

A Prediction of Prejudice? The Priming of Insecure Attachment Styles

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Submitted in partial fulfilment of the requirements of the Bachelor of Arts degree in Psychology at Dublin Business School, School of Arts, Dublin.

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18th March 2016

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Acknowledgements

I would like to express my sincerest thanks to my supervisor, Dr. Patricia Frazer and Michael Nolan for their continued and invaluable support throughout. I would like to thank all the faculty members at Dublin Business School for their guidance and support. A grateful thanks to all of my friends and family who took part in this study. Not only for being participants but also for encouraging me throughout this process, I will be forever grateful to my friends and family.

Abstract

The aim of this study was to examine the effect of priming insecure attachment styles has on reactions to racial groups, and how different attachment styles mediate this effect. A mixed design was used; experimental to examine the effects of priming, and a correlational to examine the relationship of this effect between attachment styles. 28 participants (17 female 11 male) were sub-consciously primed, either insecurely or neutrally, in a word task. Reactions to racial groups were measured using an IAT and attachment styles assessed using a questionnaire. Results showed no significant difference in the associations to racial groups between the insecurely primed and the control group, and no significant effect mediated by attachment styles. Further research is needed into the techniques of insecure priming; the efficacy of its priming methods and if insecure attachment can be demonstrated through verbal priming in the same manner secure priming can.

1. Introduction

Much contemporary research has centred around the topic of the interconnection between social identity theory (Tajfel & Turner, 1986) and Bowlby's (1969, 1973, 1988) attachment theory. Bowlby's research on reactions to a stranger has demonstrated a link to reactions to out-groups based on social identity theory. This effect can be seen in such research as Mikulincer & Shaver (2001). The secure base schema, when primed was found to attenuate negative reactions to out-groups. An important limitation of contemporary research is the failure to address the possibility of priming the insecure base schema, thus studying possible effects on negative reactions to out-groups. The following research is based on and a continuation of Bowlby's (1973) attachment theory and, the reactions to out-groups based on Mikulincer & Shaver (2001). These studies will investigate the priming of the insecure base schema, how this affects the individual's sense of security and thus promoting in-group favouritism (Brewer (1999)). The following literature and studies ultimately attempts to find a link between the insecure base schema and negative associations to racial out-groups.

1.1 Variable 1 Attachment Styles

Attachment styles of Bowlby's (1973) theory illustrate how the relationship with the primary caregiver, can later affect adult attachment styles and relationships and therefore, reactions to strangers. When a child is distressed at the absence of the primary caregiver, or introduction of stranger, this can be an indication that the child belongs to a either insecure avoidant or insecure ambivalent/resistant attachment style. This is an extremely important indication of

the child's emotional state of being and is a contemporary topic of research as can be seen in Brooker et al (2013) work on the development of stranger fear in infancy. Hazan & Shaver (1987) furthered the concepts of attachment by applying them to adult relationships. Based on the relationship with the significant other, the partner would be classified into one of four groups': secure, anxious preoccupied, dismissive avoidant or fearful avoidant. The paper shows how a person reacts to an absence of the other, but fails to look outside this relationship. If the security base of a person extends past infancy and into adulthood where else does it influence?

Studies like Magai et al (2000) have demonstrated how each attachment type is accompanied with different personality attributes based on mood and emotion. It was found that fearful-avoidant participants exhibited facial expressions linked with shame and were inclined to see anger in faces more so than secure individuals. Individuals typical with preoccupation types were observed to disclose anger and distress in their trait emotions. The findings point to the fact that individuals with less secure attachment types are not only less secure in an adult relationship but the affect can be seen in basic emotions in everyday tasks. The study looked at facial expressions which may be ambiguous and predicted theories in attachment theory only accounted for a minority of trait emotion in attachment styles. Bartz & Lydon (2004) considered how attachment might not only affect the individual relationship, but how it may impact the role of the individual on a societal level. Participants were primed hearing a description of a relationship based on secure, avoidant or anxious-ambivalent style. Their levels of agency (*which is defined as "a concern for the self"* Bratz & Lydon (p1389 2004)) and communion (*which is defined as a reflection of "a concern for others"* Bratz & Lydon (p1389 2004)) were examined. This study demonstrates how an individual with an

insecure attachment type can possess attributes that would make them more applicable to a team or group, or else more likely to have a concern for the self. The importance of working together as a group or society is crucial; lacking these attributes can seriously hinder progress as a society. Allen, V. (2013) demonstrated that security priming can lead to a decrease in expressed psychopathy in individuals high in trait anxiety attachment. Like Mikulincer & Shaver (2001), Allen V (2013) has shown the positive effects of security priming, how making the secure schema salient in the mind can have a positive effect has been demonstrated many times. One flaw was the failure to examine the reverse aspect, if priming the secure schema can lead to reduced negative reactions to out-groups and psychopathy then what would happen if the insecure style was primed?

Many negative traits are associated with the insecure attachment style (Magai et al (2000)). If these had the ability to primed it would be a serious problem for the individual. The extent of effects of securely primed individuals goes as far as to reduce psychological pain (Cassidy, Shaver, Mikulincer, Lavy (2009)). When securely primed and compared to anxiously attached people, participants are less likely to engage in moral disengagement (Chugh, Kern, Zhu, & Lee (2014)). Chugh, Kern, Zhu, & Lee (2014) found it was relatively simple to securely prime people, that it's an excellent intervention for making people morally engage with the group, similar to the work of Bartz & Lydon (2004), where the findings show that insecure people to possess more agency traits. This is also in accordance with Bowlby's (1973) theories of the secure individual already has a secure base and may venture from it. An insecure person would not. In real life this manifests in forms of people not wanting to venture from their own groups and risk security; or even a lack of having a secure base would mean reduced help seeking behaviours and therefore prone to psychological pain. Very few

of these studies primed insecure attachment types at all. If these studies show that it is so easy to prime someone's attachment type, and that so many negative attributes come with insecure attachment; it begs the question what happens when someone is insecurely primed?

1.2 Variable 2 Research on Social Groups

Another important variable in this study and in social psychology is group interaction, specifically inter-group conflict. People tend to categorise others into 'us' and 'them' (Allport (1979)). The definitions of these groups then grow and become a part of our identity. People are then categorized and put into 'our' group, not part of 'us', considered being an 'out-group'. The categorisation does not end there. Individual's attributes themselves with aspects similar to their group (Turner et al (1987)). This self-categorisation is what allows us to feel part of/ identify with a group. If we feel part of a group, then we invest something of ourselves; what we invest is our self-esteem (Tajfel & Turner (2004)). This investment can lead to the favouring of our own group over the other out-group as a protective measure. Protective measures in social groups can be seen as far back as the apes. Mothers and infants with many male friends would be protected (Palombit, Seyfarth, & Cheney, D. L. (1997), Nguyen, Van Horn, Alberts, & Altmann (2009)). Animals who are in danger from a predator would receive a larger response when they cried for help if they had a strong social bond. A thought is that some of human's psychological processes and various behaviours are a product of evolution (Buss (1995)).

It is easy to see in modern times, how someone might fear for their own security. Similar to their ancestors, the social group is used as a tool of security; a place where they belong. The threat today is not a physical, but a psychological one. Allport (1979) never said that out-group hate can be derived from in-group love, but the preferential treatment (in-group bias) of one's own group can be just as damaging from an external perspective (Brewer (1999)). Although dated this research is supported by modern literature (Brewer (2007)). In modern context, intergroup conflicts can be seen in religion and nationalism. Marsh & Brown (2011) found the homonegativity correlation with religiosity and nationalism was not moderated by adult attachment style, however some of these measures were self-reported and uncontrolled as submissions were by internet. The relations between groups are important now more than ever. A need for further research is present as previous studies, whilst contributing to the understanding of interrelations of social groups; it does not consider one thing, the individual's personality, specifically the attachment style. If security plays a role in the creation of the social bond and group; and as attachment theory is the account of our secure base, there may be a interaction.

1.3 The Relationship between the Priming of the Insecure Attachment Style and Reactions to Out-Groups

The two variables present here have a strong common denominator. Both share the concept of security. Attachment is based on security (Bowlby (1969)) and social groups have a strong relationship with the need to be secure. Hunter gatherer to the metropolitan human, there is

shift from physical to psychological. The concern of the contemporary person is the emotional need to protect the invested self-esteem in a social group (Tajfel & Turner (2004)). In contemporary research the relationship between attachment style and group interactions has been a popular topic. The relationship between attachment and prejudice through the mechanism of empathy was examined by Boag (2015). The mediating role of empathy between the attachment styles of secure, anxious and avoidant were minimised and prejudice reduced when attachment security is primed.

In a seven yearlong study, (Parens (2012)) insecure attachment styles were found to have a strong link with prejudice due to stranger anxiety and identification with the attachment object. The prejudice is however benign. Two factors lead to the conversion to malignant prejudice. They are internalised hostility/ hate and the influence of society. It noted that the first possible path to malignant prejudice can form when harsh or abusive childrearing is used. Harsh and abusive child rearing is also a predictor for anxious and avoidant attachment types which may already have underlying benign prejudice. This question has been asked before (Di Pentima & Toni (2009)) in literature and it was found that insecure style teenagers exhibited a higher level of blatant and subtle prejudice. Avoidant styles showed the highest level of blatant prejudice. An important note to make is the external validity of these studies. Many ask participants to answer questionnaires about prejudice, but this may not translate into prejudice behaviours. The number of chairs in which someone would sit away from a Muslim was examined by Boag & Carnelley (2012); primed attachment security significantly predicted discriminating behaviours.

The extent to which negative attachment styles have with malignant behaviours towards others was researched by Hofstra, Oudenhoven, & Buunk (2005); negatively attached participants reacted more negatively when considering adaptation strategies of immigrants. The following attachment styles were associated with the adaptation strategies: fearful = assimilation, dismissive = separation, pre-occupied = marginalization. Securely primed individuals are also much more likely to have a higher level of cultural empathy (Mallinckrodt McNett, Celebi, Birks, Tsai & Williams (2013)). In this study it was also found that the practice of asking the participant to imagine a securely attached love one was not nearly as effective as priming with visual imagery. This practice of priming by picturing a loved one, or someone from a particular type of relationship, has been used in many studies.

Due to the evidence found by (Mallinckrodt (2013)) the internal validity should be questioned. The effects of attachment styles extend beyond intergroup relations. Mikulincer & Shaver (2007), mental health and prosocial behaviours are promoted by boosting attachment security. From contemporary literature a clear focus has emerged, the increased boosting of the secure base as a resistance to concepts such as poor mental health, various prosocial behaviours in-group bias. There has been a failure to look at the concept of attachment security from the aspect of priming the insecure. Previous literature has centred around the nucleus of the secure style, the insecure have simply been a figure to compare to. The following study will ask what happens when the individual is primed with the insecure attachment style?

1.4 Present Study

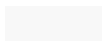
Influenced by Bowlby's (1973) and Mikulincer & Shaver (2001), this study will examine the affect that primed insecure attachment has on negative associations to race. In these papers, the secure base is a result of the relationship with the significant other in which during times of stress there was someone with whom they could rely on. Waters, Rodrigues, & Ridgeway (1998) defined it cognitively as when facing obstacles, the individual will run through 'if-then' propositions. The securely attached thinks that if they meet an obstacle they may reach out to someone for help, that the stress associated with the obstacle will subside. This is the foundation of the secure base. As Mikulincer & Shaver said, the secure base "In Bowlby's (1973) terms, the sense of having a secure base provides an individual with a framework for maintaining well-being, formulating effective emotion-regulation devices, developing positive models of the self and others, and engaging in exploration and risk-taking activities." (p97 2001). The secure base holds many positive features such as a positive cognitive internal script, positive models of the self and others and the formulation of effective emotion-regulation devices. Therefore, the absence of the secure base must be described as the insecure attachment style.

A schema is described as a concept that is organised into a mental structure that represents some aspect of the world ("Psychotherapy Glossary," n.d.). Examples of schemata are stereotypes, social roles, scripts and worldviews. DiMaggio describes it as "schematic structures that organize that information" (p263 1997). It is a mental structure in which concepts of items of the real world are stored cognitively in the brain.

Therefore, a conclusion can be drawn that the insecure base schema is the mental framework/ representation of the concept of the abandonment from the significant other and the insecurity that is felt by the individual from earlier childhood experiences.

Allport (1979) first describe the in-group as a group which you are a part of. Brewer (2007) cleared up the definition by stating that people categorise themselves into groups based on the values that they believe they have. If a person is sporty, large and competitive, they may identify as a rugby player. An out-group is the opposite. The out-group is a group of people with whom the individual does not identify with and believes he/she has no membership in.

Prejudice as defined by Allport is "feeling, favourable or unfavourable, toward a person or thing, prior to, or not based on, actual experience" Allport (p6 1979). The prejudice substitute used here, is the measure of negative associations to racial groups. An IRAP (implicit relations association test) test will be used. The participants will see faces from different racial groups and will be timed on their response. The D-score (when negative) is a measure of how likely they are to relate negative words to black faces and positive words to white faces. The priming method (Mikulincer (2001)): the participants will complete a word association task, as they progress through the task words will prime their insecure attachment sub-consciously. In order to assess the participant's attachment style, the ECR-R (experience in close relationships questionnaire revised) will be used (Fraley (2005)).



1.5 Rationale

The area of attachment security and out-group relations have been a popular topic. Much of the research has not considered the possibility of priming insecure attachment. The method of priming the attachment base in Bartz & Lydon (2004), was to ask the participants to imagine an insecure relationship. This practice raises many questions about the ability of the participant to accurately imagine the exact relationship needed. As Mallinckrodt, McNett, Celebi, Birks, Tsai, & Williams (2013) found priming the secure base by asking participants to imagine a relationship, was only effective as a control positive prime. With the lack of view from the perspective of insecure attachment in the literature, yet the support from the literature concerning all the negative emotional reactions associated with insecure attachment types (Magai et al (2000)), a gap is shown in literature about the possibility of priming insecure attachment and making the negative connotations like prejudice salient.

Another point is the contradicting nature of the literature. Marsh & Brown (2011) found that insecure attachment was linked to Homonegativity when examining a religious group but not with a nationalist group. Schwartz & Lindley (2005) found that religion and attachment had no clear relationship, attachment style did not moderate the relationship between religion and homophobia. This may only be linked with homophobia; a hypothesis could be that sexuality might not be as strong of a group distinguisher in modern times compared to race or gender. The answer is unclear and further research is needed.

The priming technique has been well validated in previous studies such as Mikulincer (2001). Not only is the priming technique supported by research but it has also been shown that anyone can be primed no matter the attachment style (Baldwin (1992, 1994, 1997)). A preoccupied or avoidant attachment style person may experience a momentary lift when primed with the securely. The question asked in this study is; does that mean the same effects of insecurity can be made salient so easily too? Another point of concern is that repeated priming can have a lasting effect on one's life (Carnelley & Rowe (2007)). The secure base can improve the view of the self and relationships; but what of the priming of insecure attachment? Would continuous priming result in negative, long lasting effects?

If insecure attachment styles have been linked to prejudice behaviours and decisions, (*Di Pentima & Toni (2009), Boag & Carnelley (2012), Hofstra, van Oudenhoven, & Buunk (2005)*) and it is possible to prime anyone, (Baldwin (1992, 1994, 1997)) and make the effects of attachment styles salient and effective (Mikulincer & Shaver (2001)), and if continued priming can have a lasting affect then the possibility that the priming of insecure attachment types will bring about prejudicial characteristics is worth researching.

If the hypothesis is accepted, then it would mean a greater understanding of insecure attachment and the relationship it has with racial associations. The impact of this study would mean a catalyst for further research into the area and assistance to any group or body attempting to reduce prejudice. The hope is that, like the secure base priming research, this may also be used in the real world eventually (Twemlow, Fonagy, Sacco, Vernberg & Malcom (2011)).

Hypotheses

H1: It is hypothesised that there will be a significant difference in D-scores between an insecurely primed group and a control group.

H2: It is hypothesised that there will be a negative correlation between avoidance attachment scores from an ECR-R questionnaire and D-scores from an insecurely primed group

H3: It is hypothesised that there will be a negative correlation between anxiety attachment scores from an ECR-R questionnaire and D-scores from an insecurely primed group

H4: It is hypothesised that there will be a significant negative correlation between avoidance attachment scores from an ECR-R questionnaire and D-scores of a control group

H5: It is hypothesised that there will be a significant negative correlation between anxiety attachment scores from an ECR-R questionnaire and D-scores of a control group.

H6: It is hypothesised that there will be a significant difference in D-scores of participants between exposure to insecure priming and secure priming.

H7: It is hypothesised that there will be no significant difference between the anxiety scores of an insecurely and securely primed group, compared to a neutral and securely primed group.

H8: It is hypothesised that there will be no significant difference between the avoidance scores of an insecurely and securely primed group, compared to a neutral and securely primed group.

2. Methods

2.1 Participants

28 (17 female & 11 male) participants took part in the experiment. These participants were chosen based on ease of access. Friends, family and colleagues of the experimenter took part in. Ages ranged between 20-60 years old. Participants in general were either in their 20s or 50+ with a mean age of 24.

2.2 Design

Group	Control Group	Experimental Group
Word Task (priming)	Neutral Prime	Insecure Attachment Prime
IAT	IAT (A/B)	IAT(A/B)
Word Task (priming)	Secure Prime	Secure Prime
IAT	IAT (A/B)	IAT(A/B)
Attachment Questionnaire	ECR-R	ECR-R

2.2.1 Hypothesis 1.

For the main hypothesis, that the D-scores of an insecurely primed group would be significantly lower than that of a control's, the manipulation of the independent variables consisted of whether or not participants were insecurely primed.

The dependent variables for all hypothesis was the IAT score (the D-score). This study was experimental as participants were randomly assigned to either the control or the priming group. The allocation of participants to the groups was done by the flip of a coin. It was a between subject design in which the experimental group (insecurely primed participants) and the control group (neutrally primed participants) were compared. The measure of prejudice that was used was the IAT (D-Score) which was run on E-Prime software.

2.2.2 Hypothesis 2-5.

For hypothesis 2 & 3, that the D-scores and attachment scores from the ECR-R will not correlate, participants' attachment types were measured using the ECR-R revised online. Each participant was primed (insecurely), examined for prejudice, primed again (securely) and tested on their attachment type. Each predictor variable (attachment style score) was compared to the criterion variable (D-score). Attachment is given as two scores, one for the level of attachment related anxiety and one for attachment related avoidance. If both scores are low, it is assumed the subject is of a secure attachment style.

The two attachment scores of the participants from the experimental group were correlated with their first D-score after insecure priming. It was therefore a within group design and a quasi-experiment.

Hypothesis 4 & 5, have the same aim of examining how prejudice is mediated by attachment styles; attachment style score and D-score from a control group would negatively correlate. The previous analysis was to examining how negative attachment types predicted the effect of priming. Are insecure subjects more vulnerable to the priming of the insecure attachment type and therefore more likely to show negative racial associations? This analysis is to examine how prejudice overall is mediated by attachment styles. It was a correlation and a within group design. The control groups' attachment score was correlated with their D-score after neutral priming. The PV being the attachment score would predict a lower CV of the D-score.

2.2.3 Hypothesis 6-8.

Hypothesis 6 asked the question if there will be a significant difference in D-scores of the experimental group after insecure initial priming (insecure) compared to the secondary priming (secure). The participant was insecurely primed, racial associations measured, securely primed and then racial associations measured again. This was to compare the rates of negatively associated words to the opposite race and investigate; if it is possible to increase a subject's level of negatively associated words to the opposite race by priming them insecurely. Also, is it possible to reverse this effect by priming them again securely? A repeated measures analysis was used on this within group design to see if there was a significant difference between the two D-scores of the experimental group.

Hypothesis 7 & 8 was examining if the insecure priming would persist even after secure priming. The attachment scores of the control and experimental group were compared by a between sample T-test for this between group design to see if insecure priming would affect attachment score.

2.3 Materials and Apparatus

One of the measures used is the experience in close relationships revised questionnaire Fraley, R. C. (2005). This self-report questionnaire is one the most used measures for adult attachment types. It's a 36 questions long with a Likert scale (Likert (1932)) of between 1 (strongly disagree) and 7 (strongly agree). This questionnaire was used based on its validity and short completion time. Upon scoring of the ECR-R, two different values are obtained. The attachment-related anxiety score and the attachment-related avoidance score. These two scores indicate the level of a person's anxiety attachment and avoidance attachment. It can be assumed if both scores are low; the participant is of a secure attachment. The validity and reliability of the experience in close relationships questionnaire has been reviewed and verified. Sibley, Fischer & Liu (2005), after conducting a longitudinal analysis, found the ECR-R is a highly stable indicator of latent attachment.

A website host was used to store the ECR-R. The chosen host was surveymonkey.com. This service allows the participants to fill out questionnaires (like the ECR-R) online. MacAfee antivirus software was used to ensure a secure connection and the surveymonkey.com stores all the information on their servers securely. Upon completion on the chrome web browser, the information was later exported to Microsoft excel. Microsoft

excel was used to organise the data. All of these tasks were performed on a dell laptop (Inspiron 15 5000)

The stimuli used in the IAT was faces from two different races; Caucasian faces (10 male 5 female) and Black faces (10 male 5 female). These faces were obtained from a research database (<http://www.wilmabainbridge.com/facemorability2.html>). The faces have been used and validated by Bainbridge, Isola & Oliva (2013). The images themselves are not presented in this present study is due to copyright. The faces comprise of smiling and neutral emotions, both were shown equally in black and white faces. The faces were situated in an oval frame with little to no background. All pictures were portrait orientation in which the subject was facing the camera directly. In all images, an effort was made to have a similar lighting, quality, colour vibrancy and amicable appearance. This database was used due to its large number of faces and diversity in race, it is also used commonly in contemporary research, as can be seen in Bylinskii et al (2015) in which the memorability of photos was examined.

The measure of prejudice that was used was the Implicit Association Test (IAT) (Greenwald, McGhee & Schwartz (1998)). The photos previously mentioned were shown on screen with words which have been associated with negative or positive emotions, which were chosen due to their use and validation in research (Bellezza, Greenwald, & Banaji (1986)). The IAT has been used much in previous research and whilst not as effective as the IRAP, it is a simpler measure for setting up and scoring. The external validation and reliability of the IAT is still strong.

2.4 Procedure

Participants were brought into an empty classroom where they were instructed that they would be taking a test that examines the emotional relationships between various words and images. The participants were told that they would sit through two word tasks, two facial tasks and complete a questionnaire. An information sheet was given and the experimenter explained the tasks to the participants ensuring not to use any priming words.

2.4.1 Word task.

The first task each participant took was a word task. The purpose of this task was simply to prime the participant and therefore no information was recorded. The structure of this word task was taken from Mikulincer & Shaver (2001). The participant was told that they would see two words. After they would be asked whether they believed in their own opinion if the words were a pair or separate. An example given was religion and democracy. The first word (e.g. religion) appeared in the centre of the screen for 500ms, then the primer appeared 50ms then the second word (e.g. democracy) 500ms.

The primer for the first task was, a negatively attached word (alone, push away) for the experimental group, for the control group it was a neutral word (chair, table). All words were in the centre of the screen. The purpose was so that the distractor words would serve as a forward mask (fixation on centre of screen) and as a retroactive mask, covering the primer from detection. The participant was told that the machine would shuffle through words

randomly, this was used as further deception. After 60 word tasks with a primer between each pair of words the participant continued onto the IAT task. The timing and masking techniques were based from Forster & Davis (1984) and Mikulincer & Shaver (2001). A full lists of words used is included in appendix A.

2.4.2 IAT.

The IAT began immediately after the word task. Participants were told they would see a face, either white or black. There was two words on screen on both sides of the face. One was a negative word (maggot) and the other was a positive word (sunshine). The positions of these words changed throughout the experiment randomly. Negative words appeared on both the left and right side of the face, as would positive words, positioned randomly between trials. The participant was given instructions before every task. By pressing 'A' or 'L' to either; match white faces to positive words and black faces to negative words, or alternatively, match white faces to negative words and black faces to positive words. The reaction times and accurate responses of all participants were recorded and a D-score was calculated (Campbell (2008)) based on the average response time of, either negative or positive words to either black or white faces. There were two designs of the IAT programme; (A) which white-negative & black-positive came as the first task, followed by white-positive & black-negative and (B) in which white-positive & black-negative came as the first task, followed by white-negative & black-positive. This was to ensure a counterbalance and the order they saw the faces in had no confounding effect.

2.4.3 Second Block.

Participants went through another word task in which both groups (control and experimental) were exposed to secure primers (love, hug). The conditions and structure was the identical to the first word task, except for the primer. The participants then took the IAT again. The IAT was identical to the first except order of words matched to the race was changed (e.g. positive + white changed to negative + white).

2.4.4 ECR-R.

Participants could ask questions and relax, this was to allow time for the priming effects to diminish. The participants then took an ECR-R questionnaire online using a laptop.

2.4.5 Post experiment/ ethical concern.

A concern was that priming the insecure attachment style would result in grief and anguish for the participant. For this reason, all participants were primed securely before finishing the experiment. Participants were given a full debrief with a sheet explaining the true nature of the experiment with contact information of the experimenter, supervisor and various mental health organisations. The participants were told that help was available if they needed it (also to counter act any remaining effects of negative attachment).

3.Results

3.1 Overview and Normality

All data collected from participants was entered into IBM SPSS Statistics 22. Test for normality was run on all the variables. These tests included Shapiro-Wilk and Levene's test for equality of variance. Skewness and kurtosis Z-values, histograms and box plots were also examined. Whilst there was some skewness in the distribution of the data, for all but one variable (Experimental D-score 2 $Z = -3.11$) there was no significant deviation from normality. All other variables were approximately normally distributed. In table 2 the exact figures of distribution for each of the independent variables can be seen. To analyse hypothesis 6 a Wilcoxon signed-rank test was used as the population could not be assumed to be normally distributed.

Table 2 Figures of Distribution

Variable	Skewness	Z-Value	Sharpio-Wilk
D-score 1Total	0.534	1.21	0.599
D-score 2 Total	-1.217	-2.75	0.014
Experimental D-score 1	0.26	0.45	0.83
Experimental D-score 2	-1.82	-3.11	0.004
Control D-score 1	1.058	1.72	0.24
Control D-score 2	-.554	-0.9	.936
Anxiety score Experimental group	.306	.528	.937
Avoidance Score Experimental Group	-.434	-0.748	.092
Anxiety score Control group	-.214	-0.347	.213
Avoidance Score Control Group	-.877	-1.424	.081

3.2 Descriptive statistics

The sample consisted of 17 females and 11 males (N=85). The selection criteria was that participants had to be over 18, there was no other exclusions. The majority of participants were college students between the ages of 21-29 (college N=26, 50+ age group N=2)

In order to measure how priming the insecure attachment style affects associations to racial groups, and how attachment types mediate this effect, all participants took two Implicit Association tests (Greenwald, McGhee & Schwartz (1998)), after two priming tasks. At the end of the tasks a self-reported measure attachment style was taken (Fraley (2005)).

Table 3 Descriptive Statistics for IAT

Group	Mean	Standard Deviation	95% Confidence Levels	
			Lower Bound	Upper Bound
D-Score 1 Total	-120.28	519.89	-321.87	81.31
D-score 2 Total	-91.2	383.86	-240.05	57.64
Experimental group D-score 1	-207.37	525.51	-498.389	83.64
Control group D- score 1	-19.79	515.3	-331.19	291.6
Experimental group D-score 2	-78.06	404.1	-301.84	145.72
Control group D- score 2	-106.73	374.92	-332.94	120.19

In table 3 the mean, standard deviation and confidence intervals for all variables can be seen. All though in some cases there was a high difference in the means of the groups, due to such a high standard deviation the null hypothesis had to be accepted for 7 out of 8 of the hypothesis. For the first hypothesis it can be seen how the experimental group's D-score after being insecurely primed was quite high (M=-207.37 SD=525.51) compared to that of the control group who received the neutral prime (M=-19.79 SD=515.3). Overall, between the means of the control and the experimental group; there was an increase of 947%. Further analysis was undertaken to examine these results more closely.

Table 4: Attachment scores distribution

Attachment Score	Control Group		Experimental Group	
	Mean	SD	Mean	SD
Anxiety attachment score	3.04	1.25	3.39	1.24
Avoidant attachment score	3.44	1.1	2.64	0.8

The attachment scores averaged from a 1-7 ECR-R scale (Likert (1932)) shows the level of a participants anxious and avoidant attachment styles, if both scores are low it can be assumed that the participant is of a secure attachment type. These attachment scores come from the ECR-R, that was taken after either insecure attachment priming then secure attachment

priming (experimental group), or neutral priming, then secure priming (control group). It was thought that the insecure priming may have a retroactive effect on the participants self-reported attachment type questionnaire. From table 4 it can be seen that the control avoidant score ($M=3.44$ $SD=1.1$) is quite larger than the experimental avoidant score ($M=2.64$ $SD=0.8$). These figures were also compared to the D-scores in table 3. Further analysis was conducted to see if there was a significant result between the variables.

3.3 Inferential Statistics

5 statistical tests (parametric and non-parametric) were conducted. A one-way ANOVA, paired sample T-test, Pearson's correlation and a Wilcoxon signed-rank test were used.

3.3.1 Hypothesis 1.

It is hypothesised that there will be a significant difference in D-scores between an insecurely primed group and a control group.

A one-way between subjects ANOVA was used to investigate if there was a significant difference between the d-scores of the two groups. This was to see if insecure attachment priming would result in a higher level of negative associations to black faces (all participants happened to be white so the level of negative associations to black faces would show their reactions to an out-group). A negative D-score, meant participants were more likely to associate a negative word to black faces and positive words to white faces (see

appendix B). If there was a significant difference between the D-scores of the groups (neutral and insecure attachment priming) it would mean the priming had an effect.

Table 5: One way between subjects' ANOVA

Variable	D-score 1 Mean	Standard Deviation	F	dfs	p
Insecure attachment primed group	-207.37	525.51	0.9	1	0.35
Neutral Primed group	-19.79	515.3			
Total	-120.28	519.89		27	

There was no significant difference in D-scores of the two groups at the $p < .05$ significance level [$F(1, 26) = 0.9, p = 0.351$]. Post hoc tests were not conducted due to an insignificant result. The null hypothesis was accepted.

The difference between the means (figure 1), is quite large; control ($M = -19.79$ $SD = 515.3$), experimental group ($M = -207.37$ $SD = 525.51$). Although a large difference in the means was found the IV of insecure attachment priming ($\eta^2 = 0.03, 95\% \text{ CI} = -321.87- 81.31$) accounted for 3% of the variance explained. A summary of the data can be seen in table 5.

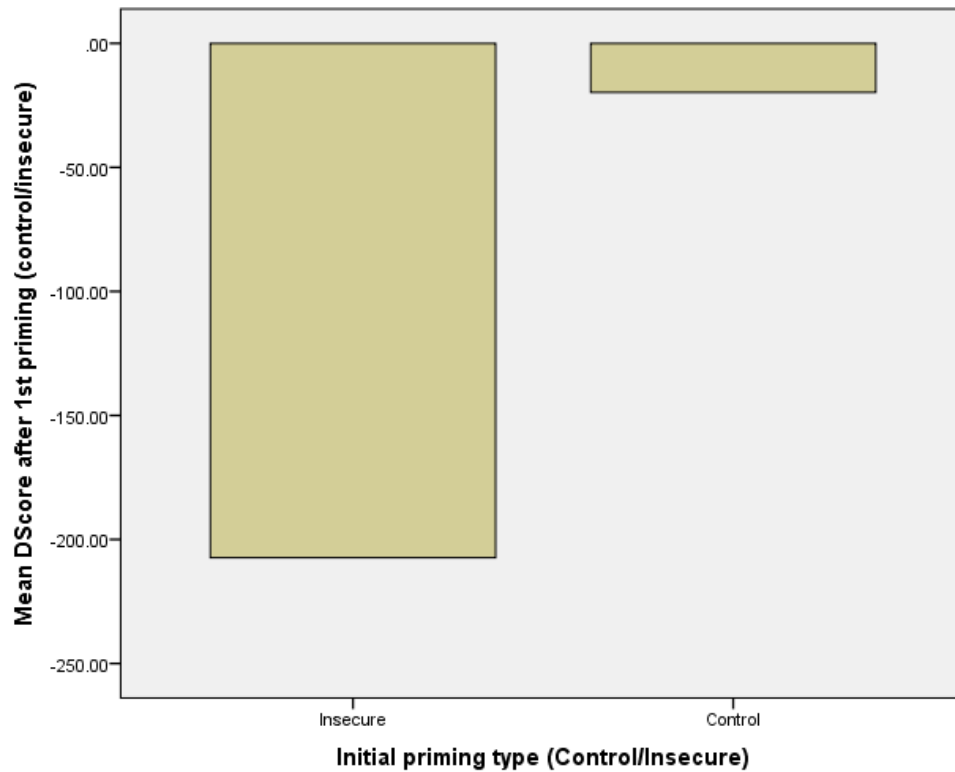


Figure 1: The difference in means of D-scores

These results suggest that there was a difference between the results of the IAT between the two groups which would suggest that the insecurity priming had an effect on the type of association to racial groups. When the results were looked at closely, it was found that there was no significant difference; this is also backed by the large standard deviation and small explanation of variance. To summarise, there was an effect on the D-scores, it just cannot be explained by the independent variable of insecurity priming.

3.3.2 Hypothesis 2.

It is hypothesised that there will be a negative correlation between avoidance attachment scores from an ECR-R questionnaire and D-scores from an insecurely primed group

This hypothesis set out to investigate if a higher avoidant attachment score would predict a negative D-score (more likely to associate positive words to white faces and negative words to black faces). A Pearson r correlation was computed to assess the relationship between the attachment avoidance and D-scores from an IAT

3.3.3 Hypothesis 3.

It is hypothesised that there will be a negative correlation between anxiety attachment scores from an ECR-R questionnaire and D-scores from an insecurely primed group.

This hypothesis was examining if a higher anxiety score would predict a negative D-score. A Pearson R correlation showed that there was a negative yet insignificant correlation between the two variables ($r = -0.066$, $n = 15$, $p = 0.817$). A scatter plot (figure 2 Summarizes the results)

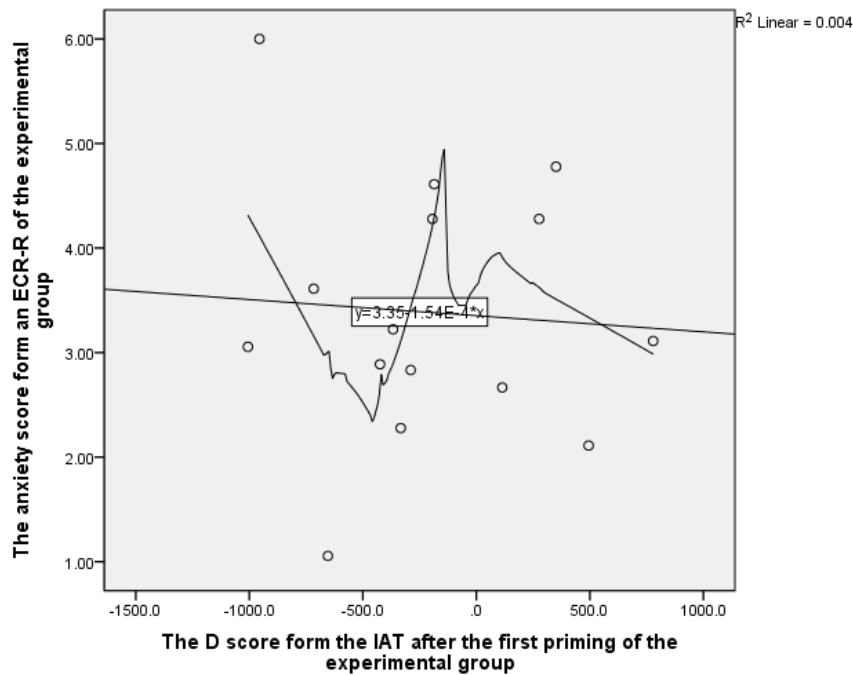


Figure 2: Hypothesis 3 scatter plot

3.3.4 Hypothesis 4.

It is hypothesised that there will be a significant negative correlation between avoidance attachment scores from an ECR-R questionnaire and D-scores of a control group.

This hypothesis was examining if a higher avoidance score would predict a negative D-score. A Pearson R correlation showed that there was a positive and insignificant correlation between the two variables ($r = 0.367$, $n = 13$, $p = 0.217$). The null hypothesis was accepted.

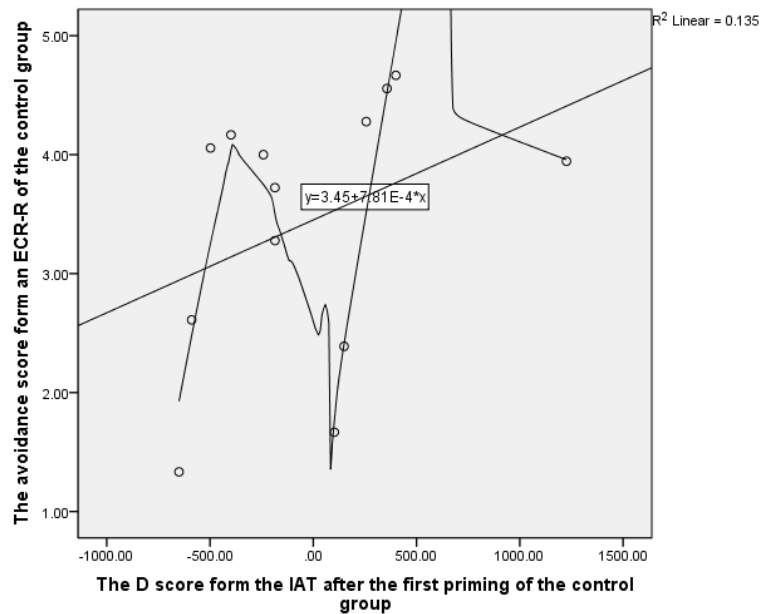


Figure 3: Scatter plot for hypothesis 4

3.3.5 Hypothesis 5.

It is hypothesised that there will be a significant negative correlation between anxiety attachment scores from an ECR-R questionnaire and D-scores of a control group.

This hypothesis was examining if a higher anxiety score would predict a negative D-score. A Pearson R correlation showed that there was a negative and insignificant correlation between the two variables ($r = -0.224$, $n = 13$, $p = 0.461$). A scatter plot in figure 4 summarizes this information.

The null hypothesis was accepted.

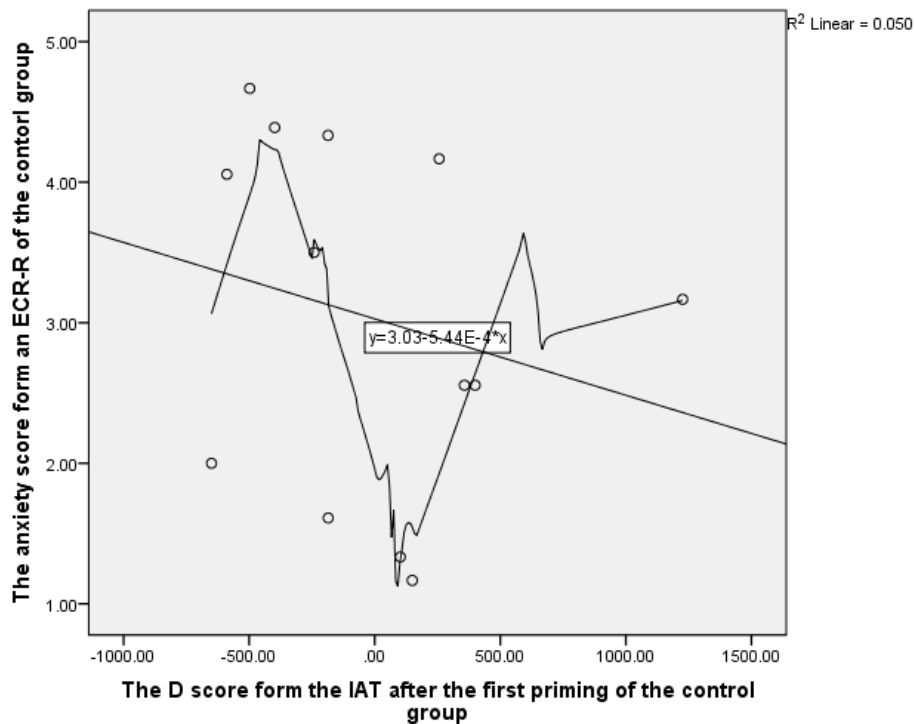


Figure 4: scatter plot for hypothesis 5

3.3.6 Hypothesis 6.

It is hypothesised that there will be a significant difference in D-scores of participants between exposure to insecure priming and secure priming

After examining the data with a Shapiro-Wilk ($p = .004$) and looking at the descriptive data (skewness = -1.8, Z-value = 2.9) the data was found to not be normally distributed. A non-parametric Wilcoxon signed ranks test showed that the two time points (D-score 1: $M = -207.37$ $SD = 134.48$ D-score 2: $M = -78.1$ $SD = 100.93$) did not differ significantly in D-scores ($Z = -0.85$, $p = 0.394$). The insecurity priming had the same effect as the security priming on D-scores.

3.3.7 Hypothesis 7.

It is hypothesised that there will be no significant difference between the anxiety scores of an insecurely and securely primed group, compared to a neutral and securely primed group

Here the hypothesis was investigating if insecure priming had an effect on self-reported attachment types, even after being securely primed, when compared to a group that was not insecurely primed. Thus seeing if insecure priming has a lasting affect and is stronger than security priming. An independent samples t-test showed that there was no significant difference between the anxiety attachment scores of the experimental group ($M = 3.39$ $SD = 1.24$) and the control ($M = 3.04$ $SD = 1.25$) groups [$t(26) = 0.74$, $p = 0.468$]. The null hypothesis was accepted.

3.38 Hypothesis 8.

It is hypothesised that there will be no significant difference between the avoidance scores of an insecurely and securely primed group, compared to a neutral and securely primed group.

This hypothesis is the same as hypothesis 7, but looking at the avoidance attachment type instead of anxiety. An independent sample T-test showed that there was a significant difference in the avoidance ECR-R scores of the insecurity primed ($M = 2.64$ $SD = 0.8$) and the neutrally primed ($M = 3.44$ $SD = 1.1$) groups ($t(26) = -2.21$, $p = 0.036$). From table 6 it can be seen that the mean avoidance score for the insecurity primed group is significantly higher. The hypothesis was rejected; it did not meet the criteria ($p < 0.025$). The mean difference was negative instead of the predicted positive.

Table 6: Results of t-test and Descriptive Statistics

	Group						95% CI for Mean Difference	t	df	p
	Insecurity Primed			Neutral Primed						
	M	SD	n	M	SD	n				
Avoidance score ECR-R	2.64	0.8	15	3.44	1.1	13	-1.53, -0.05	-2.21	26	0.036

* $p < .05$.

4. Discussion

Mikulincer (2001) examined the effects of priming the secure base schema with securely associated words, this led to a reduced level of negative reactions to outgroups. The aim of the current study was to investigate the affect that insecurity priming has on associations to racial groups. It was hypothesised that insecurity would result in a higher level of negative word associations to out-groups. Since all participants were Caucasian, it was thought that the priming would mean a greater association of positive words to white faces and negative words to black faces (If participants race had of been mixed this would have been accounted for in the in post analysis of the data). A secondary aim was to examine how the attachment type of the participant mediates this effect. The rationale of this study, was the lack of research in insecurity priming and its effects on racial associations.

Three of the eight hypothesis were accepted, the results indicate that the findings are uninterpretable. For the first hypothesis, the one way between subjects' ANOVA revealed that whilst there was an increase in the mean of the associations of negative words to black faces by the experimental group, it was not significant. The priming of insecure words accounted for only 3% of the variance explained. Whilst the neutral priming could not have affected the scores as they have been used in many studies in a similar manner without interference (Mikulincer (2001) Mikulincer & Shaver (2005)); the method of priming insecurely seems to have failed to prime strongly enough to obtain a significant result. From the analysis of the results it is clear to see that whilst there was a difference, the spread of scores was so large it was insignificant (Insecurity SD = 525.51, Control SD = 515.3). In the examination of how attachment styles predict the associations of negative words to out-group

faces (black faces), it was found that insecure attachment styles (anxiety and avoidance) did not predict a higher level of associations of negative words to the racial out-group. It was thought that insecure attachment styles would not be more sensitive to the insecure prime than the control group. This was measured by correlating the ECR-R score with the racial IAT score. The results confirm what Mikulincer (2001, 2005) found; attachment style is irrelevant to the priming. In comparing a control group's attachment and D-score, the aim was to examine how attachment styles predict associations to a racial out-group regardless of priming. Research (Gormley & Lopez (2010), Schwartz (2005)) has disagreed how on the role of attachment in prejudice. Most recent research (Boag (2015), Parens, H. (2012)) has shown there to be a strong link between insecurity, empathy and prejudice. This study rejected the hypothesis that there would be a correlation between the attachment insecurity and negative associations to racial out groups.

For hypothesis 6 the aim was to investigate the possibilities of reversing any effect caused by the insecure priming in the experimental group and also as a secondary measure to see if the insecure priming had an effect. As there was no significant result, data was deemed uninterpretable. Although the means differed between time points (D-score 1: $M = -207.37$ $SD = 134.48$ D-score 2: $M = -78.1$ $SD = 100.93$), due to the large standard deviation and unevenly distributed data the null hypothesis was accepted.

Hypothesis 7 and 8 examined the enduring effect priming can have. Both groups took an ECR-R to measure attachment style but only the experimental group was primed insecurely before the secure priming. Carnelley (2007) has shown how repeated priming can

have a lasting effect, it was therefore hypothesised that insecure priming would have an enduring effect. Both hypothesis was rejected as the p value was not met.

4.1 Implications on Previous Research

Previous research has shown that negative reactions out-groups can be attenuated by the priming of the secure base (Mikulincer (2001)) and that the priming of insecure attachment styles is possible (Bartz (2004) Wilkinson, Rowe, & Heath (2013)). With insecure attachment styles come many negative traits Allen, V. (2013) like homophobia and possibly prejudice (Boag (2015), Parens (2012), Gormley (2010), Schwartz (2005)). It was thought that the priming of the insecure attachment style would result in a higher level of negative associations to racial out-groups (Palombit (1997) Nguyen (2009)). This is because it targets security, and a natural human defence is identification with one's own group for protection. This effect was not found. The rate at which the insecurely primed participants associated negative words to black faces and positive words to white faces was no higher than the control group.

There may have been a fault in the priming of the insecure style. Bartz (2004) and Wilkinson (2013) both primed their participants by using mental imagery. The participants were asked to imagine a certain type of relationship; either secure, avoidant or anxious. It may be that this method is a more successful for the priming of attachment styles and should be investigated in future research. Mikulincer (2001) found that the priming of the secure base schema had the same effect across all attachment types. It was then assumed that it would also be the case with insecure attachment priming, that attachment types would not predict the effectiveness of the priming. The results in this study validates Mikulincer's

(2001) findings. Between both anxious and avoidant attachment types, neither had a significant correlation with the score from a racial IAT after being insecurely primed. Since neither of them were predictors of the effectiveness of the priming it can be assumed that attachment type does not mediate the effect of the priming of the insecure attachment style.

From the research of Boag, (2012, 2015) it was found that insecure attachment styles may have a relationship with prejudice. They can predict homophobia in certain cases (Gormley (2010)) in men and be the first step in a path from blatant to malignant prejudice (Di Pentima (2009) Parens (2012)). In this study, the relationship between attachment style and a racial IAT was examined. With evidence of how attachment styles predict prejudice, homophobia and negative reactions to out groups the hypothesis was made that a more insecure attachment style would result in a higher level of negative associations to black faces and positive word associations to white faces in the control. A significant relationship between attachment styles and prejudice was not found in the control group. The absence of this relationship in the results may be due to uninterpretable data in the control group. The D-score in the control group increased between D-score 1 and D-score 2. This should not have happened, as a secure prime should have lowered negative associations (Mikulincer (2001)). The fact that there were such large standard deviations, irregular differences between the means of D-score 1 and D-score 2, lead to the conclusion that the data is uninterpretable.

The results for hypothesis 6 show that whilst there was a large decrease in negative associations to black faces and positive associations to white faces, it was insignificant. The absence of an insecure prime and introduction of a secure prime lead to a decrease in the mean. This decrease was so spread out throughout the population that it was insignificant.

Previous research has shown how strong and lasting the effect of secure priming can be (Carnelley (2007)). There has been no research comparing the strength of secure priming to insecure priming, only secure priming on its own (Carnelley (2007), Cassidy(2009), Twemlow (2011)). As the research has shown the strength of the secure base, and since the secure base schema is the presence of a feeling of security, and, the insecure attachment type is the absence of this (Bowlby (1969)(1973)(1988)); it was thought that the introduction and addition of this secure base would overcome the primed insecure attachment style. The results are in agreement; they are however insignificant. The average means of D-scores was reduced after the secure attachment priming when compared to the d-score after insecure priming. Since we know there to be a link between the prejudice and insecure attachment styles (Di Pentima (2009) Parens (2012)(2007)) and a link of secure attachment style to a reduction in prejudice (Mikulincer (2001) Hofstra (2005)) the effect of which attachment style was currently predominant in the participant was measured by their D-score. The results of an increase in the mean did show that secure base priming can overcome insecure priming and that a reverse of insecure priming is possible. It was insignificant so no definitive conclusions can be drawn from it, further research is needed.

Hypothesis 7 and 8 were investigating the enduring effects of priming insecure attachment style, if, even after being primed securely, will a participant still show an insecure attachment style on the ECR-R? There has been little research on the persistence of insecure priming. What has been researched is the persistence of secure priming. Carnelley (2007) demonstrated that the effect of priming the secure base can influence later views of the self and relationships. Due to this evidence it was hypothesised that the same effect would be seen

in the insecure priming. Results showed that there was a difference between the groups, however the control group had a significantly higher level of avoidance than the insecure group. There was a decrease in the means of anxiety scores for the control group compared to the experimental group but it was small and insignificant. It was deemed that there must have been a confounding variable in the control group and the data was deemed to be uninterpretable.

4.2 Weaknesses

4.2.1 Primers.

As there was a concern about uninterpretable data, the measures and variables were looked at to see if there were any shortcomings so future research could account for them. The biggest weakness of the study was the inability to prime insecure attachment strongly enough to exhibit a significant effect. The method of priming was identical to that of Mikulincer (2001). The main issue is the words chosen. For the secure primers, the same words were used (closeness, love, hug, support). However, for insecure primers, since there were no validated examples, a thesaurus was used (Synonyms and antonyms of words. (n.d.)). The antonyms found for the secure primers were: alone, separate, push-away and disloyal. It seemed that these would be valid primers of the insecure attachment styles as Pierce & Lydon (1998) and Greenberg, Solomon & Pyszczynski (1997) used words that were simply related by their syntax to the concepts they were examining. It seems though that since a large effect was not observed in the priming of the insecure attachment styles that the words may not have been linked strongly enough to the concepts of

insecure attachment. Gibbons (2009) has shown that the primers must also score high on the arousal dimension, this may have been a limiting factor for the primers used in this study.

4.2.2 Number of primes.

Mikulincer (2001) used 60-word trials with 15 primers placed randomly throughout the trials. In this study, whilst the number of trials remained the same, the number of primes rose to 60. This was to ensure successful priming. Whilst there is no research to say that a higher number of primes is not as effective; such a high rate has not been seen in research. The highest rate of primes in a similar word task was 48 (Klauer, Eder, Greenwald & Abrams (2007)). While there is no evidence against it, the efficacy of high number of primes needs to be investigated.

4.2.3 Implicit Associations Test.

The faces used for the task were not emotionless. They were picked to display the same neutral expression as much as possible but the slight difference in expression could have influenced the associations of words as participants would have been more likely to associate positive words to attractive looking images (Chatterjee, Thomas, Smith & Aguirre (2009) Dingfelder (2006)). The explicit issue of race may have affected the results. Many participants established that the study was examining race and although the IAT is implicit, Dijksterhuis (2004) says that it is very difficult to change someone's pre-existing strong attitudes. Cacioppo, Marshall-Goodell, Tassinary & Petty (1992) found it is best if the participant is in an evaluative vacuum.

4.2.4 Timing.

In this study the participants had as long as they wanted to respond in the word task. This may have resulted in a lower strength level of the priming as Klauer (2007) states that timed response results in a faster succession of primes and a more successful prime.

4.2.5 Participants.

All participants knew the experimenter personally. Since this experiment was concerning quite personal information, participants may have not been as open and answered differently for fear the experimenter would know their results. Although there is no research on the relationship between experimenter and participant it is clear to see that this was a concern from questions of the participants during the experiment. As the majority of participants were women and majority of images in the IAT were men, it could have meant that women were more likely to associate positive words to the male images (Kranz & Ishai (2006)). This is assuming they were heterosexual which it is estimated 92% of young adults are (O'Brien (2015)).

4.2.6 ECR-R Timing.

The ECR-R was conducted immediately after the experiment. During the experiment, participants either received an insecure then secure priming session or

a control then secure priming session. Priming with words has an effect on self-perceived attachment styles (Mikulincer (2001)).

4.3 Strengths

4.3.1 Timing.

The timing was the other variable that changed between Mikulincer (2001) and this study. The length of prime on screen was longer, however primes just as long, or longer have been seen to be effective in many other studies. Finkbeiner (2011) found 40/50ms to be the ideal length of a subconscious word primer. Primers that had a duration of as long as 82ms have even been seen to be effective (Klauer, Eder, Greenwald & Abrams (2007)).

4.3.2 Implicit Associations Test.

All words used were validated in research to see if they are perceived as being negatively associated or positively associated (Bellezza, Greenwald, & Banaji (1986)). The analysis of the IAT was done in accordance with previous research (Campbell (2008)). A concern was the order the faces were matched to the words. If

white faces were always the first race to be associated with the positive word, the effect seen may just be from the fact that white face were constantly paired with positive words for the first task. To counterbalance, this two types of the program were made; one where white + positive was the first task and the second where black + positive was the first task.

4.3.3 Environment.

The environment for all studies were kept the same; a quiet empty classroom with just the participant and the researcher. The researcher would sit away from the participant so as to give them privacy. As the environment was kept consistent it can be said that all participants experienced the same environmental variables which were also kept to a minimum.

4.3.4 Experimental Conditions

All participants were randomly allocated to either the control group or the experimental group. Apart from the independent variables, an attempt was made to control for all other variables (environment, instructions, lighting of the room)

4.4 Future Research.

There are many things to be learned from this study. Most of which is that a further understanding of the insecure attachment styles is needed, and the efficacy of their priming techniques. In this study it was seen that the priming of the insecure attachment styles was unsuccessful. There was a large difference in the mean of D-scores and this was

due to the successful priming of the secure base schema, this can be seen from the decrease in the mean of D-scores of the experimental group. As Gibbons (2009) has shown, a word primer needs to score high on an arousal dimension test for it to be effective. In his study the words were picked from the highest arousing words judged by a group of students.

For future research, another important point is the technique of priming. Previous studies (Mikulincer, Gillath, Halevy, Avihou, Avidan & Eshkoli (2001), Gillath, Sesko, Shaver & Chun (2010)) used techniques similar to the one this study used; an implicit form of priming by computer. However, more contemporary research has begun using explicit priming. Studies like Wilkinson, Rowe & Heath (2013), Bartz, J. A., & Lydon, J. E. (2004) and Gillath, O., Sesko, A. K., Shaver, P. R., & Chun, D. S. (2010) primed their participants explicitly. Participants were asked to think about a relationship based around an attachment style (secure, avoidant, anxious). This resulted in successful priming and took less time and equipment. There needs to be further research into the efficacy of using words as primers for insecure attachment styles. Very few studies have primed any insecure attachment styles, most identify people who already have an insecure disposition and use them (Gillath (2010)).

If a population was used that had no personal connection to the researcher and had no gender imbalance, then this may result in more accurate findings. In Mikulincer (2001) gender was accounted for by only showing females, female faces and males, male faces.

If time was not an issue, then a study similar to this one would benefit from a longitudinal design. To conduct the ECR-R questionnaire at a later date would have been more accurate as the effects of the priming would have diminished.

Questions regarding if strongly felt pre-existing attitudes to a target can be changed by a priming session have been raised by Gibbons (2009) and Dijksterhuis (2004). If participants feel strongly about racism and see black and white faces, a simple priming session may not be enough. In Mikulincer (2001) a population was used in which racism is a much more common occurrence. A population like this may have no pre-existing concerns against associating a negative word with an out-group.

The main implications of this study is its contributions it will have to further research in the area. Future experimenters can learn the importance of insecure primers and how, with further research, it may be found that insecure attachment styles do not behave in the same way as secure attachment styles when primed.

4.4 Conclusion.

In conclusion, this experiment was based on an area that has little research; the priming of the insecure attachment styles and its effects on associations to racial groups. The priming of the insecure attachment styles had an effect on the participant's associations of words to races, but it was not strong enough to call significant. This paper can serve to support the theories of Mikulincer (2001); that all attachment styles can be primed to a similar degree, and to shape further research. For further research an emphasis needs to put on the efficacy of the word primers, the population used and the method of priming itself, if the nature of insecure attachment styles effect on racial associations should understood further.

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Appendix A

Words used in the word priming task.

Secure Primers:

Closeness, love, hug, support

Insecure Primers:

Alone, separate, push away, disloyal

Control Primers:

office, table, boat, picture

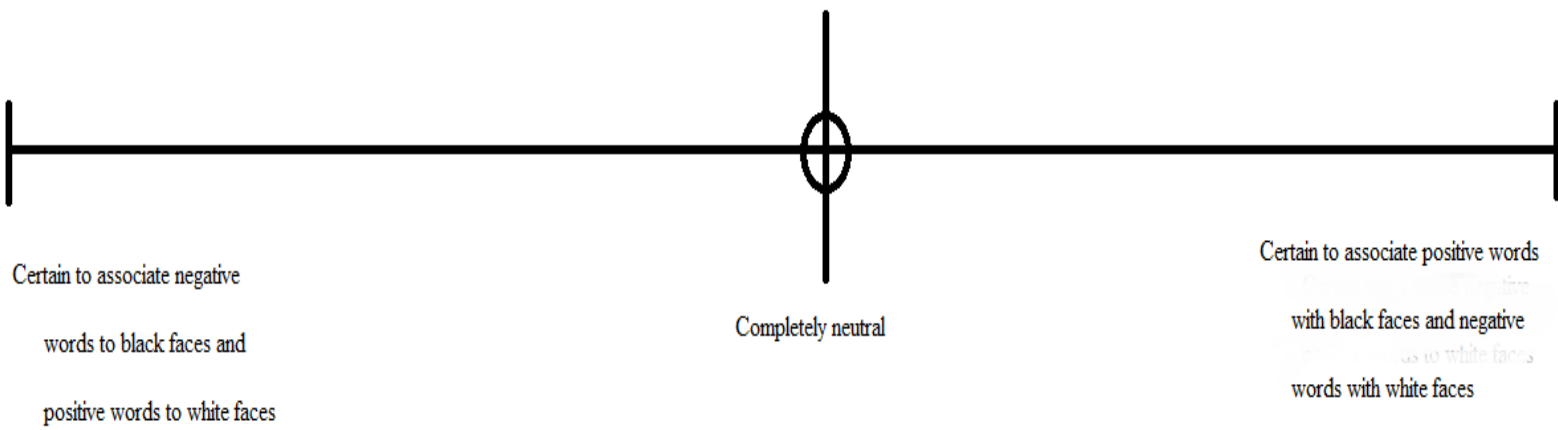
Distractor words:

Religion, democracy, army, home, politician, school, nationalism, education, charity,
culture, art, environmentalism

Appendix B

D-Scale of the Implicit Associations Test

D-Scale of the Implicit Associations Test

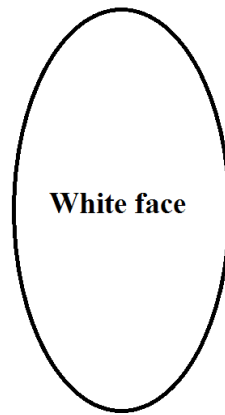


Appendix C

IAT example and list of words:

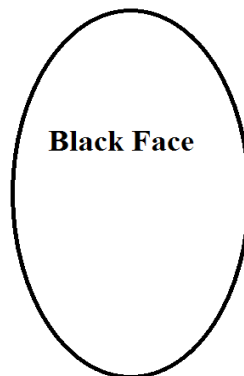
White and black faces will appear on screen. Match all white faces to negative words and black faces to positive words. Use the keys 'A' and 'L' to select the word.

Press any key to continue



Maggot
Press A

Cuddle
Press L



Romantic
Press A

Corpse
Press L

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Words used in IAT:

Positive words:

Love

Romantic

Sentimental

Cheer

Cozy

Cuddle

Negative Words:

Corpse

Maggot

Nazi

Slaughter

Ugly

Vomit

Appendix D

ECR-R questionnaire:

1. I'm afraid that I will lose my partner's love.
2. I often worry that my partner will not want to stay with me.
3. I often worry that my partner doesn't really love me.
4. I worry that romantic partners won't care about me as much as I care about them.
5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.
6. I worry a lot about my relationships.
7. When my partner is out of sight, I worry that he or she might become interested in someone else.
8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.
9. I rarely worry about my partner leaving me.
10. My romantic partner makes me doubt myself.
11. I do not often worry about being abandoned.
12. I find that my partner(s) don't want to get as close as I would like.
13. Sometimes romantic partners change their feelings about me for no apparent reason.
14. My desire to be very close sometimes scares people away.
15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.
16. It makes me mad that I don't get the affection and support I need from my partner.
17. I worry that I won't measure up to other people.

18. My partner only seems to notice me when I'm angry.
19. I prefer not to show a partner how I feel deep down.
20. I feel comfortable sharing my private thoughts and feelings with my partner.
21. I find it difficult to allow myself to depend on romantic partners.
22. I am very comfortable being close to romantic partners.
23. I don't feel comfortable opening up to romantic partners.
24. I prefer not to be too close to romantic partners.
25. I get uncomfortable when a romantic partner wants to be very close.
26. I find it relatively easy to get close to my partner.
27. It's not difficult for me to get close to my partner.
28. I usually discuss my problems and concerns with my partner.
29. It helps to turn to my romantic partner in times of need.
30. I tell my partner just about everything.
31. I talk things over with my partner.
32. I am nervous when partners get too close to me.
33. I feel comfortable depending on romantic partners.
34. I find it easy to depend on romantic partners.
35. It's easy for me to be affectionate with my partner.
36. My partner really understands me and my needs.

Scoring Information: The first 18 items listed below comprise the attachment-related anxiety scale. Items 19 – 36 comprise the attachment-related avoidance scale. In real research, the order in which these items are presented should be randomized. Each item

is rated on a 7-point scale where 1 = strongly disagree and 7 = strongly agree. To obtain a score for attachment-related anxiety, please average a person's responses to items 1 – 18. However, because items 9 and 11 are “reverse keyed” (i.e., high numbers represent low anxiety rather than high anxiety), you'll need to reverse the answers to those questions before averaging the responses. (If someone answers with a “6” to item 9, you'll need to re-key it as a 2 before averaging.) To obtain a score for attachment-related avoidance, please average a person's responses to items 19 – 36. Items 20, 22, 26, 27, 28, 29, 30, 31, 33, 34, 35, and 36 will need to be reverse keyed before you compute this average.

Generic Instructions: The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by [web: clicking a circle] [paper: circling a number] to indicate how much you agree or disagree with the statement

Special notes: You may wish to randomize the order of the items when presenting them to research participants. The ordering below is simply a convenient one for illustrating which items belong to which scale. Also, some people have modified the items to refer to “others” rather than “romantic partners.” This seems sensible to us, and in our own research we commonly alter the wording to refer to different individuals. For example, sometimes we reword the items to refer to “others” or “this person” and alter the instructions to say something like “The statements below concern how you generally feel

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in your relationship with your mother” or “The statements below concern how you generally feel in your relationship with your romantic partner (i.e., a girlfriend, boyfriend, or spouse).”

- Fraley, Waller, & Brennan. The Experiences in Close Relationships-Revised (ECR-R) Questionnaire (2000)

Appendix E

Information sheet

Participant Information Sheet:

Participant number:

If you chose to do so you may take part in the research study of “The Cognitive Association of Words and Outgroups” in which the various associations between different words and social groups will be examined.

If you choose to take part, at any point you may stop the study. In total it should take about 20 mins.

In the first task two words will appear on screen one after the other. and after they disappear from your screen you will be asked if you think the words were a pair or an opposite in your own mind. You will do this by pressing the relative key.

The second part of the study involves you following instructions on screen and matching the correct words to the faces on screen. You will be asked to match a specific word, either positive or negative to the face that appears. You must identify the chosen word whether it be positive or negative and then correctly select it by pressing either ‘A’ or ‘L’.

The third section is an online survey about your adult attachment type. You will be asked questions about a relationship you have.

Fourthly you will take the first task again and then take a questionnaire.

This is completely anonymous, I will not be taking any names. The only information that will be recorded will be your participant number, the date and time you took the experiment and your age.

It is completely voluntary and you may withdraw or leave whenever you want.

If you have any questions please don't hesitate to ask.

Any further information or enquiries can be directed to (John Meaney)

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or (Patricia Frazer)

Appendix F

Debrief Sheet

Debrief Sheet

Insecure attachment priming and prejudice

This has been an experiment investigating the possibilities of priming the insecure base schema and its effects on prejudice and how attachment types mediate this effect.

During this experiment you were subliminally primed with words such as 'alone' or 'push away'. In order to counteract these effects you were primed again with securely attached words such as 'hug' 'love'.

The point of this was to investigate how previously researched negative effects associated with insecure attachment types can be primed and if they will result in prejudice.

The second part of the experience in which you attached words to a face was an implicit association test. This was to test your levels of prejudice without your knowledge.

If you feel there have been any residual effects from this study or feel that you need to contact someone due to any worries or concerns or any reason at all please do not hesitate to contact one of the following emails.

(Patricia Frazer) supervisor

[\(01\) 872 7700](tel:018727700) Samaritans hotline

jo@samaritans.org samaritans