange Story 18: Missing Value
- Strange Story 19: "He's playing" (1)
- Strange Story 20: Missing Value
- Strange Story 21: "She's being sarcastic" (2)
- Strange Story 22: "She doesn't want to hurt the girl's feelings" (2)
- Strange Story 23: "He's being euphemistic" (2)
- Strange Story 24: "Because he doesn't want to be seen as the one who ate the cake" (0)

## Comparison 27

Strange Story 1: "Either because he forgot or he didn't want to get into trouble" (2)

Strange Story 2: "Because he is happy for his friend but sad for himself" (1)

Strange Story 3: "Because she's annoyed at her fellow...she's being sarcastic" (2)

Strange Story 4: Missing Value

Strange Story 5: "Because he is wearing a gorilla mask" (2)

Strange Story 6: "Because she is mimicking her sister... she looks up to her sister" (2)

Strange Story 7: "Because she didn't want to get into trouble with her friend" (2)

Strange Story 8: "Because she guessed that Michelle would do that" (2)

Strange Story 9: "Because he likes her" (2)

Strange Story 10: "Because she is a bitch...she wants to sell the earrings" (2)

Strange Story 11: "Because she thought he was trying to rob her" (2)

Strange Story 12: "Either he is genuinely hungry or he wants to give her the sense that she will satisfy her" (2)

Strange Story 13: "Because he doesn't want to upset her" (2)

Strange Story 14: "Because she is trying to understand what's going on with the bill and they won't deal with her unless she's the one whose name is on the bill" (2)

Strange Story 15: "Because he wants some more" (2)

Strange Story 16: "Because she is being sarcastic" (2)

Strange Story 17: "Because she thought she had or she lied not to get into trouble" (2)

Strange Story 18: "Because she is trying to surprise him" (2)

Strange Story 19: "Because he is a kid" (0)

Strange Story 20: "Because she thought it was the other way around" (2)

Strange Story 21: "Sarcastic" (2)

Strange Story 22: "Because she doesn't want to upset her friend" (2)

Strange Story 23: "Because he's being cheerful" (0)

Strange Story 24: "Because he doesn't want to get into trouble" (2)

## Comparison 28

Strange Story 1: "Because he forgot" (2)

Strange Story 2: "Because he is being polite" (2)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "Because it is true" (1- insinuated that he understood it was a figure of speech)

Strange Story 5: "Because he is being humorous" (0)

Strange Story 6: "She is copying her" (2)

Strange Story 7: "Because she is embarrassed" (0)

Strange Story 8: "She's trying to be cleverer than Michelle" (1)

Strange Story 9: "He's being kind" (2)

Strange Story 10: "She's exaggerating" (0)

Strange Story 11: "She was scared" (2)

Strange Story 12: "He's exaggerating" (0)

Strange Story 13: "He's being nice" (2)

Strange Story 14: "To avoid complications" (2)

Strange Story 15: "Because he is very hungry" (2)

Strange Story 16: "Because she is being kind" (0)

Strange Story 17: "Because she is avoiding embarrassment" (0)

Strange Story 18: "Because it is a surprise party" (2)

Strange Story 19: "He's being funny" (0)

Strange Story 20: "Because she was worried" (1)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "She's avoiding embarrassment... and to be nice" (2)

Strange Story 23: "He's exaggerating" (0)

Strange Story 24: "He is avoiding blame" (2)

## Comparison 29

Strange Story 1: "Because it was the only thing he hadn't bought...it was like he was defending his position" (0)

Strange Story 2: "Because he feels mixed emotions. He's happy for his...not his friend but someone in the company but sad it's not him" (1)

Strange Story 3: "Sarcasm" (2)

Strange Story 4: "Because he feels guilty that he didn't pay" (1)

Strange Story 5: "Because he is being funny" (0)

Strange Story 6: "She is copying" (2)

Strange Story 7: "Covering her tracks" (1)

Strange Story 8: "Double bluff" (2)

Strange Story 9: "It's a white lie" (2)

Strange Story 10: "Modesty" (0)

Strange Story 11: "Fear" (1)

Strange Story 12: "Trying to be kind" (0)

Strange Story 13: "To be kind" (2)

Strange Story 14: "Otherwise she wouldn't be allowed to talk about the bill" (2)

Strange Story 15: "Because he is pleading to someone else's kindness" (2)

Strange Story 16: "She's being kind" (0)

Strange Story 17: "Guilt that she had remembered everything else" (0)

Strange Story 18: "To keep it a surprise" (2)

Strange Story 19: Missing Value

Strange Story 20: "Modesty...no...anxiety" (1)

Strange Story 21: "Sarcasm" (2)

Strange Story 22: "To be kind" (2)

Strange Story 23: "Sarcasm" (0)

Strange Story 24: "Because he is a bad person" (0)

## Anxiety 1

Strange Story 1: "He's simply forgotten to buy the bread and it was on his list, so he assumed he had bought it" (2)

Strange Story 2: "Well he tells his girlfriend he is sad because that's the truth and he's being polite to a colleague regardless of whether he likes him or not it's the polite thing to do and the professional thing to do" (2)

Strange Story 3: "She is exasperated" (1)

Strange Story 4: "Well we don't know because we don't know what Sara said" (1)

Strange Story 5: "Because he is dressed as a gorilla" (2)

Strange Story 6: "She is miming the action" (2)

Strange Story 7: "Because she is embarrassed" (1)

Strange Story 8: "Because she is actually going to offer some chocolates to her friend" (0)

Strange Story 9: "Because the hair has been cut and there's no point in making her feel bad" (2)

Strange Story 10: Missing Value

Strange Story 11: "She didn't know that...It's dark outside and she was anxious" (2)

Strange Story 12: Missing Value

Strange Story 13: "Because there is no point, she's very excited and that's what she wants to hear" (2)

Strange Story 14: "In order to get service from the BT agent" (2)

Strange Story 15: "Because he is greedy" (1)

Strange Story 16: "Because her friends have been raving about it so much and they're there already" (0)

Strange Story 17: "Same as question one. She had made that ...put it on the list and assumed that since it was on the list she must have bought it" (2)

Strange Story 18: "She got confused" (0)

Strange Story 19: "Because he is a ghost" (1)

Strange Story 20: "Because she is paranoid" (1)

Strange Story 21: "Because she is exasperated" (1)

Strange Story 22: "Because it is her friend's wedding and her friend gets to pick the bridesmaids dress's" (0)

Strange Story 23: "Because it is a wonderful day for work it's raining cats and dogs and there's nothing better to do" (0)

Strange Story 24: "Because otherwise his wife will give him hell" (2)

## Anxiety 2

- Strange Story 1: "Because he didn't want to appear to have forgotten" (2)
- Strange Story 2: "Because you can feel different things for different people" (0)
- Strange Story 3: "She's being sarcastic" (2)
- Strange Story 4: "He says it because it's an expression" (1)
- Strange Story 5: "Because he is joking and he is dressed up as a gorilla" (2)
- Strange Story 6: "Because she is mimicking Jane" (2)
- Strange Story 7: "Because she doesn't want to get into trouble for spilling the wine" (2)
- Strange Story 8: "Vanessa says it because she is trying to double bluff" (2)
- Strange Story 9: "Because he doesn't want to hurt her feelings" (2)
- Strange Story 10: "Because she wants to get more earrings sold" (2)
- Strange Story 11: "Because she assumed that he was a mugger" (2)
- Strange Story 12: "Because he is trying to make her feel good about how much she has cooked" (1)
- Strange Story 13: "Because he wants to make her feel good" (2)
- Strange Story 14: "Because she wants to get the job done and it is irritating waiting for someone else to come home" (2)
- Strange Story 15: "Because he is really hungry and wants her cake" (1)
- Strange Story 16: "To make sure that...not to offend her friend" (0)
- Strange Story 17: "Because she forgot to buy it" (2)
- Strange Story 18: "To try and fool him" (2)
- Strange Story 19: "Because he's fooling about" (1)
- Strange Story 20: "Because she didn't know that the child was fretful about her exam results" (0)
- Strange Story 21: "She's being sarcastic" (2)
- Strange Story 22: "Not to offend...and not to make trouble" (2)
- Strange Story 23: "Sarcasm...fed up" (0)
- Strange Story 24: "Because he's a dirty blamer!" (2)

### Anxiety 3

Strange Story 1: "Because he didn't want to get scolded by her for forgetting something" (1)

Strange Story 2: "He says he is happy for politeness sake and he's sad for the sake of revealing his true feelings" (2)

Strange Story 3: "To be sarcastic" (2)

Strange Story 4: "I don't know" (0)

Strange Story 5: "To have a laugh" (0)

Strange Story 6: "She just likes to imitate an older person" (2)

Strange Story 7: "To avoid displeasure" (1)

Strange Story 8: Missing Value

Strange Story 9: "To produce good feelings" (1)

Strange Story 10: "To get some advantage" (1)

Strange Story 11: "Because she is worried about being attacked" (1)

Strange Story 12: "Just to express his hunger" (1)

Strange Story 13: "To make her feel better" (2)

Strange Story 14: "For the sake of convenience – to save hassle and bureaucracy" (2)

Strange Story 15: "To be humorous" (0)

Strange Story 16: "For the sake of social harmony" (0)

Strange Story 17: "She's afraid of being criticised for forgetfulness" (1)

Strange Story 18: "I have no idea" (0)

Strange Story 19: "To have a laugh" (0)

Strange Story 20: Missing Value

Strange Story 21: "To be sarcastic" (2)

Strange Story 22: "To make her...to make the other person feel better" (2)

Strange Story 23: "To be humorously sarcastic" (0)

Strange Story 24: "To escape blame" (2)

#### Anxiety 4

Strange Story 1: "Because he thought he had... he forgot" (2)

Strange Story 2: "Because he is happy someone else got the job because he knows how rewarding it is at the same time you feel the loss of not getting that job" (1)

Strange Story 3: "Because she's upset with the rain" (1)

Strange Story 4: "Because obviously she had to pay and she was devastated" (1)

Strange Story 5: "Because he's just doing the obvious that he's a gorilla wearing the mask" (0)

Strange Story 6: "She is just mimicking her sister, trying to look older" (2)

Strange Story 7: "Because she was scared...she didn't want to get into trouble... she passed the buck" (2)

Strange Story 8: "Because she knows that she thinks she'll lie to her so this time she said the truth so she wouldn't go to the correct place" (2)

Strange Story 9: "Now it's going to be two ways – either he said that to keep her happy and it look horrendous or he might genuinely like it" (1)

Strange Story 10: "She wants her friend to buy the earrings and she's just exaggerating to make the sale" (2)

Strange Story 11: "Because she was scared he was about to mug her or something" (2)

Strange Story 12: "No it's a figure of speech" (2)

Strange Story 13: "The usual thing...girls like flattery...So to avoid a fight just say a positive thing rather than negative" (2)

Strange Story 14: Missing Value

Strange Story 15: "He's a greedy person...fatso" (1)

Strange Story 16: "No sarcasm" (2)

Strange Story 17: "Because she thought she had" (2)

Strange Story 18: "So she could surprise him" (2)

Strange Story 19: "He's playing around...He wants to be a little ghost for a while" (1)

Strange Story 20: "Because she doesn't have enough confidence in herself" (1)

Strange Story 21: "Sarcasm" (2)

Strange Story 22: "So she doesn't upset the bride to be...polite etiquette" (2)

Strange Story 23: "Figure of Speech" (2)

Strange Story 24: Missing Value

## Anxiety 5

Strange Story 1: "Maybe just to please her" (0)

Strange Story 2: "Maybe he is saying he is happy for Eric just to not show that he is angry" (1)

Strange Story 3: "Because she is angry" (1)

Strange Story 4: "Because maybe his girlfriend wasn't happy that she had to pay" (1)

Strange Story 5: "Is it because he is dressed like a gorilla" (1)

Strange Story 6: "Because she wishes that she could be like her sister" (0)

Strange Story 7: "Because she doesn't want her friend to be angry with her for spilling on the floor" (2)

Strange Story 8: "To try and make her friend chose the other one instead of the kitchen" (2)

Strange Story 9: "To make his friend happy" (2)

Strange Story 10: "To make him feel sorry for her if she doesn't get them sold" (1)

Strange Story 11: "Because it's an expectation that if it's late they're more likely to hurt you in the dark" (2)

Strange Story 12: "Because he is so hungry" (1)

Strange Story 13: "To make her feel good because she just bought a new top" (2)

Strange Story 14: "She doesn't want to get into trouble maybe because the bill is so high" (0)

Strange Story 15: "Because he is joking about and just wants to eat more cake" (1)

Strange Story 16: "To make her friend feel happy that she has taken her to a new restaurant" (0)

Strange Story 17: "To please her husband" (0)

Strange Story 18: "So that he won't expect it to be on a Friday" (2)

Strange Story 19: "He's using his imagination" (1)

Strange Story 20: "Because she expected that she would have done so bad because she was so nervous" (2)

Strange Story 21: "Because she is angry that it has already gone wrong and it is not the best trip" (1)

Strange Story 22: "To please her friend because she's getting married" (2)

Strange Story 23: "He's being sarcastic because the weather is rubbish really" (0)

Strange Story 24: "Because he doesn't want his wife to be angry" (1)

## Anxiety 6

Strange Story 1: "He said it because he thought he had bought the bread and he felt embarrassed" (2)

Strange Story 2: "He's happy he didn't get the job because maybe he was going to have to work longer hours" (0)

Strange Story 3: "She is being sarcastic" (2)

Strange Story 4: "He's telling it like it happened and also what she felt like" (0)

Strange Story 5: "He's trying to break the ice maybe with her and also wearing the mask at that time he is" (0)

Strange Story 6: "Because she wants to be accepted by her sister" (0)

Strange Story 7: "She may have forgotten from drinking too much or she is embarrassed" (1)

Strange Story 8: "Because it was a double bluff" (2)

Strange Story 9: "Because the hair cut may be nice" (0)

Strange Story 10: Missing Value

Strange Story 11: "She might have been predisposed in thinking that he was going to harm her or attack her in some way" (2)

Strange Story 12: "Because he's been told not to eat before coming over and so therefore he is starving" (1)

Strange Story 13: "To... protect the feelings of the other person" (2)

Strange Story 14: "In order to get the information she wants" (2)

Strange Story 15: "He's trying to implore...or ease in a jokey way what could be an awkward situation" (0)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "Out of fear of embarrassment" (0)

Strange Story 18: "In order to surprise him on the Friday" (2)

Strange Story 19: "In order to have fun with his father and also to not have to get up at that time" (1)

Strange Story 20: "She was predisposed to thinking she failed" (2)

Strange Story 21: "To express displeasure" (1)

Strange Story 22: "Because obviously it's her friend's wedding and she has chosen it" (2)

Strange Story 23: "It's a play on words...and also he's trying to make light of what's going to be a rubbish day" (2)

Strange Story 24: "Because he can blame the children he has a was of getting out if it and also he may be embarrassed" (2)

## Anxiety 7

Strange Story 1: "Because he had forgotten" (2)

Strange Story 2: "Because he is happy for his friend but sad he didn't get that position himself" (1)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: Missing Value

Strange Story 5: "He's at a fancy dress party" (1)

Strange Story 6: "She's imitating" (2)

Strange Story 7: "She is too embarrassed to tell the truth" (1)

Strange Story 8: "To double bluff her" (2)

Strange Story 9: "To not hurt her feelings" (2)

Strange Story 10: Missing Value

Strange Story 11: "Because he came too close" (0)

Strange Story 12: "To please his friend" (1)

Strange Story 13: "He says it because that is what she wants to hear" (1)

Strange Story 14: "Because she wants to sort the query out as soon as possible without involving her friend"  
(2)

Strange Story 15: "He really wants the cake and he's just exaggerating" (1)

Strange Story 16: "She is being sarcastic" (2)

Strange Story 17: "She has either forgotten what she's bought or too embarrassed to admit she has forgotten"  
(2)

Strange Story 18: "I think she is trying to double bluff him" (2)

Strange Story 19: "He's just having fun" (1)

Strange Story 20: Missing Value

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "To say what she thinks her friend wants to hear" (2)

Strange Story 23: "He's just being kind and cheery" (0)

Strange Story 24: "Because he is guilty" (1)

## Anxiety 8

Strange Story 1: "Because he had forgotten" (2)

Strange Story 2: Missing Value

Strange Story 3: "Because she was cross and being sarcastic" (2)

Strange Story 4: "He wants to cover up...he is lying to save his embarrassment" (0)

Strange Story 5: "To be funny" (0)

Strange Story 6: "To copy her sister" (2)

Strange Story 7: "She didn't want to admit that she had done it wrong...that it was her. She wanted to hide the truth" (2)

Strange Story 8: "So that she wouldn't get the chocolates. So she wouldn't find them" (2)

Strange Story 9: "He doesn't want to hurt her feelings" (2)

Strange Story 10: "She wants to force whatever her name is into buying something" (2)

Strange Story 11: "She was afraid" (1)

Strange Story 12: "Because he is hungry" (1)

Strange Story 13: "He doesn't want to hurt her feelings" (2)

Strange Story 14: "She wants to try and get to the bottom of it" (1)

Strange Story 15: "He just wants more cake" (2)

Strange Story 16: "Because it is not true" (0)

Strange Story 17: "She's just forgotten" (2)

Strange Story 18: "So that he wouldn't guess the right day" (2)

Strange Story 19: "Because it's funny" (0)

Strange Story 20: Missing Value

Strange Story 21: "Sarcasm" (2)

Strange Story 22: "So she doesn't hurt the other ones feelings" (2)

Strange Story 23: "To try and make the day seem more interesting" (0)

Strange Story 24: "He is embarrassed to admit he has eaten it...rotten dad!" (0)

## Anxiety 9

Strange Story 1: "Because he is a liar" (0)

Strange Story 2: "I don't know" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "Because it is true" (0)

Strange Story 5: "He's trying to be funny" (1)

Strange Story 6: "She is copying her sister" (2)

Strange Story 7: "She doesn't want to get into trouble" (2)

Strange Story 8: "She tricked her. She thought she was going to lie about them" (2)

Strange Story 9: "He doesn't want to hurt her feelings" (2)

Strange Story 10: "She wants to sell some more" (2)

Strange Story 11: "Because she is anxious" (1)

Strange Story 12: "Because he hasn't had anything to eat" (1)

Strange Story 13: "He doesn't want to hurt her feelings" (2)

Strange Story 14: "Because she wants to query the bill" (1)

Strange Story 15: "Because he is greedy" (1)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "She is a liar" (0)

Strange Story 18: Missing Value

Strange Story 19: "Because he's a child and he is playing" (1)

Strange Story 20: "Because she was anxious" (0)

Strange Story 21: "She's just being sarcastic" (2)

Strange Story 22: "She doesn't want to hurt her feelings" (2)

Strange Story 23: "It's a figure of speech" (2)

Strange Story 24: "He doesn't want to get into trouble" (2)

## Anxiety 10

- Strange Story 1: "Because he was nervous" (0)
- Strange Story 2: "Um...because in one of his statements he's lying" (1)
- Strange Story 3: "Because she is being unfair" (0)
- Strange Story 4: "Because he's an asshole" (0)
- Strange Story 5: "Because he's got a very dry sense of humour" (0)
- Strange Story 6: "Because she's mimicking her older sister" (2)
- Strange Story 7: "Because she is frightened of the consequences of being truthful" (1)
- Strange Story 8: "Because she is smart" (1)
- Strange Story 9: "Because he is being polite" (2)
- Strange Story 10: "Because she wanted to make more money" (2)
- Strange Story 11: "Because she suspected that he had alternative motivations and intentions" (2)
- Strange Story 12: "Because he probably is hungry because it is a commonly used phrase" (2)
- Strange Story 13: "Because he is being polite" (2)
- Strange Story 14: "Because she wouldn't be able to attempt fixing the problem if she told the truth" (2)
- Strange Story 15: "Because he is greedy" (0)
- Strange Story 16: "Because she is sarcastic" (2)
- Strange Story 17: "I've got no idea it makes no sense" (0)
- Strange Story 18: "To throw him off track" (2)
- Strange Story 19: "Because he is a child" (0)
- Strange Story 20: "Because she thought she had done badly before she had even found out the results" (2)
- Strange Story 21: "Because she is not giving the trip a chance" (0)
- Strange Story 22: "Because she is being polite" (2)
- Strange Story 23: "Because he's being sarcastic and using a commonly used phrase" (1)
- Strange Story 24: "To try and get himself out of trouble" (2)

## Anxiety 11

Strange Story 1: "Because he didn't want to upset her" (0)

Strange Story 2: "Because people can have different emotions and they want to hide their emotions to different people" (1)

Strange Story 3: "Because she was being sarcastic" (2)

Strange Story 4: Missing Value

Strange Story 5: "Because he wants to keep his identity secret" (0)

Strange Story 6: "She's copying" (2)

Strange Story 7: "Because she doesn't want to hurt her feelings or get in trouble" (1)

Strange Story 8: Missing Value

Strange Story 9: "To not hurt her feelings" (2)

Strange Story 10: "To guilt trip her" (1)

Strange Story 11: "I don't know" (0)

Strange Story 12: "Because he is hungry" (1)

Strange Story 13: "Because he doesn't want to hurt her feelings" (2)

Strange Story 14: "Because she wants to speak about her bill" (1)

Strange Story 15: "Because he wants more. He is greedy" (2)

Strange Story 16: "Because she doesn't want to upset anyone" (0)

Strange Story 17: "She just lied" (0)

Strange Story 18: "Because she wants to catch him out" (2)

Strange Story 19: "Because he's messing around" (1)

Strange Story 20: "Because she was worried about her results" (1)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "She is being sarcastic and doesn't want to hurt her friends feelings" (1)

Strange Story 23: "He's being sarcastic" (0)

Strange Story 24: "Because he is lying and he doesn't want to get into trouble" (2)

## Anxiety 12

Strange Story 1: "He may just have been mistaken" (2)

Strange Story 2: "Not to upset Eric's feelings" (0)

Strange Story 3: "Sarcasm" (2)

Strange Story 4: Missing Value

Strange Story 5: "To be funny" (0)

Strange Story 6: "Mimicking someone she looks up to" (2)

Strange Story 7: "So she could get away with it" (2)

Strange Story 8: "To mislead" (2)

Strange Story 9: "He doesn't want to hurt her feelings" (2)

Strange Story 10: "To try and sell the earrings" (2)

Strange Story 11: "She felt anxiety" (1)

Strange Story 12: "Because he is hungry but doesn't mean it literally" (2)

Strange Story 13: "Because he doesn't want to hurt her feelings" (2)

Strange Story 14: "So she can figure out her bill" (2)

Strange Story 15: "Because he wants more. He's a pig" (2)

Strange Story 16: "Sarcastic" (2)

Strange Story 17: "She made a mistake" (2)

Strange Story 18: "She wanted to surprise him" (2)

Strange Story 19: "Because he is a kid" (0)

Strange Story 20: "No...low self-esteem...no confidence" (1)

Strange Story 21: "Sarcasm" (2)

Strange Story 22: "So she doesn't hurt her feelings" (2)

Strange Story 23: "Sarcasm" (0)

Strange Story 24: "So she's not angry with him" (2)

### Anxiety 13

- Strange Story 1: "He might have thought that he's bought it" (2)
- Strange Story 2: "Because he could be happy for someone else but sad for his own position" (0)
- Strange Story 3: "She's being sarcastic" (2)
- Strange Story 4: "Because his date might have reacted badly" (1)
- Strange Story 5: "Because he was playing make believe" (2)
- Strange Story 6: "Same reason- she's playing" (1)
- Strange Story 7: "To get herself out of trouble" (2)
- Strange Story 8: "Because she knows that her friend will think that Vanessa isn't going to hide it in the kitchen" (2)
- Strange Story 9: "To spare her feelings" (2)
- Strange Story 10: "Because she wanted to pressure her into buying the earrings" (2)
- Strange Story 11: "Because Rebecca had a perception that her neighbourhood was dangerous" (2)
- Strange Story 12: "Because she was speaking metaphorically" (2)
- Strange Story 13: "To spare her feelings" (2)
- Strange Story 14: "In order to sort out the bill" (2)
- Strange Story 15: "He's trying to be persuasive" (2)
- Strange Story 16: "It was her own perception of the restaurant" (0)
- Strange Story 17: "She might have thought she'd bought it" (2)
- Strange Story 18: "Because she wanted to trick him" (2)
- Strange Story 19: "Playing make-believe" (2)
- Strange Story 20: Missing Value
- Strange Story 21: "She's being sarcastic" (2)
- Strange Story 22: "To spare her friends feelings" (2)
- Strange Story 23: "He's being sarcastic" (0)
- Strange Story 24: "He didn't want to get into trouble" (2)

#### Anxiety 14

- Strange Story 1: "Well...I guess he forgot he didn't get any" (2)
- Strange Story 2: Missing Value
- Strange Story 3: "She's being sarcastic" (2)
- Strange Story 4: Missing Value
- Strange Story 5: "Because he is dressed like a gorilla" (2)
- Strange Story 6: "She is pretending" (2)
- Strange Story 7: "She's nervous about how she'll react" (2)
- Strange Story 8: "I have no idea" (0)
- Strange Story 9: "He didn't want to hurt her" (2)
- Strange Story 10: "To exaggerate for some reason...sympathy maybe" (0)
- Strange Story 11: "She was scared" (1)
- Strange Story 12: "Because he's hungry" (2)
- Strange Story 13: "He doesn't want to hurt her feelings" (2)
- Strange Story 14: Missing Value
- Strange Story 15: "He's exaggerating because he really wants some more of the cake" (2)
- Strange Story 16: "She's being sarcastic" (2)
- Strange Story 17: Missing Value
- Strange Story 18: "So that she could surprise him" (2)
- Strange Story 19: "Because he's pretending to be" (2)
- Strange Story 20: "She was afraid of the outcome" (1)
- Strange Story 21: "Sarcastic" (2)
- Strange Story 22: "It's not her wedding so it's not her choice" (0)
- Strange Story 23: "He's being sarcastic" (0)
- Strange Story 24: "He's scared of the repercussions" (2)

## Social Anxiety 1

- Strange Story 1: "But...um...are you supposed to be able to answer that?" (0)
- Strange Story 2: "Because he is happy for the other bloke and sad for himself" (1)
- Strange Story 3: "She's being sarcastic" (2)
- Strange Story 4: "I don't know" (0)
- Strange Story 5: "He is like that I suppose" (0)
- Strange Story 6: "Because she's imitating what the other persons doing" (2)
- Strange Story 7: "Because she didn't want to take responsibility or whatever for it" (1)
- Strange Story 8: "To double bluff her" (2)
- Strange Story 9: "He didn't want to upset her" (2)
- Strange Story 10: "Because she is trying to get her to buy them" (2)
- Strange Story 11: "Because she didn't think he only wanted to ask for the time" (2)
- Strange Story 12: "Because she's...because she's going to cook...I don't know" (0)
- Strange Story 13: "Not to upset her" (2)
- Strange Story 14: "Because BT may not deal with her if she says she's not the bill holder" (2)
- Strange Story 15: "To try and get her to give him" (1)
- Strange Story 16: " (nothing- eventually asked participant is she wanted to move on)" (0)
- Strange Story 17: "I don't know" (0)
- Strange Story 18: Missing Value
- Strange Story 19: Missing Value
- Strange Story 20: Missing Value
- Strange Story 21: Missing Value
- Strange Story 22: "Because she doesn't want to deflate her confidence" (1)
- Strange Story 23: "Because if it's raining you might as well go to work" (1)
- Strange Story 24: "Because he didn't want her to know that he ate it" (1)

## Social Anxiety 2

Strange Story 1: "He's lying" (0)

Strange Story 2: "Because he doesn't want to let his true feelings to the other man" (1)

Strange Story 3: "Because of the bad weather" (0)

Strange Story 4: "I don't know...I've forgotten" (0)

Strange Story 5: "Because that's what he's behaving...he's dressed up" (2)

Strange Story 6: "To imitate" (2)

Strange Story 7: "She didn't want to admit to making the...doing the accident" (1)

Strange Story 8: "To try and mislead" (1)

Strange Story 9: "Not to upset" (2)

Strange Story 10: Missing Value

Strange Story 11: "She's already worried it might happen...so she's thinking it's happening" (1)

Strange Story 12: "Because he thinks that's what she wants to hear" (1)

Strange Story 13: "It's a birthday present...he wants to please her" (1)

Strange Story 14: "So she can get information" (1)

Strange Story 15: "Because he likes the cake" (0)

Strange Story 16: "Well she wants to please her friend" (0)

Strange Story 17: "She has either forgotten or is lying" (2)

Strange Story 18: "To keep him guessing" (1)

Strange Story 19: "Because he is playing" (1)

Strange Story 20: "Because she thought she had failed" (1)

Strange Story 21: "Not sure" (0)

Strange Story 22: "She doesn't want to upset her friend" (2)

Strange Story 23: "Because it is raining heavily" (2)

Strange Story 24: "Because he doesn't want to get into trouble" (2)

### Social Anxiety 3

Strange Story 1: "Not enough information or he must have bought some bread on another occasion" (0)

Strange Story 2: "He is looking at different aspects of the same situation" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "I don't know" (0)

Strange Story 5: "He is being humorous" (1)

Strange Story 6: "She is mimicking her sister because she admires her and wants to be like her...I suppose" (2)

Strange Story 7: "She is covering up for her mistake" (2)

Strange Story 8: "She is trying to outtrip Michelle" (1)

Strange Story 9: "He doesn't want to upset her" (2)

Strange Story 10: "It is possibly a strategy to get her customer to buy some earrings she doesn't really want"  
(1)

Strange Story 11: "She felt...um...She may have felt uncomfortable in the situation" (0)

Strange Story 12: "Because he has been told not to eat beforehand...and perhaps he wants to indicate that he  
hasn't" (1)

Strange Story 13: "He doesn't want to upset her" (2)

Strange Story 14: "Because she thinks that if she gives her own name she won't be able to discuss the bill" (2)

Strange Story 15: "Because he wants some more cake" (1)

Strange Story 16: "She is being sarcastic" (2)

Strange Story 17: Missing Value

Strange Story 18: "She wants to make it as difficult as possible for him to work out when the party is going to  
happen" (1)

Strange Story 19: "He is being playful" (1)

Strange Story 20: "She didn't know that she wanted to congratulate her at that point" (2)

Strange Story 21: "It sounds like it could be a number of things...but it sounds like sarcasm" (2)

Strange Story 22: "She doesn't want to upset the bride" (2)

Strange Story 23: Missing Value

Strange Story 24: "He doesn't want her to know what has happened" (1)

#### Social Anxiety 4

Strange Story 1: "Because he is scared not to" (0)

Strange Story 2: "Because he feels that he should" (1)

Strange Story 3: "Because she is angry" (0)

Strange Story 4: "Because he felt embarrassed probably about his wallet" (0)

Strange Story 5: "Because he has got a gorilla mask on" (1)

Strange Story 6: "She is pretending to put in lipstick" (2)

Strange Story 7: "She felt embarrassed to admit that she had done it" (1)

Strange Story 8: "Perhaps she thought Michelle wouldn't believe her and look in the kitchen" (1)

Strange Story 9: "Because he doesn't want to hurt her feelings" (2)

Strange Story 10: "Because she wants her to buy the earrings" (2)

Strange Story 11: "Perhaps she didn't realise he was going to" (1)

Strange Story 12: "Because he wants to make her feel as though he's very hungry so he can eat what she's cooking" (1)

Strange Story 13: "Because he doesn't want to hurt her feelings" (2)

Strange Story 14: "I don't really know to be honest" (0)

Strange Story 15: "Because he wants the cake" (1)

Strange Story 16: "She doesn't want her friend to be upset because she doesn't like the restaurant" (0)

Strange Story 17: "She didn't want to feel stupid that she had forgotten something" (2)

Strange Story 18: "I don't know to be honest" (0)

Strange Story 19: "To pretend he's a ghost...he is a little boy...I don't know" (2)

Strange Story 20: "She obviously didn't know she had passed...did well" (2)

Strange Story 21: "She is being sarcastic" (2)

Strange Story 22: "Because she doesn't want to hurt her friend's feelings" (2)

Strange Story 23: "It's a saying" (1)

Strange Story 24: "He doesn't want to upset his wife" (0)

## Social Anxiety 5

Strange Story 1: "There could be a couple of reasons. He could be avoiding having to admit that or he could have become flustered in the supermarket and had thought he had bought it when he hadn't" (2)

Strange Story 2: "Because maybe he doesn't want to have to upset his wife...I don't know...concern his wife" (0)

Strange Story 3: "Because she doesn't like getting wet I presume" (0)

Strange Story 4: "Because he said she could live it up and then at the end he couldn't pay" (1)

Strange Story 5: "I don't know...just to...because he's wearing a gorilla mask...I don't know...to make her laugh or something...I don't know" (0)

Strange Story 6: "Because she is a child and children imitate grown-ups" (2)

Strange Story 7: "Because it is easier to blame someone that can't be told off because they'll never know who it was" (0)

Strange Story 8: "Because she knows her friend knows whether she keeps them in the kitchen or bedroom" (1)

Strange Story 9: "To save from upsetting his girlfriend...It's just easier...you know what I mean" (2)

Strange Story 10: "Because some people are guarded about their income...um...be someone who takes money off people" (1)

Strange Story 11: "Well she's worried about walking home...so she has that fear of attack... can you read the question again?" (1)

Strange Story 12: "Because she has gone to a lot of trouble to cook for him a meal...he's just letting her know he's up for it" (0)

Strange Story 13: "Because it was a present that she chose for him and he didn't want to hurt her feelings" (1)

Strange Story 14: "Because BT won't speak to anyone unless it's the bill owner and the bill needs sorting out so she told a lie" (2)

Strange Story 15: "Because he wants her part of the pie and he wants to make him feel a bit guilty into giving him some" (2)

Strange Story 16: "Because it is her friends idea and she's really enthusiastic about it...or she might have said 'oh fantastic' in a tone of sarcasm...you know what I mean?" (1)

Strange Story 17: "**Just to cover up**" (0)

Strange Story 18: "To throw him off the scent or maybe she just doesn't know him well enough to figure it out" (1)

Strange Story 19: "Because he is a child and he's using his imagination... he has a sheet over his head and he thinks he's a ghost" (2)

Strange Story 20: "Well if she was genuinely anxious then she would have immediately assumed the worst...um...if she wasn't because she thought she had done pretty well in the exam then" (0)

Strange Story 21: "Well she could be being honest...um it's not a fantastic trip because the plane is late. Or she is being sarcastic" (1)

Strange Story 22: "Because weddings are quite important to women and it's obviously her friend's big day and that...and she didn't want to say she didn't like the dress...to save hassle really" (1)

Strange Story 23: "It's just an expression which means it is raining quite a lot" (2)

Strange Story 24: "To save an argument with his wife you know what I mean?" (1)

## Social Anxiety 6

Strange Story 1: "Don't know" (0)

Strange Story 2: "Not sure" (0)

Strange Story 3: "Because she's annoyed at the weather" (1)

Strange Story 4: "Don't know sorry" (0)

Strange Story 5: "Because he is dressed as a gorilla" (1)

Strange Story 6: "Because if I remember rightly she's the younger one so she's mimicking" (2)

Strange Story 7: "Maybe she was drunk" (0)

Strange Story 8: "Double bluff" (2)

Strange Story 9: "To keep her happy" (2)

Strange Story 10: "To make a few extra quid" (2)

Strange Story 11: "Because she was anxious" (1)

Strange Story 12: "Because it's a standard phrase" (1)

Strange Story 13: "To keep her happy...keep the peace" (2)

Strange Story 14: "To gain access to the account" (2)

Strange Story 15: "Because he wants the cake" (1)

Strange Story 16: "Because that's her opinion" (0)

Strange Story 17: "Because she forgot" (2)

Strange Story 18: "So he doesn't suspect" (2)

Strange Story 19: "Because he is a child" (0)

Strange Story 20: "Because that's how she was feeling" (0)

Strange Story 21: "Because she is frustrated" (0)

Strange Story 22: "Because that's her opinion of the dress...no I'm wrong in that sorry...she's trying to keep her friend happy" (2)

Strange Story 23: "Because it's a phrase" (1)

Strange Story 24: "To save an argument" (1)

## Social Anxiety 7

Strange Story 1: "Didn't want his girlfriend to nag him or something" (0)

Strange Story 2: "Didn't want to upset Eric" (0)

Strange Story 3: "Sarcasm" (2)

Strange Story 4: "As in why did he use that term of phrase? I don't know...just to express it was a bad thing" (1)

Strange Story 5: "To be amusing" (0)

Strange Story 6: "Kids like to be like their older sister or brother" (0)

Strange Story 7: "To avoid annoying her...well to avoid being shouted at" (1)

Strange Story 8: "Double bluff" (2)

Strange Story 9: "To integrate himself...whatever the appropriate word is" (0)

Strange Story 10: "Wanted to get her to buy some of her earrings" (2)

Strange Story 11: "Because she was afraid" (1)

Strange Story 12: "It's a turn of phrase...It's saying he is hungry" (2)

Strange Story 13: "To get in her good books" (1)

Strange Story 14: Missing Value

Strange Story 15: "I don't know...to be amusing" (0)

Strange Story 16: "To avoid pissing people off" (0)

Strange Story 17: "To avoid being nagged" (0)

Strange Story 18: "To make sure it was a surprise" (1)

Strange Story 19: "To be amusing" (0)

Strange Story 20: "Because she was nervous" (0)

Strange Story 21: "Sarcasm" (2)

Strange Story 22: "To not annoy people" (1)

Strange Story 23: "Term of phrase" (1)

Strange Story 24: "To avoid being shouted at" (1)

## Social Anxiety 8

Strange Story 1: "Because he was afraid Jane would think he was incompetent" (0)

Strange Story 2: "Because you can feel both things at the same time. Happy for his friend but sad for himself" (1)

Strange Story 3: "Because she wanted to have a good day... she's disappointed" (0)

Strange Story 4: "Because he feels embarrassed. He wanted to treat this lady to something special so he feels like he's let her down" (1)

Strange Story 5: "Because he has a mask on and he's having a joke" (1)

Strange Story 6: "She's pretending because she wants to copy the other girl who is putting on lipstick...she wanted to be like her" (2)

Strange Story 7: "Probably because she stained the carpet and she doesn't want a confrontation about it- she feels bad" (1)

Strange Story 8: Missing Value

Strange Story 9: "Because he doesn't want to tell her what he really thinks and hurt her feelings" (2)

Strange Story 10: "I don't know why someone would say that. It is not a very nice thing to say" (0)

Strange Story 11: "Maybe she has been attacked in the past and she was scared and it was dark" (1)

Strange Story 12: "It's just an expression" (0)

Strange Story 13: "Probably because his girlfriend has made an effort and she likes it and he doesn't want to offend her" (2)

Strange Story 14: "I don't know maybe she wants to...uh...see what the bill is. She thinks that her friend has made some calls or something like that that she doesn't want to pay for" (0)

Strange Story 15: "Because he is being sort of manipulative" (1)

Strange Story 16: "Because she thinks her friend really wants to get food from that restaurant so she's going along with it" (0)

Strange Story 17: "Um probably like the same reason again...she kind of remembered and then she forgot and doesn't want to have to explain it" (2)

Strange Story 18: "To try and sort of out fox him I suppose" (2)

Strange Story 19: "He's just joking about" (0)

Strange Story 20: "Because she hasn't got much sort of confidence in her abilities" (1)

Strange Story 21: "I'd say just because she's being a bit selfish really. It's kind of not really that important a bit of a delay...so..." (0)

Strange Story 22: "Because it's her friend's wedding and she wants it to go well for her" (1)

Strange Story 23: "Because he's trying to look in the bright side of things" (0)

Strange Story 24: "Just to avoid having a row" (2)

## Social Anxiety 9

- Strange Story 1: "Because he thought he had bought the bread" (2)
- Strange Story 2: "He can't express his sadness to Eric. He is being polite" (2)
- Strange Story 3: "She was cross" (1)
- Strange Story 4: "Because it happened" (0)
- Strange Story 5: "Because it's just a mask" (0)
- Strange Story 6: "Because she was just mimicking" (2)
- Strange Story 7: "She might not have realised she spilt the wine" (0)
- Strange Story 8: "To trick Michelle" (2)
- Strange Story 9: "He doesn't want to upset Sara" (2)
- Strange Story 10: "Because she wanted the other earrings" (0)
- Strange Story 11: "Because she wasn't sure what his intentions were" (2)
- Strange Story 12: "You can't eat a horse" (0)
- Strange Story 13: "He doesn't want to upset Monica" (2)
- Strange Story 14: "To find out exactly what the right bill should be" (2)
- Strange Story 15: "He's desperate for more cake" (1)
- Strange Story 16: "Doesn't want to offend Penelope" (0)
- Strange Story 17: "Maybe she forgot to buy it" (2)
- Strange Story 18: "To surprise him" (1)
- Strange Story 19: "Because he is playing around" (1)
- Strange Story 20: "Because she was anxious of her results" (0)
- Strange Story 21: "She's a bit annoyed about the delay" (0)
- Strange Story 22: "She doesn't want to upset Ann" (2)
- Strange Story 23: "It's a figure of speech" (2)
- Strange Story 24: "Because Sam is angry at him" (0)

## Social Anxiety 10

Strange Story 1: "He didn't want to disappoint his partner" (0)

Strange Story 2: "He is happy that Eric got the job but sad that he didn't get it himself" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "Because he is embarrassed" (0)

Strange Story 5: "To be humorous" (0)

Strange Story 6: "Imitation of adult behaviour" (2)

Strange Story 7: "To protect their relationship or protect herself" (0)

Strange Story 8: "Double bluff" (2)

Strange Story 9: "Because he doesn't want to upset her" (2)

Strange Story 10: "She hopes to make a profit" (1)

Strange Story 11: "Because of her expectations given the reputation of the area" (2)

Strange Story 12: "To demonstrate how he has followed her request not to eat before the meal so he appreciates what she has cooked for him" (1)

Strange Story 13: "Because he doesn't want to disappoint her" (2)

Strange Story 14: "Because she wants to find out the amount of money that her flat mate has actually run up" (0)

Strange Story 15: "Greedy" (0)

Strange Story 16: "To keep the peace" (0)

Strange Story 17: "So that her...the other person didn't get angry" (0)

Strange Story 18: "To make sure it was still a surprise for him because she is aware of the pattern of his thinking" (2)

Strange Story 19: "Out of a sense of playfulness and to prevent his father from being upset or irritated" (0)

Strange Story 20: "Because her expectations were that she hadn't passed" (2)

Strange Story 21: "sarcasm" (2)

Strange Story 22: "Because she doesn't want to upset her friend" (2)

Strange Story 23: "Irony...humour" (0)

Strange Story 24: "Deflect anger" (1)

## Social Anxiety 11

- Strange Story 1: "No idea...he lied" (0)
- Strange Story 2: "To please other people" (0)
- Strange Story 3: "Because she was angry" (1)
- Strange Story 4: "Because it is true" (0)
- Strange Story 5: "Because he is being funny" (0)
- Strange Story 6: "To pretend she is doing the same thing" (2)
- Strange Story 7: "To avoid conflict" (1)
- Strange Story 8: "To be clever" (0)
- Strange Story 9: "Not to hurt her feelings" (2)
- Strange Story 10: Missing Value
- Strange Story 11: "Because she was scared" (1)
- Strange Story 12: "To please her" (1)
- Strange Story 13: "To keep the peace" (1)
- Strange Story 14: "To avoid hassle" (1)
- Strange Story 15: "To get his own way" (1)
- Strange Story 16: "Just to keep her friend happy" (0)
- Strange Story 17: "To avoid conflict" (0)
- Strange Story 18: "So that he doesn't get suspicious" (2)
- Strange Story 19: "To play a game" (2)
- Strange Story 20: Missing Value
- Strange Story 21: "Just because she's disappointed" (0)
- Strange Story 22: "Not to ruin the other girls day" (2)
- Strange Story 23: "Being sarcastic I guess" (0)
- Strange Story 24: "To get away with the whole thing" (0)

## Social Anxiety 12

Strange Story 1: "Because it was true" (0)

Strange Story 2: "Because he is scared to reveal his true feelings" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "He's reflected on past emotions..." (0)

Strange Story 5: "Because he is playing along with his costume" (2)

Strange Story 6: Missing Value

Strange Story 7: "She doesn't want to be in trouble with her friend" (2)

Strange Story 8: Missing Value

Strange Story 9: "He doesn't want to hurt his girlfriend's feelings" (2)

Strange Story 10: "She wanted sympathy" (0)

Strange Story 11: "She was anticipating what might happen" (1)

Strange Story 12: "Just something to say" (0)

Strange Story 13: "He wants her to feel good about herself" (2)

Strange Story 14: "She doesn't like not being involved in the bill payment so she makes it up" (2)

Strange Story 15: "He's over-exaggerating to show how good it is" (0)

Strange Story 16: "She wants to please her friend" (0)

Strange Story 17: "She didn't want to seem silly in front of her husband" (0)

Strange Story 18: "To try and put him off when they might be doing something" (2)

Strange Story 19: "He's having fun" (1)

Strange Story 20: "She's unsure of herself" (0)

Strange Story 21: "Sarcasm" (2)

Strange Story 22: "She wants her friend to feel good about herself and can't face telling the truth" (2)

Strange Story 23: "Sarcasm" (0)

Strange Story 24: "He doesn't want his wife to be angry with him" (2)

### Social Anxiety 13

Strange Story 1: "To get out of being yelled at" (0)

Strange Story 2: Missing Value

Strange Story 3: "Because she is angry" (1)

Strange Story 4: "He's insecure" (0)

Strange Story 5: "He wanted to make her laugh" (0)

Strange Story 6: "She admires her sister" (0)

Strange Story 7: "To avoid a fight" (1)

Strange Story 8: "To outsmart her" (2)

Strange Story 9: "To make her feel better" (2)

Strange Story 10: "To exaggerate" (0)

Strange Story 11: "Just in case" (0)

Strange Story 12: "To make her happy" (0)

Strange Story 13: "To avoid a bad situation" (1)

Strange Story 14: "It's easier" (0)

Strange Story 15: "To give her no choice" (0)

Strange Story 16: "She doesn't like it there" (0)

Strange Story 17: "I don't know" (0)

Strange Story 18: "To surprise him" (2)

Strange Story 19: "To distract his dad" (0)

Strange Story 20: "She was being honest" (0)

Strange Story 21: "Because she's mean" (0)

Strange Story 22: "She doesn't want to fight with her friend" (1)

Strange Story 23: "To make the situation funny instead of horrible" (0)

Strange Story 24: "Because it is easier" (0)

## Social Anxiety 14

Strange Story 1: "I don't know" (0)

Strange Story 2: "Because they are different people" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "It depends...I don't know" (0)

Strange Story 5: "Presumably because he is wearing a gorilla mask" (2)

Strange Story 6: "Uhh... I don't know...Uh...am I supposed to guess? Well, the literal truth is that I don't know" (0)

Strange Story 7: "Again we don't know literally, but she's probably trying to cover up for herself" (1)

Strange Story 8: "It's a double bluff" (2)

Strange Story 9: "I imagine he wants to spare her feelings" (2)

Strange Story 10: "Presumably because she wants to make a sale" (2)

Strange Story 11: "Because she was anxious" (1)

Strange Story 12: "He's exaggerating for effect" (0)

Strange Story 13: "He wants to be nice" (1)

Strange Story 14: Missing Value

Strange Story 15: "He wants some cake" (2)

Strange Story 16: "She's probably being sarcastic" (2)

Strange Story 17: "She's probably lying so she doesn't get blamed" (0)

Strange Story 18: "To stop him figuring it out" (2)

Strange Story 19: "For fun" (0)

Strange Story 20: "She didn't know" (2)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "To spare the other person's feelings" (2)

Strange Story 23: "He's just complaining" (0)

Strange Story 24: "He doesn't want the blame" (2)

## Social Anxiety 15

Strange Story 1: "He forgot" (2)

Strange Story 2: Missing Value

Strange Story 3: "Because she is soaked and a bit miffed maybe" (0)

Strange Story 4: "Because it was a date and he wanted it to go well and it probably didn't go so great" (0)

Strange Story 5: "Because he is at a party...I don't know" (0)

Strange Story 6: "She's just pretending" (2)

Strange Story 7: "To avoid getting into trouble" (2)

Strange Story 8: Missing Value

Strange Story 9: "To not hurt her feelings and make her feel a bit better" (2)

Strange Story 10: "One of those things you say to exaggerate" (0)

Strange Story 11: "She's frightened" (0)

Strange Story 12: "Because it is a saying...or it might be" (0)

Strange Story 13: "Because that's what blokes have to say...probably to look out for her feelings" (1)

Strange Story 14: "To find out what the bill was or get some information" (2)

Strange Story 15: "Because he wanted more cake" (1)

Strange Story 16: Missing Value

Strange Story 17: "Perhaps because she forgot" (1)

Strange Story 18: Missing Value

Strange Story 19: "Because he's playing" (1)

Strange Story 20: "Because she was really worried about her work" (0)

Strange Story 21: "Because it's delayed and she's frustrated" (0)

Strange Story 22: "Because it is not her wedding she's trying to be considerate to the person's feelings whose wedding it is" (2)

Strange Story 23: "Because it's one of those things you say in the morning just to say something" (0)

Strange Story 24: "To cover up the fact that he ate some of the cake" (2)

## Social Anxiety 16

- Strange Story 1: "He was confused and thought he had" (2)
- Strange Story 2: "Because he is socially conditioned to do so" (0)
- Strange Story 3: "She's being sarcastic" (2)
- Strange Story 4: "Because his date was hacked off that she had to pay on their first date" (2)
- Strange Story 5: "He's trying to be funny" (0)
- Strange Story 6: "Because she's a child and children copy" (2)
- Strange Story 7: "Because she feels bad and is trying to place the blame on someone else" (2)
- Strange Story 8: "Because she is trying to outwit her friend who she assumes is making an assumption" (2)
- Strange Story 9: "Because he doesn't want to hurt his girlfriend's feelings" (2)
- Strange Story 10: "Because she wants the extra cash" (2)
- Strange Story 11: "She anticipated him doing something violent or aggressive towards her and was afraid" (2)
- Strange Story 12: "To illustrate that he hasn't eaten as he was advised and is ready for a huge meal" (2)
- Strange Story 13: "Because he doesn't want to hurt her feelings" (2)
- Strange Story 14: "She's trying to resolve the situation by pretending to be the person that is named on the bill" (2)
- Strange Story 15: "He's doing it for effect and to be funny and probably to cover up he's being a bit greedy" (1)
- Strange Story 16: **"To avoid a confrontation"** (0)
- Strange Story 17: "She probably thought she had but she hasn't" (2)
- Strange Story 18: "Because she is anticipating that he will try and outwit her and she is double bluffing" (2)
- Strange Story 19: "He's just being a child...he's playing" (1)
- Strange Story 20: "Because she internally felt that she hadn't done well and was anticipating something that wasn't the case" (2)
- Strange Story 21: "She's being sarcastic because it started badly with a two and a half hour delay" (2)
- Strange Story 22: "Because he friend had chosen it on her very special day and she doesn't want to upset her by telling her she hates it" (2)
- Strange Story 23: "He's being flippant and trying to make a joke about the weather being crappy" (0)
- Strange Story 24: "He's scared of his wife" (0)

## Social Anxiety 17

Strange Story 1: "He wanted to keep her happy" (0)

Strange Story 2: "Mixed feelings" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "He just wants to talk about how he got on" (0)

Strange Story 5: "To make her laugh" (0)

Strange Story 6: "She's copying her...she wants to be like her sister" (2)

Strange Story 7: "She doesn't want to get her angry with her" (1)

Strange Story 8: "To put her off the scent...double bluff" (2)

Strange Story 9: "Not to upset her" (2)

Strange Story 10: Missing Value

Strange Story 11: "She was afraid she was going to get attacked" (1)

Strange Story 12: Missing Value

Strange Story 13: "To keep her happy" (2)

Strange Story 14: "To get the job done and avoid complications" (2)

Strange Story 15: "To get her to smile and feel sorry for him" (0)

Strange Story 16: "Because she doesn't want her friend to be offended" (0)

Strange Story 17: "She probably forgot" (2)

Strange Story 18: Missing Value

Strange Story 19: "He's playing... he's being playful" (1)

Strange Story 20: "Because she feared the worst" (1)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "Because she wants to make her friend happy" (2)

Strange Story 23: "He's being sarcastic" (0)

Strange Story 24: To stop her shouting at him" (1)

## Social Anxiety 18

Strange Story 1: "Because he didn't want to get into trouble... he was lying" (0)

Strange Story 2: "Because he is being polite to the other guy (Eric) and truthful to his wife" (2)

Strange Story 3: "Because she is being sarcastic" (2)

Strange Story 4: "I assume just because she is angry at having to pay" (1)

Strange Story 5: "He's dressed as a gorilla...he's trying to be funny" (2)

Strange Story 6: "She's imitating" (2)

Strange Story 7: "She doesn't want to get into trouble" (2)

Strange Story 8: "Because she doesn't want her to find the chocolates" (1)

Strange Story 9: "He doesn't want to hurt her feelings" (2)

Strange Story 10: "I think it's because she wants her to buy them" (1)

Strange Story 11: "Because she was scared that he was a mugger" (1)

Strange Story 12: "He's using an expression which many people use to indicate that he is hungry" (2)

Strange Story 13: "Because he doesn't want to hurt her feelings" (2)

Strange Story 14: "So that she can sort out without her friend" (2)

Strange Story 15: "Because he wants the cake" (2)

Strange Story 16: "She's being sarcastic" (2)

Strange Story 17: "She didn't want to look forgetful" (0)

Strange Story 18: Missing Value

Strange Story 19: "Because he's pretending to be a ghost" (2)

Strange Story 20: "Because she assumed it would be bad news" (2)

Strange Story 21: "She's being sarcastic" (2)

Strange Story 22: "She doesn't want to hurt her friend's feelings" (2)

Strange Story 23: "It might be again that he's being sarcastic" (0)

Strange Story 24: "Because he doesn't want the blame" (2)

## Social Anxiety 19

- Strange Story 1: "Because she asked him" (0)
- Strange Story 2: "Because he wants to please both people" (0)
- Strange Story 3: "Because she's being sarcastic" (2)
- Strange Story 4: "Because he is making a joke...He doesn't mean it literally like" (1)
- Strange Story 5: "Because he is dressed like a gorilla" (2)
- Strange Story 6: "Because she wants to be like her sister" (0)
- Strange Story 7: "Because she didn't want to get the blame" (2)
- Strange Story 8: Missing Value
- Strange Story 9: "Because he doesn't want to have to hurt her feelings" (2)
- Strange Story 10: Missing Value
- Strange Story 11: "Because she was on her own in the dark" (0)
- Strange Story 12: "It's just a saying...he doesn't mean it literally" (1)
- Strange Story 13: "Just to make her feel nice about herself" (2)
- Strange Story 14: "Just to make things less complicated" (0)
- Strange Story 15: "Because he really wants the cake" (1)
- Strange Story 16: "She's being facetious" (2)
- Strange Story 17: "Because she probably forgot" (2)
- Strange Story 18: "So that he wouldn't suspect there was a party on Friday" (2)
- Strange Story 19: "Because he is a child and he's just playing" (1)
- Strange Story 20: Missing Value
- Strange Story 21: "Because she's being sarcastic" (2)
- Strange Story 22: "Because she doesn't want to hurt her feelings" (2)
- Strange Story 23: "It's just a saying" (1)
- Strange Story 24: "Because he feels guilty about eating the cake" (0)

## Social Anxiety 20

Strange Story 1: "I have no idea...I couldn't answer for Bill" (0)

Strange Story 2: "I don't know" (0)

Strange Story 3: "I don't know" (0)

Strange Story 4: "I don't know" (0)

Strange Story 5: "Because he is wearing a gorilla costume" (2)

Strange Story 6: "Because she wants to be like her sister" (1)

Strange Story 7: "I don't know because I don't want to infer...it could be a number of reasons" (0)

Strange Story 8: "I don't know" (0)

Strange Story 9: "To save from hurting her" (2)

Strange Story 10: "I don't know" (0)

Strange Story 11: "Because the evidence...because she feels fearful walking the streets and assumed he was going to attack her" (2)

Strange Story 12: "To make her feel that he's hungry for the food that she's prepared because she told him not to eat anything" (2)

Strange Story 13: "To save her from feeling bad about the top she's wearing" (2)

Strange Story 14: "Because otherwise she wouldn't be able to access...she wouldn't be able to discuss the bill" (2)

Strange Story 15: "Because he desperately wants the cake so he thinks that if he exaggerates she might give it to him" (2)

Strange Story 16: "Because she's disgusted and being sarcastic" (2)

Strange Story 17: "I don't know" (0)

Strange Story 18: "To keep the surprise for his benefit" (2)

Strange Story 19: "Because he is a child and he wants to have fun" (0)

Strange Story 20: "Because of the anxiety she automatically assumes Gillian has come to tell her she has failed because that's what she believes has happened" (2)

Strange Story 21: "Because she is irritated that her flight is delayed and she's pissed off" (1)

Strange Story 22: "Because she feels that it's the bride's day and she doesn't want to cause her any upset" (2)

Strange Story 23: "Because he is being sarcastic and would prefer for it to be sunny" (0)

Strange Story 24: "I don't know" (0)

## Social Anxiety 21

- Strange Story 1: "Because he didn't want to get into a confrontation" (0)
- Strange Story 2: "He wants Eric to like him and his wife to console him" (1)
- Strange Story 3: "Because she is being ungrateful" (0)
- Strange Story 4: "Because he wants to discuss it with his flatmate" (0)
- Strange Story 5: "To be funny" (0)
- Strange Story 6: Missing Value
- Strange Story 7: "Because she is afraid of what Georgina would say or do" (1)
- Strange Story 8: "To outwit the other one" (2)
- Strange Story 9: "To make Sara feel better" (2)
- Strange Story 10: "She wanted to get rid of her last earrings" (2)
- Strange Story 11: "Because she was scared" (0)
- Strange Story 12: "Because it is just an expression" (1)
- Strange Story 13: "To make Monica feel better" (1)
- Strange Story 14: "So she doesn't have to pay the bill" (0)
- Strange Story 15: "Because he's greedy" (0)
- Strange Story 16: "So that she doesn't cause a scene" (0)
- Strange Story 17: "Because she was scared of her husband" (0)
- Strange Story 18: "Because they don't get on very well and he'll just do the opposite to what she said" (0)
- Strange Story 19: "Because he is a little boy" (0)
- Strange Story 20: "Because she has got no confidence" (1)
- Strange Story 21: "Because she is ungrateful" (0)
- Strange Story 22: "To make her friend feel good" (2)
- Strange Story 23: "It's just an expression" (2)
- Strange Story 24: "Because he doesn't want to get into trouble" (2)

## Social Anxiety 22

Strange Story 1: "Because he was ashamed about not having any bread" (0)

Strange Story 2: "Because he has the ability to feel happy for others" (0)

Strange Story 3: "To be ironic" (2)

Strange Story 4: "Because it didn't go well...To humorize the situation" (2)

Strange Story 5: "To be funny" (0)

Strange Story 6: "Because she is a kid and she likes to copy people" (2)

Strange Story 7: "Because she can get away with it and she doesn't want to piss her friend off" (2)

Strange Story 8: Missing Value

Strange Story 9: "Because girls get funny about those things. He doesn't want to hurt her feelings" (2)

Strange Story 10: Missing Value

Strange Story 11: "Because she is high strung and makes assumptions about situations" (2)

Strange Story 12: "Because he is hungry" (1)

Strange Story 13: "Because women are sensitive about these things. He wants to be nice" (2)

Strange Story 14: "Because BT people will not deal with you if it's not your name" (2)

Strange Story 15: "He's trying to be funny" (0)

Strange Story 16: "She's being ironic and she's talking to herself" (2)

Strange Story 17: "She was ashamed she'd forgot" (1)

Strange Story 18: "Because she knows he will think it's on Saturday" (2)

Strange Story 19: "Because kids do that...to be fun...to play and surprise his father" (1)

Strange Story 20: "Because she was making assumptions" (2)

Strange Story 21: "To be ironic" (2)

Strange Story 22: "Because you don't say bad things to people on their wedding. Especially when it's women" (0)

Strange Story 23: "To be ironic" (0)

Strange Story 24: "Because he doesn't want to be blamed" (2)

### Social Anxiety 23

Strange Story 1: "He forgot" (2)

Strange Story 2: "He's happy for his friend but he is sad for himself" (1)

Strange Story 3: "She was just disappointed" (0)

Strange Story 4: "He says it because it was his first date and she was having to really trust him...and she's pissed off...It's a big ask to fork out all that money when she may not see him again" (0)

Strange Story 5: "Because he is having some fun" (0)

Strange Story 6: "Because she wants to be like her big sister" (0)

Strange Story 7: "She just couldn't handle the confrontation" (1)

Strange Story 8: "She was bluffing" (2)

Strange Story 9: "He does it not to uh...hurt her feelings" (2)

Strange Story 10: "To get her friend to buy some" (2)

Strange Story 11: "Because she just went into panic" (1)

Strange Story 12: "**Because he would be in trouble otherwise**" (0)

Strange Story 13: "He says it not to hurt her feelings" (2)

Strange Story 14: "Because...Ummm...BT won't deal with her if it's not her name on the bill" (2)

Strange Story 15: "Because he is desperate for that food" (1)

Strange Story 16: "She just didn't want to cause waves" (0)

Strange Story 17: "**Because she couldn't be bothered to get into it with him**" (0)

Strange Story 18: "To confuse him" (1)

Strange Story 19: "Because he wants to have fun with his dad" (0)

Strange Story 20: "She didn't think she's passed" (2)

Strange Story 21: "She was being very sarcastic" (2)

Strange Story 22: "Because she doesn't want to hurt her friend's feelings" (2)

Strange Story 23: "He is just having some banter" (0)

Strange Story 24: "Because he doesn't want to get told off" (2)

## Social Anxiety 24

Strange Story 1: "He might have forgotten that he didn't buy it" (2)

Strange Story 2: "Because he wanted the job but they weren't friends but he's happy that he's got it anyway" (0)

Strange Story 3: "She's being sarcastic" (2)

Strange Story 4: "Because it didn't go down well with Sarah who wasn't happy to pay" (1)

Strange Story 5: "Because it is Halloween and he has a gorilla mask on" (1)

Strange Story 6: "She is copying the same way that Jane does it" (2)

Strange Story 7: "She's embarrassed that she made the mess" (0)

Strange Story 8: "Just being truthful" (0)

Strange Story 9: "So he didn't have to hurt her feelings" (2)

Strange Story 10: "To guilt trip her into buying some" (2)

Strange Story 11: "Because of the bad crime rates she didn't know what he was going to do" (2)

Strange Story 12: "Because he didn't eat because he knew she was cooking" (1)

Strange Story 13: "Not to hurt her feelings" (2)

Strange Story 14: "So that BT would talk to her and not have to wait for Beth" (2)

Strange Story 15: "He just really wanted more cake" (1)

Strange Story 16: "Her friend took her there and thought it was good. She didn't want to ruin it" (0)

Strange Story 17: "She might have just forgotten" (2)

Strange Story 18: "She could have got her days muddled up" (0)

Strange Story 19: "Just being a kid and having a laugh" (0)

Strange Story 20: "Because she worried about them because she always thinks the worst" (1)

Strange Story 21: "Being sarcastic" (2)

Strange Story 22: "Because it's her friend's wedding and she's chosen it so she wouldn't want to put her down" (2)

Strange Story 23: "It's just a saying that everyone says and it's sarcastic because it's not a nice day" (1)

Strange Story 24: "He didn't want to get the blame" (2)

