

Persuasion and Attitudes: Advertising and  
Captology influence on attitudes and  
behavioural intent towards lesbians, gay men  
and same-sex marriage.

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# Declaration Statement

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# Glossary of Terms

**Avatar** – A physical representation of a person in a virtual environment.

**Captology** – The use of technologies as persuasive tools.

**Elaboration Likelihood Model (ELM)** – A theory that elaborates on the central and peripheral routes for attitude change through persuasion.

**The Theory of Reasoned Action (TORA)** – A theory that rationalises behaviours based on human decision and intentions.

**The Theory of Planned Behaviour (TPB)** – A theory that predicts behaviour using three components these are; the attitude toward the behaviour, the social norm and the difficulty in performing the action.

**Lesbian, Gay, Bisexual and Transgender (LGBT)** – The acronym for people who are homosexual (gay and lesbian) or attracted to both genders (bisexual) Transgender is a person who deviates from their assigned gender at birth.

**Attitudes Towards Same-sex Marriage Scale (ATSM)** – A Likert scale used to measure a person's attitudes towards same-sex marriage.

**Attitudes Towards Lesbians and Gay men Revised Scale-Short Form (ATLG-R-S5)** – A Likert scale used to measure a person's attitudes towards lesbians and gay men.

**The Television Advertisement Evaluation Internet Questionnaire (TAEIQ)** – A Likert scale used to measure agreeableness to an advertisement.

**The Uncanny Valley** – A phenomenon which occurs when an artificial humanoid character approaches human likeness experiencing a decline in agreeableness before increasing again as the humanoid becomes more human like in appearance.

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# Abstract

Attitudes are essential to human interaction, ranging from simple attitudes to complex ones. An attitude is an individual's cognitive evaluation of a particular person, group, object, action or concept (Smith & Mackie, 2007). These evaluations are correlated to resulting behaviours using the Theory of Reasoned Action that conjectures that the cause of any behaviour is an individual's conscious decision to engage in a certain action (Fishbein & Ajzen, 1975). However, individual attitudes such as homophobia may be altered using persuasive methods (Hogg & Vaughan, 2007). A similar persuasion technique is interactivity; this is when a human-like cue such as an avatar is used to alter an attitude (Sundar & Kim, 2005; Vasalou & Joinson, 2009). This research investigates if advertising and captology interventions affect participant attitudes towards lesbians, gay men and same-sex marriage. This research used same-sex marriage policy advertising to identify if an effect on participant attitudes and voting was present. Statistical analysis found that policy advertising had an effect on participant attitudes towards same-sex marriage [ $F(2,251), P < .0005$ ; Wilk's Lambda = .428;  $\eta^2 = .572$ ]. However, policy advertising had no effect on attitudes toward lesbians and gay men. In the second part of this study, male and female avatars were created with different expressive abilities. These avatars were embedded in a same-sex marriage advertisement to identify if the avatar itself, their actions or gender affected participant attitudes and voting behaviour. The avatars did not statistically alter attitudes towards same-sex marriage or lesbians and gay men. In the last phase of this research, participants were interviewed about the advertising, avatars and materials used during this study. The interview findings identified themes relating to persuasion, attitudes and anthropomorphism. These results suggest further research in the field of persuasive technology, persuasive advertising and their ability to alter attitudes.

# **Introduction**

## Introduction

In this introduction to the literature, a combination of attitudes research is presented and how behavioural models may be used to predict resulting behaviours and actions from these attitudes. The persuasive methods and tools that may be used to alter resulting behaviours and attitudes conclude this chapter before the literature examination in the next section.

## Attitudes

Attitudes are present in everyone's daily lives; they range from simple everyday choices that aid in simple decisions to more complex attitudes. Both types are subject to an individual's judgement of a person, group, object, action or concept (Smith & Mackie, 2007). These may also be altered by external factors such as law, religion, culture and politics or by other forms of intervention such as the media and the opinions of others.

A person's individual attitude may be changed using persuasive approaches (Hogg & Vaughan, 2007). Some of these methods detailed in the next chapter include; interactivity, which is a common persuasion technique, when a humanlike representation such as an avatar, which is physical representations of a person's identity online (Sundar & Kim, 2005; Vasalou & Joinson, 2009) is used to aid or develop a specific behaviour or attitude.

In this chapter, the emerging methods of persuasion using new technologies such as avatars and interactive advertisements will be discussed in relation to the theories they are based on to form an explanation of the potential implications and applications for use in everyday life. Attitudes are diverse and present in numerous scenarios. Gordon Allport (1935) provided one of the first descriptions of attitudes in psychology, as "a mental and neural state of readiness, organised through experience, exerting a distinctive or dynamic influence upon the individual's response to all objects and situations with which it is related" (pg. 810). It is important to note that Allport's argues, that a person's environment affects the individuals attitudes.

## Prejudice

When discussing attitudes it is important to draw focus towards prejudice and its relationship with attitude development. Several researchers have investigated a number of individual prejudices towards race (LaPierre, 2010), same-sex marriage (Firestone, Harris & Vega, 2005; Galupo & Pearl, 2007; Pearl & Galupo, 2007), and lesbians and gay men (Herek, 1984, 2000a; Inbar, Pizzaro, Knobe & Bloom, 2009).

Prejudice defined by Langdrige and Taylor (2007), is a negative attitude that is comprised of an individual's thoughts, feelings and behaviours towards the subject or object. There are two main theories that aim to predict these behaviours; these are the Theory of Reasoned Action (Ajzen & Madden, 1986) and the Theory of Planned Behaviour (Ajzen, 2001), these are discussed in detail in the next chapter.

## Altering Attitudes

Several investigations have incorporated research about implementing persuasive methods such as the Elaboration Likelihood Model by Petty and Cacioppo, (1986). Petty and Cacioppo detail two methods of persuasion; central and peripheral to alter a person's attitudes and resulting behaviours. Hogg and Vaughan (2007) argue that attitudes may be altered using persuasive methods; some of these methods often include the use of technology. Persuasive technologies are present almost every scenario when we use technology, on our mobile phones, online, television and in games (Fogg, 2003).

The area where persuasion interacts with computing technologies such as smart phones, computers and the internet is defined as captology (Joyce & Weibelzahl, 2011). Sundar, Kalyanaraman, and Brown (2003) implemented one of the forms of captology, the amount of interaction participants could have with a website. Sundar, Kalyanaraman, and Brown's (2003) work is described in the literature overview; in short the increased interaction between people and the technology source increased their attitudes.

## Avatars

Avatars are another form of persuasive computer mediated technology; defined by Vasalou and Joinson (2009) as a physical depiction of a person in an online scenario. As avatars have become more popular, their design has increased

falling subject to the uncanny valley. Mori (1970; Mori, 2005 as cited in Misselhorn, 2009) first defined the uncanny valley as it emerged in the advancing field of robotics. Mori stated that the more an artificial representation of a human approached a perfect human representation; the viewer's affinity increased [fig. 1].

As the uncanny valley detailed by Mori (1970) is a phenomenon that occurs when a humanoid character such as a physical doll or robot or in an electronic medium such as an avatar or game character approaches a likeness to human shape. The uncanny occurs when the viewer becomes more agreeable to the object until it peaks and declines, before the viewer's affinity increases again as the object increases its resemblance of a human. Some of the moving objects examined by Mori (1970) are translate below [Fig. 1]<sup>1</sup>.

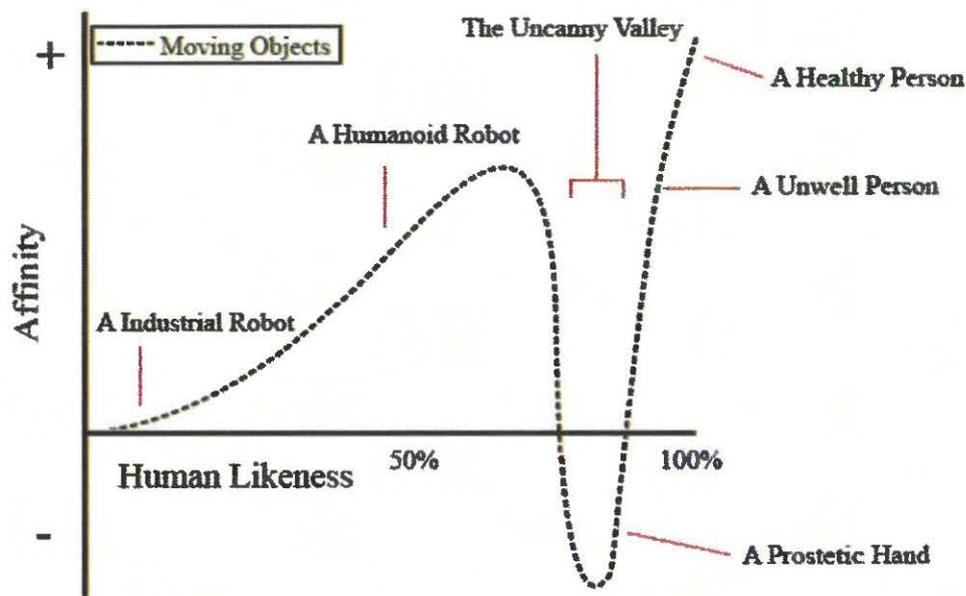


Figure 1. The Uncanny Valley

However, the views of a person on the uncanny valley towards a stimulus are not linear, as the individual tend to produce a negative evaluation of a humanoid as it becomes more human-like. As technology advanced however and the robots became

<sup>1</sup> The Uncanny Valley from "The Uncanny Valley [From the Field]" by M. Mori, K.F. MacDorman and N. Kageki, 2012, *IEEE Robotics and Automation Magazine*, 2, p 98-100. Copyright 2012 by the IEEE.

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more advanced in their human appearance, attitudes towards them would then increase again.

Several investigations that are reviewed in the next chapter have incorporated avatars on various levels allowing people to design their own avatars for a specific purpose online (Hancock, Toma & Ellison, 2007; Vasalou & Joinson, 2009) or using predesigned avatars (Yee & Bailenson, 2007). These investigations concluded that the effects of the design of a humanoid representation had an effect on the user's behaviour. Yee and Bailenson's work on a person's self-representation in a virtual environment broached upon the uncanny valley. As avatars become more advanced a person's ability to depict their actual appearance more realistically online will affect how they behave in online environments.

On this basis, researchers have continued to investigate into the effects persuasive technology may have upon a person's attitudes and actions incorporating persuasive technology theories such as the self-representation and the Proteus effect (Yee & Bailenson, 2007) defined in the next section, as well as the Uncanny Valley (Mori 1970).

Investigations such as the work by Dunn and Guadagno (2012) when combined with previous theories such as the Elaboration Likelihood Model (Petty & Cacioppo, 1986) and the Theory of Reasoned Action (Ajzen & Madden, 1986) and the Theory of Planned Behaviour (Ajzen, 2001) have allowed for an interdisciplinary research. This research aims to use the work of these authors to examine the effects of different methods of persuasive technology in the forms of political advertising and interactive avatars and how they may affect a person's attitudes and corresponding actions towards lesbians, gay men and same-sex marriage. The justifications for this in the fields of attitudes, persuasion, captology and prejudice research which has been outlined in this section is discussed in the following review of literature.

# Literature Review

## Literature Review

In this chapter the various different fields of psychology research relating to this project will be discussed and evaluated. The fields that will be covered include attitudes and their relation to human behaviour, the specific attitudes towards the lesbian, gay, bisexuals and transgender community. The review will then discuss how attitudes research towards gay men and lesbian woman and same-sex marriage. This chapter will then discuss the persuasion methods and theories used to alter attitudes and concluding with how technology has been incorporated to advance these methods.

## Attitudes and Behaviour

Attitudes are a key component of human interaction; they may be simple such as our choices of brands or complex such as our beliefs and choices in how we vote or act towards another person. An attitude is an individual's cognitive evaluation of a particular person, group, object, action or concept (Smith & Mackie, 2007).

Attitudes are often described as many different things because attitudes are categorised depending on the object, the attitudes are towards but also if they are positive or negative. For example, some of these attitude labels are self-evaluation for example when the individual evaluates their own person. Prejudice is one of the most commonly examined attitudes towards other objects, individuals or groups. Attitudes may be comprised of several thoughts, feelings and behaviours towards a subject or object; these may be interesting link toward an individual's future behaviour (Langdrige & Taylor, 2007).

LaPierre (1934) conducted interesting social psychology research on prejudice, taking a Chinese couple on a three-month trip across the USA. LaPierre and his participants stopped in 251 hotels, auto camps and restaurants on the trip and were refused service in one of the establishments. LaPierre chose to travel with the two Chinese participants, as American attitudes towards the Chinese were poor during this period were poor during this period (LaPierre, 2010).

LaPierre allowed the two participants to ask for accommodation or enter establishments before him in an attempt to factor his own presence out of the research during the acquisition of accommodation.

After the travelling phase of the research, LaPierre wrote to the same establishments enquiring if they would cater for Chinese race guests, each of the establishments were asked the same question "Will you accept members of the Chinese race as guests in your establishment?" Only one of the respondents said they would serve the guests however 92% of the sample said they would not serve Chinese race guests. LaPierre interpreted the reasons for the written refusals from the staff that had previously served the Chinese guests, had served them against their own personal beliefs (Lee, 2010).

It may be criticised however that LaPierre's correspondents were not actually with the staff that had originally served LaPierre and his participants. Therefore LaPierre's study does not entirely investigate an individual's attitudes and corresponding action but the correspondent's attitudes of the person, which LaPierre was in contact with. However, two core behavioural intention theories, Fishbein and Ajzen's (1975) Theory of Reasoned Action (TORA) and Ajzen's (2012) Theory of Planned Behaviour (TPB) may rationalise the actions displayed by the staff of the establishments of LaPierre's (1934) prejudice research.

### **Attitude Theories**

Fishbein and Ajzen (1975) developed the Theory of Reasoned Action (TORA), which conjectures that the cause of any behaviour is the behavioural intention. A behavioural intention may be defined as an individual's conscious decision to engage in a certain action (Fishbein & Ajzen, 1975). The theory of reasoned action accounts for two intentional factors of which one may be used to determine intent; these are a subjective norm and the attitude toward the behaviour.

In the Theory of Reasoned Action, an attitude towards a specific behaviour is composed of a person's expectancy and the result of interacting with a particular object, person or issue. The subjective norm is defined as the overall expectancy of the everyday that a person forms through prior experience; these are also referred to as predictions (Fishbein & Ajzen, 1975).

Historically, Festinger (1964) critically noted the lack of published support in attitude literature concerning the expectation of future behaviour resulting from changed attitudes formed by the individual. This attitude formation requires the individual to physically or symbolically encounter an attitude or object and then

respond to it on either a cognitive, affective or a behavioural basis (Higgins & Kryglanski, 1996). The literature gap to which Festinger referred to was filled when Fishbein and Ajzen (1974) correlated individual's attitudes and resulting behaviours using observation methods. Fishbein and Ajzen's (1975) Theory of Reasoned Action (TORA), highlighted above, may explain this correlation of attitudes and behaviour.

According to Bohner (2002), the revised Theory of Reasoned Action (TORA) (Ajzen & Madden, 1986) also associates the subjective norms importance along with the attitude toward the behaviour, the intention and the behavioural outcome. Bohner defines a subjective norm as a sum of products, each product involving the belief that a person's peer may think that other people should perform a specific behaviour and the motivation to comply with peer opinions. However Ajzen's extension to TORA, the Theory of Planned Behaviour (TPB) only uses three methods to predict behaviour.

The first is the *attitude toward the behaviour*, which is the degree to which a person has a positive or negative valuation of the behaviour. The second is the *subjective norm*, this is the social component of TPB in which the individual feels pressure to perform or not perform the behaviour (Doll & Ajzen, 1992).

The final component is *perceived behavioural control*, this is the evaluation of the task difficulty to display or carry out a behaviour which may be made by an individual before any action is taken. For example if a person is engaging in a weight loss regime they are more likely, according to Ajzen (2012), to achieve and maintain their goals if they believe the task is manageable and realistic. According to the theory of planned behaviour, the behavioural performance can be predicted from people's intentions to perform the behaviours in question and from their perceptions of control over the behaviour. The theory of planned behaviour is more suitably implemented in behavioural scenarios in which the factors being examined for prediction are not multifaceted.

Cooke and French (2008) conducted a meta-analysis to examine the reliability of the Theory of Planned Behaviour (TPB) (Ajzen, 2001) and the ability of the Theory of Reasoned Action (TORA) (Ajzen & Madden, 1986) to predict intentions and behaviours of individuals to attend medical screening. The authors conducted a review of 33 research studies, which reviewed and examined the application and reliability of both the TPB and the TORA.

One of these research studies conducted by Godin and Kok (1996) examined eight existing TPB research studies when applied to screening behaviours. The authors publicised that participant attitudes towards highly correlated towards their intentions to attend screening. Bohner's (2002) subjective norms, which are known to associate with the TORA, indicated a moderate correlation between screening behaviours and attitudes. Participant's perceived behavioural control associated with the TPB, which used in the evaluation of the task difficulty, involved the evaluation of medical screening procedure, and also indicated a moderate correlation in all 8 pieces of research.

The corresponding research review conducted on TPB and other behaviours by Armitage and Conner (2001 as cited in Cooke & French, 2008), supports Godin and Kok's (1996) research for the use of both the TORA and the TPB in predicting the public's behaviours and intentions based on their attitudes and evaluation of a scenario, event or task. Peslak, Ceccucci and Sendall (2010) conducted research that used the TORA to examine the use of Instant Messaging (IM) behaviours and their subjective norms. The authors developed a survey that was administered to a student sample to identify instant messaging behaviours and behaviour. It was identified that participant's attitudes towards the action in this case IM was statistically associated with their intentions to use the service.

Finally, the subjective norms associated with IM use showed a significant correlation with the intention to use the service. Also, Peslak et al., (2010) provide further support for the implementation and use of the TORA as a predictor of human behaviour and action. The authors found a strong positive relationship between IM behaviour and intention, providing further support for the findings of Gupta and Kim (2007) but also Cooke and French (2008).

## **Attitudes towards Lesbian, Gay, Bisexual and Transgender individuals**

Before any investigation into attitudes towards Lesbians, Gay men, Bisexuals and Transgender community (LGBT) is conducted, it is important to first understand the historic basis of LGBT studies in both the fields of psychology and psychiatry. According to the 6<sup>th</sup> revision in the DSM-II manual (American Psychiatric Association & American Psychiatric Publishing 1973), homosexuality was to no

longer be classified on several grounds. Firstly, the change in the DSM-II was brought about by both increased psychological research in LGBT studies and in particular the research conducted by Doctor Evelyn Hooker. Hooker conducted the first ground breaking study of a sample of sixty males, thirty of which were heterosexual and the remaining thirty were homosexual were matched based on their educational attainment, IQ and also their age. Hooker (1957) examined the psychological and psychiatric adjustment of her participants using three projective tests, which were administered by experts to examine participant's attitudes, emotions and thoughts.

Hooker (1957) used the Rorschach inkblot test that was the most widely used projective test of the time, the Thematic Appreciation Test (TAT) and the Make a Picture Story (MAPS) test. The results from Hooker (1957) indicated that two thirds of both the groups was classified to be in the highest categories of the healthy adjusted individuals, showing no significant difference in the mental functioning or capability of either the heterosexual or the homosexual participants. The results of this study were the basis of several other investigations investigating LGBT attitudes by Herek (1987, 2000a).

This revision to the DSM-II (American Psychiatric Association & American Psychiatric Publishing 1973), has had several ripple effects on the not only the disciplines of psychology, medicine and psychiatry but also in the wider everyday community as this modification to the DSM-II (American Psychiatric Association & American Psychiatric Publishing 1973) altering how research towards LGBT attitudes and prejudice is conducted. The decision to remove a person who identifies as homosexual from the list of mental illnesses recorded in the DSM manual reflects the years of extensive research that shows that sexual attraction to a member of the same sex is not a psychological disorder.

The results of the revision to the manual however could only have a minor effect overall on the general population. Individuals often hold their own attitudes towards this the LGBT community or other topical issues in politics this was highlighted by Langdrige and Taylor's (2007) study of existing participant attitudes.

Langdrige and Taylor (2007) concluded that an individual would already hold a previous attitude towards an object or issue in a particular situation. Negative

attitudes towards a member of the Lesbian, Gay, Bisexual or Transgender (LGBT) community is often known as homophobia. Homophobia was originally defined by Weinberg (1972), as the dread of being in close quarters or proximity with homosexual individuals. This classification may possibly be due to the mental classification of homosexuality that was revised the following year or due to an individual's own implicit or explicit opinion.

The definition of homophobia was refined further by Herek (1984, 2000a) and Herek and Capitanio (1996, 1997) developed this definition further as hostile reactions towards lesbians and gay men; this hostility is founded upon a negative one-dimensional attitude and irrational fears. However this fear definition was criticised because of the implicit assumption that all homophobic attitudes arise from fear. This was then relabelled sexual prejudice, defined as negative attitudes towards an individual due to sexual orientation alone (Herek, 2000a).

The sexual prejudice described by Herek (2000a) is currently an issue in Russia with the integration of a new bill that bans the propaganda of non-traditional sexual relations to minors. This bill specifically affects the LGBT community banning gay pride parades until 2113 ("Gay parades banned," 2012). There have also been serious attacks and fines imposed on anyone who breaks the law discussing non-traditional (heterosexual) views (Grekov, 2013). The law that was accepted with no political opposition affects both Russian citizens and tourists, reflecting the negative attitudes in Russia towards LGBT individuals (Halper, 2013). The sexual prejudice described above that is based on attitudes was one of the explanations proposed by Inbar, Pizzaro, Knobe and Bloom (2009) who investigated the implicit attitudes held by participants in their disapproval of LGBT individuals.

Several researchers have researched how implicit attitudes may be impacted by internal and external factors. For example research by Inbar et al. (2009) discussed the role of emotion in moral concepts and attitudes of specific groups but how disgust sensitivity is important in shaping this intuitive attitude. The researchers found that participants did not judge the constructed vignette of two men kissing in public on an explicit level but on an implicit one as they viewed the action as intentional whereas this was not the case for heterosexual kissing. This research however fails to answer if implicit attitudes are more negative to gay men than lesbians. The peripheral method of attitude change used by Inbar et al. (2009) relates

to a concurrent study by Hendren and Blank (2009) who observed prejudice behaviour toward lesbians and gay men.

The corresponding research that was conducted by Hendren and Blank (2009) employed observable prejudice situations with two conditions of intervention, gender and T-shirt message. An emotion evoking message on the bystanders t-shirt was used to identify a LGBT individual or supporter who received less help than the control situation, decreasing if the requestor was male, indicating a sexual prejudice factor. The latter result partially answers the behavioural discrimination towards gay men more so than lesbians mentioned by Inbar et al., (2009). Hendren and Blank's (2009) results may be improved through the use of a quantitative element incorporating a scale such the Attitudes Towards Lesbians and Gay Men (ATLG) created by Herek (1987) to provide more conclusive attitude results than observation alone.

### **Attitudes towards gay men and lesbian women**

The sexual prejudice highlighted above was altered by the gender of the person in question was explored by Herek (2000b), who suggested heterosexual attitudes towards lesbians and gay men is influenced by both the minority groups politics but also their gender and gender identity. Herek and Capitanio (1997) later investigated the social stigma and attitudes towards people with AIDS. The ATLG (Herek, 1987) was used to assess participant's attitudes towards lesbians and gays using a refined version of the original scale before investigating the stigma surrounding AIDS. This scale also shows higher results when levels of religiosity are increased or lack of contact with gays and lesbians (Herek & McLemore, 2011).

The results of Herek and Capitanio (1997) found that after personal contact with people with AIDS reduced the fear of exposure to people with AIDS and less blame for their contraction of the disease. This exposure and publicity of AIDS produces a reduction in negative attitudes towards both LGBT individuals but also general AIDS sufferers. Herek and Capitanio's (1997) research utilises information processing of logical information from the central route of attitude change of the ELM (Petty & Cacioppo, 1986). As Herek and Capitanio's (1997) participants gained more information about the disease, their individual attitudes changed.

Herek's research has also focused on another way to measure the public's attitudes towards same-sex marriage. Herek created the Attitudes Toward Lesbians and Gay Men scale (ATLG) (Herek, 1987) scale originally consisted of 20 items but was later revised to a short measure which has been revised to a short form scale of ten items, five addressing the attitudes towards gay men and five towards lesbian women. This research incorporated the five-item revision of the ATLG, the ATLG-R-S5 (Herek, 1998).

### **Attitudes towards same-sex marriage**

As the above research illustrates the ATLG, scale (Herek, 1987) has been the basis of several attitude studies like, Pearl and Galupo (2007). A new attitudes measure towards same-sex marriage was designed to better evaluate the specific attitudes towards this political issue. Pearl and Galupo (2007) developed the Attitudes towards Same Sex Marriage scale (ATSM) using a sample of 615 participants with a diverse sample that included students and adults. This development of the ATSM took place over four phases the first examination on 154 participants, resulted in the revision of the scale from 22 to 17 items to increase structure and reliability of the scale. The second phase examined upon 255 students was conducted to identify the psychometric value of the scale. The results of all four phases identified correlating results.

The third phase of Pearl and Galupo's (2007) research was a replication of study 2 on a non-student sample. This phase also incorporated an educational attainment; the results of study 3 indicated a positive correlation between positive attitudes and levels of educational attainment. The final phase incorporated the ATLG (Herek, 1987) and the Modern Homo-negativity Scale (Morrison & Morrison, 2002 as cited in Galupo & Pearl, 2007), which examines political conservatism and religious identification.

Pearl and Galupo (2007) hypothesised that participant attitudes towards same-sex marriage would correlate to their attitude towards gay men and lesbian women; therefore to validate the ATSM. The ATLG (Herek, 1988) was used also with the Attitudes Towards Same-Sex Marriage scale (ATSM) which produced correlating results. The application of this scale has the potential to be used in countries that are introducing same sex marriage or civil unions and how these

attitudes affect voting behaviours. However, in addition to examining attitudes towards same-sex marriage, this research also examines participant's attitudes in relation to political voting behaviours towards same-sex marriage.

The current research draws on the research suggestions by Galupo and Pearl (2007) to incorporate the ATLG-R-S5 (Herek & McLemore, 2011) when examining attitudes towards same sex marriage. For example an investigation of the influences that advertising may have upon the attitude formation towards Lesbians, Gay men and same-sex marriage (SSM) (Challenor, 2011). To conduct this research the investigator randomly sampled student participants assigned to one of three variable groups. These groups were Pro-SSM, Anti-SSM and a control group, using four different advertisements, one Pro-SSM; one Anti SSM; and two unrelated advertisements to influence participant attitudes.

Research participants from a college sample (Challenor, 2011) completed the ATSM scale (Pearl & Galupo, 2007), ATLG-R-S5 scale (Herek and McLemore, 2011) and the Television Advertisement Evaluation Internet Questionnaire (TAEIQ) (Survey Share, 2010) after viewing same-sex marriage (SSM) policy advertisements. Participants also completed a ballot on SSM to measure corresponding attitudes. The findings of Challenor (2011) identified a significant attitude change of both Pro-SSM and Anti-SSM advertising variable groups on the ATSM and ATLG-R-S5. The results infer that participant scores on both the pro and anti-policy advertising towards same-sex marriage, lesbians and gay men produce changes on both the attitude scales (ATSM & ATLG-R-S5) after viewing persuasive advertising. The ballot vote results illustrated that 74 of 75 participants voted in favour of SSM in Ireland. These research findings are however limited due to the age range of participants and not referable to a wider population due to the student sample.

Attitudes towards everyday issues such as an individual's behaviour or to convenience and consumer products are comprised of and may be affected by the individuals own thoughts, feelings and evaluations towards the object (Langdrige & Taylor, 2007). Attitudes towards LGBT community however may be influenced by several other environmental factors that were depicted by Firestone, Harris and Vega (2005) in their investigation of "Attitudes about Same Sex Marriage in San Antonio, Texas". Firestone, Harris and Vega (2005) investigated whether there was support for same-sex marriage amongst eleven hundred responses using the San Antonio

Survey in 2004. The aim of their investigation was to identify if participants would support a proposition for same-sex marriage in Texas. Several factors could have affected the respondents' attitudes such as; gender, ethnicity, political party and ideology, income, religiosity, educational attainment, age and urbanisation. Religiosity and political ideology are two of the factors described previously by Firestone et al. (2005), were indicated by Galupo and Pearl (2007) to affect the participant scores on the ATSM.

The results from Firestone et al. (2005) revealed that female participant's attitudes were more positive than the male participants and of this gender division. Secondly, the white and Latino Americans were more positive when compared to the African American respondents; these are just two examples of the factors above. Overall the results indicate that attitudes towards same sex marriage in Texas are increasing but slowly due to the populations various factors.

As gender was a focus of investigation by Firestone et al. (2005), the present research will also attempt to investigate any possible effects of gender during this investigation. As the findings of Guadagno and Cialdini's (2002) suggest that female and male participant results differ from each other online based on their own attitudes and the possible perceived attitudes of the communicator. The examination of gender is also relevant as the findings of Pearl and Galupo (2007) and Galupo and Pearl (2007) as they noted that female participant attitudes towards same-sex marriage were more positive than male attitudes. This was a concurrent finding of Herek (1984, 1988) noting male participant attitudes towards lesbians and gay men were more negative than female participant attitude scores.

Individuals may draw upon attitudes such as those towards LGBT individuals, described above during information processing and more commonly as a heuristic for making judgements. A heuristic is simply a procedure for solving a problem that function by reducing the possible solutions to any particular problem to find the ideal course of action (Robinson-Riegler & Robinson-Riegler, 2012). An individual uses an attitude as a heuristic when a person links their own existing attitudes towards a particular stimulus and an evaluation summary, which allows the individual to make summations to solve a problem or conclude a thought process (Fazio, 1995). These heuristic attitudes may then be applied in the real world when the individual chooses to avoid an activity, object or person that they may have

negative attitudes or opinions towards. The Theory of Reasoned Action (TORA) (Fishbein & Ajzen, 1975) therefore may allow for the prediction of an individual's actions based upon both attitudinal and behavioural intent.

## Persuasion

These individual attitudes may be altered using various persuasive methods (Hogg & Vaughan, 2007). Persuasion itself may be defined as inducing a person to adopt particular values, beliefs or attitudes through a process or a number of processes (Reber & Reber, 2001). A central theory of persuasion is the Elaboration Likelihood Model (ELM) for attitude change through persuasion (Petty & Cacioppo, 1986). The ELM elaborates on two routes of persuasion used by a viewer for attitude change. The central route requires the individual to evaluate an argument based on its strengths, weaknesses. In contrast, the peripheral route uses peripheral cues and not the argument quality. These cues include stimuli change or emotional appeal to alter the attitudes of the viewer to the product (Petty & Cacioppo, 1981) [Fig 2]<sup>2</sup>.

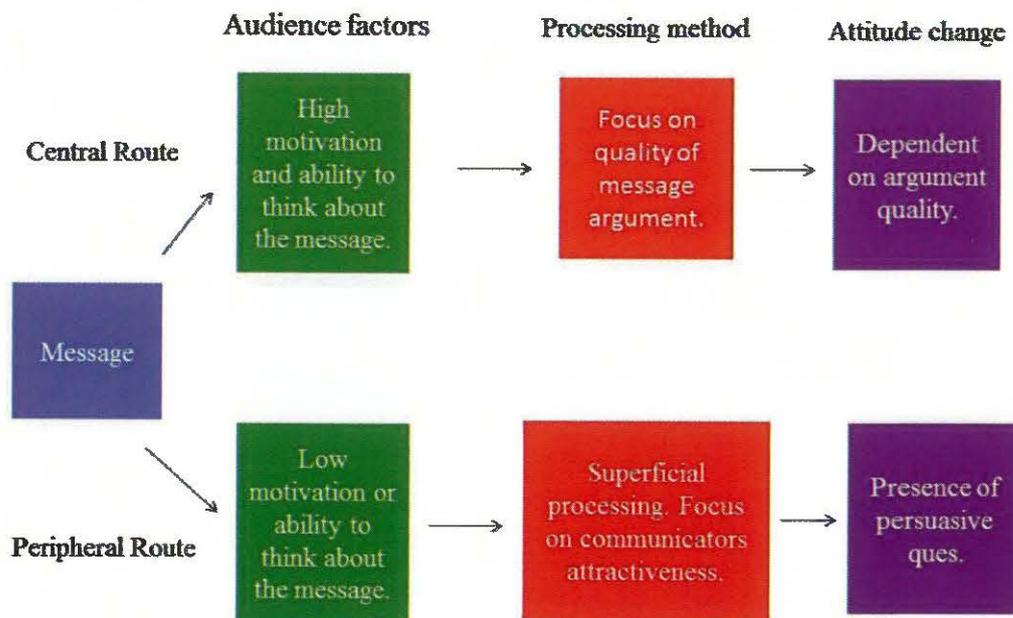


Figure 2 - The Elaboration Likelihood Model (ELM)

<sup>2</sup> The Elaboration Likelihood Model (ELM) from *Social Psychology* (p206), by M. A. Hogg and G. M. Vaughan, 2007, Harrow: Prentice Hall. Copyright [2007] by M. A. Hogg and G. M. Vaughan. Adapted with permission.

The ELM model was investigated by Tam and Ho (2005) focusing upon the interactions businesses' have with their customers on their websites. Tam and Ho (2005) conducted an experiment on one thousand Australian university students to examine the manipulation of interactive navigation cues and site elements e.g. promotional or personalised offers, influencing a person's ability to process information and alter behaviour. Results from Tam and Ho (2005) indicate that web personalization affects the viewer's elaboration and decision-making in the central route by offering products that match the preference of the users. This finding supports the persuasiveness of the central route.

Further testing of the ELM was conducted by Te'eni-Harari, Lampert and Lehman-Wilzig (2007), they examined the reliability of the ELM on a young Israeli population (4-15 years). The interventions of this research were based on the central and peripheral routes of ELM. Participants were presented with two statements each, one that had high involvement or low involvement. The involvement intervention was the manipulation of the character in the statement to be "mother" or "neighbour", the mother being the attractive character and neighbour the unattractive character of the statement. The argument of the statement for the central route of ELM was about the taste of the chocolate or the peripheral message was about the packaging of the product.

The results of Te'eni-Harari et al. (2007) indicate that younger populations do not use the two core routes (central and peripheral) of the ELM in either the high (central route) or low (peripheral route) involvement scenarios. The author's research design only using interviews may have affected this result and that the uses of a different research design with a more diverse sample and a more experimental and classical design control may yield different results.

More recently, two researchers who implemented the ELM were Angst and Agarwal (2009) investigated if individuals may be persuaded to allow their information to be stored in a new electronic health record system (EHRs) regardless of the privacy risks involved in participation. The investigators combined the ELM theory and EHR related user issues such as privacy, to create a questionnaire, which first explained EHR system concepts and then asked questions about privacy on such a system. The researchers then provided participants a positive or negative argument for the use of EHR systems.

The results of Angst and Agarwal's (2009) investigation supported the hypothesis that a positively framed argument yielded a higher post-manipulation of their participant attitudes leading to an attitude change. The conclusion of the research relevant to attitude change is the support for positively framed arguments effecting individual attitudes more than negatively framed ones, in other words argument framing. The authors also indicated that the relevance to the audience of the message is also important as the relation to the audience determines their issue involvement and attention.

### **The Heuristic Systematic Model**

Another concurrent model with the ELM of persuasion is the Heuristic Systematic Model created by Bohner, Moskowitz and Chaiken (1995). This model is similar to the ELM concept of the central route of processing. Both models assume that both motivational and capacity are necessary for systematic processing to take place (Bohner, Moskowitz & Chaiken, 1995). The Heuristic Systematic Model also highlights that judgements produced by systematic processing are generally more enduring than those produces by heuristic processing alone. Both of these persuasion theories are core concepts used in all advertising.

Both the Elaboration Likelihood Model (Petty & Cacioppo, 1986) and the Heuristic Systematic Model (HSM) (Bohner, Moskowitz and Chaiken, 1995) illustrate that different advertisements may be defined by the different characteristics of the videos such as the content of the message i.e. facts, statistics or semantic opinions which may be present in the message. The effectiveness of a message may also be dependent on its delivery, for example if it has been made or endorsed by a governmental agency or Non- profit organisation.

The Heuristic Systematic Model (HSM) was implemented by Zhengchuan and Wei (2012) in theory-based Chinese research investigating the psychological mechanisms effecting phishing attacks on banking information security. Zhengchuan and Wei (2012) used HSM to study phishing scams relating to how the victim processes the information they are presented with relating to their cognitive resources processing the stimuli. The authors describe that the systematic portion paid by the victims would often be limited as they may be less motivated to process the message resulting in their information being stolen. The heuristic processing

route of the HSM however relies on the viewer's awareness of cues, heuristic processing is the basis of Zhengchuan and Wei (2012), arguing that heuristics are often the deciding factor in validating a phishing scam. The authors proposed that if argument quality was high in a scam victimisation would increase and also with a scam that has endorsement from a credible source. Their research supports the HSM framework as a predictor for predicting phishing victimisation however as no experiment was conducted the implementation remains untested. Zhengchuan and Wei (2012) grounded theory research with the HSM supports a framework for identifying and preventing future phishing attacks by implementing systematic and heuristic processing.

### **Disclosures in Advertising**

The endorsements described above used in advertising are defined by the United States Federal Trade Commission as Television Advertising Disclosures (TADs). TADs are often used at the end of public messages and advertisements to provide information to the audience about the message; this often involves an endorsement from a company or organisation that support or commissioned the message. The risks that TADs present, was highlighted by Kendrick, Morgan, Boedecker & Stoltman (2007) relating to the pharmaceutical industry as advertising products directly to the consumer is legal in the United States and New Zealand as it creates an imbalance of information provided to the consumer, with 53 million consumers asking physicians about the advertised products and a further 12.1 million receiving the medication. However there are also some of the potential benefits of these forms of advertisements is education about medical diseases with the potential to seek medical advice and discussion.

Overall, these endorsements may alter impressions of products such as drugs in Jendrick et al. (2007), as opposed to advertisements that are not directly endorsed by an organisation (Morgan & Stoltman, 2002). The use of additional information in advertising such as TADs in messages have an effect upon the re-cognition of information as a person encodes the incoming information into their own existing knowledge and experience. Social cognition may be defined as a human centred view of evaluating the ways in which we process external stimuli information, instead of viewing the process of encoding sound vibrations like a microphone we

instead view it from a pre-existing method as people experience and encode many different sounds and associate them with the familiar pre-existing sounds on a continual basis but also our limitations as human processors (Stainton, 2003).

When discussing persuasion or advertising the theory of social cognition is important as it theorises the influences that affect the cognitive process when a person is viewing an advertisement or statement. Stainton (2003) describes the foundations of social cognition and it's including elements of schemas, stereotyping and attributions which take place during the encoding process it may be view as a cognitive psychology theory but also a social psychology theory because of these attributes. A negative aspect however to social cognition is during the encoding phases when association is used as a schema to increase encoding efficiency it may allow stereotyping and prejudice.

## **Persuasion in Advertising**

Advertising is seen in many forms on a daily basis in print, electronic or visual and audio media sources. This mass availability of publication is used to promote products, alter consumer attitudes and perceptions towards a product or issue on a daily basis (O'Shaughnessy & O'Shaughnessy, 2004). Advertising whether for a product or political campaign wishes, to promote an issue or persuade the audience to take a particular action using a persuasive message is the goal of an advertisement.

In other words, persuasive messages in advertising must have a basic structure. Hoveland, Yanis and Kelley (1953) describe that persuasive messages must be designed to address the audience appropriately. This is dependent on firstly an appropriate source from which the message originates. The persuasive factor in the source of the message is reliant upon its creditability and attractiveness. The message, which is presented to the audience, is important, as one side of an argument may be more persuasive than the other; this is often seen in political advertising in the United States.

The recent rise in negative advertising over positive advertising has arisen in American politics advertising from 1% and 46% respectively by the Democratic and Republican campaigns in 2004 to 83% and 89% in 2006 (Lau, Sigelman & Rovner, 2007). A meta-analysis conducted by Lau, Sigelman and Rovner (2007) discussed

this rise, however results support their use as they increase audience interest in 11 of the 15 campaigns. This may be due to the different emotional methods employed such as enthusiastic, fearful or the method of persuasion employed.

### **Intrinsic effects on persuasion**

Briñol, Petty, Valle, Rucker and Becerra, (2007), investigated the persuasiveness of a message described by Hoveland, Yanis and Kelley (1953) on a Spanish sample. They observed the effects of a powerful or non-powerful job role and how it affected participant's confidence in their evaluations of a message. The authors investigated if a powerful or non-powerful role when combined with varied argument quality influenced information processing of a message on the recipients self-validation before and after the message of persuasion has been administered.

The power roles which Briñol et al. (2007) resulted in participant confidence in their own attitudes and social judgements towards a message was higher in a powerful role and not as confident in a low powered role. The authors suggest that even though participants have the same thoughts, high power roles are more likely to act on them.

### **The Self-Validation Hypothesis**

The self-validation procedure recorded above is known as the self-validation hypothesis (Petty, Briñol & Tormala, 2002). The self-validation hypothesis similarly to the TORA, is used to predict an individual's actions based on an individual's judgements of a particular topic and their attitudes towards them. However, a limitation of the self-validation hypothesis is it that the connection between the effect of power and persuasion may not be ecologically valid and requires further research to provide comparable data.

The effect of the self-validation hypothesis on self-generated persuasion in role-playing scenarios was conducted by Briñol, McCaslin and Petty (2012). Using the counter attitudinal argument of introducing comprehensive exams scenario (Petty, Briñol & Tormala, 2002), one hundred and twenty seven undergraduate American students were asked to create arguments in favour directed to a professor, student, family member or no target. Briñol, McCaslin and Petty (2012) theorised that the students would produce less arguments for known targets and more for an

unknown target, as they would put more effort into convincing themselves than another. After the arguments were created participant attitudes and behavioural intentions were assessed. Results supported expectations as more arguments were generated in the unknown condition, suggesting that the number of arguments generated predicted the evaluations of exam introduction as the number of arguments projected participant evaluations of exam attitudes. These findings however do not account for the participant's evaluations of their own evaluations of their arguments, and would have benefited from the implementation of a self-evaluation measure relating to their generated arguments. This research however further supports that persuasive ability of a message may be affected by the effort an individual allocates during message creation. The findings of Briñol, McCaslin and Petty (2012) present implications for future research emphasising the importance, and application of the relationship between the target of the persuasion, the number and strength of arguments to produce attitude change in advertising mediums such as video and print advertising.

### **Persuasion Effects on Implicit and Explicit Attitudes**

The intrinsic effects on the power a message is not the only factor that must be considered during the design of a political advertisement. Research using print media was conducted by Arendt, Marquart and Matthes (2013), highlighting the different affects that the components of a message may have on implicit and explicit attitudes towards immigrants. Arendt, Marquart and Matthes (2013) conducted an experiment using an Austrian student sample of one hundred and sixty four students. Participants were divided into three groups who viewed either positively valenced advertisements (using nature), negatively valenced advertisement's (factual, text based) or the control consumer advertisement's. The authors used the Implicit Association Test (IAT) to measure implicit attitudes and adapting the "feeling thermometer" measuring explicit attitudes after viewing nine advertisements' using Likert ratings (Gawronski et al. 2008, as cited in Arendt, Marquart & Matthes, 2013).

The IAT is a computer-administered task that measures the strengths of associations between any two concepts (Lindgren, Neighbors, Teachman, Reinout, Westgate & Greenwald, 2013). In Lindgren et al. (2013) the concepts of alcohol

avoidance and use were measured by recording participants' reaction times to statements were recorded (response latencies). A comparison of reaction times for implicit attitudes towards alcohol was then conducted, comparing latency times between two tasks; alcohol-approach/water-avoid and water-approach/alcohol-avoid. The tasks assigned the words approach and avoid to two keys on the keyboard requiring them to assign them with images of alcohol and water according to the task. The participant associates a shorter response time to indicate a favourable attitude. In Lindgren et al. (2013), this would indicate a more positive attitude towards alcohol or water.

The implicit and explicit results from Arendt, Marquart and Matthes (2013) identify that all participants showed implicit attitudes and favourable explicit attitudes towards foreigners. Using multiple regression analysis they identified participant implicit attitudes predicted explicit attitudes in the positive valency advertising group. However they did not in the negative valency or control groups. Arendt, Marquart and Matthes (2013) discussed that their findings support that participants who viewed positively valenced-calming ads, expressed their explicit attitudes more openly and focused less on the political strategy behind the message. This finding indicated that participant's attitudes were based on implicit judgements with reduced information processing.

The results of the negative valency group from Arendt, Marquart and Matthes (2013) are interesting as participants who viewed openly negative advertisements towards immigrants displayed egalitarian-related views implicitly which in turn predicted explicit pro-immigrant attitudes. The authors argue that the content of the advertisements may have been too negative reducing the thought process of participants during implicit and explicit attitude formation, priming participants to display more positive attitudes.

Briñol, Petty and Barden, (2007) and Arendt, Marquart and Matthes (2013) both focused their research on attitude change based on the message content and its effects on the viewer. Further research however, could be conducted into the form of persuasion provided to the audience including the variables such as the persuasive ability of the spokesperson and the positive or negative position of an advertisement. As well as the imagery used which may inspire an emotional response and attitudinal effects on the audience, drawing on the routes of the ELM (Petty & Cacioppo, 1986).

An investigation could benefit from looking into these variables and how they have an effect upon our views and actions, such as political advertisements and the messages, they use to portray their opinion and persuade voters to vote for or against a particular issue.

Briñol, Petty and Barden, (2007), conducted research that incorporated the effect of emotion on persuasion. The authors chose to investigate the self-validation hypothesis on an American undergraduate sample further by examining the effects of emotion in a message on the judgemental evaluations that a message presents to the viewer. The researchers focused on the effect of a participant's emotion may have on his/her own confidence in their perceptions of a message. Also, they looked to see if alternating confidences may indeed effect attitudinal changes but also if varying levels of elaboration cause these changes also.

The effects of emotion on the viewers' evaluation of a message were examined across four experiments. In particular, they investigated the effect to which a happy response or sad response influences a judgement. The participants of Briñol, Petty and Barden, (2007) were required to read a strong or a weak persuasive message, the researchers then required their undergraduate student participants to note their opinions at that point. Requesting that participants write about an experience in which they felt happy or sad before noting their attitudes toward the message again, altering the participant's emotional state.

As the authors predicted, participant attitudes were more approving towards the proposal when presented with the strong arguments. Briñol, Petty and Barden, (2007) repeated this method in their second experiment but required participants to note their own confidence in their thoughts about the strong or weak message they saw using a seven-point Likert scale. The authors hypothesised that participant's confidence levels would differ between happy and sad conditions. This was supported as happy participants confidence rated significantly higher than sad participants' confidence.

Therefore, authors found in their second examination that emotion can influence an individual's evaluative judgements by affecting the confidence people have in their own thoughts to a persuasive message. Researchers who wish to implement a message, advertisement or other form of persuasive method therefore should note the findings of Briñol, Petty and Barden, (2007), which requires an

individual to make an evaluative judgement because their mood when they receive the message may alter their attitudes and possible actions.

The research findings conducted by Briñol, Petty and Barden, (2007) support the self-validation hypothesis (Petty, Briñol & Tormala, 2002), which theorises that an individual's emotion can influence their attitudes changing them when their confidence in either their own thoughts or opinions is altered. However, these results due to their self-reporting measures could have benefited from a quantitative or observation method. This review above describes the self-validation hypothesis as an important predictor similar to TORA in which conclusions are drawn about an individual's possible actions based on their own attitudes highlighting the importance of the variables that influence a participant during the reception of a message or argument.

As it is the audience of the message which are the deciding factor of the persuasive ability of the message (Martin, Carlson & Buskist, 2007), it is therefore important to evaluate the possible factors of the environment in which the message is viewed but also the emotional content which is shown to the audience.

The message, which the advertisement is gravitated around, may also employ persuasion methods such as reframing. Reframing is commonly used to produce a connection of an everyday item or issue to an emotional connection in the audience making it an issue of interest (O'Shaughnessy & O'Shaughnessy, 2004). Reframing has recently been used to combat attitudes towards Islam in the United States reducing peoples association of Islam's with terrorism using narrative approaches (Van Steenburg, 2011). These reframing techniques along with Petty and Cacioppo's (1986) peripheral route of attitude change are commonly used in conjunction with political advertisements to persuade voters or influence a ballot on a political issue.

## **Technology and persuasion**

Corresponding research has shown that another method of drawing user attention to an issue similar to reframing is known as interactivity. Sundar and Kim (2005) define interactivity as a humanlike cue in the context of human-computer interaction (HCI). The research conducted by Sundar, Kalyanaraman and Brown (2003) manipulated the interactivity of a political campaign website by varying the

amount of hyperlinks and reactive communication to the users. The results of the interactivity manipulation from low, medium and high indicated that the interactivity of the webs site had an influence on participant's impression formation of the candidate, but also increased attitudes towards policy issues (Sundar, Kalyanaraman & Brown, 2003).

As Sundar and Kim (2005) describe that interactivity allows the users to view a computer differently than the traditional expectations of a computer. The role of a computer has evolved to a view of the communicator is that the computer is a source of communication in the information process rather than the medium of transmission.

Sundar and Kim (2005) investigated interactivity and persuasion, the authors wished particularly to examine if the participants interacted with an advertisement was its persuasive appeal increased. Sundar and Kim (2005) used 48 participants that were exposed to low, medium or high levels of interactivity of a website. Other conditions included whether the advertisement was animated or static and finally the shape of the banner was manipulated. The authors inferred based on their findings that interactivity were positively associated with the advertisements and attitudes towards the product. In addition to this finding, an interesting result was that the levels of interactivity with animation and the ad shape itself had an influence on the persuasion process.

### **Traditional vs. Non-Traditional Persuasion Methods**

A traditional method of persuasion, like online interactive methods of persuasion advertising, holds an informed advantage over the non-interactive methods of captology. They cannot employ a tailored examination of their audience and alter their method or content of delivery to the viewer. Bucy (2004), who defined the practice of online media, discussed the advantage of using online persuasion over traditional methods and in particular its use as news source but as the communication system of this information. In Bucy's research review of interaction as a whole, the increased interactivity methods often correlate to increased use or traffic on websites as the level of interactivity provides incentive or actions that the user enjoys and therefore continues to use that particular service.

The advantage of computer-mediated methods of captology is the factor of interactivity, when used correctly interactivity may be used to increase the persuasive appeal of an advertisement which contains more interactivity (Sundar & Kim, 2005) or increase the users attitudes towards a political party issue (Sundar, Kalyanaraman & Brown, 2003) which was detailed in the persuasion and advertising section above. These two pieces of research re enforce the argument that methods of captology may affect the population's attitudes towards a particular issue depending on the method of interactive captology intervention.

More recently, Kim and Sundar (2012) manipulated the presence/absence of a human-like agent and low/high interactivity on a health website to investigate if mindful assumptions of anthropomorphism to the website. Kim and Sundar (2012) implemented the HSM model (Bohner, Moskowitz & Chaiken, 1995) to identify if the expertise heuristic was present in the participants judgements of the health related information when a virtual doctor-like aid was present.

The human-like aid used by Kim and Sundar (2012) in their website scenarios was a cartoon design with various facial expressions present during interaction. The aid resembled a senior male doctor who was balding and wore a white gown and stethoscope. Ninety-three undergraduate students in the United States were randomly assigned to one of four groups, high interactivity with and without an agent or low interactivity with and without an agent. The findings of Kim and Sundar (2012) identified no difference in the levels of interactivity relating to anthropomorphism. However, participants that were not exposed to the presence of the agent mindlessly described the websites as being human-like. Finally, participants exposed to the agent reported less human-like descriptors relating to the website, the authors argue that this is due to participants intentionally denying treating the website in a humanlike way. A limitation of Kim and Sundar's (2012) research is the participants may have varying levels of experience as they were recruited from a communications class for convenience, affecting the reliability results. An advantage of Kim and Sundar (2012) is that instead of directly asking participants about the human-like aid as if they had directly asked these questions participants self-reported mindfulness may not have been reliable, they instead recorded human-like attributes associated to the website.

The persuasive interactions that occur during human computer interaction on various levels of interaction have been investigated in greater detail in regard to their interactions with people, specifically as persuasive tools during the communication process of information. These factors are described in further detail in remainder of this section.

## **Computer Mediated Communication and Persuasion**

The growth of the Internet has seen an increase of the use of on-line social networking sites to over 700 million users and these methods of online communication are used to create and communicate our own representations of our personalities (Back, Stopfer, Vazire, Gaddis, Schnukle, Egloff & Gosling, 2010). The content which users of on-line social networking websites present to friends and the general public is often also targeted by website owners to streamline personal advertisements to meet or spark users specific needs. The different users of an on-line social networking websites vary greatly depending on a number of characteristics such as race, gender, personal preferences and skill level.

Various tools may be used to connect a general or specific demographic to an issue by making it a topic of interest or by gaining the users attention using various methods of communication, whether direct or not these methods often have a medium which attempt to transfer the message to users. Computer Mediated Communication's (CMC's) are one of the most modern techniques used to transfer information to and from the general population. CMC's include email, instant messaging, blog posts and recently video sharing through sites such as YouTube and social networking sites such as Facebook.

Computer mediated communication is then divided into two further categories, synchronous and asynchronous. Synchronous CMC's include instant messaging as it takes place instantly with another individual. In contrast, asynchronous CMC's include emails and blogging that take place at any point after the message has been sent (Ashley, 2003). Golby (2011) conducted preliminary research investigating the interfamilial use of CMC's using online focus groups to determine the factors that effected different CMC use between different groups of people. Using a university sample in Singapore, Golby (2011) investigated CMC

between participants their friend and with their parents, how it affected relationships and contrasted to face-to-face communication.

The results identified several themes; *perceived inappropriateness* during *intrafamilial interaction* preferring face to face contact, *conflict* regarding online identities when a family member disapproves of an online contribution, *self-disclosure* allowing participants to make more emotional disclosures with friends but not family. *Family generation gap*, participants tended to engage in discussion via CMC's with siblings but not parents, *Nature of offline relationship*, participants with a good offline relationship with family engage in CMC's more with family members and *Online communities versus family community*, participant's favoured CMC use to create new interactions, sharing interests that would be impossible in an offline environments.

The research by Golby (2011) highlights that CMC's are used for different purposes and effects the use of different methods of CMC's used to aid interactions based on the environment and context, future research would benefit by incorporating these themes examining context, technological experience and gender differences. In an alternative environment Antheunis, Valkenburg and Peter, (2007) examined CMC's between one hundred and sixty two students, detail that the characteristics of CMC's may stimulate interpersonal attraction and relationship formation as a reduction of visual and auditory cues are present providing anonymity for the individual. This particular benefit of CMC's aids online dating scenarios and social media communications, as they are predominantly text based in nature, encouraging self-disclosure and directs questioning (Antheunis, Valkenburg & Peter, 2007).

### **Gender examinations of CMC's**

It is important while discussing CMC's to note that online communications differ depending upon the user's purpose (business, social etc.) but also their demographic variations such as age and gender. Guadagno and Cialdini (2002) conducted further examination of the differences in computer-mediated persuasion with regard to gender of the communicator and the recipient. The author's provide support for the strength of the argument that the participant's gender in both the roles, as either the communicator or the recipient is the key to the success or failure

of the persuasion itself. Yet they note that it is also different for each gender depending on the communication mode in which the message is delivered. Guadagno and Cialdini (2002) justify their research based on the lack of literature in relation to the social psychology perspective of persuasion, concerning both computer-mediated communication but also face-to-face interaction. This lack of research may be due to the high levels of experimental control that are present in the other branches of psychology that are hard to implement in such research.

The effects of the experimental environment may influence the circumstances that direct the audience's attention away from the method of communication, affecting the ability of the message that Hoveland, Yanis and Kelley (1953) describe as the key factor in the persuasive message of an advertisement. Counteracting this, Guadagno and Cialdini (2002) noted that a common finding of studies which use the socially constrained methods of persuasion as a communication from such as a computer have found that participants are more focused on the task at hand and less on the other people present and their views.

Guadagno and Cialdini (2002) investigated persuasion conducted amongst men and women in face-to-face environments and over email interactions. Some conclusions that can be drawn from the above research findings are that the work of Guadagno and Cialdini (2002) supports Petty and Cacioppo's (1986) central and peripheral routes of persuasion. During the research conditions, involving a weak argument, the participants reported more of the communicator's thoughts on the topic (comprehensive exams) being discussed rather than why they actually agreed or disagreed with the content of the message itself. This was found in both on and offline communication conditions. This finding follows the peripheral route of the elaboration likelihood model (Petty & Cacioppo, 1986).

The findings of Guadagno and Cialdini (2002) identified that female participants of the on-line condition displayed more negative thoughts towards the topic and the arguments of the communicator than the face-to-face condition, when the message was supported with factual information (central route of the ELM). A possible explanation for this finding is that people may have responded more openly about their attitudes towards the topic than they would have otherwise suppressed in a face-to-face conversation. Females were also more agreeable with the communicators if they were female in the face-to-face more than the online

conditions. This indicated that the on-line communication may have allowed female participants to focus more on their own opinions and the content of the message rather than the persuasive argument of the communicator. In contrast to this, the male participant's results did not differ between the on-line and offline conditions.

The findings of Guadagno and Cialdini (2002) provide information on the impact of interactive CMC's on interpersonal influence; suggesting people are more persuasive when they have a physical presence with the audience. For women having any prior interaction with a communicator enhances the level of agreement relative to the interaction, online or face-to-face, supporting the future findings of Antheunis, Valkenburg & Peter, (2007). However in the male condition, men they only showed a competitive or disagreeing attitude which resulted in less agreement with the communicator. This supports the use of the ELM (Petty & Cacioppo, 1986) in computer-mediated communications examining how CMC's affect the central and peripheral routes of persuasion in addition to the gender implications posed by Guadagno and Cialdini (2002).

More recently in New Zealand, Waldovogel (2007) investigated the greeting and closing messages used in work place five hundred and fifteen emails in a manufacturing plant and educational scenario. The findings of the examination identified that in the manufacturing plant more detailed greetings and closings were used, encouraging a trusting and positive interaction between staff and management. After restructuring in the educational scenario low staff moral and mistrust between management and staff resulting in indirect and more distant communications between staff via email. The findings of Waldovogel (2007) support that the situational and cultural affects that effect the location CMC's take place in. Finally Waldovogel (2007) conducted a gender comparison observing that females were more likely than male workers to engage in more detailed opening and closing messages. The authors suggest that this finding is due to more females working in administrative roles in the manufacturing scenario. This research would have benefited from but did not record the CMC preferences according to gender.

Thayer and Ray (2006) who studied users' variations in online communications examined this gender variation and relationship preferences focusing on gender, age and internet use variables. A questionnaire was used to gather data about online behaviours and their participant's offline features. The

authors hypothesised several different variations between gender, internet use for communication and duration of use, which tested on 174 participants ranging from young, middle aged to late adults. Thayer and Ray (2006) did not find significance between male and female user's choices for online communication and relationship building for friends, family, co-workers or strangers. This finding requires further research to identify if gender differences exist for communication methods for various purposes of CMC methods using qualitative methods to identify participant attitudes and choice explanations for each method. However, this research supports assumptions that younger internet users prefer to engage in CMC because their own skill level and experience was greater using these methods, therefore allowing young adults more control over the interaction process (Madell & Muncer, 2007).

The research conducted by Madell and Muncer (2007) provide more possibilities for Thayer and Ray's (2006) findings regarding the use of CMC's by younger users preference to engage and further their communication with friends online. Madell and Muncer (2007) identify that in addition to growing up in the technological age, their participants chose to communicate using instant messaging, text or email because it allows them to respond in their own time to friends appropriately to their conversations. However, Madell and Muncer's (2007) research was conducted using 14 participants in 2 separate focus groups, to appropriately examine the gender use differences identified in the research investigations describes above a larger gender sample is required to examine the different uses of CMC's for different purposes amongst men and women.

### **Tailored CMC's**

Computer mediated communication may be used for specific purposes and interactions online. The refinement of computer-mediated interactions was examined by Ruiter, Kessels, Jansma and Brug (2006) investigating if the attention of the viewer altered when computer-mediated message were tailored towards the audience. In the authors investigation they examined whether computer-tailored health communications received more attention from the reader than non-tailored health communications in a randomized but controlled trail among 24 students.

Ruiter et al. (2006) created two groups to conduct this investigation, one that received a specifically tailored nutritional message to the participant. For example, if

the participant ate three pieces of fruit a day the message would provide feedback saying that five pieces of fruit is the recommended daily allowance. The non-tailored message would simply say an average amount that the general public eat and the recommendation. To examine if one method was more effective than another the researchers measured reaction times to the stimulus while also monitoring the brain activity represented by the event related potentials present using an electroencephalogram (EEG).

The focus of Ruiter et al. (2006) is on the attention paid during the tailored and non-tailored messages. The authors theorize that is important for all attention related research to note that a message cannot be persuasive if the person does not actively or subconsciously allocate, mental resources towards the stimulus; this is known as resource allocation theory. Resource allocation theory (Ruiter, Kessels, Jansma & Brug, 2006) supports Petty and Cacioppo's (1986) hypothesis that because humans have limited resources at any one point in time, we pay attention to stimuli that we judge to be more pertinent to us. The author's results suggest that participants allocated more attention resources to the message in the tailored as opposed to the non-tailored message. Henkemans, Van der Boog, Lindeberg, Van der Mast, Neerincx and Zwetsloot-schonk (2009) conducted research that has incorporated artificial CMCs to aid motivation for weight loss purposes.

### Tailored CMC's for motivation

As Ruiters, Kessels, Jansma and Brug, (2006) identify a person may pay more attention on a communication which is tailored for a specific purpose of interest to them. Henkemans et al. (2009) looked at the effects of the presence of self-management when a persuasive computer assistant was present and then examined the computer assistant's influence on participants' self-management. Henkemans et al. (2009) conducted their research on a sample from the Netherlands where 45% of people are overweight; the authors noted from their previous literature research supports the theory that individuals who engage in self-management of their weight show an increase in weight loss.

Henkemans et al. (2009) designed a persuasive computer assistant and evaluated its influence on self-management. The authors used an online lifestyle diary with participants to record their weight loss data and food intake. The researchers incorporated a computer assistant known as iCat. The iCat is an interactive robot that, created by Phillips as a research platform to primarily study human and robot interaction. The robot has several animated facial expressions, it is an intelligent interface as it is able to engage in conversation, play chess or perform tasks that aid the user.

The researchers manipulated the various facial expressions which iCat is capable of performing to provide feedback to the users. In the author's research, 118 of participants were overweight; the researchers separated this group to compare diary uses with and without the computer aided feedback from iCat on their performance to the users over a period of four weeks.

Some of the findings of Henkemans et al. (2009) are interesting in regard to the group, which received feedback from the iCats facial expressions and comments. Participants who received feedback contributed more to their weight loss diary; participants who were not in the group that received feedback showed a declining motivation to fill in their diary as frequently. Participants in the feedback group also reported a lower Body Mass Index (BMI) this however was a self-reported observation.

It may be inferred based upon the findings of Henkemans et al. (2009), that the use of computer-assisted persuasion is likely to support motivated overweight people and lifestyle related diseases to get a better insight in and adhere to their self-

management program or routine. The feedback that the participants received from the iCat was not overly complicated, the cat expressed empathy and encouraged the user in its comments and supported these with positive feedback through facial expressions.

A limitation of the research conducted by Henkemans et al. (2009) is the Uncanny Valley (Mori, 1970). The author's research could benefit by investigating aspects of the uncanny valley with their work. As defined in the introduction, the Uncanny Valley was established in robotics, as the discipline advanced. The Uncanny Valley is a trend of people's emotional responses towards the physical appearance of a robot as it becomes more humanoid. Mori's hypothesis states as a human-like creation appears more human, people become more agreeable to it. Mori hypothesised that this agreeableness to the stimuli would however decline when it approached an 'uncanny' realistic level. The viewer would then change to a positive attitude as the humanoid continued to become more realistic and agreeable. Misselhorn (2009) furthered this by suggesting it be applied to other disciplines which derive from technology such as videos, computing and gaming as research in which incorporates persuasive technologies such as avatars requires more study.

## Persuasive Technology and Captology

Fogg (2003) defines persuasive technology as any interactive computing system designed to change people's attitudes or behaviours. The rise of computers as persuasive technologies did not advance until the role of a computer changed from a data encoder to a personal computer, commonly known as a PC. The creation of the internet for general use by everyday PC users stimulated the creation of persuasive technologies. Persuasive technologies online are seen on most websites, including advertisements on social networking websites, on online stores like Amazon and tailored advertising used on search engines such as Google (Fogg, 2003).

Persuasive technology has forms outside of the internet, safety simulation technology such as driving simulators that demonstrate to drivers the risks of driving under the influence of alcohol (Fogg, 2003). The use of technology for persuasion is known as Captology, when computing technologies and other technology hardware are used in cooperation with persuasion methods [Fig 3]<sup>3</sup> (Joyce, Weibelzahl, 2011).

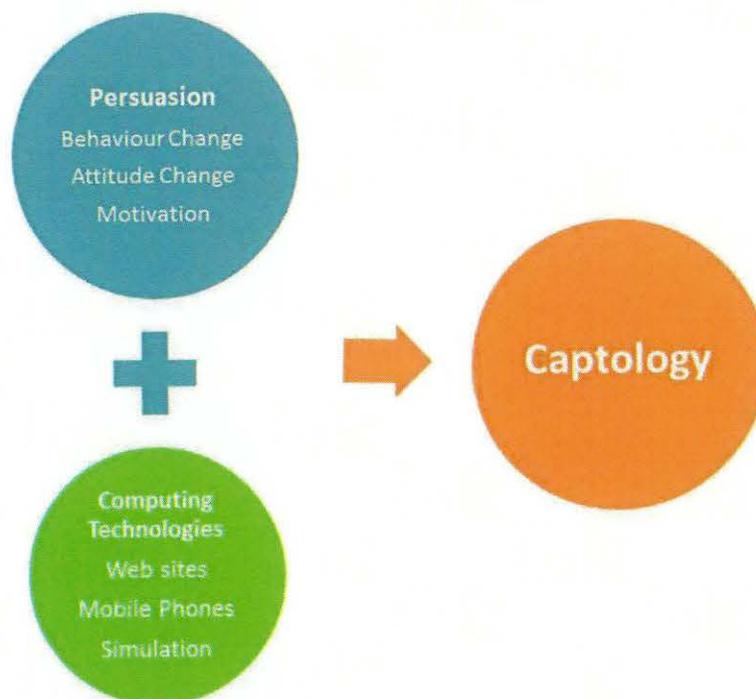


Figure 3. The Relationship between Computing Technologies, Persuasion and Captology.

<sup>3</sup> From "Student counselling services: using text messaging to lower barriers to help seeking," by D. Joyce and S. Weibelzahl, 2011, *Innovations in Education and Teaching International*, 48, p. 289. Copyright [2011] by Routledge. Adapted with Permission.

Captology is an emergent area that focuses upon “the design, research and analysis of interactive computing products created for the purpose of changing people’s attitudes or behaviours” (pg. 5). This definition encompasses the broad applications of computer technology (software, web sites, smartphone technology, games, etc.). However, how they relate to the area of persuasion and attitudes (motivation, attitude change, behavioural change and compliance). Joyce and Weibelzahl (2011) who investigated the implementation of text messages to aid help seeking behaviours amongst students conducted research that incorporated the definitions proposed by Fogg (2003). Similarly to the tailored CMC’s used by Ruiters, Kessels, Jansma and Brug (2006), Joyce and Weibelzahl (2011) created a specific text message reminder for students to counteract depression by seeking help.

Joyce and Weibelzahl (2011) used seventy-one Irish undergraduate students to explore student attitudes to receiving and responding to text messages and to measure the impact of a text message on a student’s help seeking behaviours. Joyce and Weibelzahl (2011) identified that students did not object to receiving regular texts from the college, with first year students responding to text messages more frequently. The health service in the university sent one text message per fortnight to seven hundred and fifty students. The authors hypothesise that students in third and fourth year build a resistance to communications from the college and do not respond as frequently. Overall the findings identify that the employment of tailored help seeking text messages is effective as eleven people engaged in help seeking behaviours after health service messages.

## **Avatars**

One of the most common computer mediated methods of communication is using an avatar. Avatars are creative platforms for the representation of a person’s physical identity or depictions of their identity online (Vasalou & Joinson, 2009). Avatars are used in different online environments. Vasalou and Joinson (2009) examined the representations made by users in three online environments; dating websites, online gaming and blogging.

Vasalou and Joinson (2009) used a self-report method incorporating both qualitative and quantitative research disciplines to allow participant feedback on why they designed their avatars with different psychical attributes for each of their three

conditions. The findings of this particular avatar self-representation research found that participants in the dating condition highlighted one of their physical attributes more than others did. Blogging participants were the most accurate representations of the users' actual appearance, while the gaming participant avatars accentuated an aspect of their avatar to suit the context of the game.

The examiners of this research note that their own research findings in regard to online dating avatars replicate the findings of Hancock, Toma and Ellison (2007). These investigations note that male participant has designed their own avatars to be taller than their actual selves are, whereas female participants made themselves thinner in appearance than their actual appearance.

The authors of both investigations theorise that participants alter their physical appearances or accentuate one aspect of their existing physical appearance to their view of their ideal self. Furthermore the findings of Vasalou and Joinson's (2009) dating conditions qualitative finding from the self-reports completed by participants report that participants did not greatly alter their own physical appearance as the possibility of meeting another person face-to-face was too high to drastically alter their appearance without misleading the other party.

The behavioural implications from Vasalou and Joinson's findings that are relevant to this research are drawn from possible effects by the physical appearance of avatars. The authors theorise that an individual alters the appearance of their own avatar increasing its physical attractiveness or other attributes such as intelligence. The focused attention that may then be paid to these alterations of an avatar may then have an affect or influence on another person's behaviour or physical action. Previous research conducted by Yee and Bailenson (2007) focused on the effects of avatars on behaviours.

Yee and Bailenson (2007) investigated the effects of the physical appearance (study 1) and height (study 2) of an individual's avatar on a person's/user's behaviour. This two-part investigation involved the use of two pre-existing avatars that were allocated to the participants; the first study involved participants receiving an attractive avatar (group 1) or unattractive avatar (group 2). The research findings designate that the participants in the attractive avatar group reduced their interpersonal distance more than in the unattractive condition. Participants in the

attractive condition increased their self-disclosure to confederates more than the unattractive condition.

Yee and Bailenson's (2007) participants in second study were assigned a short, normal or tall avatar in a negotiation task to divide money between two individuals. Second study results found that there was a main effect for height, with a further Tukey HSD analysis identified participants in the tall condition split the money in their favour more than short condition participants. Participants in the short condition were twice as likely to accept an unfair offer (72%) than in the normal (31%) or tall participants (38%).

The conformity of an individual's behaviour to follow the representation of an avatar is known as the Proteus effect (Yee and Bailenson, 2007). Vasalou and Joinson's (2009) research infers a similar finding to the Proteus effect hypothesis in relation to the behaviours of their participants in their blogging condition. The members of the blogging condition of their study did not conduct behaviours of how they should behave or act based on the attributes of their avatar, the blogging condition designed an avatar reflecting their lifestyle, appearance and preferences. This could be theorised as a prospective Proteus effect as participants designed the surroundings of their avatars lived in, pets they would like to have etc. The bloggers however did incorporate aspects of their personality and physical self with their own aspirations of their physical appearance and life.

A current piece of research that was conducted by Dunn and Guadagno (2012) investigating the relationship between a person and their avatar and in particular the influence of gender, personality and self-esteem. Using an undergraduate student sample the researchers allowed their participants to create their own avatars for use in a video game. After this process their photographs were taken of the participants for comparison to their creations. Dunn and Guadagno (2012) base the use of avatars as online self-presentations of their participants in using the theory of self-presentation which argues that individuals express themselves in different formats to others and they then interpret the expressions and in this particular case using an avatar (Goffman, 1959).

The findings of Dunn and Guadagno (2012) indicated a strong connection between participants choice of avatars to represent themselves to others and their impression management in which people highlight their positive attributes to others

(Schlenker, 1980). The effect of social norm conformity was also a finding present in this research as both male and female participants designed their avatars to consist with social norms that they deemed ideal representations of their gender, which varied from their photographs. Dunn and Guadagno (2012) inferred that participant's choice of skin colour and attractiveness was important to their avatar design. An interesting finding which could be further explored in future research was the effect of low self-esteem on avatar design across gender as Dunn and Guadagno (2012) identified that male and female participants with low self-esteem picked avatars with darker skin tones.

Additional gender research relating supported by the findings of Dunn and Guadagno (2012) was that gender was a significant predictor for how participants viewed their avatars likeness to their own appearance. This finding however has yet to be supported on a real world sample identifying if gender is a significant predictor of gender expectations of avatars in online scenarios. An examination of predesigned avatars of several appearances across gender may be used to evaluate and expand on these findings.

Research to further the findings of Vasalou and Joinson (2009) as well as the research by Yee and Bailenson (2007) could be conducted to investigate an avatars broader effect as a persuasive tool to alter an individual's behaviour. Therefore, the presented study incorporated the previous research findings that are detailed in the section above and attempt to identify if there is a link between a general avatar that has no identifiable gender or race to examine the possible effects on behaviour that an avatar may have but also its possible persuasive implications as an influential instrument.

The inference of the use of an avatar as a persuasive tool may be argued theoretically on the basis of the individual's connection and input into an avatar to promote their own appearance, intelligence (Vasalou & Joinson, 2009), alter it to meet physically attractive social norms, represent their personality (Dunn & Guadagno, 2012) and their interests but also their aspirations for their future (Vasalou & Joinson, 2009). Therefore it may be said that because people who use avatars visually display themselves using all the functional aspect possible to design their own personal avatar, that an avatar may have an effect on the creator or

exposed individuals in return as was seen in the investigation by (Yee & Bailenson, 2007) into avatar attractiveness effects on behaviours and action.

## **Summations for this research**

Based upon the various pieces of research described above, the present research seeks to investigate and answer several openings throughout attitudes, persuasion, and computer mediated communication persuasion, captology and avatar research. In particular, this research will look at attitudes towards lesbians, gay men and same-sex marriage. The present research will incorporate suggestions for future research but also attempt to further research findings and limitations of the reviewed investigations.

## **Attitudes**

The findings of Challenor (2011) found that participant scores on both the pro and anti-policy advertising towards same-sex marriage, lesbians and gay men do produce changes on both the attitude scales (ATSM & ATLG-R) by persuasive advertising intervention. The ballot vote results illustrated that 74 of 75 participants voted in favour of SSM in Ireland. Therefore, based on the captology research discussed above, the aim will be to investigate if there is an effect from this intervention using avatars on the attitude scales used in previous research when an avatar is integrated into the pro same-sex marriage video. The present research will also seek to replicate and expand on the findings of Challenor (2011) while address the limitations of a student sample by conducting the present research on a representative Irish sample population.

## **Persuasion**

As described in the persuasion in advertising section above, Ruitter et al. (2006) researched the attention of a viewer, which increased when the computer-mediated message was tailored towards the audience. However, the investigation into the specification of a message to the audience and the attention that is paid towards the stimulus allows this research to incorporate a degree of resource allocation theory, as participants will be exposed to a video message in the intervention of this research. Therefore, this research will incorporate the use the

Television Advertising Evaluation Internet Questionnaire (Survey Share, 2010) to allow participant feedback on the advertisements but also make anecdotal inferences on the attention paid to the content of the advertisements based upon the feedback on the evaluation scales of each participant. The use of this scale may allow the present research to obtain participant feedback on not only the quality of the advertisement but also their qualitative data such as their opinions and thoughts.

### **Captology and Avatars**

The present research will also incorporate the captology intervention mentioned above based on the research conducted by Henkemans et al. (2009), Yee and Bailenson (2007), Vasalou and Joinson (2009) and Dunn and Guadagno (2012) using avatars in the second phase of this research.

This research makes several hypothesis based upon the research described in the review above in which participants invest their physical and emotional selves into avatars that avatars may in turn influence an individual if they display some of the inherent characteristics described by Henkemans et al. (2009) such as facial expressions and gestures. The present research will incorporate the previous research conducted in investigating the effects of captology. This research will adopt the methodology by adapting the theory that Henkemans et al. (2009) used to provide reinforcement and support to their participants by using avatars to provide feedback on the pro same-sex marriage advertisement using facial expressions and gestures such as nodding and smiling.

This research will also incorporate the feedback upon the findings of Guadagno and Cialdini's (2002) which resulted in participants sharing their own attitudes more openly in the online condition by implementing the methodology phases of this research on-line using a survey website. This form of implementation will eliminate any possible experimenter bias or socially desirable answers as well as any effects one participant may have on a fellow participant.

The present research will incorporate the findings of Dunn and Guadagno (2012) who found that their participants paid particular attention and care to an avatars, race, and physical attributes of their own design. Therefore, as the present research will incorporate this finding to create a male and female avatar, which is

Caucasian race, this measure will be taken to identify if the gender of the avatar has an effect on participant attitudes.

## **Gender Examination**

This research will also attempt to investigate any possible effects of gender during this investigation. As the findings of Guadagno and Cialdini's (2002) suggest that female and male participant results differ from each other online based on their own attitudes and the possible perceived attitudes of the communicator. The examination of gender is also relevant as the findings of Pearl and Galupo (2007) and Galupo and Pearl (2007), which noted that female participant attitudes towards same-sex marriage were more positive than male attitudes. This was a concurrent finding of Herek (1984, 1988) who noted male participant attitudes towards lesbians and gay men to be more negative than female participant attitude scores.

## **The Present Study**

Therefore, considering the gaps in both the literature and the application capabilities of the theory discussed, this study is beneficial in an Irish context where recent polls have shown over two thirds believe that gay couples should be allowed to marry (Irish Times, 2010). A similar article to this Irish poll were the statistics released by the United States census which highlighted that 646,464 same-sex couples stated that they live together; an increase of 80% on in ten years. The results of the United States census show that the number of people identifying as LGBT is increasing, however these findings may not indicate that the numbers are solely increasing but that the members of the American public may be becoming more open by divulging their personal data.

This inference is made based on the changing viewpoint on the LGBT community in America from recent polls on nationwide same-sex marriage illustrating that 53% are now in favour (Gallup, 2011). The results of the Irish times newspaper poll however may have used a convenience sample and not a wider mixed sample showing true public opinion, however both polls in America and Ireland indicate a change in public attitudes towards same-sex marriage.

As political television advertising in Ireland is prohibited, this study will investigate the effects of American advertising on an Irish individual's attitudes

towards lesbians, gay men and same-sex marriage on a diverse mixed Irish sample of participants. This research conducted an investigation over three phases.

In the first phase participants will be divided into three groups viewing either a pro same-sex marriage (group 1) or anti same-sex marriage (group 2) policy advertisement or a consumer advertisement (control group). Following the methodology of Challenor (2011) in the first phase of research, participants will complete two attitude scales after viewing the assigned advertisement. These scales are the Attitudes Towards Same-sex Marriage Scale (ATSM) (Galupo & Pearl 2007) and the Attitudes Towards Lesbians and Gay Men Scale (ATLG-R-S5) (Herek, 1998). Participants will then complete the Television Advertisement Evaluation Internet Questionnaire (TAEIQ) (Survey Share, 2010) before all groups view the same consumer advertisement. The first phase concludes after participants vote on a same-sex marriage ballot before completing the ATSM, ATLG-R-S5 and TAEIQ a second time

In the second phase of research the participants who viewed the anti-same-sex marriage policy advertisement (group 2) will be divided into three further groups. These groups will view the pro same-sex marriage advertisement used in phase one. In the second phase the advertisement will contain a male avatar (group 1), female avatar (group 2) or no avatar (control). The participants of the second phase follow the same methodology as the first completing the ATSM, ATLG-R-S5, TAEIQ and the ballot vote. The second phase of this research will be conducted 8 weeks after this first phase of the current research, 5 weeks more than Herek (1984, 1994) recommend increasing the test-retest reliability of the ATLG.

In the third phase structured interviews will also be employed in this investigation to identify several factors. The main topic of the interviews will be the captivity variable used in this research. These interviews will also examine participant attitudes towards the scales and the advertisements that were used in this research. The interviews will also ask participants about their familiarity with the scales after the two phases of this research, this aims to aid in the qualitative examination the test-retest factor of this study.

However, this research will address the sample limitations and research suggestions of the previous research using the same repeated measures method but

instead using a diverse population from across Ireland. The specifics of the methodology of this research are provided in detail in the next chapter.

Therefore, the aim of this study is to answer: Can advertising and captology intervention affect an individual's attitudes and behavioural intent towards lesbians, gay men and same sex marriage?

## Research Questions

There are several research questions, which this research seeks to investigate, based on the literature review and previous research conducted by previous researchers in the areas of persuasion and captology as well as the previous research conducted by this researcher on the topic. These research questions are listed below.

1. Can advertisements and captology interventions affect an individual's attitudes towards lesbians, gay men and same sex marriage?
2. Does the implementation of an avatar with animated facial expressions have an effect on participant's attitudes and voting behaviours towards gay men, lesbian women and same-sex marriage?
3. Do male and female participant scores differ significantly on the ATLG-R-S5 and ATSM after viewing the pro or anti-policy advertisements?

## Hypotheses:

H1 – There will be a difference between the pro same-sex marriage (SSM) and anti SSM group scores after viewing on the ATSM.

H2 – There will be a difference between the pro same-sex marriage (SSM) and anti SSM group scores after viewing on the ATLG-R-S5.

H3 – Pro and anti-policy advertising will have a significant effect on participant scores on the ATSM after viewing.

H4 – Anti SSM policy advertising will produce more significant results on the ATSM than the pro SSM policy advertising.

H5 – Pro and anti-policy advertising will have a significant effect on participant scores on the ATLG-R-S5 after viewing.

H6 - Anti SSM policy advertising will produce more significant results on the ATLG-R-S5 than the pro SSM policy advertising.

H7- Female participant attitudes on the ATSM in the pro, anti-same-sex marriage policy and control advertising groups will be more positive than male participant attitude scores.

H8- Female participant attitudes on the ATLG-R-S5 in the pro, anti-same-sex marriage policy and control advertising groups will be more positive than male participant attitude scores.

H9- Pro same sex marriage advertising that includes a female interactive avatar will have a positive effect on participant attitudes on the ATSM.

H10- Pro same sex marriage advertising that includes a female interactive avatar will have a positive effect on participant attitudes on the ATLG-R-S5.

H11- Pro same sex marriage advertising that includes a male interactive avatar will have a positive effect on participant attitudes on the ATSM.

H12- Pro same sex marriage advertising that includes a male interactive avatar will have a positive effect on participant attitudes on the ATLG-R-S5.

H13- Pro SSM advertising without an interactive avatar will not affect the anti SSM advertising group attitude scores on the ATSM and ATLG-R-S5.

# Methodology

## Methodology

In this chapter, the individual data collection phases of this research are discussed. These individual sections are the research design for the three phases of data collection, information about the participants, materials used and the procedure that was followed before concluding with the ethical practices, which were followed.

## Research Design

This study employed a repeated measure and mixed methods design, using a combination of quantitative measures. These measures which are detailed in the materials section in this chapter were the Attitudes Towards Same-sex Marriage scale (ATSM) (Pearl & Galupo, 2007), the Attitudes Towards Lesbians and Gay men Scale (ATLG-R-S5) (Herek & McLemore, 2011), the Television Advertisement Evaluation Internet Questionnaire (TAEIQ) (Survey Share, 2010) and structures interviews [Fig. 4]. The above questionnaires were used accordingly with the independent variable in three forms of advertising and interactive avatars; these advertisements and avatars are described in the research design sub sections. All three phases of research were conducted online to aid the recruitment of a national sample.

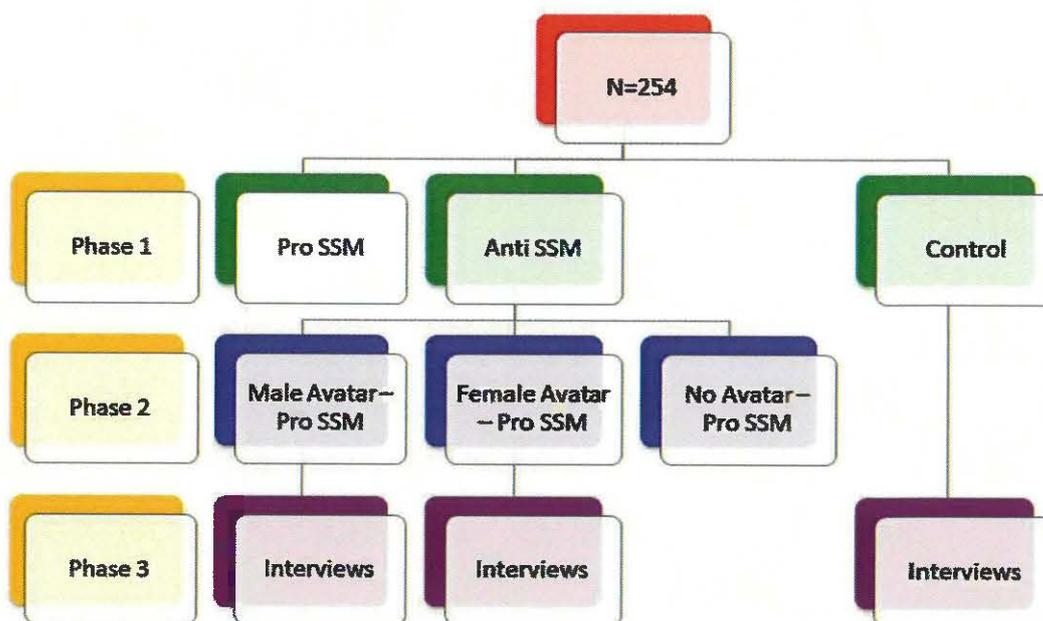


Figure 4 – Research Design Flow Diagram

## Phase 1 – Advertisement Intervention

The purpose of the first phase of research was to utilise a between participant groups design examining the effects of the individual independent advertising variables. These variables were measured using the Attitudes Towards Same-sex Marriage scale (ATSM) (Galupo & Pearl, 2007) (Appendix A) and the Attitudes towards Lesbians and Gay Men scale (ATLG-R-S5) (Herek & McLemore, 2011) (Appendix B) The Television Advertisement Evaluation Internet Questionnaire (TAEIQ) (Survey Share, 2010) (Appendix C) was administered to participants to gather advertisement evaluations. The TAEIQ also allowed time between advertisement viewing and attitude recording periods.

### Pilot Study

Before the first phase took place, a pilot study was required. The pilot study in the first phase was required to examine the procedural method employed online. After the researcher created the online experiment six participants two in each of the three groups, carried out the experiment. The participants average completion time of eighteen minutes and feedback on the procedural aspects was recorded. This pilot tested altered the display of the questionnaires so they appeared in a larger question matrix such as the ATLG-R-S5 was displayed as two questions instead of ten, [fig.

**\*6) Please rate the statements below.**

|   | <b>Strongly Disagree</b> | <b>Disagree Somewhat</b> | <b>Neither Agree Nor Disagree</b> | <b>Agree Somewhat</b> | <b>Strongly Agree</b> |
|---|--------------------------|--------------------------|-----------------------------------|-----------------------|-----------------------|
| <b>Sex between two men is just plain wrong.</b>   | <input type="radio"/>    | <input type="radio"/>    | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |
| <b>I think male homosexuals are disgusting.</b>   | <input type="radio"/>    | <input type="radio"/>    | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |
| <b>Male homosexuality is a natural expression of sexuality in men.</b>                          | <input type="radio"/>    | <input type="radio"/>    | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |
| <b>Male homosexuality is a perversion.</b>  | <input type="radio"/>    | <input type="radio"/>    | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |
| <b>Male homosexuality is merely a different kind of lifestyle that should not be condemned.</b> | <input type="radio"/>    | <input type="radio"/>    | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |

5] reducing the time required by the participants.

Figure 5 - Online survey image, ATLG-R-S5 question Matrix

## Phase 1 Participants

Three hundred and sixty four participants participated in the first phase of research. These participants were recruited from the general population using an Age Action Ireland newsletter advertisement, which may be seen, in Appendix D, and through an invitation email to the staff and volunteers who work at National Rehabilitation Hospital (Appendix E). Participants were also sourced using a Facebook advertisement, [Fig. 6] this advertisement was designed to reach people over eighteen who were living in Ireland that spoke English.

The Facebook advertisement was clicked a 94 times over the course of phase one participant recruitment. Finally, an email invitation was sent to third level education campus' departments and student societies inviting staff and students from across Ireland to participate.



Figure 6. Facebook Advertisement

The well-being procedures followed during the recruitment of these participants adhered to the ethical codes set by Institute of Art, Design and Technology (IADT) ethics committee before passing ethics form B but also by the Psychological Society of Ireland (PSI) and British Psychological Society (BPS). After incomplete surveys were excluded, two hundred and fifty-four remained; these participants were randomly assigned to one of three groups.

## Participant Group Allocation

The participants in the first and second phases of research were allocated to the individual advertising groups of both phases through the consent form webpage, hosted on Dropbox. This consent form (Appendix F) contained a button that contained HTML coding (Java Script Source, 2000) shown in appendix G. This coding was designed to randomly allocate participants to one of three groups in phase one. The allocation was entirely random and did not filter participants into the groups to produce equal numbers. This method was employed to allow for true random allocation of participants.

## Group and Gender Distributions

The pro same-sex marriage (SSM) group contained one hundred and one participants, the anti SSM group contained eighty-eight participants and the control group contained sixty-five participants. Table 1 displays the gender distribution and the allocation of participants to the three groups use in phase 1. The age range of participants was from 18 and 63, ( $M=29$ ,  $SD=10.26$ ).

Table 1

*Phase 1 Participant Group and Gender Distribution.*

| Participant Group          | N   | %:   | Gender Distribution |             |
|----------------------------|-----|------|---------------------|-------------|
|                            |     |      | Males (N)           | Females (N) |
| Pro SSM advertising group  | 101 | 39.8 | 35                  | 66          |
| Anti SSM advertising group | 88  | 34.6 | 33                  | 55          |
| Control group              | 65  | 25.6 | 22                  | 43          |
| Total                      | 254 | 100  | 90                  | 164         |

The pro same-sex marriage-advertising group consisted of 39.8% of phase one participants with a gender division of 35 males and 66 females. The anti, same-sex marriage-advertising group contained 34.6% of first phase participants, with a gender division of 33 males and 55 females. The control group consisted of 25.6% of participants, 22 male and 43 female; these distributions are illustrated in figure 7.

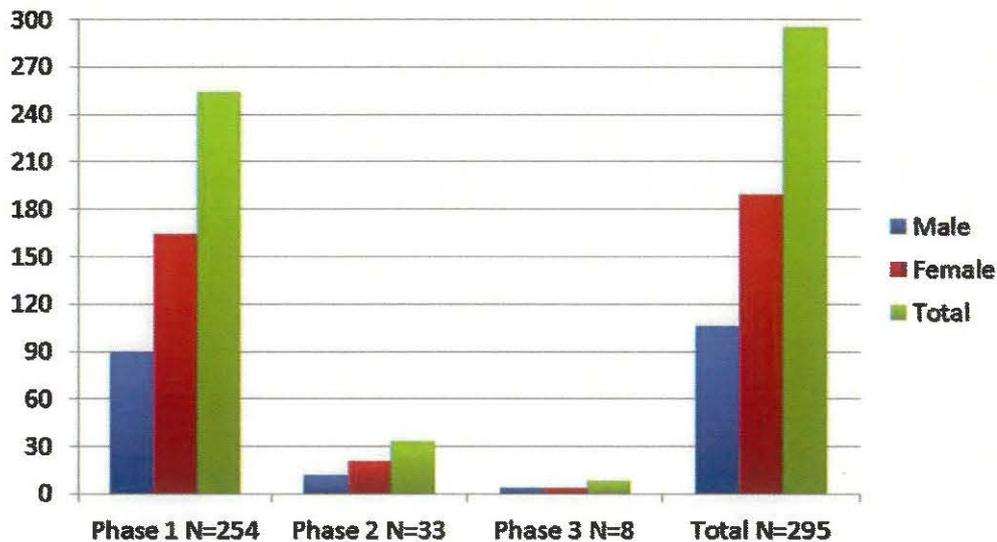


Figure 7. Participant Gender Distribution

## Phase 1 Materials

### Written Materials

The first phase of research required several different materials to conduct the experiment. The first materials were the consent (appendix F) and debrief forms (appendix H). The first phase incorporated three likert scales, one advertisement evaluation form the Television Advertising Evaluation Internet Questionnaire (TAEIQ) (Survey Share, 2010) and two attitude scales which were the Attitudes Towards Same-sex Marriage scale (ATSM) (Pearl & Galupo, 2007) and the Attitudes Towards Lesbians and Gay Men scale (ATLG-R-S5) (Herek & McLemore, 2011)

The TAEIQ (Survey Share, 2010) was used in the pilot and main studies of the first and second phase of research. The TAEIQ shown in appendix c provided both quantitative and qualitative feedback from the participants. Several questions were removed from the scale for the purpose of this investigation as they were not relevant (Q3, Q5-6, Q12-14). An addition three questions (Q18-20) were removed as they gathered demographic information. The first section of the TAEIQ gathered participant evaluations of the advertisements using likert ratings e.g. Very well to Not at all well. The participant is asked to make these evaluations of the advertisement based on its ability to catch a person's attention, how appealing and memorable, creative, convincing it is before rating its quality to other similar advertisements. The participant is then able to make qualitative evaluations of how appealing or unappealing the advertisement may be before selecting a various adjectives that they would use to describe the advertisement.

This scale was a useful tool as it allowed participants to provide written opinions and answer prompting questions relating to the advertisement. The opinions that were provided may allow further knowledge into the participant's individual adjustment. This individual adjustment in terms of attitudes towards lesbians, gay men and same sex marriage however may be the individual's response to the either the same sex marriage advertisement and if the individual consciously chooses to re-evaluate their attitudes or beliefs based upon the content they have just viewed. This reevaluation refers to the power to which Briñol, Petty and Barden (2007) referred to.

As the research in the literature review identifies the ATLG scale (Herek, 1984) has been the basis of several attitude studies like, Pearl and Galupo (2007) used the revised ATLG-S (Herek, 1998). A new attitudes measure towards same-sex marriage was designed to better evaluate the specific attitudes towards this political issue. Pearl and Galupo (2007) developed the Attitudes towards Same Sex Marriage scale (ATSM) using a sample of 615 participants using a diverse sample that included students and adults. Developed over four stages; the results of the first examination of the ATSM revealed high internal consistency  $\sigma = .94$  ( $N = 154$ ), revising the scale from 22 to 17 items to increasing the structure and reliability of the scale. The second phase additional yielded a high internal consistency of  $\sigma = .96$  ( $N = 225$ ) supported the psychometric value of the scale.

The third phase replicated study two on a non-student sample. The authors found a positive correlation between positive attitudes and levels of educational attainment and a reliability alpha of  $\sigma = .97$  ( $N = 242$ ). The final phase incorporated the ATLG-S (Herek, 1988) and the Modern Homo-negativity Scale (Morrison & Morrison, 2002 as cited in Pearl & Galupo, 2007), examining political conservatism and religious identification. The results of all four phases identified correlating results. After revision, the ATSM Likert scale consists of 17 items with 8 items requiring reverse scoring is presented in appendix a. There are five likert ratings provided to participants from strongly disagree to strongly agree. Each item carries a minimum score of one and a maximum score of five, resulting in a max score of eighty-five (highly positive attitudes) or minimum score of seventeen (highly negative attitudes).

Pearl and Galupo (2007) highlighted the application of this scale has the potential to be used in countries that are introducing same sex marriage or civil unions and how these attitudes affect voting behaviours. This scale was found to produce negative scores frequently when participants showed levels of political conservatism and religiosity (Galupo & Pearl, 2007). During the transcription process from paper to the online survey used for data collection, question eight was omitted due to human error, making the scale in this research, sixteen items. However, the Attitudes Towards Same-sex Marriage (ATSM) scale (Pearl & Galupo, 2007) has been shown to highly correlate with later research (Galupo & Pearl, 2007) by the authors with an internal consistency of  $\sigma = .94$  ( $N = 112$ ). Importantly, within the present research the results of the first phase of research have shown the sixteen items ATSM used in this research correlate with the findings of the creators with a Cronback's alpha  $\sigma = .94$  ( $N = 254$ ), which was additionally supported by the Cronback,'s alpha of  $\sigma = .88$  ( $N = 33$ ) in the second phase.

The second attitude likert scale used in this phase of research was the ten item Attitudes Towards Lesbians and Gay men scale revised short form (ATLG-R-S5) (Herek & McLemore) presented in appendix B. The ATLG-R-S5 was revised from the twenty item ATLG scale (Herek, 1984) after it was evaluated during Herek's (1988) reliability and revision investigation of the ATLG. The ATLG-R-S5 is composed of two subscales, the ATL-R-S5 examining attitudes towards lesbians and the ATG-R-S5 examines attitudes towards gay men. These 10 items are identical

except for the modification of the male and female in the subscales to allow for direct comparisons between subscales if desired. The ATLG-R-S5 records five participant responses from strongly disagree to strongly agree over ten items, with four items requiring reverse scoring. A test of reliability for the ATLG-R (Herek, 1984) which is the basis for the revised ATLG-R-S5 sub-scales yielded alphas values which exceeded .85 and .90 for the full scale when administered to college student (Herek, 1987a, 1987b, 1988). When tested on a non-student sample reliability values of .90 were obtained for the full scale (Herek, 1994). The short version correlates highly with its longer counterpart (ATLG-R with ATLG,  $r = .80$ ). The revised and shorter version of the ATLG, the ATLG-R-S5 (Herek & McLemore, 2011) has shown to be appropriately reliable, valid, and convenient for most research designs.

This research used Herek and McLemore's (2011) Attitudes Towards Lesbians and Gay men scale-short form (ATLG-R-S5), the results of the first phase of research displayed a Cronbach's alpha  $\sigma = .700$  ( $N = 254$ ). The results of the second phase of research displayed a Cronbach's alpha  $\sigma = .90$  ( $N = 33$ ). Higher scores on the ATLG-R-S5 (Herek & McLemore, 2011) denoted negative attitudes with lower scores indicating positive attitudes towards lesbians and gay men. Investigations conducted by Herek (1987a, 1987b, 1988, 1994) has correlated negative attitude scores on the ATLG with high religiosity, reduced contact with lesbians and gay men, adherence to traditional sex-role attitudes and beliefs in the traditional family.

A ballot vote towards same sex marriage in Ireland was also used during the first phase of research to identify if participant attitudes may be correlated to actions. Participants in all groups of the first phase conduct the ballot before and after viewing the advertisements. This ballot was also used to compare to other ballots towards same-sex marriage described in the literature overview section, these comparisons are described in the next chapter.

## Video Materials

Four videos were used in this investigation; two consumer advertisements and two same-sex marriage campaign policy advertisements. The participants in the phase only viewed two videos out of the possible combinations. All the videos were sourced from the public video hosting website YouTube. Consumer advertisements were chosen by the researcher for this research as they are unrelated to the main focus of examination, attitudes towards lesbians, gay men and same-sex marriage. Both of the consumer advertisements were also selected, as they require the same viewing time by the participants. The first consumer advertisement used in phase one control group was a Cadburys Chocolate Advertisement (Macegrove, 2007)<sup>4</sup>. This video was selected as it follows the peripheral route of the elaboration likelihood model of persuasion (Petty & Cacioppo, 1986) including no factual argument, relying on visual and auditory stimuli to link the advertisement to the product. The advertisement is famous for its inclusion of a Gorilla playing the famous drum solo from the Phil Collins song *In the Air Tonight*, the advertisement runs for a total of ninety-one seconds, this advertisement is displayed in figure 8.



Figure 8. The Cadburys Gorilla Advertisement.

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<sup>4</sup> Cadbury's Chocolate Advertisement – "Cadburys Gorilla Advert" created by Cadbury's Chocolate, 2007. Available from <http://youtu.be/TnzFRV1LwIo>

The second consumer advertisement was a Guinness advertisement created in 2009 titled *Bring it to Life*<sup>5</sup> depicting the creation of the world. This advertisement was shown to all of the participants of the first research phase and runs for 91 seconds. The researcher chose this advertisement for its creative visual imagery, which adheres to the peripheral route of information processing defined by Petty and Cacioppo (1986) without presenting the audience with a specific argument to purchase their product. The advertisement combines orchestral music with the visual stimuli. The image in figure 9 depicts several men pulling grass across the earth.

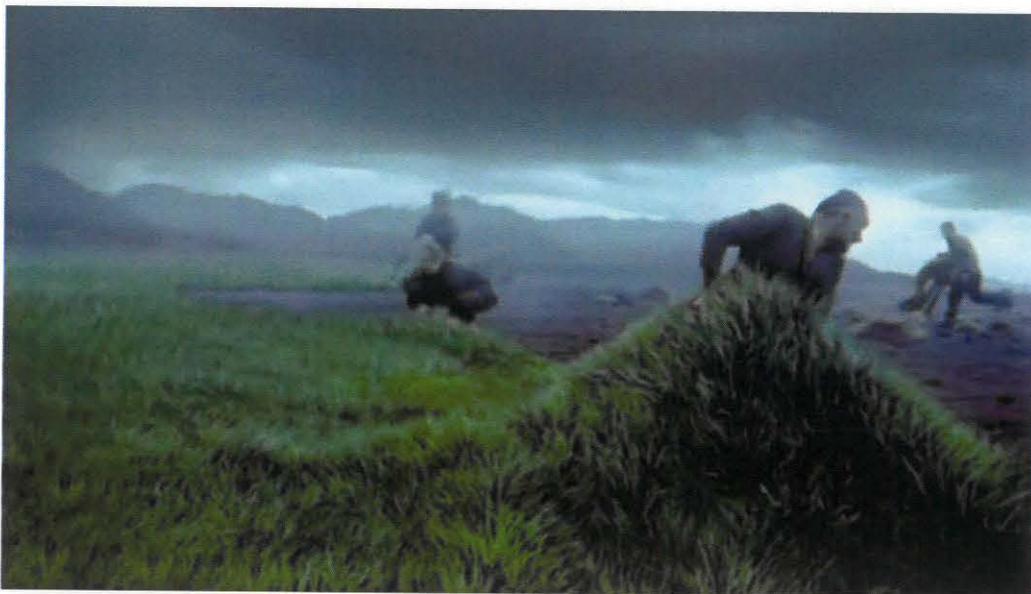


Figure 9. The Guinness Advertisement.

The two same-sex marriage policy advertisements used in this research were also sourced from the video hosting website YouTube. As this research describes in the review of literature video advertising for political purposes is against Irish law.

Therefore the same-sex marriage policy advertisements were sourced from California in the United States where an amendment to the Californian constitution was due to be held. The amendment known as proposition 8 was to redefine the law to “only marriage between a man and a woman is valid or recognized in California” (Marin, 2013, “What is Prop 8?”). The amendment was passed with 52% in favour of Prop 8; banning same-sex marriage in November 2008 after 83 million dollars was

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<sup>5</sup> Guinness advertisement – “Bring it to Life” created by Guinness World, 2009. Available from <http://youtu.be/-pgA8Z71FVE>

spent on campaign advertising, 44.1 million in favour and 38.8 million against (Moore, 2009).

Two of the advertisements which are used in this research were designed by two independent groups, the NOH8 (pronounced no hate) campaign in favour of same-sex marriage and Preserving Marriage against same-sex marriage. The political advertisements used in the study were approved to be aired on Californian television by the federal campaign watchdog, which regulates all the political advertising in the United States (LoGrippe, 2010).

The pro same-sex marriage video (NOH8 campaign) that was used in this research is featured in figure 10.<sup>6</sup> The video also followed the peripheral route of persuasion identified by Petty and Cacioppo (1986) featuring celebrities from the United States speaking in different languages in favour of same-sex marriage and equality. The video uses various arguments relating to human rights and discrimination. The advertisement has the same running time as the consumer advertisements of ninety-one seconds.



Figure 10. The Pro Same-Sex Marriage Advertisement.

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<sup>6</sup> Pro same-sex marriage Advertisement – “I am Human NOH8 Campaign PSA” created by the NOH8 Campaign, 2008. Available from <https://www.youtube.com/watch?v=PXR3a5yIWRw>

The final video used in the second phase of research was the second same-sex marriage policy advertisement in favour of proposition 8, banning marriage. This advertisement was created by the Preserving Marriage campaign in 2008. The advertisement that may be seen in figure 11<sup>7</sup> runs for ninety seven seconds. Following the peripheral route of persuasion described by Petty and Cacioppo (1986) displays young men and women of various races to argue for the protection of marriage using religious arguments.



*Figure 11.* The Anti-Same-Sex marriage advertisement.

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<sup>7</sup> Anti-same-sex marriage advertisement - "YES on Proposition 8 (Prop 8) protect marriage" created by Preserving Marriage, 2008. Available from <http://youtu.be/Y4nqtDrJI7A>

## Phase 1 Procedure

The first phase of the data collection as described above followed the repeated measures design. This design was conducted online using the online survey website ([www.freeonlinesurveys.com](http://www.freeonlinesurveys.com)). The participants were first provided with a link to an online consent form (Appendix F). After consenting the participants were brought to the survey website, entering their demographic and contact information.

Participants then completed two attitude scales, the Attitudes Towards Same-sex Marriage scale (ATSM) (Pearl & Galupo, 2007) and the Attitudes Towards Lesbians and Gay Men scale (ATLG-R-S5) (Herek & McLemore, 2011) before completing a ballot vote on same-sex marriage in Ireland. The participants then proceeded to the next section; containing the first advertisement; the pro same-sex marriage [Fig. 12], anti-same-sex marriage or control Cadburys chocolate consumer advertisement.

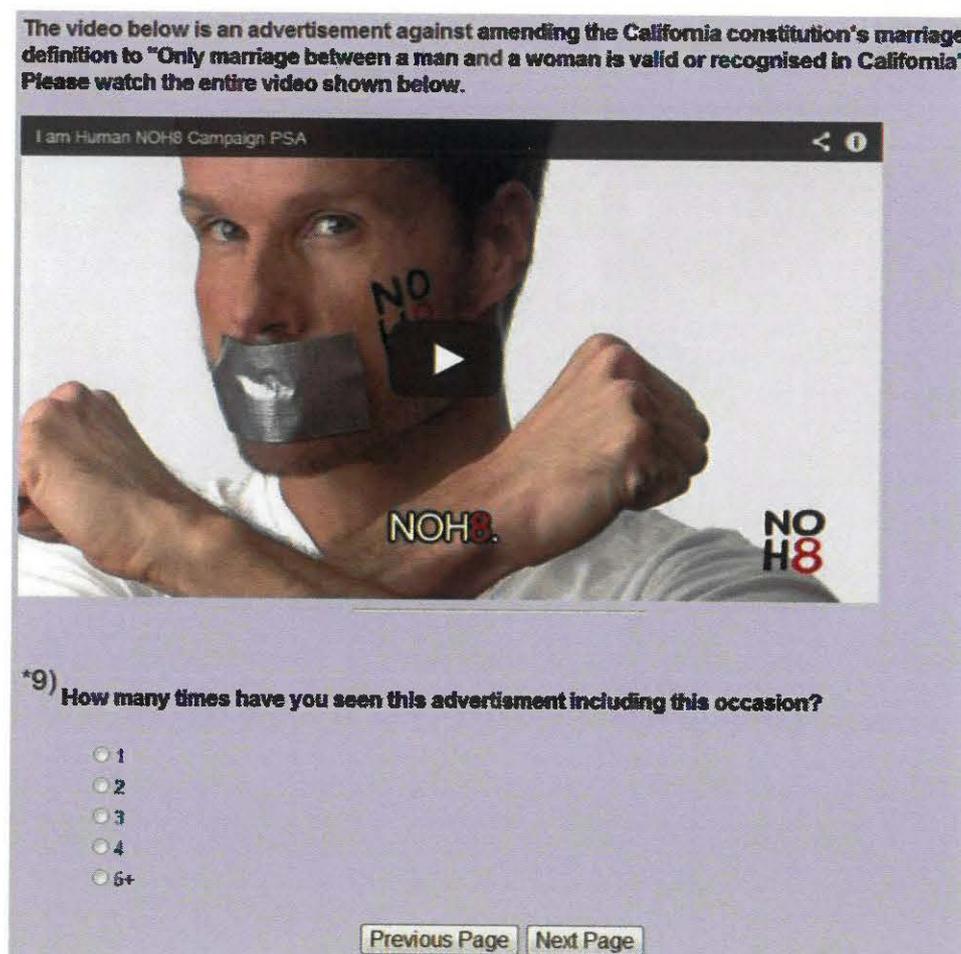


Figure 12. The Pro Same-Sex Marriage Advertising Group Procedure Image.

After the Participants viewed the advertisement displayed in figure 12, they proceeded to the next page to complete the TAEIQ (Survey Share, 2010). On completion, the participants in all groups then viewed the Guinness consumer advertisement [Fig 13]. After viewing the TAEIQ (Survey Share, 2010) was completed again. Finally, the participants then completed the ATSM (Pearl & Galupo, 2007) and the ATLG-R-S5 (Herek & McLemore, 2011) for a final time before voting on same-sex marriage in Ireland again. The participants were then debriefed using a debriefed (Appendix - H) and thanked for their participation.

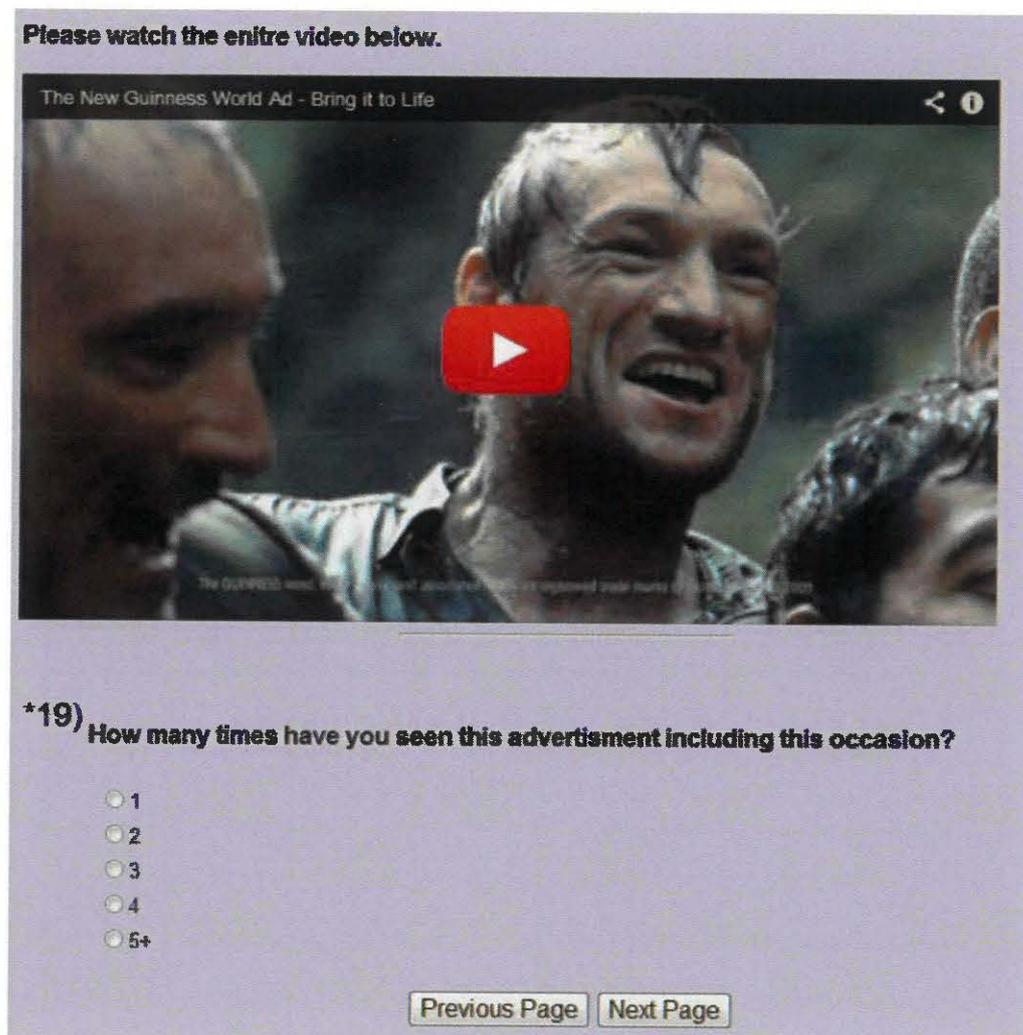


Figure 13. The Online Survey, Guinness Advertisement Procedure Image.

## Phase 2 – Avatar intervention

### Participants

The participants for the second phase were recruited using an invitation email shown in appendix I. This email was sent to all the participants who viewed the anti-same-sex marriage policy advertisement used in the first phase.

### Participant Group Allocation

Similarly, to the first phase, the participants in the second phase of research were allocated to the individual groups through the consent form webpage. This consent form contained a button that contained HTML coding (Java Script Source, 2000) shown in appendix K. These coding randomly allocated participants to one of three groups in phase two and did not filter participants into the groups to produce equal numbers allowing true random allocation of participants.

The age range of participants in phase 2 was from 21 and 48, ( $M=28$ ,  $SD=8.2$ ). The male avatar group consisted of 33.3% ( $N=11$ ) of the total ( $N=33$ ) participants of phase two with a gender division of  $n=6$  (50%) males and  $n=5$  (45%) females. The female avatar group was composed of 51.5% ( $N=17$ ) of the first phase participants, with a gender division of  $n=5$  (29%) males and  $n=12$  (71%) females. Finally, the no avatar group for phase two consisted of 15.2% of participants,  $n=1$  (20%) male and  $n=4$  (80%) females. See table 2 below for distributions.

Table 2

*Phase 2 Participant Gender and Group Distribution*

| Variables           | N  | %:   | Gender Distribution |      |             |      |
|---------------------|----|------|---------------------|------|-------------|------|
|                     |    |      | Males (N)           |      | Females (N) |      |
|                     |    |      | N                   | %    | N           | %    |
| Male avatar group   | 11 | 33.3 | 6                   | 55%  | 5           | 5    |
| Female avatar group | 17 | 51.5 | 5                   | 29%  | 12          | 71%  |
| Control group       | 5  | 15.2 | 1                   | 20%  | 4           | 80%  |
| Total               | 33 | 100  | 12                  | 100% | 21          | 100% |

## Materials

### Written Materials

Correspondingly, to the first phase of research the second phase used the same written materials in the same order. The participants were provided at the start of the study with a consent form (appendix J); on completion, participants were provided with the debriefing form (appendix J). The participants of the second phase used the TAEIQ (Survey Share, 2010) in the pilot and main studies of the second phase of research. The TAEIQ shown in appendix C was used to gather quantitative and qualitative feedback from the participants. As in the first phase, several questions were removed from the scale for the purpose of this investigation as they were not relevant (Q3, Q5-6, Q12-14). An addition three questions (Q18-20) were removed as they gathered demographic information.

Concurrent with the first phase of research, the second phase used the Attitudes Towards Same-sex Marriage (ATMS) Scale, designed by Pearl and Galupo (2007). The ATSM is a 17 item likert scale with 8 items requiring reverse scoring. As an error removing question 8 from the 17 item scale occurred in the first phase the second phase also omitted the question. The second phase of research also used the Attitudes Towards Lesbians and Gay men scale-revised short form (ATLG-R-S5) (Herek & McLemore, 2011).

## Avatar Design

The second phase of this research was subject to extensive pilot testing to design the interactive avatars, with further pilot testing to gather feedback after each edition of the avatar was completed. It was decided that a modified version of the waterfall model of software design (Royce, 1970) would be employed as an animation designer was employed by the Dun Laoghaire Institute of Art, Design and Technology to create the avatars with the researcher. The first two steps of system requirements and software requirements were not excluded as they were not required. The steps of the software waterfall model employed are displayed below in figure 14.

This research began at the analysis phase examining previous avatar literature before designing, animating, pilot testing and finally integration with the pro same-sex marriage policy advertisement. This model provides a distinct advantage as the each stage of development is not initiated until the previous stage requirements and feedback have been integrated.

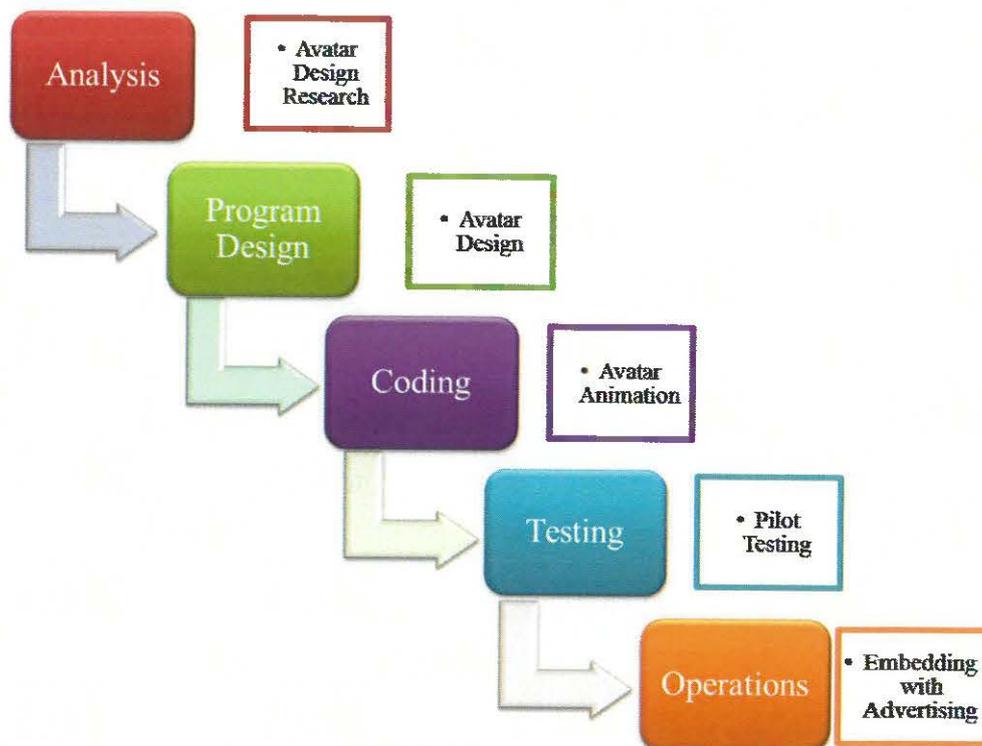


Figure 14. The Waterfall Model of Software Design.

### Analysis

The analysis phase of avatar design required a review of avatar design literature. A number of research papers were examined relating to the gender design, a facial design, facial expressions, facial gestures and clothing design, the design recommendations from these investigations is summarised below.

During the designing of the avatars research by Dunn and Guadagno (2012) was incorporated regarding the gender roles of the avatars. The participants of Dunn and Guadagno (2012) chose avatars which represented the traditional gender roles, for women this represented a traditional slender ideal with men selecting more masculine avatars. These findings were incorporated when the male and female avatars were created, giving them more common gender normative features such as a broad jawline on the male avatar.

The work conducted by Vasalou and Joinson (2009) also had an impact on the avatar design as the authors noted that participants chose more formal clothing in scenarios in which they wanted to be portrayed as more professional. As this research aimed to design an avatar, which is perceived to have its own opinion, this research decided that the avatars would appear in formal clothing. After pilot testing described in the next stage of the model before animation this was altered based on participant feedback to a blue shirt as it is both gender neutral and professional.

The design of the facial expressions and gestures was refined by several pieces of research. In relation to the animation process, the research conducted by Rigas and Gazepidis (2009) on the role of facial expressions and body gestures was also incorporated. Rigas and Gazepidis (2009) investigating the user satisfaction of avatars with facial expressions only or avatars with expressions and body gestures and traditional text and graphical metaphors when incorporated with a product on forty-two participants.

The results of the investigation identified that 88% of participants preferred avatars with facial expressions ranking products higher over the other groups. In addition to this the design implications of Rigas and Gazepidis (2009) effecting this research was the satisfaction ratings of participants towards the facial gestures. The gestures of surprised, amazed, happy, interested, neutral and thinking were viewed as positive gestures by up to 95% of participants, observing participants mimicking the expressions during interaction. However as the authors did not include the images of

the avatars to replicate the gestures, therefore no direct guide could be followed requiring further research.

The research conducted by Guadagno, Swinth and Blascovich (2011) on thirty eight American college students examining the social evaluations that are formed by people after interacting with an avatar as a peer counsellor was also incorporated. The authors identified that the non-verbal behaviour displayed by smiling increased the perceived empathy of the avatar, resulting in positive evaluations of the avatar and their interaction. The authors also noted that participant levels of trust, comfort and satisfaction with the interaction also increased. Therefore the design of this research chose to incorporate the findings of Rigas and Gazepidis (2009) and Guadagno, Swinth and Blascovich (2011) incorporating positive facial expressions of two types of smiling (with and without showing teeth), a neutral thinking face and the facial gesture of nodding in the design.

The animation of the avatars also required research relating to the facial gesture of blinking. Weibel, Stricker, Wissmath and Mast (2010) investigated the effects of eye blinking rates, pupil size and viewing angle of an avatar has on impression formation. Using a Swiss student sample (N56) the authors identified that a main effect for the viewing angle with avatars viewed from below and frontal views as the most sociable and attractive, with large pupils and the human eye blinking frequency of 24 blinks per minute to be more sociable and attractive also. Therefore on the basis the results of Weibel et al. (2010) the avatars of this research were viewed from a frontal view angle, with larger pupils and a blinking rate of 24 eye blinks per minute was incorporated into the avatars of this research.

### Program Design

The male and female avatars were designed using Adobe Flash CS6; to be 2D representations of a man and women. The purpose of the 2D animation was due to the time and monetary restrictions. The animation designer and research first created prototypes sketches for pilot testing which incorporated the design recommendations of previous research [Fig. 15]. After pilot testing, the designs were refined to the shoulder and altering the hair of the male to look more modern [Fig. 16].



Figure 15. The Full Body Avatar Designs.

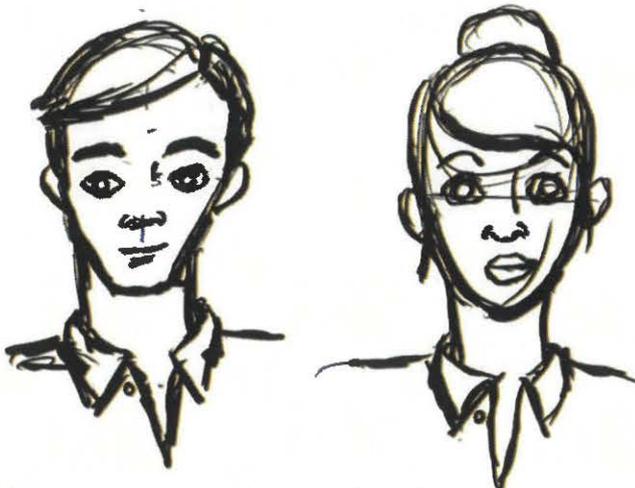
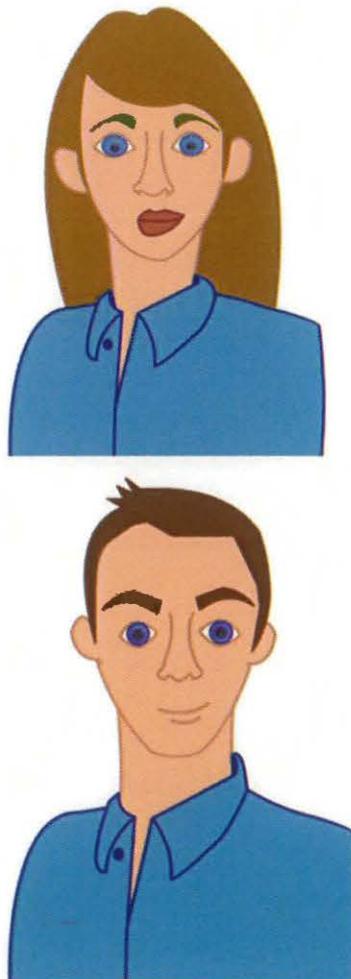


Figure 16. The Avatars from Shoulder Viewpoint.

After the avatar designs were altered as they appear in figure 16, a further pilot study was conducted before the designs could proceed to the next phase. The participants of the pilot study noted that the female avatar still appear to be too formal when contrasted to the male. The female avatar's hair was altered, to tied up and instead at shoulder length. The colour mock ups after this change are displayed in the next section.

### Coding

The coding phase of design in which the avatar was animated was conducted using Adobe Flash CS6. The avatar concept drawings from the previous phase were redrawn based on participant feedback to include colour, including design suggestions and shown to the pilot study to gather feedback. The final concept designs of the avatars are displayed in figure 17. After the design pilot testing phases was completed, the designing process an avatar script was created. This script contained the actions the avatar would perform such as nodding, different smiles and turning to view the audience and video. The researcher and animation designer allocated gestures to take place either during a statement such as nodding or smiling at the end of a statement made by the speaker in the video.



*Figure 17. The Female and Male Animated Avatars.*

### Testing

After the avatars were animated, the researcher and animation designer tested the animations for design glitches before integration with the pro same-sex marriage policy advertisement. After this was complete another pilot study was conducted to gather participant feedback on the animated facial expression used by the avatar. The participant feedback altered the content facial expression used in the animation as participants described the facial expression as judgemental. The avatars mouth curvature was altered to counteract this effect.

The feedback provided during the various pilot testing phases allowed the researcher and animation designer to focus on previous research described in the literature review and participant feedback, to prevent issues such as the uncanny valley (Mori, 1970, 2005) by altering the design when required.

### Operations

In the final stage of the animation design the male and female avatars were incorporated into the pro-same-sex marriage advertisement Adobe Flash CS6.

After integration, pilot testing was conducted to identify any potential issues with integration and design. The pilot testing participants noted that they were slightly distracted by the different languages (audio stimuli) and the three visual stimuli (subtitles, avatar and person on screen) used in the video.

This distraction may have been due to a strain on the resources of the central executive. The central executive is described as the sorting office of Baddeley's working memory model (Baddeley, 2007 as cited in Robinson-Riegler & Robinson-Riegler, 2012). Robinson-Riegler and Robinson-Riegler (2012) describe the working memory model as two subsystems, the verbal information processor (phonological loop) and the visual information processor (visuo-spatial sketchpad). These two processors are linked and sorted by the central executive processing information (language comprehension, problem solving and reasoning) before it is stored in long term memory (Robinson-Riegler & Robinson-Riegler, 2012). As the central executive has a limited ability to process visual and auditory stimuli; when a task is too demanding, the resources are drained resulting in a reduction in complex thinking.

Therefore on the basis of these recommendations accounting for the cognitive limitations of the central executive of participants the video was dubbed in

English by Irish student volunteers. The aim of this was to reduce the cognitive overload on the central executive by reducing the demand of the phonological loop of the participants allowing them to focus more of their attention resources on the visual stimuli presented by the avatar and the video (Robinson-Riegler & Robinson-Riegler, 2012).

This process required a sound engineer to edit the video with a new audio track. This audio track contained two levels, the script audio designed to match the movement of the original actors lip movements. The second level was the background audio; this was designed to replicate the background music used in the original video, playing at a lower volume than the speech level. After the audio tracks were created they were integrated with either the male avatar displayed below in figure 18 or the female avatar [Fig 19].



Figure 18. Pro Same-Sex Marriage Advertisement with the Male Avatar.

## Video Materials

Four video materials were used during the second phase of research. These videos were the Guinness advertisement [Fig. 13] and pro same-sex marriage policy advertisement [Fig. 12] created by the NOH8 campaign and the adapted pro same-sex marriage policy advertisement with either a male or female avatar. The pro-same sex marriage advertising video was modified for research purposes. As the avatar design section above details the same-sex marriage advertisement audio was altered after they were integrated with either the male<sup>8</sup> avatar or the female<sup>9</sup> avatar displayed below in figure 19.



Figure 19. Pro Same-Sex Marriage Advertisement with the Female Avatar.

## Pilot Study

This pilot study of the second phase was conducted to examine the procedure employed. The pilot study took place eight weeks after the completion of the first phase of data collection. The participants were sourced from the anti-same-sex marriage policy advertisement group used in the first phase of research and allocated randomly to three further variable groups; the first of these groups, the control group viewed the pro same-sex marriage policy advertisement with no avatar.

<sup>8</sup> Pro same-sex marriage advertisement (male avatar) – “AP8M.” Created by Liam Challenor, 2012. Available from <http://youtu.be/xLjj8kDij4o>

<sup>9</sup> Pro same-sex marriage advertisement (female avatar) – “AP8F.” Created by Liam Challenor, 2012. Available from <http://youtu.be/xpRAMyQBdRQ>

The second group viewed the pro-same-sex marriage policy advertisement with a female avatar and the final group viewed the advertisement with the male avatar. The participants completed this phase of the methodology in the same order as phase one. The methodology was conducted using the same online survey website of the first phase.

Participants first filled out the Attitudes Towards Same-sex Marriage (ATSM) scale (Pearl & Galupo, 2007) and the Attitudes Towards Lesbians and Gay men revised five item version (ATLG-R-S5) (Herek & McLemore, 2011) before viewing the pro same-sex marriage advertisement with or without the embedded interactive avatar. The participants then completed the Television Advertisement Evaluation Internet Questionnaire (TAEIQ) (Survey Share, 2010). After this, the participants then viewed the same Guinness consumer advertisement used in the first phase of research. After viewing, the participants completed the TAEIQ before completing the ATSM and the ATLG-R-S5. Participants then concluded this phase of the data collection after completing the ballot vote on same-sex marriage in Ireland before debriefing. The procedural time identified for this was twenty minutes.

## **Procedure**

The procedure of the main data collection of phase two was conducted online incorporating the two attitude scales, the ATSM and the ATLG-R-S5 and the advertisement evaluation scale the TAEIQ. The two advertisements were also incorporated in this survey. The three participant groups of the first phase of research were recruited using the email addresses they supplied during the first phase of research. The consent form (appendix J) link was provided via email as it was hosted on Dropbox. After the participants consented to take part in the study they were randomly allocated to one of three participant groups.

The three groups all viewed the pro same-sex marriage policy advertisement used in the first phase. This advertisement contained a female, male or no avatar (control) in the video. After giving consent, the participants were then asked to complete their demographic information into the survey displayed on the following page in figure 20.

The participant then continued from this page to complete the attitude scales (ATSM & ATLG-R-S5) for the first time before voting on same-sex marriage in Ireland. Upon completion of this vote, the participant continued to the next page to view the advertisement that may or may not have included the interactive avatar. After viewing the participant completed the advertisement evaluation, scale the TAEIQ before proceeding to view the next advertisement. The second advertisement was the Guinness consumer advertisement, after viewing the participants completed the TAEIQ for a final time.

The participant then continued to the final recording of participant attitudes, completing the ATSM and the ATLG-R-S5. On completion of these attitude scales the participants vote towards same-sex marriage in Ireland was recorded before the participant was debriefed (appendix L). Finally, the participants were thanked for their participation in the research.

#### Advertising and Captology

Hello, you have been redirected to this survey because you have consented to take part in the research which is being conducted by Liam Challener (Liam.Challener@iaad.ie) at the Dun Laoghaire Institute of Art, Design and Technology.

To allow participants to withdraw your mothers maiden name and your date of birth are requested to remove your data.

Thank you for your participation.

\*1) What is your gender?

Male  
 Female

---

\*2) Please provide your mothers maiden name.

---

\*3) Please provide your date of birth.

e.g. -15/08/1983

---

\*4) As the consent form explained, the researcher may require your voluntary participation for the second phase of this research, therefore please provide your email in the box below.  
Please note, this is completely confidential.

Next Page

Figure 20. Phase 2 Online Survey Demographic Information Page.

## **Phase 3 – Structured Interviews**

### **Pilot Study**

The interviews used in this research were conducted among the participants who participated in the captology intervention of phase two and the control group of the first phase. The participants for these interviews were sourced via email using the information gathered in the first and second phase. The interviews were conducted in a meeting room on the Institute of Art, Design and Technology (IADT) campus or using the video calling service Skype (2013). Skype was implemented for the interview process as the participants who lived in different locations in Ireland could not always make it for the interviews. The audio from these calls was recorded and stored using the same method as the IADT interviews. However the participants of the pilot study were present in the interviews on the IADT campus.

The purpose of the pilot study in the third phase of research was to examine the procedural aspects of the phase and identify any potential issues raised by the questions. The participants of the pilot study were divided into two groups, one group of participants sourced from the control group of the first phase. The second group was composed of the participants from the second phase who viewed advertising that incorporated the animated avatars. On arrival in IADT the participants completed the procedure detailed below, with an average completion time of one hour. The results of the pilot study altered the procedure to include images of the videos after playing them for participants to aid recall as participants noted the time frame between phase two and phase three affected their memory.

## Participants

After the pilot study, six participants were later recruited from the first and second phases using an email invitation (appendix Q) sent to all the participants in the first phase control group and the avatar groups of the second phase. The responding participant took part in the interviews. The gender distribution of participants is displayed in table 3 below.

Table 3  
*Phase 3 Participant Group and Gender Distributions*

| Variables             | N | %:   | Gender Distribution |       |             |       |
|-----------------------|---|------|---------------------|-------|-------------|-------|
|                       |   |      | Males (N)           | %     | Females (N) | %     |
| Phase 1 Control Group | 3 | 50%  | 2                   | 66.6% | 1           | 33.3% |
| Phase 2 Avatar Group  | 3 | 50%  | 1                   | 33.3% | 2           | 66.6% |
| Total                 | 6 | 100% | 3                   | 100%  | 3           | 100%  |

## Materials

### Written Materials

Several materials were required to conduct the interviews used in this phase. The materials required for both interview groups were; a consent form (appendix R), and the debriefing form (appendix W). The control group and avatar interview groups required different question scripts.

The avatar group required three question scripts for the interviews; one relating to the pro same-sex marriage policy advertisement (appendix S), another relating to the anti-same-sex marriage policy advertisement (appendix T) and finally the questions relating to the avatars used in phase two (appendix U). The image sheets with the female (appendix M) and male avatars (appendix N) were also required. The control group question script (appendix T) was used during the interviews along with two image sheets one containing images of the Cadburys advertisements (appendix O) and the other the Guinness advertisements (appendix P).

## Video Materials

The videos used in the first and second phases of this research were also required as the control group highlighted them as an aid for memory recall. The consumer advertisements were the Cadburys chocolate advertisement<sup>10</sup> created by Cadburys chocolate in 2007 shown to the control group participants in phase one the Guinness advertisement<sup>11</sup> shown to all participants in phases one and two.

The policy advertisements shown to the avatar group participants in phase one were also required these were the pro same-sex marriage policy advertisement<sup>12</sup> and the anti-same-sex marriage policy advertisement<sup>13</sup>.

## Procedure

The participants of the third phase were fully informed before the interviews began using a consent form (appendix R). Several question scripts were used for the participants of the third phase.

The participants in the control group were asked questions relating to the materials used in this research. The participants were shown the advertisements on a laptop before the questions began. The questions related to the Cadburys and Guinness advertisements they viewed, the participant was also asked if they thought the audience attitudes would be affected by viewing the two advertisements (appendix V). These questions were based on the TAEIQ questionnaire to allow the participants to give further feedback on the audio and visual components of the advertisements while reflecting with the images of the Cadburys (appendix O) and Guinness (appendix P).

The participants from the avatar groups of the second phase followed the same procedure as the control group of phase one. After giving consent the participant was first shown the pro and anti-same-sex marriage advertisements on a laptop. After this, the participants were asked questions about the pro (appendix S)

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<sup>10</sup> Cadburys Chocolate Advertisement – “Cadburys Gorrilla Advert” created by Cadburys Chocolate, 2007. Available from <http://youtu.be/TnzFRVILwIo>

<sup>11</sup> Guinness Advertisement – “Bring it to Life” created by Guinness World, 2009. Available from <http://youtu.be/-pgA8z71FVE>

<sup>12</sup> Pro same-sex marriage Advertisement – “I am Human NOH8 Campaign PSA” created by the NOH8 Campaign, 2008. Available from <https://www.youtube.com/watch?v=PXR3a5yIWRw>

<sup>13</sup> Anti-same-sex marriage Advertisement – “Yes on Proposition 8 (Prop 8) protect marriage” created by preserving marriage, 2008. Available from <http://youtu.be?Y4nqtDrJ17A>

and anti-same-sex marriage (appendix T) advertisements. After these questions were completed, the interviewer asked the participant's questions relating to the advertisements that contained the interactive avatars (appendix U) while showing the participants the screenshots of the female (appendix M) and male avatar (appendix L).

Upon completion of the interview, the participants were debriefed (appendix W) and thanked for their participation throughout this research. The average completion time for this procedure was one hour.

### **Ethical considerations**

This research incorporated several research practices in accordance with the ethical codes of the Psychological Society of Ireland (PSI) and the British Psychological Association (BPS). This research was also subject to review and approval by the Department of Learning Sciences Ethics Committee (DLSEC) at the Institute of Art, Design and Technology (IADT).

This research submitted an ethics proposal detailing the ethical practices that were employed during the course of this research. These practices included the standard procedures involved in research such as informed consent, the right to withdraw at any time, data protection and anonymity of the participant and detailed debriefing procedures. These debriefing procedures due to the topics being examined included post contact information of the researcher, supervisors as well as additional mental health services contact information and links to electronic copies of the Health Service Executive mental health booklets for heterosexual and homosexual participants (Health Service Executive, 2007). These booklets which are accessible using the debriefing forms (appendix F, L & W) may not contain 100% relevant information to each participant or 100% relevancy to the topic but as the information they provide participants for their own support but also to the individuals to whom the attitudes are about the researcher feels that they are important resources to be provided to each participant.

The data used in this research was protected in a number of ways; the data recorded from the first and second phases was stored on the password protected storage system Dropbox. The audio recordings from the third phase were also stored using this method. No identifiable data was used during the course of this research.

This data is subject to the data protection act 1998 and will be destroyed five years after the collection date. The participants were also informed that the research may use their non-identifiable data for dissemination purposes.

The researcher did not provide individual feedback to the participants during or after the data collection process. This researcher employed an online methodology in phases one and two to allow participants to withdraw at any point by closing the study but also to provide an increased level of anonymity and confidentiality.

As this research described in the videos materials section above, the political advertising intervention videos used in the study have been cleared to be air on Californian television by the federal campaign watchdog that regulates all the political advertising in the United States (LoGrippe, 2010).

The results of this research will now be discussed according to the phases in which they were investigated in the next chapter.

# Results

## Results

### Introduction

Phase one of this research examined the effect of an advertisement on an individual's attitudes with the second phase investigating the effect of integrated animated avatar on a person's attitudes. A number of statistical tests were performed upon the first and second phase of research data using Statistics Package for the Social Sciences (SPSS) Version 20, (2011).

This chapter will examine both phase one and two using descriptive and inferential statistics, concluding with the structured interviews in phase three. First, phase one will be examined using descriptive statistics followed by inferential statistics relating to each individual hypothesis of phase one. Phase two of this research is described later in this section with descriptive and inferential statistics on the interventions of phase two. A third phase concludes this chapter providing qualitative thematic analysis on the structured interviews used.

The interventions that are referred to in the following chapter are the pro and anti-same-sex marriage policy advertisements used in the first phase and the male and female avatars in the second phase. In both phases, the control group only saw two consumer advertisements.

### Phase 1

#### Descriptive Statistics

In this study several methods of statistical analysis were conducted on participant attitude scores gathered using the Attitudes Towards Same-sex Marriage Scale (Pear; & Galupo, 2007) and the Attitudes Towards Lesbians and Gay men scale revised 5 item (Herek & McLemore, 2011), to determine the outcomes of the policy advertising interventions used on the groups in the first phase of this research.

### Same-sex marriage attitudes before viewing

The participants in the three groups in phase 1 completed attitude scales before viewing any advertisements to evaluate their existing attitudes to compare any changes in attitude after viewing. The table 4 presented below describes the score for all participants on the ATSM before and after viewing.

Participant's scores from all three groups before viewing the advertisements ranged from 24 (highly negative attitudes) to 73 (moderately positive attitudes) with a mean of 65.34 and standard deviation of 6.64. The Skewness statistic of -2.315 illustrates that the participant scores were not normally distributed. The Kurtosis value (8.123) indicates that the distribution of scores peak in the centre of the distribution.

Table 4

*Participant Descriptive Scores Towards Same-Sex Marriage Pre and Post Viewing*

| Descriptive Statistics |     |         |         |        |                |          |          |
|------------------------|-----|---------|---------|--------|----------------|----------|----------|
| Scale                  | N   | Minimum | Maximum | Mean   | Std. Deviation | Skewness | Kurtosis |
| Pre ATSM               | 254 | 24      | 73.00   | 65.342 | 6.64551        | 2.315    | 8.123    |
| Post ATSM              | 254 | 16      | 80.00   | 72.704 | 9.03897        | 2.787    | 10.215   |

### Same-sex marriage attitudes after viewing

After advertisement, viewing participant attitudes towards same-sex marriage across all three groups can be seen in table 4 above. Participant scores after viewing the different advertisements on the ATSM ranged from 16 (highly negative attitudes) to 80 (highly positive attitudes). The mean of these scores was 72.7, indicating an overall positive attitude, with a deviation of 9.03. The Skewness statistics of -2.787 displaying that participant's scores were not normally distributed. The Kurtosis value of 10.215 after viewing indicates that scores cluster in the centre of the distribution of scores.

### Attitudes towards lesbians and gay men before viewing

As well as completing the ATSM before viewing any advertisements, participants from all three groups in phase one completed the attitudes towards lesbians and gay men short version (ATLG-R-S5). Table 5 below displays the participant scores before viewing ranged from 10 (highly positive attitudes) to 47 (highly negative attitudes) with a mean score of 14.02 and a standard deviation from the mean of 5.35 indicating an overall positive attitude towards lesbians and gay men. The Skewness statistic of 2.133 specified the majority of scores are on the low on the distribution. The Kurtosis value of 6.628 also supports this distribution of scores.

Table 5

*Participant Scores Towards Lesbians and Gay Men before Viewing*

| Descriptive Statistics |     |         |         |        |                |          |          |
|------------------------|-----|---------|---------|--------|----------------|----------|----------|
| Group                  | N   | Minimum | Maximum | Mean   | Std. Deviation | Skewness | Kurtosis |
| Pre ATLG-R-S5          | 254 | 10      | 47.00   | 14.027 | 5.35492        | 2.133    | 6.628    |
| Post ATLG-R-S5         | 54  | 10      | 43.00   | 4.165  | 5.45881        | 1.760    | 3.821    |

### Participant attitudes towards lesbians and gay men after viewing

After viewing the individual advertisements participants attitude scores shown in table 5, ranged from 10 (highly positive) to 43 (highly negative), with a mean score of 14.16 and standard deviation of 5.45 suggesting an overall positive attitude. The Skewness statistic (1.760) is lower than before viewing indicates a shift towards negative attitudes but this does not denote significant change. The Kurtosis statistic of 3.821 also indicates that scores have altered more towards the centre of the distribution after viewing.

### Advertising effects on voting

One of the research questions of this investigation examined if pro same-sex marriage policy advertising produced a yes vote on the same-sex marriage ballot and if anti-same-sex marriage policy advertising produced a no vote on the ballot. The results for the ballot vote for the pro same-sex marriage-advertising group did not alter after viewing. The results are displayed in figure 21. The majority of votes, 98 of 101 participants voted with 93 voting yes, 5 voting no and 3 abstaining from the vote.

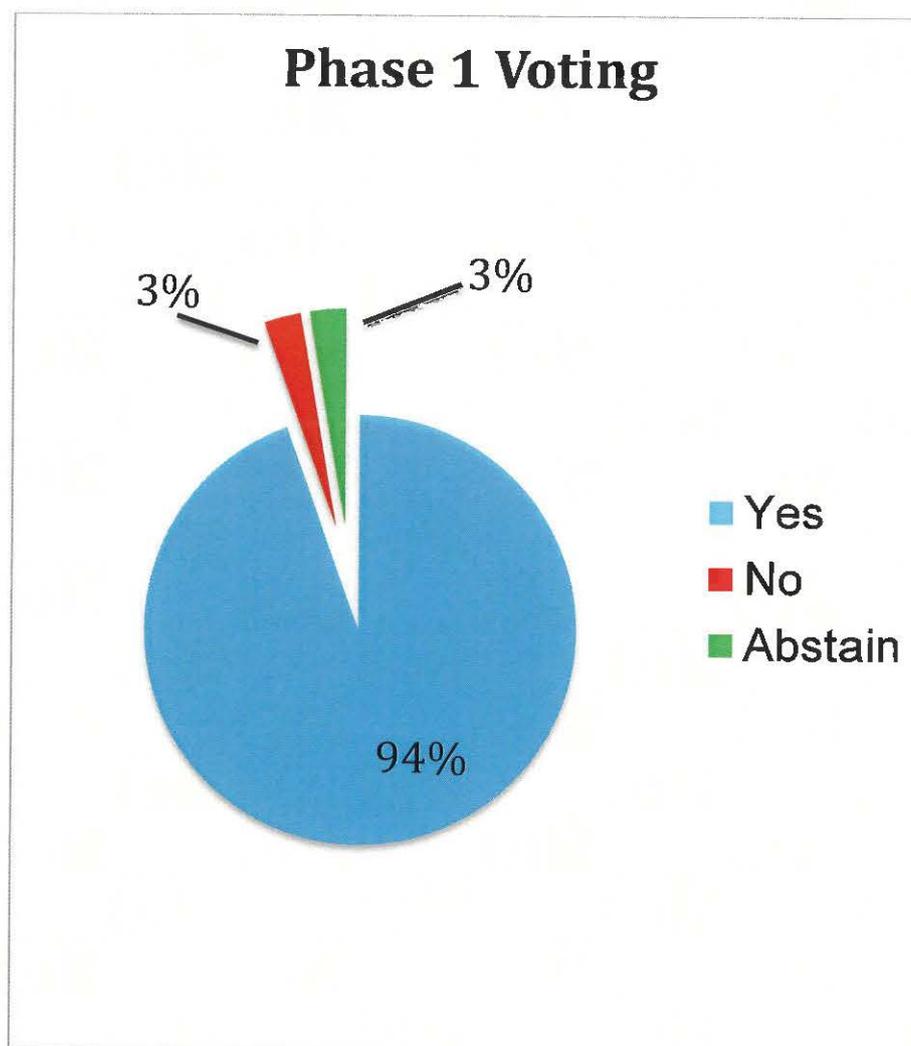


Figure 21. Phase 1 Voting Results.

The anti-same sex marriage-advertising group voting before viewing, results were as follows, 85 voted, 84 voting yes, 2 voting no and 2 abstaining. The results of the ballot after viewing altered slightly with 83 voting yes, 2 voting no and 3 abstaining. The control group voting results did not alter after viewing, 64 participants voted yes, no participants voted no and 1 abstained from voting. These results may be seen in table 6.

Table 6  
*Same-Sex Marriage Voting Results*

| Group   | Voting Option | Before Intervention |        | After Intervention |        |
|---|---------------|---------------------|--------|--------------------|--------|
| Pro Same-Sex<br>Marriage Policy<br>Advertising  | Yes           | 93                  | 92%    | 93                 | 92%    |
|   | No            | 5                   | 5%     | 5                  | 5%     |
|   | Abstain       | 3                   | 3%     | 3                  | 3%     |
| Total   |               | 101                 | 100%   | 101                | 100%   |
| Anti-Same-Sex<br>Marriage Policy<br>Advertising | Yes           | 84                  | 95.5%  | 82                 | 94.3%  |
|   | No            | 2                   | 2.27%  | 2                  | 2.27%  |
|   | Abstain       | 2                   | 2.27%  | 2                  | 3.40%  |
| Total   |               | 88                  | 100%   | 88                 | 100%   |
| Control Group                                   | Yes           | 64                  | 98.46% | 64                 | 98.46% |
|   | No            | 0                   | 0%     | 0                  | 0%     |
|   | Abstain       | 1                   | 1.53%  | 1                  | 1.53%  |
| Total   |               | 65                  | 100%   | 65                 | 100%   |

## Phase 1 – Inferential Statistics

### Advertising effects on attitude scores

The first hypothesis of this research examined if there would be a difference between the pro same-sex marriage-advertising group and the anti SSM advertising group after viewing the advertising. To analyse if a difference was present an independent sample t-test was conducted, on participant scores on the post advertising scores of the ATSM.

The t-test results indicated that there was no significant difference in scores of the pro same-sex marriage policy advertising group ( $M=71.88$ ,  $SD=10.92$ ) and the anti-same-sex marriage policy advertising group [ $M=72.85$ ,  $SD=8.42$ ;  $t(187) = -0.677$ ,  $p=.500$ ]. The magnitude of the differences in the means was very small (eta squared = .005). Therefore, the first hypothesis of this research was not supported, as there was no significant difference. Figure 21 below illustrates the mean trend increasing from time one and time two, the trend suggests an increasing positive attitude after viewing each of the advertisements, they are however not statistically significant.

Hypothesis two of this research examined if there would be a difference on the ATLG-R-S5 scale between the pro same-sex marriage-advertising group and the anti SSM policy advertising group after advertisement viewing. To investigate this, an independent sample t-test was conducted on participant scores after viewing on the scores of the ATLG-R-S5.

There was however, no significant difference in scores of the pro same-sex marriage policy advertising group ( $M=14.52$ ,  $SD=5.98$ ) and the anti-same-sex marriage policy advertising group [ $M=14.38$ ,  $SD=5.59$ ;  $t(187)= .164$ ,  $p=.870$ ]. The magnitude of the differences in the means was very small (eta squared = .005). Therefore, the second hypothesis of this research was not supported, as there was no significant difference. The trend of the means for the ATLG-R-S5 is also displayed later in figure 24 showing a slight decline in mean attitudes; however, these are not statistically significant.

### Control group attitude scores on the ATLG-R-S5 and ATSM

One of the research questions of this investigation was to identify if advertising could affect an individual’s attitudes on the ATSM and the ATLG-R-S5. A paired sample t-test was carried out on the control group to identify if a difference was present between participant scores on the pre and post advertisement viewing on scores of the ATSM.

There was a significant increase in scores before (M=69.24, SD=6.24) and after viewing [M=73.78, SD=6.14;  $t(64) = -11.27, p < .0005$ ]. The eta squared statistic = (.67). Therefore, the participants in the control group displayed increased attitudes on the ATSM after viewing the control advertisements. The increase in ATSM means is displayed in figure 22 below, illustrating its significance.

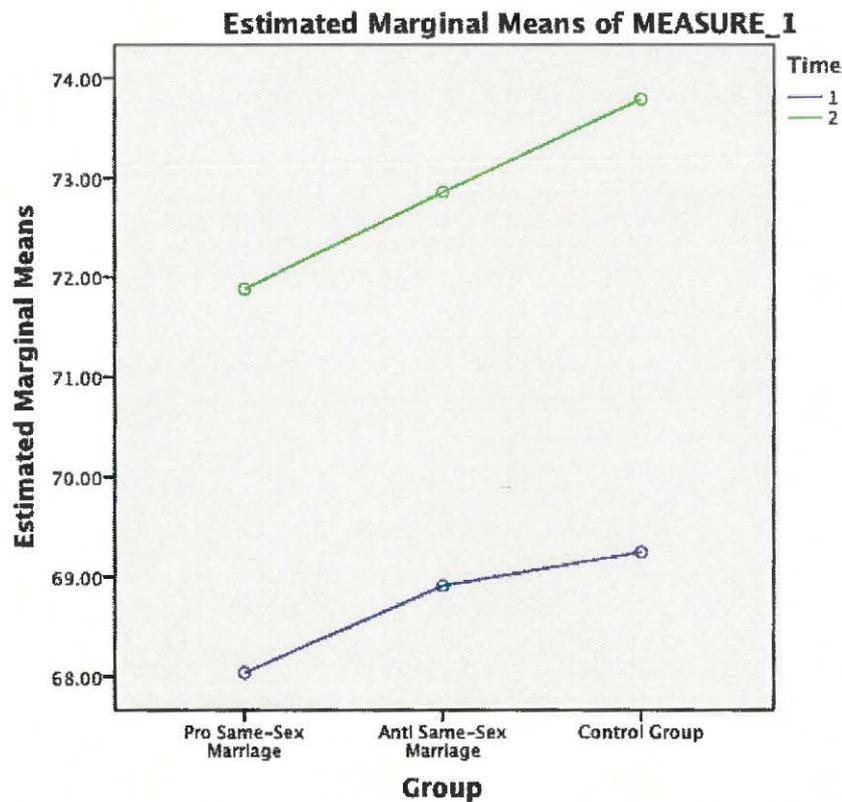


Figure 22. Comparisons of the phase 1 Participant Scores on the ATSM Scale before and after Advertisement Viewing.

### **Attitudes on the ATLG-R-S5 before and after viewing**

A paired sample t-test was conducted on the control group to identify if a difference was present between participant scores on the pre and post advertisement viewing scores of the ATLG-R-S5. The t-test results indicated that there was no significant difference in scores before ( $M=13.36$ ,  $SD=4.31$ ) and after viewing [ $M=13.30$ ,  $SD=4.28$ ;  $t(64)=.182$ ,  $p=<.856$ ]. The magnitude of the differences in the means was not significant (eta squared = .0005). Therefore, the attitude scores based on the ATLG in the control group after viewing the control advertisements did not change.

### **Policy advertising and the ATSM**

The third hypothesis of this research examined if the implementation of either pro or anti-same-sex marriage policy advertising effects participants scores on the ATSM. To investigate this, a mixed between- within subjects ANOVA was conducted. The ANOVA results yielded a Wilk's Lambda of .428, with a probability value of .0005, [ $F(2,251)$ ,  $P=<.0005$ ; Wilk's Lambda=.428;  $\eta^2=0.572$ ]. As a result, there was a significant effect of the advertising between testing occasions on the ATSM across the three groups, shown above in figure 22 and below in figure 23, which shows the increase in means. Observing the guidelines proposed by Cohen (1988), the Partial Eta Squared value ( $\eta^2=0.572$ ) suggests a very large effect size, which supports this finding.

There was however, no significant interaction effect between the effects of time and groups, displayed by a Wilk's Lambda=. 993. This result means that the change amongst the three policy advertising groups on the ATSM varied between each group, shown in figure 22 above. The between subjects effect of the participant groups was not significant (sig. =.478). Therefore, due to this lack of significant interaction between the groups, there was no significant difference in participant attitudes between the three groups but only a significant difference before and after viewing the advertisements.

## Anti-policy advertising and the ATSM

The fourth hypothesis examined if the anti-same-sex marriage policy advertising would produce more significant results on the ATSM than the pro SSM policy advertising. The results of a mixed between-within subjects ANOVA conducted on pro and anti SSM policy advertising groups identified that there was no significant difference between the groups, as the significance value for the between subjects effect of the participant groups was  $\text{sig.} = .478$  this is not significant. Therefore, there was also no significant difference in participant attitudes across the three groups; illustrated above in figure 22 and 23 below. Hypothesis four was rejected as no significant difference on the ATSM was identified between the pro and anti-same-sex marriage policy advertising groups or control group policy advertising on the ATSM.

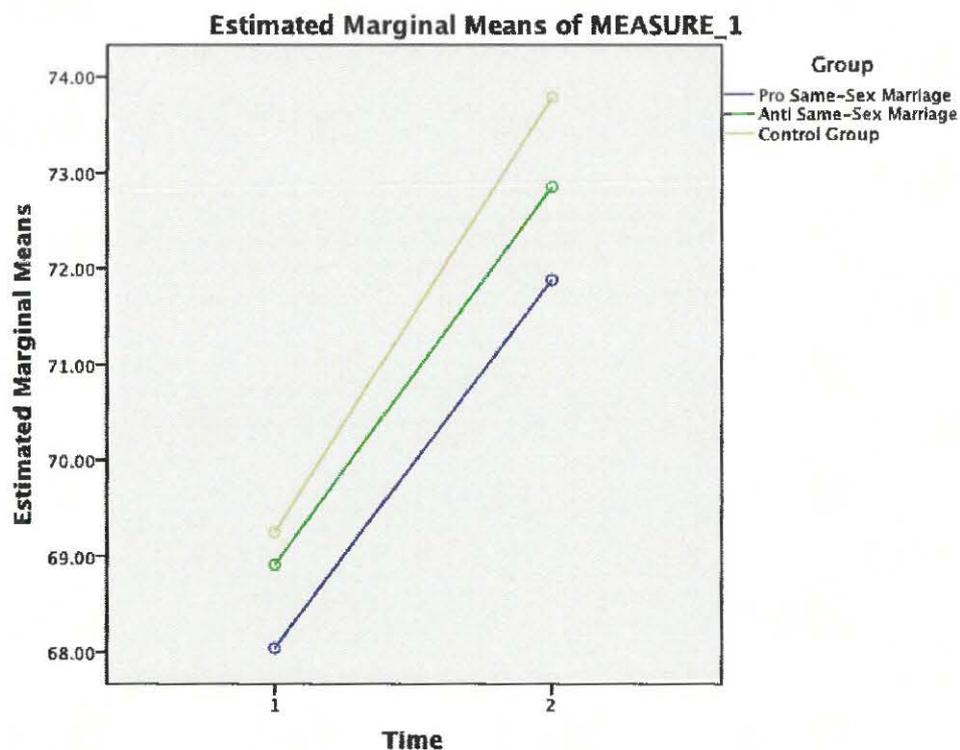


Figure 23. Comparison of the Phase 1 Participant Scores on the ATSM Scale before and after Advertisement Viewing.

## Policy advertising and the ATLG-R-S5

A mixed between-within subjects ANOVA was conducted on pro and anti SSM policy advertising groups to examine if any policy advertising had an effect upon the ATLG-R-S5 in accordance with hypothesis five. The ANOVA results yielded a Wilk's Lambda of .998, with a probability value of .457, [F (2,251),  $P < .457$ ; Wilk's Lambda = .998;  $\eta^2 = .572$ ].

There was no significant effect of the policy advertising used between testing occasions on the ATLG-R-S5 across the three groups. The Eta Squared value ( $\eta^2 = .002$ ) indicates a very small effect of the policy advertising on the ATLG-R-S5. This is displayed in figure 24 and 25 as they display the change in means for the three groups on the ATLG-R-S5, this change is not a significant one as the axis for both graphs ranges by 3 points on the scale.

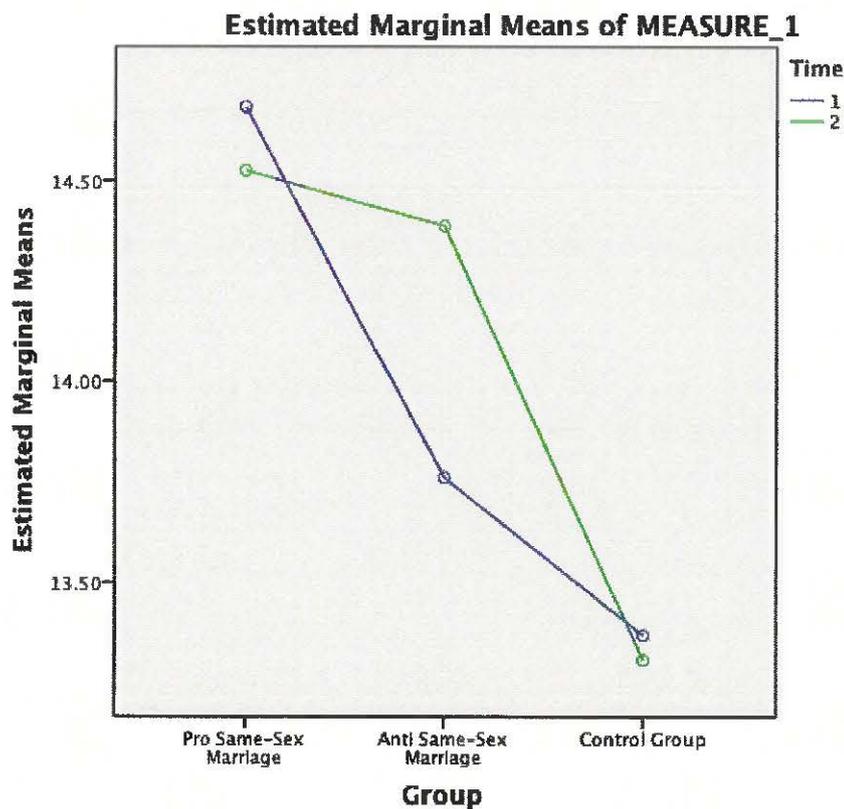


Figure 24. ATLG-R-S5 Group Means Comparisons.

There was also no significant interaction effect between the effects of time and the individual groups between testing occasions on the ATLG-R-S5 in phase 1 as the Wilk's Lambda = .984, this result indicates the change amongst the three policy advertising groups on the ATLG-R-S5 varied between each group was not significantly different. The significance value for the between subjects effect of the participant groups was sig. = .313, indicating that there was also no significant difference [Fig. 25.]

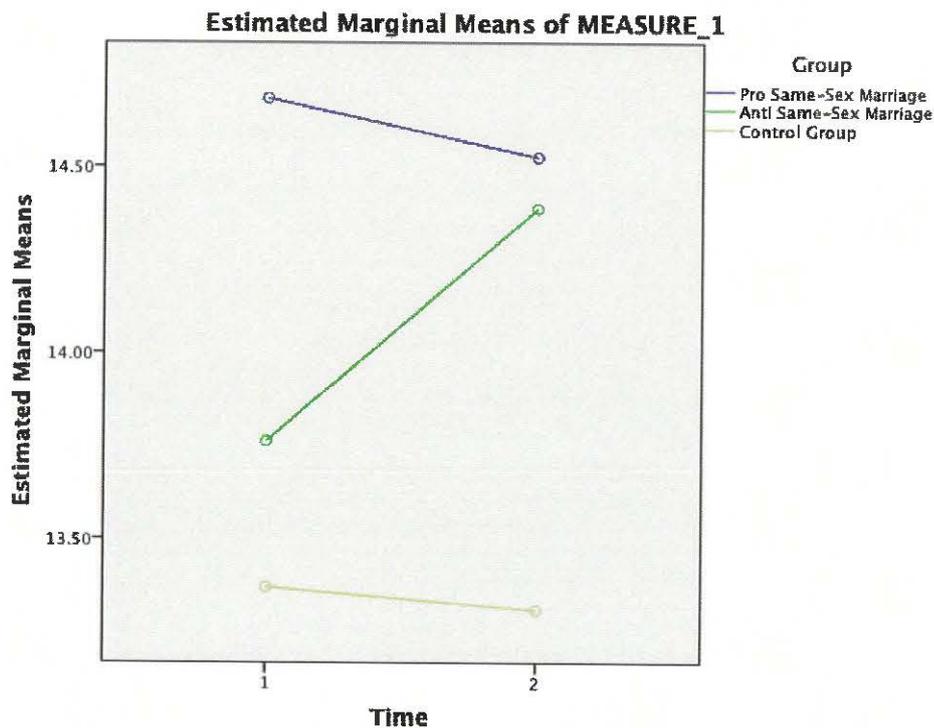


Figure 25. ATLG-R-S5 Group Means comparisons before and after viewing

### Anti-policy advertising and the ATLG-R-S5

An examination to identify if anti-same-sex marriage policy advertising had a greater effect on the ATLG-R-S5 than the pro same-sex policy advertising after viewing was hypothesis six. The results of a mixed between-within subjects ANOVA identified a significance value for the between subjects effect of the participant groups was sig. = .313, which revealed that the anti-same-sex marriage policy advertising did not produce more negative attitudes on the ATLG-R-S5.

The results therefore support that the anti-same-sex marriage advertisement was not more persuasive than the pro same-sex marriage policy advertising, as the

results were not significant. Consequently, the sixth hypothesis was rejected as no significant difference was identified on the ATLG-R-S5 between the pro same-sex marriage policy-advertising group and anti-same-sex marriage policy advertising group or control group scores.

### **Gender attitude contrasts on the ATSM**

The seventh hypothesis examined whether there was a difference in participant attitudes towards same-sex marriage across gender. It was hypothesised that female participant attitudes would be more positive than male participant attitudes on the ATSM. To examine this, an independent sample t-test was conducted and the results identified that there was a significant difference between males and females on the ATSM.

Before intervention male ( $M=67.21$ ,  $SD=7.99$ ) and female ( $M=69.43$ ,  $SD=7.60$ ) attitude scores on the ATSM differed significantly [ $t(252)=-2.19$ ,  $p=.029$ ]. The magnitude of the differences between male and female scores was ( $\eta^2=.018$ ), this means that there was a large effect size. A Mann-Whitney post hoc test was conducted and the result supported a significant difference ( $p=.003$ ) between male and female participants.

The differences in gender after advertising intervention was also conducted, similarly after intervention male ( $M=70.75$ ,  $SD=9.43$ ) and female ( $M=73.77$ ,  $SD=8.65$ ) attitude scores on the ATSM also differed significantly [ $t(252)=-2.57$ ,  $p=.011$ ]. The magnitude of the differences between male and female scores was ( $\eta^2=.042$ ), signifying a large effect size. A Mann-Whitney test was conducted because of this effect and the results support a significant difference ( $p=.0005$ ) between males and females, with females scoring higher positive attitudes.

### **Gender attitude contrasts on the ATLG**

Hypothesis eight was focused on whether there was a difference in participant attitudes across gender on the ATLG. It was hypothesised that female participant attitudes would be more positive than male participant attitudes on the ATLG. To examine this, an independent sample t-test was conducted, the results identified that there was no significant difference between males and females based on the ATLG.

An independent samples t-test was also carried out upon the male and female participant's attitude scores on the ATLG. Before intervention male ( $M=14.86$ ,  $SD=5.37$ ) and female ( $M=13.56$ ,  $SD=5.30$ ) attitude scores on the ATLG did not differ significantly [ $t(252) = 1.86$ ,  $p = .064$ ]. The magnitude of the differences between male and female scores was ( $\eta^2 = .013$ ), this means that there was a moderate effect size. A Mann-Whitney test was conducted because of this effect, the results support a significant difference ( $p = .026$ ) between males and females.

The differences in gender after advertising intervention was also conducted, after intervention male ( $M=15.0$ ,  $SD= 5.63$ ) and female ( $M=13.70$ ,  $SD=5.32$ ) attitude scores on the ATLG did not differ significantly [ $t(252) = 1.81$ ,  $p = .071$ ]. The magnitude of the differences between male and female scores was ( $\eta^2 = .01$ ), this means that there was a small effect size. A post hoc Mann-Whitney test was conducted because of this effect, the results support this finding ( $p = .038$ ).

## Phase 2

The research focus for the second phase of this was to examine the effect of captivity interventions (animated avatar) upon attitude scores when participants completed the ATSM (Pearl & Galupo, 2007) and the ATLG-R-S5 (Herek & McLemore, 2011). An examination of participant attitude scores before and after intervention to determine if the use of an avatar integrated into an advertisement could alter attitudes in a positive direction. The integration of an animated avatar did not have an effect on participant's attitudes. Three hypotheses were tested during the second phase regarding attitude change that may occur from the intervention of policy advertising.

## Descriptive Statistics

The second phase of research to determine the outcomes of the pro same sex marriage policy advertising advertisements with and without an avatar, statistical analysis were conducted on participant attitude scores on the Attitudes Towards Same-sex Marriage Scale (Pearl & Galupo, 2007) and the Attitudes Towards Lesbians and Gay men scale revised five item version (Herek & McLemore, 2011).

### Same-sex marriage attitudes before viewing

The participants in the three groups in phase 2 completed attitude scales before viewing any advertising or avatars to evaluate their existing attitudes for changes after viewing. Participant's scores [Table 7] from all three groups before viewing the advertisements ranged from 51 (positive attitudes) to 76 (moderately positive attitudes) with a mean of 70.27 and standard deviation of 6.02. The Skewness statistic of -1.914 illustrates that the participant scores suggesting scores gathered towards the high end of the distribution. The Kurtosis value 3.386 indicates that the distribution of scores peak towards the centre and high end of the distribution.

Table 7

*Participant Attitudes Towards Same-Sex Marriage before and after viewing.*

| Descriptive Statistics |     |         |         |       |                |          |          |
|------------------------|-----|---------|---------|-------|----------------|----------|----------|
| Scale                  | N   | Minimum | Maximum | Mean  | Std. Deviation | Skewness | Kurtosis |
| Pre ATSM               | 254 | 51      | 76.00   | 70.27 | 6.02           | 1.914    | 3.386    |
| Post ATSM              | 54  | 28      | 78      | 70.27 | 6.02           | 3.380    | 14.304   |

### Same-sex marriage attitudes after viewing.

Participant attitudes towards SSM across all three groups, after advertisement viewing can be seen above in table 7. After viewing the different advertisements, participant's scores on the ATSM ranged from 28 (highly negative attitudes) to 78 (highly positive attitudes). The mean of these scores was 70.27, indicating an overall positive attitude, with a deviation of 6.02. The Skewness statistics of -3.380 displaying that participant's scores distributed on the higher end of the graph. The Kurtosis value of 14.304 after viewing indicates that scores cluster in the centre of the distribution of scores.

### Attitudes towards lesbians and gay men before viewing

As well as completing the ATSM before viewing any advertisements, participants from all three groups in phase one completed the attitudes towards lesbians and gay men (ATLG). Table 8 below displays the participant scores before viewing ranged from 10 (highly positive attitudes) to 28 (negative attitudes) with a mean score of 13.51 and a standard deviation from the mean of 5.02 indicating an overall positive attitude towards lesbians and gay men. The Skewness statistic of 1.558 supports the majority of scores are lower on the distribution. The Kurtosis value of 1.602 also supports this distribution of scores.

Table 8.

*Participant Attitudes Towards Lesbians and Gay Men before and after viewing*

| Descriptive Statistics |    |         |         |       |                |          |          |
|------------------------|----|---------|---------|-------|----------------|----------|----------|
| Scale                  | N  | Minimum | Maximum | Mean  | Std. Deviation | Skewness | Kurtosis |
| Pre                    |    |         |         |       |                |          |          |
| ATLG-R-S5              | 33 | 10      | 28.00   | 13.51 | 5.02           | .558     | 1.602    |
| Post                   |    |         |         |       |                |          |          |
| ATLG-R-S5              | 33 | 10      | 26.00   | 12.87 | 4.21           | 1.741    | 3.821    |

### Participant attitudes towards lesbians and gay men after viewing

After viewing the individual advertisements participants attitude scores, shown above in table 8, ranged from 10 (highly positive) to 26 (highly negative), with a mean score of 12.87 and standard deviation of 4.21 suggesting an overall positive attitude. The Skewness statistic (1.741) is lower than before viewing indicating a shift towards negative attitudes but this does not signify significant

change. The Kurtosis statistic of 3.821 also indicates that scores altered more towards the centre of the distribution after viewing.

### Avatar effects on voting

Another of the research questions of this study examined whether the pro same-sex marriage policy advertising with and without an interactive avatar affected voting behaviour towards same-sex marriage. The overall voting results for phase 2 are illustrated below in figure 26. The results for the ballot vote of the participants who viewed the pro same-sex marriage policy advertising including a male or female avatar did not alter after intervention. All of the participants who viewed the pro same-sex marriage advertisement that included the avatars voted in favour of same-sex marriage.

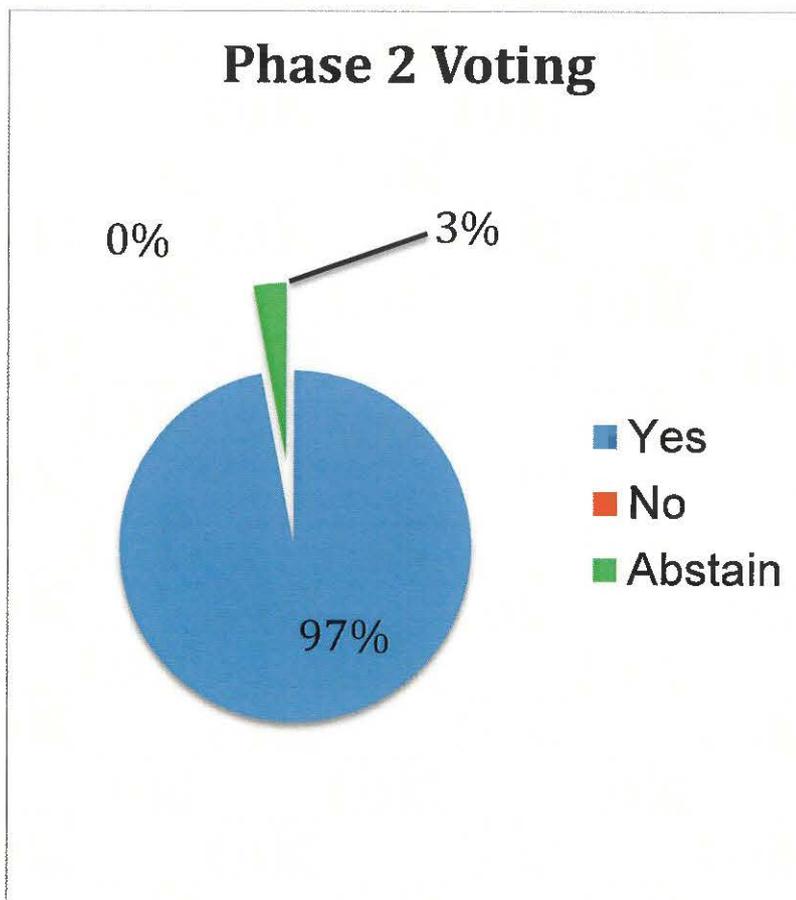


Figure 26. Phase 2 Voting Results.

The female avatar, advertising group results did not alter after intervention; these results are shown in table 9 below. All 17 participants voted in favour of same-sex marriage before and after intervention. The pro same-sex marriage policy advertising group (control group) voting results did not alter after intervention, 4 participants voted yes, no participants voted no and 1 abstained from voting.

**Table 9**  
**Phase 2 Same-Sex Marriage Voting Results.**

| Group               | Voting Option | Before Intervention | After Intervention |
|---------------------|---------------|---------------------|--------------------|
| Female Avatar Group | Yes           | 17                  | 17                 |
|                     | No            | 0                   | 0                  |
|                     | Abstain       | 0                   | 0                  |
|                     | Total         | 17                  | 17                 |
| Male Avatar Group   | Yes           | 11                  | 11                 |
|                     | No            | 0                   | 0                  |
|                     | Abstain       | 0                   | 0                  |
|                     | Total         | 11                  | 11                 |
| Control Group       | Yes           | 4                   | 4                  |
|                     | No            | 0                   | 0                  |
|                     | Abstain       | 1                   | 1                  |
|                     | Total         | 5                   | 5                  |

The results from the avatar intervention phase of this research (phase 2) illustrate that the avatars used in this research did not have a significant effect on participant attitudes and voting behaviour towards same-sex marriage. Therefore, to investigate why this occurred, a series of structured interviews were conducted with the participants of this phase but also the control group participants of phase one. The findings of these interviews are in the results of phase 3.

## Phase 2 – Inferential Statistics

### Female avatar effects on the ATSM and ATLG-R-S5

Hypothesis nine examined if the pro same-sex marriage advertising groups that incorporated a female avatar will have an effect upon participant attitudes on the ATSM. A paired sample t-test identified that there was no significant difference between participant scores on the ATSM. The female avatar-advertising group did not have a significant effect on the ATSM between time 1 ( $M=69.76$ ,  $SD=7.26$ ) and time 2 ( $M=68.00$ ,  $SD=11.45$ ),  $t(16) = .589$ ,  $p > .564$ . The eta squared statistic (.02) showing a small effect size, supporting the t-test finding. The trend [Fig. 27] of participant scores decrease marginally after watching, indicating some participants displayed more negative attitudes towards same sex marriage after viewing, however this did not reach statistical significance.

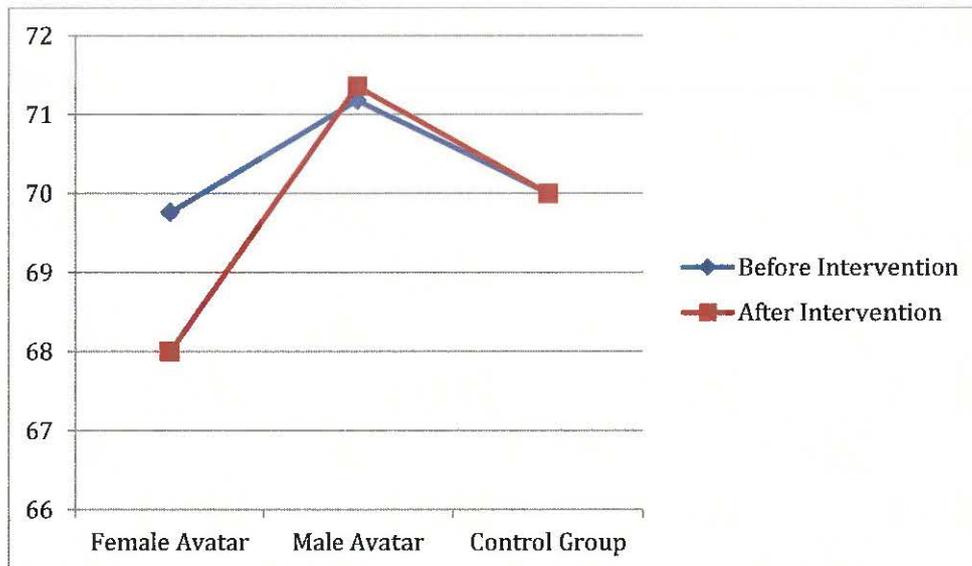


Figure 27. Participant Mean Trends on the Attitudes Towards Same-sex Marriage Scale.

### **The Female Avatar and the ATLG-R-S5**

Furthermore, hypothesis ten examined if the pro same-sex marriage advertising groups that incorporated a female avatar will have an effect upon participant attitudes on the ATLG-R-S5. A paired sample t-test identified if there was a significant difference between participant scores on the ATLG-R-S5 after viewing.

In the analysis of the female avatar-advertising group, the female avatar did not have a significant effect on the ATLG-R-S5 between time 1 ( $M=14.11$ ,  $SD=6.05$ ) and time 2 ( $M=13.41$ ,  $SD=5.02$ ),  $t(16)=1.852$ ,  $p>.083$ . The eta-squared statistic (.20) showed a large effect size, which indicates the female avatar had a large effect on participant attitude scores on the ATLG. Even though it was not statistically significant, the trends displayed in figure 28 below by the female avatar intervention group.

### Male avatar effects on the ATSM and ATLG-R-S5

The eleventh hypothesis examined if the male avatar-advertising group would have an effect on the ATSM. Correspondingly to the female avatar group, the male avatar-advertising group did not have a significant effect on the ATSM between time 1 ( $M=71.18$ ,  $SD=2.67$ ) and time 2 ( $M=71.36$ ,  $SD=3.55$ ),  $t(10) = -.184$ ,  $p > .858$ . The eta squared statistic (.003) showing no effect size, supporting the t-test finding. The trend of phase two ATSM means is shown on figure 11 above.

Hypothesis twelve tested if the male avatar-advertising group affected participant scores on the ATLG-R-S5. The results found that male avatar-advertising group did have a significant effect on the ATLG-R-S5 between time 1 ( $M=12.45$ ,  $SD=3.77$ ) and time 2 ( $M=12.00$ ,  $SD=2.82$ ),  $t(10) = 1.456$ ,  $p < .176$ . The eta-squared statistic (.17) showed a large effect size, which indicates the male avatar had a large effect on participant attitude scores on the ATLG-R-S5 even though it was not statistically significant. Figure 28 displays declining mean attitude score trend for the ATLG-R-S5, illustrates attitudes that are more negative.

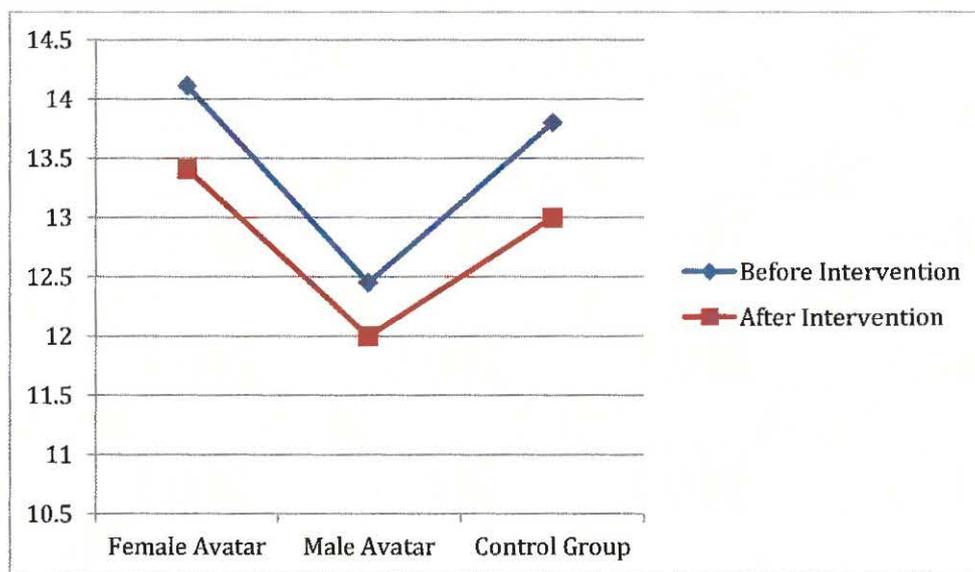


Figure 28. Participant Mean Trends on the Attitudes Towards Lesbians and Gay men Scale.

## **Pro policy advertising effects after viewing anti policy advertising**

Hypothesis thirteen examined if pro same-sex marriage policy advertising without an interactive avatar would have an effect on participants scores on the ATSM and ATLG-R-S5 who had previously viewed the anti SSM advertising. A paired sample t-test was conducted on the control group.

The pro same-sex marriage advertisement viewed by the control group did not have a significant effect on participant attitudes on the ATSM between time 1 (M=70.00, SD=7.58) and time 2 (M=70, SD=8.15),  $t(4) = .000$ ,  $p > 1.00$ . The trend of these means, shown previously in figure 27 displayed no change.

The pro same-sex marriage advertisement shown to the control group did not have a significant effect on participant attitudes on the ATLG-R-S5 between time 1 (M=13.80, SD=3.89) and time 2 (M=13.00, SD=4.24),  $t(4) = 1.000$ ,  $p > .374$ . The eta-squared statistic (.04) showed a small effect size, supporting the t-test finding. The mean trend for the ATLG-R-S5 control group for phase 2 is shown in Figure 28, illustrating a marginal insignificant decline in attitudes.

### Phase 3 – Structured Interviews

The third phase of this research gathered qualitative data from participants using structured interviews. As Denzin and Lincoln (2000) described, structured interviews are used to ask people a specific set of questions and these questions have a limited variation of response options due to this structure. Interview questions gathered information regarding the effects and feedback of captology interventions used (animated avatar) to alter attitude scores towards SSM, lesbians and gay men but also the content of scales. The interviews also examined the advertisements used in this research and the participant's evaluation of the content and delivery used.

A Thematic Content Analyses (Robson, 2002) was carried out upon the answers provided by participants (N=6) to identify emerging themes from participant responses. These responses were later uploaded to Wordle (2013) to provide a visual aid for the identified themes. The Wordle concerning to the theme of time is shown in figure 29.

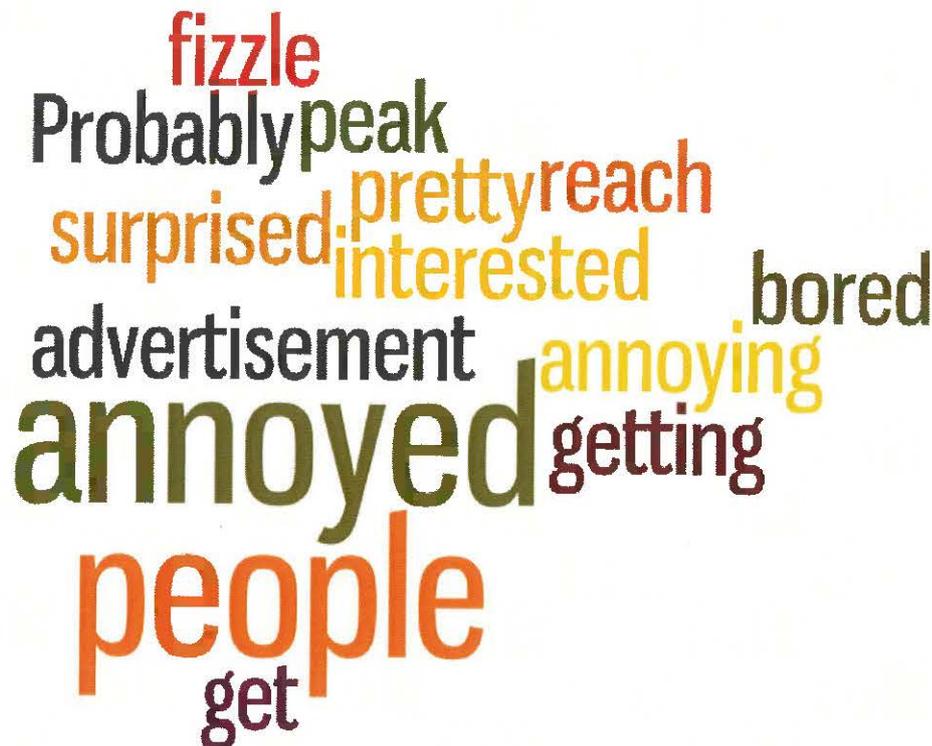


Figure 29. Control Group Wordle – Time Theme

## Coding

The structured interview questions and participant responses were transcribed according to the individual participant and the group, they originated from either, the control group from phase 1 or the male or female avatar groups from phase 2. Themes were then colour coded according to the group they emerged from: Blue for the group that viewed the avatar intervention and green for the control group participants and purple for themes that occur in both groups. The participant responses were then coded into the emerging main themes such as “Creativity,” “Novelty,” “Emotional Response,” “Time”, “Agreement, and Support”, “Cognition” and “Anthropomorphism.” As the interviews used in this research were structured, there are subject specific themes relating directly to the questions that were asked in addition to the main and minor themes, all these themes are listed in table 10 below.

Table 10

*Table of Themes*

| Major Themes     | Minor Overlapping Themes | Subject Specific Themes |
|------------------|--------------------------|-------------------------|
| Creativity       | Time                     | Attitudes               |
| Novelty          | Relevance                | Emotional response      |
| Persuasion       | Anthropomorphism         | Agreement and Support   |
| Cultural Factors | Persuasion               |                         |

*Note.* Avatar Group (Blue), Control Group (Green), Both Groups (Purple).

### Memoing

The memoing technique was used during the interview process and qualitative data interpretation process. Memoing is the process where the researcher notes their own reflective thoughts, feelings, and ideas based on their knowledge of the data and literature analysis of the investigation topic (Robson, 2002). During the interview process, participant comments relating to the literature analysis were noted, phrases and particular wording used by the participants were also recorded for examination during analysis. An example of this memoing is shown in table 11.

Table 11.  
*Interview Memoing Messages with Theme Assignment*

| Participant Group   | Participant Response   | Memo Message  | Assigned Theme  |
|---------------------|--|---|---|
| Control – (C1)      | “I can’t see it getting annoying but once you’re used to the advertisement you would think more about its relevance to the product.” | Participant may be referring to the longevity of the peripheral persuasion route.                                       | Main theme – Novelty<br>Minor theme – persuasion          |
| Avatar Group – (A1) | “She is agreeing with the content and you’re more likely to agree yourself.”   | Participant refers to the female avatar as she but also the effect the avatars agreement may have on people’s attitude. | Main theme – Persuasion<br>Minor theme – anthropomorphism |

Participant responses were presented by the participants group, number and then the line number of the response e.g. Control group participant 1, lines 4-9 = C1/4-9.

## Control Group

### Major Theme - Creativity

#### Minor Overlapping Theme – Relevance

Participants from the control group of phase 1 took part in the structured interviews. Interviews reported different interpretations and views on the use of creativity in the advertising they viewed but also its relevance to the product, figure 30 below.

In reference to the Cadbury's Chocolate advertisement in which a Gorilla plays the drums to "In the air tonight" by Phil Collins, the following points were highlighted.

*C1/2-4: "It's very memorable and a creative way of doing things, I'm not sure what the point is to the product but I don't think that matters because it is memorable. It's not related to the information though really."*

*C2/4-10: "I remembered the Gorilla and I remembered the tune but not what he did.... I'd say people would remember it easily."*

*C3/13: "Can't listen to the song without thinking of the advert."*

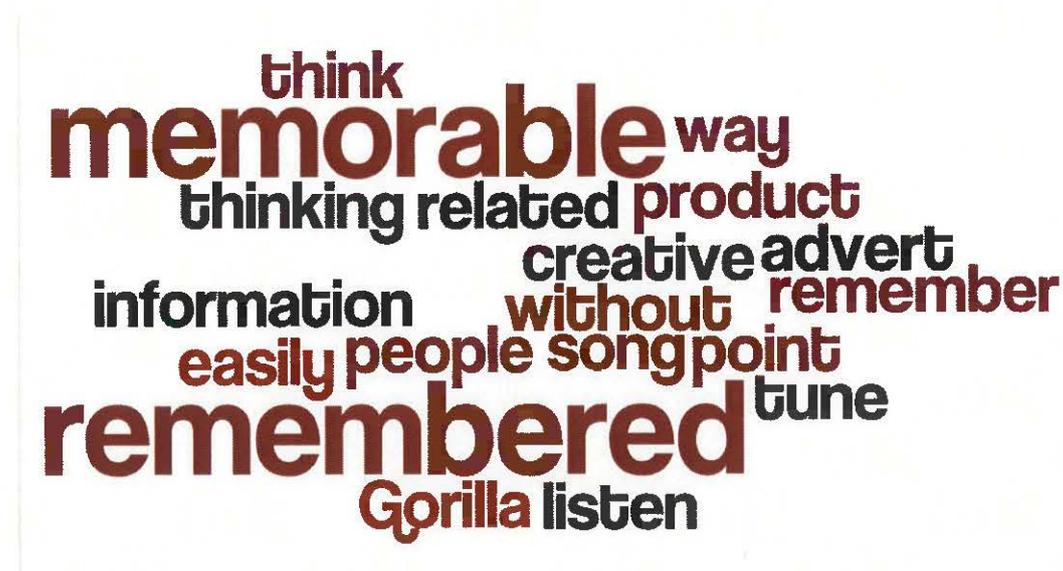


Figure 30. Control Group Wordle – Creativity and Relevance Themes

### Minor Overlapping Theme – Time

Interview participants were asked if they would enjoy the Cadbury's chocolate advertisement and the Guinness advertisement after several viewings, their responses highlighted the effects of time, figure 31 below.

*C2/26-27: "I think that it would reach a peak and fizzle off, the advertisement plays on the audience being surprised, and after that people wouldn't be too interested."*

In relation to the Guinness advertisement "Bring it to life" participants provided the following views in relation to time and creativity when asked about how they would feel after viewing the advertisement a few times.

*C1/65-66: "Em. Yeah I could see people getting bored but not annoyed. I might be annoyed because it's not the best when compared to their other adverts."*

*C3/63: "Probably not, it would get pretty annoying."*

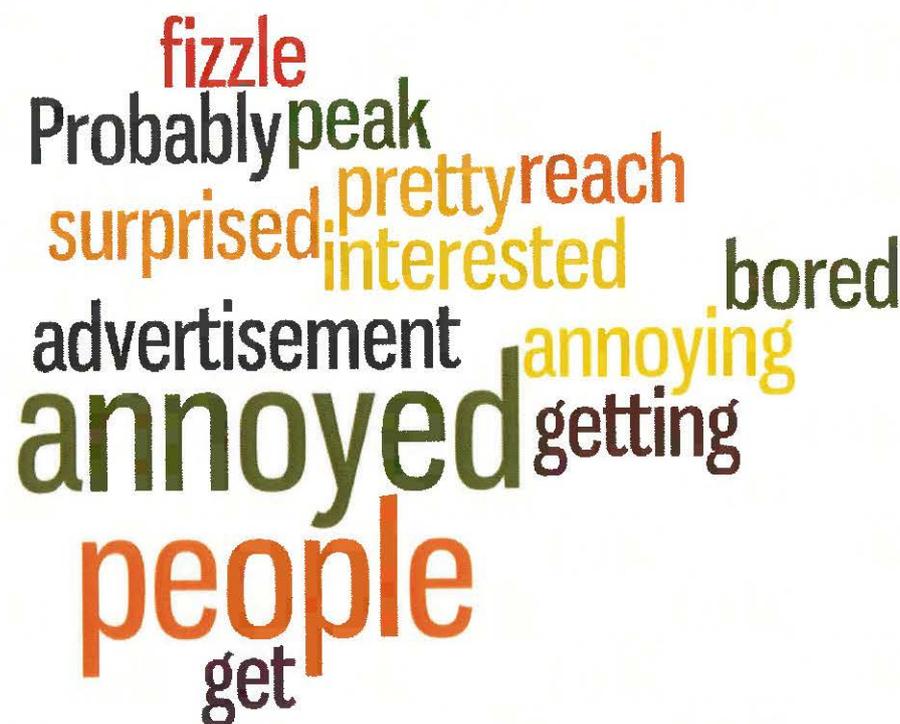


Figure 31. Control Group Wordle – Time Theme.

## Major Theme – Novelty

The participants from the control group of phase 1 reported different interpretations and views on the novelty of the advertising they viewed and its persuasive longevity. In reference to the Cadbury’s Chocolate advertisement in which a Gorilla plays the drums to “In the air tonight” by Phil Collins, participants expressed the following opinions.

**C1/20-22:** *“I can’t see it getting annoying but once you are used to the novelty of the advertisement you would think more about its relevance to the product.”*

When the interviewer asked participants if people would find the advertisement entertaining and interesting, the participant noted the basic peripheral route factors of the ELM.

**C2/13-14:** *“Entertaining yeah, it’s not very complex, so I don’t see it as highly interesting because it doesn’t have complex parts.”*



Figure 32. Control Group Wordle – Novelty Theme.

Control interview participants were asked about how memorable the advertisements were, a participant had the following view about the Guinness advertisement relating to its memorable qualities, potentially due to its unique narrative.

**C3/50-52:** *“Yes I would remember it as the Guinness advertisement. Yes because of the weird imagery, it sticks with you.”*

#### Subject Specific Theme – Emotional Response

**C1/34-35:** *“If it was the first time someone views the advertisement, once the drumming kicked in or the Gorilla’s facial expression I think people would be happier or more joyful while viewing.”*

**C2/17:** *“I think it would be hard not to, it has a feel good factor.”*

**C2/39-40:** *“I think you’re only going to get positive emotions after viewing the advertisements. I was surprised and amused and happy.”*

**C3/18:** *“I think so, something to laugh at; it has a good comedic factor.”*

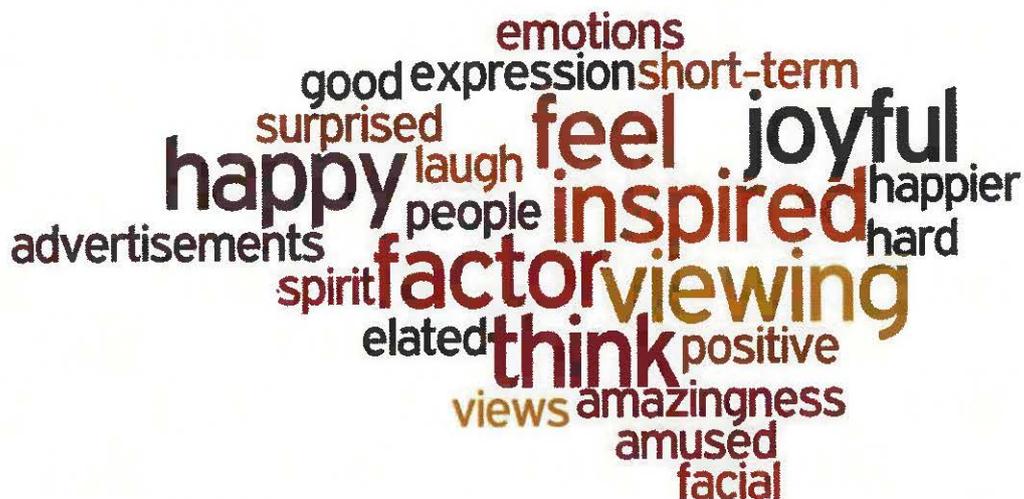


Figure 33. Control Group Wordle – Emotional Response Theme.

When participants were asked about the audience's emotional mood change after viewing the Guinness advertisement. The participant views are displayed in figure 32.

*C1/93-95: "Maybe for a short period of time, depending on the people and what they take from it. I can't see it brightening up their day but maybe in the short term it could."*

*C2/81-82: "Em, I feel elated after it, definitely elated. People would feel inspired after viewing it. The spirit of man, the amazingness of the natural world."*

## Major Theme – Cultural Factors

### Subject Specific Theme – Attitudes

When participants were asked about the attitude questionnaires used in this research the themes of Cultural Factors and Attitudes emerged as previous literature reflects that attitudes are often predetermined (Langdrige & Taylor, 2007) and are often effected by factors such as a person’s religious beliefs (Pearl & Galupo, 2007).

**C1/104-105:** *“I think that people from different backgrounds would have different viewpoints and answers for those questions.”*

Relating to the consumer advertisements effecting people’s attitudes a participant gave the following response relating to their own predetermined attitude, this supports the research provided by Langdrige and Taylor (2007).

**C2/120-122:** *“I don’t think so, but that’s possibly because it is an attitude I have already and have thought about it before. I have a strong standpoint on it but if you didn’t I suppose it is possible.”*

**C3/91-92:** *“After looking at the scales again, I think that people would have their own predetermined views on the attitudes before viewing the adverts.”*

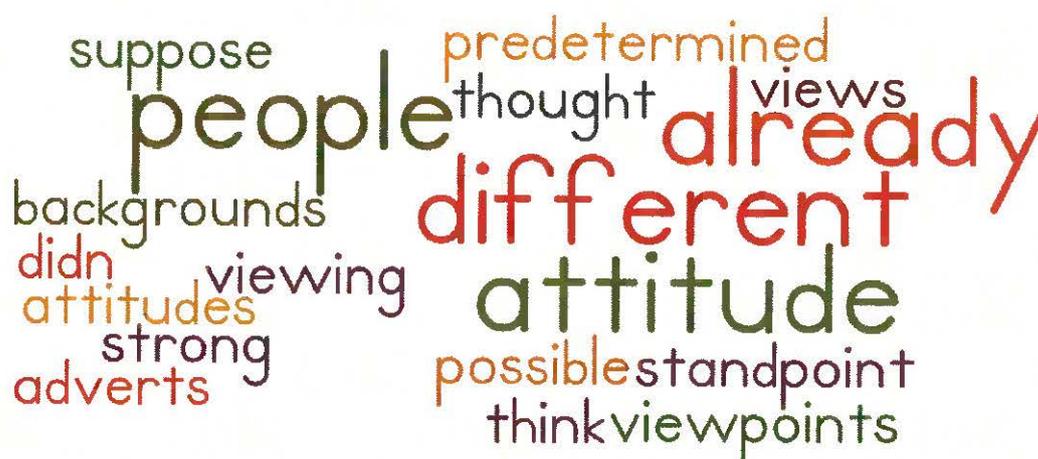


Figure 34. Control Group Wordle - Attitudes and Cultural Factors Themes.

## Avatar Group Interviews

The next set of interview participants were from the avatar intervention group (phase 2). These participants also took part in the structured interviews focusing upon the content of the videos, avatars, and attitude scales used in their involvement in this research.

Participant responses in the avatar group were presented by the number and then the line number of the response e.g. Avatar group participant 1, lines 4-9 = AV1/4-9.

## Major Theme – Persuasion

### The Anti-same-sex marriage policy advertisement

When participants discussed their views on the anti-same-sex marriage policy advertisement, the theme of persuasion emerged as participants discussed the production of the video. Participants expressed that the persuasive tools used such as the wide demographic of people used in the advertisement, this method of superficial processing seen in the peripheral route of the ELM (Petty & Cacioppo, 1986). A Wordle representation of the theme of persuasion is on the next page in figure 35.

*AV1/6-8: “I thought that it was well put together, it made me think about the other perspective. It portrays someone else’s opinion in a subtle way without saying it’s the right thing to do, it justifies that people can have this opinion and that it’s ok.”*

*AV2/4-6: “It is similar to other campaign videos, people you can identify with, a younger demographic and not older people who would be viewed as archaic, people who are forward thinking. I think it’s about recognition.”*

*AV3/ 10-11: “Yeah I think so, they have used a wide range of people, races, gender and age.”*

### The Pro-same-sex marriage policy advertisement

When participants discussed the pro same-sex marriage policy advertisement, the participants provided the following opinions about its persuasive aspects:

AV1/61: *“It was persuasive and very creative.”*



Figure 35. Avatar Group Wordle – Persuasion Theme.

The Anti-same-sex marriage policy advertisement and voting

Participants were also asked about the potential effects of the pro same-sex marriage policy advertisement on people attitudes towards gay men and lesbians and also same-sex marriage. Participant's views support those found in this research that it may have a supporting positive effect.

*AV1/70: "Yes I do. I don't think it could have had a negative effect."*

*AV3/15-16: "I think so, especially on the ATSM, the ATLG would have been stable. I would like to think the ATSM became more positive."*

The Pro-same-sex marriage policy advertisement and voting

Interview participants discussed the effects of the pro same-sex marriage policy advertisement on an audiences voting behaviour on a ballot on same-sex marriage. The participants displayed several views relating to the persuasive ability the message may have on an individual but participants such as AV1 also broached that these attitudes are predetermined.

*AV1/73-75: "I think it depends on the person you are, but I think it is persuasive, I found that it was more in line with my own beliefs but I found the anti-same-sex marriage advert to be more convincing."*

### Subject Specific Theme – Agreement and Support

The theme of agreement and support also emerged as most participants noted the persuasive support that the avatar intervention used provided. This theme of agreement and support is displayed in figure 36.

*AV1/47-48: “Yes to a certain degree, she is agreeing with the content and you’re more likely to agree yourself.”*

*AV2/54-56: “I do think so. I think that people look for agreement from someone else to justify their opinions. I think that those subconscious agreements work, like canned laughter with a sitcom.”*

*AV3/42-43: “It looked like the avatar was representing what the message was saying depending on the position and action of the avatar.”*

*AV3/47-48: “I would have known when it was discussing equality that it was agreeing and supporting the idea.”*



Figure 36. Avatar Group Wordle – Agreement and Support Themes.



## Major Theme – Cultural Factors

### Subject Specific Theme – Attitudes

The themes of cultural factors and attitudes emerged during the avatar intervention group discussing the effects of the advertising on a person's vote [Fig 38]. The avatar group noted that people have different predetermined attitudes.

*AV1/24-26: "I think it depends on how easily persuaded you are, but I do think that some peoples votes would be effected but not mine because I would have a strong opinion about it."*

*AV2/7-9: "I suppose it depends how ready to be persuaded you are. I suppose if you are on the fence then maybe but I'm not so that's not an issue for me. If you don't have strong views it could be very persuasive."*

*AV2/56-58: "I don't know if you disagreed with something that it would have the persuasive power to make you agree unless you didn't have a strong opinion."*

### Cultural effects on attitudes

AV3/3-5: *“I would think that it depends on their background, if they were religious they would have the same attitude, they focus on religion element of marriage and not the legal side of marriage.”*

AV3/19-22: *“I think that people would have voted more positively, I think people would have a strong opinion before they viewed it, there previous attitude could have been strong enough that the religious aspect could have has a strong effect on an Irish person.”*

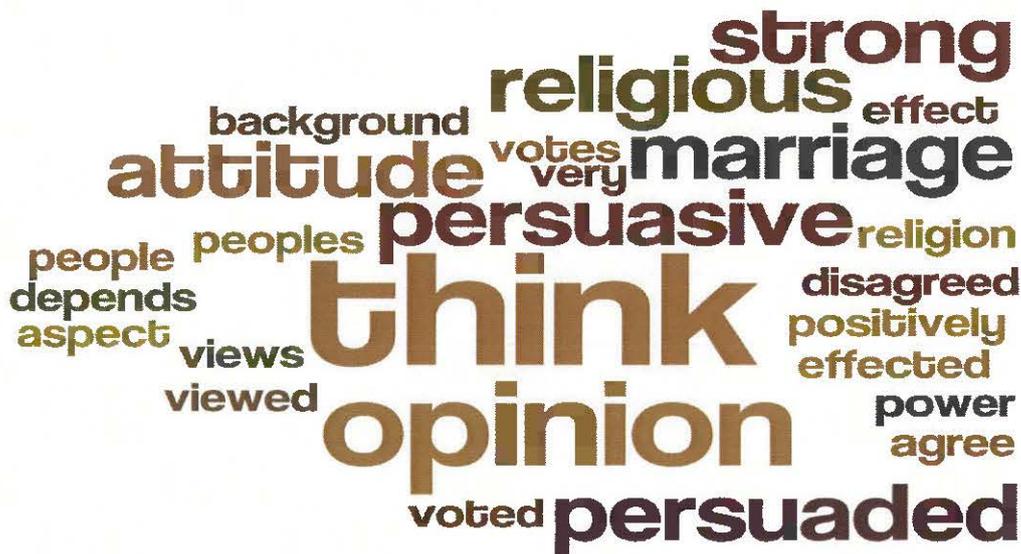


Figure 38. Avatar Group Wordle – Cultural Factors and Attitudes Themes.

### Minor Overlapping Theme – Time

Participants in the avatar intervention group discussed the effects the same-sex marriage policy advertising may have on a person’s attitudes after viewing.

AV2/19-20: *“I don’t think it would have a long term impact but a short term one.”*

## Major Theme – Novelty

During the interviews, participants discussed that they thought either of the same-sex marriage policy advertisements could have affected a person's vote towards same-sex marriage.

### Anti-same-sex marriage policy advertisement

AV2/23-26: *“Yeah, the arguments weren't novel and people who are opposed to gay marriage will use those arguments often, I don't think there is any new information. It would enforce what's already there and make it more serious by putting a campaign behind it.”*

### Pro same-sex marriage policy advertisement

AV3/87-88: *“It's a more human advertisement and that when you view an advert a certain amount of times it starts to sink in more with you.”*

AV3/91-92: *“Yes because it took a more human approach about love and equality and not a biblical argument.”*

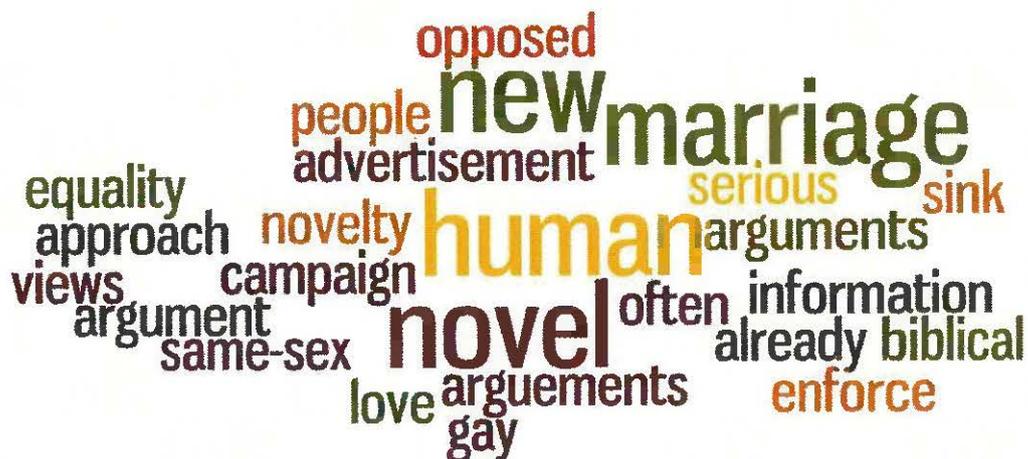


Figure 39. Avatar Group Wordle – Novelty Theme.

## Conclusion

The results described in the sections above have provided some of the answers sought by the research questions of this work. During the first phase, analysis that there was no difference in attitudes towards lesbians, gay men or same-sex marriage in the pro and anti SSM policy advertising groups after viewing. This result discussed in the next section, although not significant provides support for further examination into forms of advertising on attitudes. The interesting findings from the control group in the first phase had an increase in positive attitudes towards SSM after viewing but no increase towards lesbians and gay men; this is discussed further in the next chapter.

A significant result from the first phase was the significant effect policy advertising had upon attitudes towards SSM. This significant change was in all three groups after viewing. This significance identified in each of the three groups after viewing. In addition, the anti SSM policy advertising did not have a greater effect on attitude scores on the ATSM or ATLG than a pro SSM policy advertisement. The gender analysis in phase one, revealed a significant difference between the scores of men and women. Women displayed more positive attitudes towards same-sex marriage than men did, no gender difference was found in attitudes towards lesbians and gay men.

The statistics of the second phase focused upon the effects of the avatars on attitudes. The female and male avatars did not have an effect on attitudes towards same-sex marriage or lesbians and gay men. An additional finding of the second phase was that participants who had previously viewed anti SSM policy advertising were not affected by viewing pro SSM policy advertising.

The last research phase gathered qualitative views from participants. Several major themes of creativity, novelty, persuasion, cultural factors emerged. The minor themes of time, relevance, anthropomorphism, and persuasion emerged. Finally subject specific themes: Attitudes, emotional response, agreement, and support emerged.

Overall, the conclusions of the three phases of experiments used yielded some interesting findings, providing support for the literature and for future research directions. These results are discussed according to their individual phases in the final chapter of this study.

# Discussion

## Discussion

### Key Findings

The aim of the present study was to identify if the persuasive advertising and persuasive technologies used in this research study could alter an individual's attitudes and voting behaviour towards lesbians, gay men and same-sex marriage. In addition to this, the persuasive effect of one form of policy advertising was evaluated against another. The possible correlating actions towards same-sex marriage were examined using the ballot vote. The key findings of this research will be discussed in the following chapter in reference to each phase of research. Lastly, this research will be evaluated for strengths and limitations and concludes debating the implications of these findings on future research investigations.

### Phase 1

The results of the first phase study identified that no significant difference of scores on the Attitudes Towards Same-sex Marriage (ATSM) scale (Pearl & Galupo, 2007) or the Attitudes Towards Lesbians and Gay men revised scale (ATLG-R-S5) (Herek & McLemore, 2011) between the anti-same-sex marriage advertisement, pro same-sex marriage advertisement and control groups. The results displayed by the control group of phase one identified a statistical difference, indicating a more positive attitude towards same-sex marriage after viewing the control consumer advertisements (Cadburys chocolate and Guinness). While participant attitudes towards lesbians and gay men did not alter after viewing advertisements.

The viewing of anti or pro policy advertising on participant attitudes towards same-sex marriage (ATSM) did find significant results, identifying an increase in positive attitudes towards same-sex marriage after viewing. However, there was no significant increase in one specific group to another but the scores did differ after the viewing of advertisements in each of the groups. There was also no significant effect on participant attitudes towards lesbians and gay men in the three groups following the advertisements, a small interaction effect of the advertising was detected however, and this was not significant.

These results detailed above may be due to the persuasive theory of the advertisements described by the ELM theory for attitude change through persuasion

(Petty & Cacioppo, 1986) as all the advertisements employed this persuasion route. These findings also indicate that the change in control group scores may be due to several factors, the video, time between testing or how recently completion of questionnaire occurred which may have allowed participants to reflect on the content. These are also potential factors are discussed in the limitations section of this chapter.

A key discovery of this study was the effect of the advertising videos on participant attitudes towards same-sex marriage. These results indicate that attitudes towards same sex marriage may be affected using intervention methods such as advertising. This effect may be due to the re-evaluation factor of Fishbein and Ajzen's (1975) theory of reasoned action as participants may be re-evaluating current beliefs with the integration of the advertisement intervention along with their own experience.

Hypotheses five and six focused on the effects of anti-same-sex marriage policy advertising on attitudes. The anti-same-sex marriage policy advertising was not more persuasive than the pro policy advertising on both the ATSM and the ATLG-R-S5. It was found that the anti-same-sex marriage policy advertising did not statistically increase negative scores on both attitude scales. This finding may be accountable to the participant's re-evaluation of the advertisement or the advertisement's ability to use the different components of the Elaboration Likelihood Model (Petty & Cacioppo, 1986) to persuade the viewer and influence a change in attitudes or behaviours. This opposes Pinkleton's (1997) study in which negative political advertising negatively affected attitudes towards political candidates more than the opposing positive political advertising.

Research findings by Ardent et al. (2013) support this theory as their participants re-evaluated their own attitudes producing views that are more positive after viewing an openly negative advertisement. Ardent et al. (2013) argue that the content of the advertisements may have been too negative reducing the thought process of participants during implicit and explicit attitude formation, priming participants to display attitudes that are more positive.

The ballot vote on same-sex marriage supports the current attitude towards same sex marriage as 94% participants voted in favour of same sex marriage (SSM). These ballot results substantiate the recent poll by the Sunday Times/Red C finding

that 73% of Irish Citizens are in favour of same sex marriage with 53% agreeing strongly to the idea (O'Connell, 2011) with a later poll in 2013 indicating 75% in favour (IrishTimes.com, 2013). These findings provide further supported by those of the constitutional referendum committee for same sex marriage (SSM) finding 79% in favour for same-sex marriage (Counihan, 2013). However, as the majority of the votes in this study were in favour of SSM it may be said that the policy advertising had no effect on the ballot vote.

### **Gender Differences**

Another finding was the differences in participant attitudes before and after viewing the advertisements across gender. It was hypothesised before testing that female participants would have a more positive attitude scores on the ATSM (Pearl & Galupo 2007) and ATLG-R-S5 (Herek & McLemore, 2011) scales as the creators of both scales reported this. Pearl and Galupo (2007) reported that men had more negative attitudes than women towards both same-sex marriage and lesbians and gay men.

However, in the present study there was no statistical significant difference between men and women, when their attitudes towards lesbians and gay men were recorded and examined before and after viewing. This result also contradicts the work of Herek (1988) where men held more negative attitudes towards lesbians and gay men. Gender differences in attitudes towards same-sex marriage in this research differed significantly before and after viewing with females scoring attitudes that are more positive.

This was an interesting finding as Pearl and Galupo (2007) reported that the attitudes towards same-sex marriage and the attitudes towards lesbians and gay men scales produced corresponding results as they are viewed as corresponding attitudes and because they are both attitudes relating to the LGBT community. Smith and Mackie (2007) who defined the various cognitive formations of a person's attitude may explain the findings of this research.

Same-sex marriage is a legal concept that an individual may form an opinion about based on his or her own thoughts, beliefs and the opinions of others. As Langdrige and Taylor (2007) described, an individual's attitude towards an object or issue in a particular situation, which may be explicit or implicit. As opposed to

attitudes towards lesbians and gay men which as seen as different by Inbar et al. (2009). Lesbians and gay men are people with whom the public can have first-hand real life interaction. This is important for shaping intuitive attitudes, as they are more than an abstract legal concept; this is correlates with the classification of attitude formation detailed by Smith and Mackie (2007).

This is reinforced by Gordon Allport's (1935) definition of an attitude as a person's evaluations based upon experience and environment. This experience may be important in explaining why attitudes towards lesbians and gay men may not be significantly altered using advertising alone as our own conceptual evaluations and experiences define our attitudes.

## **Phase 2 – The Avatar Intervention**

The results of the second phase of the present research related directly to the use of persuasive technology to alter participant attitudes. Findings reported that the advertising that contained the female avatar did not significantly alter a person's attitudes towards same sex marriage. However, a mean trend of participant scores suggested that further study is required due to the deviation from the mean after viewing the advertisement with the avatar, mentioned later in this chapter. The female avatar-advertising group was also unable to have a significant effect on a person's attitude towards lesbians and gay men. Dunn and Guadagno (2012) explain this may be to how people view the avatars likeness to the gender expectations of society; females who are slender are more beautiful and males that are more muscular, and masculine. This is concurrent with the uncanny valley (Mori, 1970), when a viewer's emotional response alternates due to the design of the stimulus and it is human-like characteristics as designing outside these norms may produce negative evaluations of the stimulus.

The male avatar group, similar to the female avatar intervention, did not significantly alter participant attitudes towards same-sex marriage or attitudes towards lesbians and gay men. Although no statistical significance was identified after viewing, there was less deviation from the mean score on the ATLG-R-S5 with a more positive mean score. The scores on the ATSM however, deviated more from the mean score after viewing. The absence of an effect of the male and female avatars may be due to the uncanny valley (Mori, 1970), reducing their persuasive

ability if participants viewed the avatars negatively due to their design or level of animation.

It is important to note however, that due to the lack of research investigating the effects of persuasive avatars even though these scores are not significant they provide support for further more research into their effects and applications. These investigations could focus upon the persuasive effect of user designed, self-representative avatars in relation to the attractiveness and focused attention by participants described by Vasalou and Joinson (2009).

Another aspect within the second phase was to identify whether the implementation of pro same-sex marriage policy advertising after a person has previously viewed anti-same-sex marriage policy advertising had a positive effect on an individual's attitudes. Pinkleton (1997) highlighted that a negative message has more power than a positive one. Results did not find a significant difference in participant's attitudes towards same-sex marriage or lesbians and gay men. This finding may be explained in two ways: Potentially the pro same-sex marriage policy advertisement was not as persuasive as the anti-same-sex marriage policy advertisement. It may have ineffectively utilised the components of the elaboration likelihood model or as previously discussed in phase one, the participants who viewed the anti-same-sex marriage policy advertisement may have been more effected by its message. As Lau, Sigelman and Rovner's (2007) research highlighted negative advertising use has skyrocketed in American politics, from 1% and 46% respectively by the Democratic and Republican campaigns in 2004 to 83% and 89% in 2006. The potential research implications for this are detailed later in this chapter.

The final research component of phase two was to examine if the implementation of persuasive technology could affect a person's voting behaviour. The results from the votes gathered from participants before and after voting, identified that voting behaviour did not alter after viewing the videos with and without embedded avatars. The voting behaviours in the female avatar group were 100% in favour, 100% in the male avatar group and 80% in favour in the control group. These percentages did not alter suggesting agreement with the first phase of research, supporting positive attitudes in favour of same-sex marriage.

### Phase 3 – Structured Interviews

The qualitative data gathered from participants in the third phase was evaluative, focusing on the methodology and content of the research but also the opinions and attitudes of the participants involved in the research. In accordance with Robson (2002) coding and memoing of the data was employed to aid the researcher to create a codebook to interpret and derive themes from the data.

The themes derived from the structured interviews encompassed the creativity and novelty of the advertising content, the participant's emotional response to the content, opinions about the effects of time and how time interacted with the persuasive ability and lifespan of the advertising. Angst and Agarwal (2009) highlighted the effects of time on a person's interaction with the Elaboration Likelihood Model (Petty & Cacioppo, 1986) and how elaboration and attitudes are altered over time.

Tam and Ho (2005) and Angst and Agarwal (2009) discuss that the amount of time any individual directs towards the elaboration process when viewing a stimuli effects the generation of their thoughts in response to the information. It is important to note that if the viewer thinks the source of the message does not have the required expertise that the persuasive ability of the central route of the ELM is effected (DeBono & Harnish, 1988, as cited in Angst & Agarwal, 2009). These effects may have been present in this research as even though the creators endorsed the advertisements used the participant's views about the content and direction of agreement may have affected their persuasive ability.

In relation to the themes derived from the interviews relating directly to the persuasive technology implemented, the theme of agreement and support emerged as well as the theme of anthropomorphism. Several researchers have investigated how people design their own avatars to represent themselves in online dating, (Hancock et al., 2007) in blogging and gaming (Vasalou & Joinson, 2009) and how these designs alter resulting behaviours (Yee & Bailenson, 2007). Their collective findings support that people pay increased attention to the design of an avatar they personally designed to represent aspects of their emotional or physical self. It is therefore important to note the Proteus effect of user conformity (Yee & Bailenson, 2007) and the influences of avatar design regarding gender effects, personality and self-esteem

that avatars may effect a person's impression management (Schlenker, 1980) as a persons may be influenced while interacting with an avatar.

The emerging themes allow conclusions to be drawn from both the control group participants and the avatar group. Participant feedback from the avatar group when compared to the non-significant results from the male and female avatars provided some support for the future research focusing on examining the implementation capabilities of avatars as a persuasive technology further. Participants in the avatar groups highlighted their own understanding of the purpose and discussed the persuasive ability of avatars as persuasive tools. This understanding of the avatar use as a persuasive tool may in turn affect the application abilities in persuasion methods if participants understand the purpose. This is supportive of the findings of Dunn and Gaudango (2012) as they identify similarly the other avatar researchers discussed in the paragraph above, that people design avatars to represent themselves but also social norms. As the avatar interview participants perceived the applications of avatars as persuasive tools, supporting the findings of Yee and Bailenson (2007) to further research environments in which avatars can be implemented as human representations.

The participants of the avatar group discussed the theme of attitudes and their cultural interactions, displaying that the participants are aware of the effects of culture and how a person's background may affect a person's attitude. The effects of culture described by participants is supported by the work of Firestone et al. (2005) who identified religiosity, gender, ethnicity, income and educational attainment to effect attitudes towards same-sex marriage. This is a concurrent finding with Herek and McLemore (2011), Pearl, and Galupo (2007) who correlated these effects on their attitude measures.

Most importantly, the participants noted that the persuasive technology and advertising they viewed during their participation was evaluated with the pre-existing attitude, described attitude literature, and may be altered depending on the individual's susceptibility to be persuaded to one side of the political debate or the other. Langdridge and Taylor (2007) described that attitudes and actions are formed from internal (thoughts/ feelings) and external (other people and stimuli) evaluations which effect the attitude formation. In other words, some people create their attitudes based on their opinion and the opinion of others, and those who may be persuaded

by the subjective norm of society (Fishbein & Ajzen, 1975) may be more susceptible to the presence advertisements and avatars.

In relation to participant attitude scores on the ATSM and ATLG-R-S5 scale, the avatar group participants discussed that they believed the ATSM was more likely to be altered by advertising by increasing attitudes. Whereas the ATLG-R-S5 would not be altered as easily, with participants stating that they believed that the pro same-sex marriage policy advertisement would increase positive attitudes. This point, identified by interview participants, may be in Phase 1 of this section as Langdrige and Taylor (2007) define an attitude may be towards a concept such as same-sex marriage or a people including lesbians and gay men. Inbar et al. (2009) describe lesbians and gay men as people with whom the public can have first-hand interaction. This is important for shaping intuitive attitudes, as they are more than a concept unlike same-sex marriage.

It is important to note that because participants describe the importance of persuasion and its ability to reinforce attitudes that may already be held by the viewers, more importance should be implemented during examination and during the designing process. Tam and Ho (2005) provided further understanding of this finding as they argue that effective persuasive messages focus the attention of the subject entirely. This focused attention described by participants allowed for the restructuring of cognitive resources and resulting behaviours and attitudes, supporting Resource Allocation Theory (Ruiter et al., 2006) as participants paid more attention to a persuasive arguments or creative advertisement.

The interviewed participants of the control group, similar to the avatar interview group, displayed several themes, which included the main theme that emerged from control interviews; the theme of creativity and its relevance. Participants noted that the creativity employed in the commercial advertisements they viewed was integral to both their ability to recall the content of the advertisement but also its relation to the product. The importance of creativity and relevance of a message previously discussed in relation to the ELM (Petty & Cacioppo, 1986) but also the Heuristic Systematic Model (HSM) (Bohner, Moskowitz & Chaiken, 1995).

The effective ability of the HSM (Bohner, Moskowitz & Chaiken, 1995) to persuade an audience in this study was the different components incorporated in the

videos; facts, statistics and semantic opinions of the audience. The attention resources directed towards the content were dependent upon its delivery or as participants described, its creativity and relevance to the topic.

These participants described above how even though the product and the information used in the Cadburys chocolate advert are unrelated to one another the advertisement was still successful as it connected the audience to the product using its unusual imagery. This is one of the techniques of superficial processing described in the peripheral route of persuasion of the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986).

The participants from the control group also highlighted the effect of time on participant's attention ability and patience while viewing. As the viewer reached the peak of enjoyment of the content of the advertisement, they would lose interest in the advertisement as it declined in novelty or provided too much information to the viewer. Rogers (2003) supports this finding as the audience has limitations while processing new sound, visual content and the arguments of the message.

This novelty factor described by both interview groups, which may be related to the potential lifespan of the peripheral route of persuasion before the advertisements lose purpose and relevance. Therefore, the audience's processing method described in the ELM (Petty & Cacioppo, 1986) may become more complex or emphasised after the novelty of the advertisement becomes less original or interesting to the audience. This novelty factor is supported by findings of Hoveland et al. (1953), Briñol et al. (2007) and their attention capacity (Petty et al., 2007) relating to the persuasive structure of a message; originality, credibility and attractiveness and drawing the attention of the viewer.

Another shared theme emerged as the participants in the avatar group highlighted, the participants in the control group interviews also described their own emotional responses to the advertisements they viewed. The participant's comments about their responses support the notion that the viewer's emotions may be affected by the novelty of an advertisement, in the example above it may be due to the surprise during their first viewing. This is known as reframing (O'Shaughnessy & O'Shaughnessy, 2004), when the audience is connected to the product using emotion, an important tool in relating a product to the audience. These emotional changes may also have a certain lifespan depending on the individual viewer.

## Strengths

The strengths of the present study are the administration of the ATSM and the ATLG-R-S5 scales together as both the scales produce highly correlating results as highlighted by research conducted by Galupo and Pearl, (2007). This correlation in the results of this study as the intervention across both scales produced corresponding results. For example, in the Pro and Anti same-sex marriage (SSM) groups, corresponding attitudes displayed across both scales in the first phase of research. This correlation increased the inter-rater agreement of the use of the scales in both previous studies by scale authors (Galupo & Pearl, Pearl & Galupo, 2007), and of the present study. The use of these scales also supports the validity of the results obtained in the present study, as the inter-rater reliability statistics obtained were parallel with previous validity findings.

A key strength was that this study is the first to investigate the measured attitudes using the ATLG-R-S5 and ATSM attitude scales with political policy advertising in the first phase on a non-student sample. This research is also the first to attempt to integrate political policy advertising with an interactive avatar (second phase) to further alter attitudes and behaviour. This innovative use of intervention based upon the previous using the Proteus effect (Yee, Bailenson & Ducheneaut, 2009); to alter attitudes which resulted in the significant difference in participant scores in the first phase. This finding and the data gathered from the latter two phases provides justification for similar future research in advertising, persuasive technology and attitudinal research.

Another strength illustrated in the results of this study was the use of the ballot vote towards same-sex marriage in Ireland in the first two research phases. This ballot vote provided a link to the current relevancy of the topic in both Irish politics and in the justification for such research. The results of this ballot vote further reinforced the use of such descriptive data gathering to contrast attitude data and corresponding actions.

A methodological strength of this research was that it was conducted online in the first and second phases. This strength was relevant, as the effects of the experimental environment may have influenced the circumstances that direct the audience's attention away from the method of communication, affecting the audience's attention to the advertisement that Hoveland, Yanis and Kelley (1953),

describe as the key factor in the persuasive message of an advertisement. Therefore, employing the suggestion by Guadagno and Cialdini (2002) using a computer so that participants are more focused on the task at hand and less on the other people present and their views. An additional advantage of the online methodology employed in this research was that it did not restrict the participants by imposing a time limit to complete the study. As this research gathered participants from a older generation which may not have been as computer literate as predominately younger sample it was important to aid their participation allowing them freedom to complete the research at a unrestricted pace.

An advantage of this research was the employment of a mixed method approach, which according to Robson (2002), provides more insight than the use of a single method either qualitative or quantitative analysis, adjusting for the weaknesses of the two methods. This investigation combined the use of two quantitative measures as well as a mixed method advertising measure before interviewing participants in detail about various aspects of the research. This research method integration has yielded corresponding results with previous literature, which provides further insight into future research design and focus.

A final advantage of this research was the age range of participants; research that is conducted online which also uses online recruitment often struggles to gather participants in an older age bracket. This research gathered participants from 18 to 63, which allowed a number of different generation's opinions to be gathered.

## **Limitations**

Some of the limitations of the present study are the use of a convenience sample and its implications, the effect of participation time, avatar design effects, the use of structured interviews and limited interview participant numbers.

As stated in the strengths section above the unrestricted time to complete the study was important for an older sample. However, the amount of time required to complete the individual phases of data collection may have affected this study in several ways. Firstly, the length of time it took participants to complete the first phase was not controlled for. Participants were free to take time to fill out the attitude scales before and after the administration of the intervention advertisements. This presents two limitations; participants were required to sit and complete the

study in one sitting allowing breaks, and this means that the examination of attitude change is limited to the time between the completion of the first attitude scale, advertisement viewing and the final attitude scale. As interview group participants of the third phase note the potential time limitations that may affect the persuasive ability of the elaboration likelihood model (ELM) (Petty & Cacioppo, 1986).

Another limitation of this research is the laws against political advertisement in Ireland. The Irish Broadcasting Act (2009), states in Section 41(3) that “A broadcaster shall not broadcast and advertisement which is directed towards a political end or which has any relation to an industrial dispute.” (O’Dell, 2010). This Act prevents similar advertisement messages used in this investigation from being administered to the general population or for advertisements more specific to Irish political issues to be administered and tested. However, this researcher acknowledges that since this investigation began, several political advertisements have been publicised using online methods in several related areas in Irish society. Due to this recent development, this also provides further fields of examination discussed in the following section.

The use of a convenience sample of 254 participants sourced from college students, Age Action Ireland, National Rehabilitation Hospital, Facebook Users limits the generalizability of the results of this research as all these users were sourced using online methods. Therefore, a number of other methods of recruitment amongst the general population may have revealed varying results are required.

The present study also identifies the limitation that the control group attitudes towards same-sex marriage scores differed significantly after viewing the control consumer advertisements. This significance may be due to the use of normal product advertising in the control group, the consumer advertising may have increased participant mood levels during the examination, and further research is required in this area.

The participant attitude scores may have been affected by the time allowed to participants to complete the attitude scales. This time factor may have affected the participant’s evaluations of the questions allowing them to reflect and evaluate their answers before completing the scales; this in turn may have altered their attitudes when they viewed the scales for the second time.

As the use of a mixed method approach is an advantage, this researcher also acknowledges the limitations of such an approach. As Denzin and Lincoln (2000) described structured interviews are used to ask people a specific set of questions and these questions have a limited variation of response options due to this structure. An additional limitation to this is the amount of interview participants, Robson (2002) notes that as interviews are a demanding procedure for participants requiring more time reducing their willingness to participate. This research used a repeated measures approach bringing participants from the first phase into the following two phases, due to this design, participant numbers reduced significantly after each phase due to dropping participant involvement. Therefore, the numbers reduced in the second and more significantly in the third phase, limiting the usability of third phase qualitative results to inference data.

## **Suggestions for Future Research**

Some suggestions for the future research for this study are to investigate further into the effects of the different forms of advertising and the possible effects on attitudes, as new forms of Irish advertising relating to topical political events have emerged during this research. This investigator would recommend an evaluation of the new advertising in an Irish sample.

Furthermore, policy advertising may influence attitudes in a particular direction; this conclusion was drawn from the results from the first phase; that a person's attitudes may be altered towards same-sex marriage. As well, an investigation into the different persuasive abilities of positive and negative advertising towards an issue is required to identify if one form of advertising is more persuasive using attitude measurement and other evaluation methods such as the elaboration likelihood model is required. This effect may be examined using several forms of policy advertising across several participant groups to allow, comparison of both the persuasive advertising effects but if directionality of the advertising as a factor sways participant judgements.

Further study into the implementation of persuasive technology using a larger sample is recommended. This may be conducted using a large undergraduate sample to control for potential external effects before exploring testing on a large national

sample. The use of a larger sample would allow for a represent more demographics and support future research findings.

This researcher would recommend the use of more extensive avatar design stages to further test participant attitudes and evaluations of avatars as a persuasive tool; this may be achieved by conducting a large examination of the effects of gender, race, perceived occupation and age that may affect a person's evaluation of an avatar. This investigation may also benefit by evaluating the anthropomorphic attitudes and evaluations participants place upon avatars and why these terms are used, this theme arose in the current research, which supports such an investigation.

## **Theoretical and Practical Implications**

As this study used a unique method to influence attitude change and obtained significant results there are several implications to be considered. This study incorporated the ATSM, ATLG attitude scales and a same-sex marriage ballot to identify if attitudes may be altered using a repeated measures design. As the results obtained indicate that individual attitudes may be altered using advertising methods of persuasion, supporting the elaboration likelihood model (ELM) theory (Petty & Cacioppo, 1986) but also Fishbein and Ajzen's (1975) theory of reasoned action. This implication provides support for future researchers during the design of future research that incorporates media persuasion mediums.

It may also be inferred that as attitudes may be altered using the methods of the first phase of this study that with the incorporation of further study a persuasion method such as information advertising may be developed to reduce specified forms prejudice or in other mediums such as road safety provide justification for research to create more influential advertisements and health and safety notifications to the general public. Findings indicate that the attitudes towards same-sex marriage in Ireland are liberal and of a modern view, this finding has been further supported since the implementation of this research with a proposed referendum to the Irish constitution in 2014 announced by the Tanaiste, Eamon Gilmore in June 2013 (Kelly, 2013). Therefore, other issues such as political attitudes topics such as same-sex adoption and other same-sex legislation may be investigated in addition to other political topics currently under debate.

The findings of the second phase of this study were not significant in regard to their ability to alter an individual's attitudes towards same-sex marriage and lesbians and gay men, however further investigation into the persuasive ability and applications of persuasive tools such as avatars is required to evaluate their effectiveness in other scenarios. As the findings of the third phase of research highlight the participants human-like descriptions of avatars an investigation in their abilities may further the findings of the Proteus effect (Yee, Bailenson & Ducheneaut, 2009) but also the theory of the Uncanny Valley (Mori, 1970, 2005) when examined in other scenarios such as for educational or health related purposes.

## Conclusion

This emergent study examined whether policy advertising and persuasive technology could alter participant attitudes and corresponding voting behaviours towards same-sex marriage and their attitudes towards lesbians and gay men. As the results of this study indicate that both the pro and anti same-sex marriage policy advertising do produce changes on the attitudes towards same-sex marriage scale (ATSM) but not the attitudes towards lesbians and gay men scale (ATLG-R-S5). This discovery is a highly topical and relevant issue in Irish society and politics due to current law reform as further investigation and research to gather future data.

This study furthers the knowledge of attitudes towards the LGBT community by focusing on both same-sex marriage attitudes and attitudes towards lesbians and gay men living in Ireland. This therefore has additional implications for future study in both political issues such as parenting and adoption attitudes of LGBT parents but also support methods of reducing negative attitudes, bias and homophobia in Ireland.

This research is also the first of its kind in Ireland to design and integrate an interactive avatar specifically for the purpose of integration with a political advertisement to alter and examine a specific change in attitudes to either a positive or a negative stance. This promising technique requires further study to allow researchers to develop an effective tool in other environments that incorporate technology.

As this is, a highly relevant investigation due to the attitude results gathered in the first phase that show significance and correlate with the voting attitude of other investigations into Irish same-sex marriage poll results. This research promotes

further justification and support to conduct more analysis in the areas of political policy advertising effects on the public but also research into the implementations of technology. In regard to the current political situation in Ireland with the introduction of civil partnership bill from January 1<sup>st</sup>, 2011 and the prospect of same-sex marriage in the coming years, both support the justification of this research and equally future investigations, as current investigations in this area is lacking in an Irish context. This research may also contribute to past and future work in persuasion, attitudes, persuasive technology and LGBT research but importantly, also allows for further understanding of the issues and research areas amongst the Irish population to guide future research focus.

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# Appendices

## **Appendix A - The Attitudes Towards Same Sex Marriage Scale (ATSM)**

Response key: 1= strongly disagree; 2= disagree somewhat; 3= neither agree nor disagree; 4= agree somewhat; 5= strongly agree.

1. Same-sex marriage undermines the meaning of the traditional family.
2. Two loving same-sex parents can provide the same quality of parenting and guidance as a man and a woman.
3. A primary purpose of marriage is to provide stability in a loving relationship. Same- sex partners should have this legal right available to them.
4. The recognition of same-sex marriage poses a threat to society because public schools will be forced to teach that homosexuality is normal.
5. Marital protections, such as social security and health care benefits, should be available to same-sex partners.
6. Same-sex marriage will strengthen the morals of society by supporting equality.
7. I support individuals who are not heterosexual seeking marriage rights.
8. Men and women naturally complement one another, therefore a union between two men or two women should not be recognized in marriage.
9. The legalization of same-sex marriage is an important step toward the acceptance of individuals who are not heterosexual.
10. A primary purpose of marriage is to raise children, therefore only a man and a woman should be married.
11. Same-sex marriage ensures equal rights for all relationships regardless of sexual orientation.
12. The legalization of same-sex marriage will lead to unnecessary financial burdens, such as social security and health care benefits.
13. The legalization of same-sex marriage will jeopardize religious freedom.
14. Individuals should be free to enter into marriage with another same-sex consenting adult because god created all people and does not make mistakes.
15. Same sex marriage will lead to the moral decay of society.
16. I oppose the legalization of same-sex marriage.

## **Appendix B - Attitudes Towards Lesbians and Gay Men Scale-Short Form (ATLG-R-S5).**

Response key: 1= strongly disagree; 2= disagree somewhat; 3= neither agree nor disagree; 4= agree somewhat; 5= strongly agree.

### ATG-R-S5

1. Sex between two men is just plain wrong.
2. I think male homosexuals are disgusting.
3. Male homosexuality is a natural expression of sexuality in men.
4. Male homosexuality is a perversion.
5. Male homosexuality is merely a different kind of lifestyle that should not be condemned.

### ATL-R-S5

6. Sex between two women is just plain wrong.
7. I think female homosexuals (lesbians) are disgusting.
8. Female homosexuality is a natural expression of sexuality in women.
9. Female homosexuality is a perversion.
10. Female homosexuality is merely a different kind of lifestyle that should not be condemned.

## Appendix C – The Television Advertisement Evaluation Internet Questionnaire (TAEIQ)

1) How many times did you see this advertisement?

---

2) Did you ever mention this advertisement to anyone?

---

3) How well did this advertisement catch your attention?

- Very Well
- Somewhat Well
- Undecided
- Not Very Well
- Not at all Well

4) How appealing did you find this advertisement?

- Very Appealing
- Somewhat Appealing
- Undecided
- Not Very Appealing
- Not at all Appealing

5) How convincing did you find this advertisement?

- Very Convincing
- Somewhat Convincing
- Undecided
- Not Very Convincing

Not at all Convincing

6) How memorable did you find this advertisement?

Very Memorable

Somewhat Memorable

Undecided

Not Very Memorable

Not at all Memorable

7) How creative did you find this advertisement?

Very Creative

Somewhat Creative

Undecided

Not Very Creative

Not at all Creative

8) In general, how would you rate the quality of this advertisement compared to other ads of a similar nature?

Excellent

Good

Fair

Poor

Undecided

9) What, if anything, did you find appealing about this advertisement?

---

10) What, if anything, did you dislike about this advertisement?

---

11) Which of the following would you use to describe this advertisement? Please check all that apply.

- Appealing
- Honest
- Distasteful
- Credible
- Convincing
- Creative
- Distasteful
- Attractive
- Believable
- Memorable
- Not Credible
- Touching
- Professional
- Silly

## **Appendix D - Age Action Ireland Recruitment Advertisement**

Research Request – Attitudes research

A research master's psychology student is looking for participants in an online survey.

The aim of the research is to explore the effects of advertising and captology interventions on people's attitudes towards gay men, lesbian women and same-sex marriage. More details are provided before the survey on the website.

This research is looking at the general population and requests the participation of the members of age action Ireland. All the information gathered will be kept confidentially and anonymous, your participation is greatly appreciated.

If you are interested in taking part, you need to complete a Questionnaire that takes 15 minutes. It can be filled at any time online at -

<http://db.tt/TEQSSKvk>

Liam Challenor, B.Sc, Dún Laoghaire Institute of Art, Design and Technology.

If you have any further questions please contact the researcher at [Liam.Challenor@iadt.ie](mailto:Liam.Challenor@iadt.ie) (087-2152733) or his supervisors Dr Irene Connolly at [Irene.Connolly@iadt.ie](mailto:Irene.Connolly@iadt.ie)(01-2394963), or Hannah Barton at [Hannah.Barton@iadt.ie](mailto:Hannah.Barton@iadt.ie) (01-2144756).

## **Appendix E – National Rehabilitation Hospital Research Request Email**

Dear Everyone,

As you know, we have had many young students from the Institute of Art and Technology in Dun Laoire doing volunteer work at NRH. Many have given invaluable time and effort in many different areas of the hospital.

One of these students is Liam Challenor who was an excellent, hardworking volunteer here. He has asked me to circulate 'Everyone' asking them to participate in his research project for a Research Master's Degree. It requires you to log on and answer an on-line survey and will only take a few moments.

Please click on link below and read about it. If you agree to participate, your responses will be anonymous.

<http://db.tt/TEQSSK Vk>

Thanks for helping

Maryrose Barrington  
Volunteer Coordinator

## Appendix F - Phase 1 Online Consent Form



### Information Sheet and Consent Form

This survey is part of the research being conducted for a research masters by Liam Challenor in the Institute of Art, Design and Technology, Dun Laoghaire.

Please note, before you decide whether or not you wish to take part, it is important for you to understand why this research is being done and what it will involve.

Please take time to read this information carefully and discuss it with friends and relatives if you wish.

### The Research Aim

The aim of this research study is to examine the effects of advertising and Captology on participants attitudes towards Same- Sex Marriage, Gay men and Lesbians.

Captology is when technologies such as avatars are used as persuasive tools.

Avatars, which will be used in the second phase of this research, are the physical representations of a person's identity online. By choosing to participate in this research study, participants will further the knowledge in the area of attitudes towards the LGBT community and same-sex marriage. Your voluntary participation is completely confidential and the researcher will protect all your information.

### What does my participation involve?

This research study will take place in three phases; very few participants will be requested to complete the three phases. The first phase will take place now and require **15 minutes** to complete. The second and third phase will take place at a later date. The first stage will require the participant to fill out two short attitude scales: the Attitudes Towards Same Sex Marriage scale and the Attitudes Towards Gay men and Lesbians scale. Then you will watch two short advertisements and complete a short questionnaire about the advertisements you viewed. You will then be asked to complete a vote on same-sex marriage. The second phase of this research is the same as the first phase with the inclusion of Captology intervention. You will be asked to

provide your email address in the first phase of this research. The researcher may contact you to participate in the second phase of the study.

How will my information be protected?

A password protected storage program will store your email address separately from your data that will be stored online and protected by a password before it is destroyed after 5 years under the Data Protection Act, 1998. Only the researcher and supervisors will have access to the secure folder where it will be stored. You have the right to access your own data and may withdraw from this research at any point. The researcher would like to use your data during publication and presentations of this research. This will be anonymous, if you would not like your data used please contact the researcher or supervisors.

Contact

If you have any further questions please contact me at Liam.Challenor@student.iadt.ie or my supervisors at: Hannah.Barton@iadt.ie (01-2144756), Irene.Connolly@iadt.ie (01-2394963). More information may be found at IADT or the IADT CCTA website.

Consent

I give my consent to participate in this study and understand that I may withdraw from the study at any point. By clicking the, **I agree to participate** button below you give your consent to participate in this research study agreeing that you:

Confirm that I have read and understand the information sheet for the above study and had the opportunity to ask questions.

I understand that my participation is voluntary and that I am free to withdraw at any time.

I agree to take part in this study.

I understand that data collected about me during this study will be completely anonymous throughout this study, including publication.

I agree that I am over 18 and consent to participate in this study.

I agree to participate

## Appendix G – Phase 1 Participant Randomisation

### HTML

#### Button HTML Coding:

```

<SCRIPT LANGUAGE="JavaScript">
<!-- Begin
function go_to(url) {
window.location=url;
}
function rand_link() {
var a;
a = 1+Math.round(Math.random()*3); // a = random number between 1-3
if (a==1)
go_to("http://www.freeonlinesurveys.com/rendersurvey.asp?sid=5z93o2aaf2nhb81966676")
;
if (a==2)
go_to("http://www.freeonlinesurveys.com/rendersurvey.asp?sid=ackrwoe1xgwb1cn1029910
");
if (a==3)
go_to("http://www.freeonlinesurveys.com/rendersurvey.asp?sid=wv0ca4bjismws8uy102991
2");
}
// End -->
</SCRIPT>
<body>
<CENTER>
<FORM NAME="myForm">
<INPUT TYPE="button" NAME="I agree to participate" VALUE="I agree to participate"
onClick="rand_link()">
</FORM>
</CENTER>

</body>
</html>

```

## Appendix H - Phase 1 Online Debrief Form



**Dun Laoghaire Institute of Art, Design & Technology**  
*Institiúid Ealaíne, Deartha & Tekneolaíochta Dhún Laoghaire*

Thank you for participating in the present study concerning the effects of advertising and captology on the attitudes towards Lesbians, Gay men and Same-sex marriage.

The present study tests whether attitudes may be changed using persuasive political policy advertisements, which you may have seen in your intervention video before you took the Attitudes Towards Lesbians and Gay men (ATLG) or the Attitudes Towards Same-sex Marriage (ATSM). Both these test measure attitudes toward Lesbians and Gay men and attitudes towards same-sex marriage both before and after the intervention. These test scores will be compared for change by the researcher.

Your information will be protected at all times during the course of this study. A password protected storage program (Dropbox) will store your email address separately from your data that will be stored on surveymonkey.com and protected by a password before it is destroyed after 5 years under the Data Protection Act, 1998. The researcher and supervisors will have access to the secure folder in which it will be stored.

Your results will further the understanding of persuasion methods and allow the researcher to understand if your attitudes were altered by the videos using the above scales and if your actions were influenced also when you casted your ballot. If you wish to withdraw your results from this study please contact the researcher or supervisors with your date of birth and mother's maiden name. The researcher would like to use your data during publication and presentations of this research this data will be anonymous, if you would prefer your data is not used please contact the researcher or supervisors.

Contact

If you have any further questions please ask the researcher. Or contact me at [Liam.Challenor@iadt.ie](mailto:Liam.Challenor@iadt.ie) or my supervisors at: [Hannah.Barton@iadt.ie](mailto:Hannah.Barton@iadt.ie) (01-2144756), [Irene.Connolly@iadt.ie](mailto:Irene.Connolly@iadt.ie) (01-2394963), [www.iadt.ie](http://www.iadt.ie), [www.iadt.ie/ccta](http://www.iadt.ie/ccta).

Resources

You may find the following resources useful.

[www.irish-counselling.ie](http://www.irish-counselling.ie).

<http://www.belongto.org/service.aspx?sectionid=89>,

[http://www.yourmentalhealth.ie/images/uploads/Looking\\_After\\_Your\\_Mental\\_Health\\_English.pdf](http://www.yourmentalhealth.ie/images/uploads/Looking_After_Your_Mental_Health_English.pdf)

[http://www.yourmentalhealth.ie/images/uploads/Mental\\_Health\\_LGBT.pdf](http://www.yourmentalhealth.ie/images/uploads/Mental_Health_LGBT.pdf)

## **Appendix I - Email Invitation for Phase 2**

Dear participant,

Thank you for your participation to date in this research, it is greatly appreciated. This research is important to increase the understanding of the effects of advertising and captology on individual's attitudes.

I would now ask you to please consider taking part further; this involves completing two short attitude scales and watching two short videos, this takes 15 minutes to complete. If you have any further questions please contact the researcher or supervisors. Thank you for your time and participation.

Participation Link - <http://db.tt/JBuiBpDi>

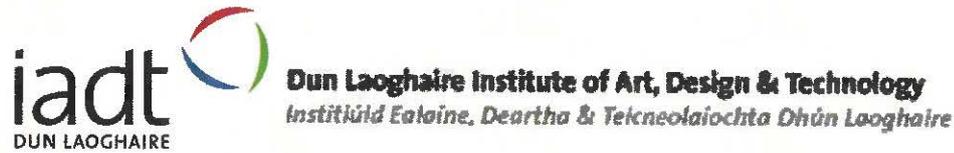
Regards,

Liam Challenor

Supervisors –

Hannah Barton [Hannah.Barton@iadt.ie - 01-2144756] and Irene Connolly [Irene.Connolly@iadt.ie - 01-2394963].

## Appendix J - Phase 2 Online Consent Form



### Information Sheet and Consent Form

This survey is part of the research being conducted for a research masters by Liam Challenor in the Institute of Art, Design and Technology, Dun Laoghaire.

Please note, before you decide whether or not you wish to take part, it is important for you to understand why this research is being done and what it will involve.

Please take time to read this information carefully and discuss it with friends and relatives if you wish.

### The Research Aim

The aim of this research study is to examine the effects of advertising and Captology on participants attitudes towards Same- Sex Marriage, Gay men and Lesbians.

Captology is when technologies such as avatars are used as persuasive tools.

Avatars, which will be used in the second phase of this research, are the physical representations of a person's identity online. By choosing to participate in this research study, participants will further the knowledge in the area of attitudes towards the LGBT community and same-sex marriage. Your voluntary participation is completely confidential and the researcher will protect all your information.

### What does my participation involve?

Participation will require you to fill out two short attitude scales: the Attitudes Towards Same Sex Marriage scale and the Attitudes Towards Gay men and Lesbians scale. Then you will watch two short advertisements and complete a short questionnaire about the advertisements you viewed. You will then be asked to complete a vote on same-sex marriage. This is the second phase of this research and is the same as the first phase with an interactive avatar which may be in one of the videos you view.

### How will my information be protected?

A password protected storage program will store your email address separately from your data that will be stored online and protected by a password before it is

destroyed after 5 years under the Data Protection Act, 1998. Only the researcher and supervisors will have access to the secure folder where it will be stored. You have the right to access your own data and may withdraw from this research at any point. The researcher would like to use your data during publication and presentations of this research. This will be anonymous, if you would not like your data used please contact the researcher or supervisors.

#### Contact

If you have any further questions please contact me at Liam.Challenor@student.iadt.ie or my supervisors at: Hannah.Barton@iadt.ie (01-2144756), Irene.Connolly@iadt.ie (01-2394963). More information may be found at IADT or the IADT CCTA website.

#### Consent

I give my consent to participate in this study and understand that I may withdraw from the study at any point. By clicking the, **I agree to participate** button below you give your consent to participate in this research study agreeing that you:

Confirm that I have read and understand the information sheet for the above study and had the opportunity to ask questions.

I understand that my participation is voluntary and that I am free to withdraw at any time.

I agree to take part in this study.

I understand that data collected about me during this study will be completely anonymous throughout this study, including publication.

I agree that I am over 18 and consent to participate in this study.

I agree to participate

## Appendix K – Phase 2 Participant Randomisation HTML

### Button HTML Coding:

```
<SCRIPT LANGUAGE="JavaScript">
<!-- Begin
function go_to(url) {
window.location=url;
}
function rand_link() {
var a;
a = 1+Math.round(Math.random()*3); // a = random number between 1-3
if (a==1)
go_to("http://freeonlinesurveys.com/rendersurvey.asp?sid=nnnk6qosvzb4bd21043090");
if (a==2)
go_to("http://freeonlinesurveys.com/rendersurvey.asp?sid=xuzuj6t5efwqprb1043091");
if (a==3)
go_to("http://freeonlinesurveys.com/rendersurvey.asp?sid=t02r9i611swdqp1043093");
}
// End -->
</SCRIPT>
<body>
<CENTER>
<FORM NAME="myForm">
<INPUT TYPE="button" NAME="I agree to participate" VALUE="I agree to participate"
onClick="rand_link()">
</FORM>
</CENTER>
</body>
</html>
```

## Appendix L - Phase 2 Online Debrief Form



**Dun Laoghaire Institute of Art, Design & Technology**  
*Institiúid Ealaíne, Deartha & Teicneolaíochta Dhún Laoghaire*

Thank you for participating in the present study concerning the effects of advertising and captology on the attitudes towards Lesbians, Gay men and Same-sex Marriage. The present study tests whether attitudes may be changed using persuasive political policy advertisements, which may have included an interactive avatar, which you may have seen in your intervention video before you took the Attitudes Towards Lesbians and Gay men (ATLG) or the Attitudes Towards Same-sex Marriage (ATSM). Both these test measure attitudes toward Lesbians and Gay men and attitudes towards same-sex marriage both before and after the intervention. These test scores will be compared for change by the researcher.

Your information will be protected at all times during the course of this study. A password protected storage program (Dropbox) will store your email address separately from your data that will be stored on surveymonkey.com and protected by a password before it is destroyed after 5 years under the Data Protection Act, 1998. The researcher and supervisors will have access to the secure folder in which it will be stored.

Your results will further the understanding of persuasion methods and allow the researcher to understand if your attitudes were altered by the videos using the above scales and if your actions were influenced also when you casted your ballot. If you wish to withdraw your results from this study please contact the researcher or supervisors with your date of birth and mother's maiden name. The researcher would like to use your data during publication and presentations of this research this data will be anonymous, if you would prefer your data is not used please contact the researcher or supervisors.

### Contact

If you have any further questions please ask the researcher. Or contact me at [Liam.Challenor@iadt.ie](mailto:Liam.Challenor@iadt.ie) or my supervisors at: [Hannah.Barton@iadt.ie](mailto:Hannah.Barton@iadt.ie) (01-2144756), [Irene.Connolly@iadt.ie](mailto:Irene.Connolly@iadt.ie) (01-2394963), [www.iadt.ie](http://www.iadt.ie), [www.iadt.ie/ccta](http://www.iadt.ie/ccta).

Resources

You may find the following resources useful.

[www.irish-counselling.ie](http://www.irish-counselling.ie).

<http://www.belongto.org/service.aspx?sectionid=89>,

[http://www.yourmentalhealth.ie/images/uploads/Looking\\_After\\_Your\\_Mental\\_Health\\_English.pdf](http://www.yourmentalhealth.ie/images/uploads/Looking_After_Your_Mental_Health_English.pdf)

[http://www.yourmentalhealth.ie/images/uploads/Mental\\_Health\\_LGBT.pdf](http://www.yourmentalhealth.ie/images/uploads/Mental_Health_LGBT.pdf)

## Appendix Policy M - Advertisements with Female Avatar



## Appendix Policy N - Advertisements with Male Avatar



## Appendix O - Cadburys Advertisement Images



## Appendix P - Guinness Advertisement Images



## **Appendix Q - Interview Recruitment Email**

Dear Participants.

Thank you very much for your previous participation, it is greatly appreciated.

The final goal of this research project is to obtain participant feedback on various aspects of the research study investigating attitudes towards same-sex marriage, lesbians and gay men. This is an excellent opportunity for you to provide the research with feedback or ask any questions you may have. The total time will require no more than 1 hour, light refreshments will also be provided. Attached is a copy of the consent form, which will be given out at the interview.

The interview will be held on the campus of I.A.D.T in Dun Laoghaire at a time which can be accommodated to your schedule. If you would be interested in participating in a short interview, please reply to this email. The content of the interview is completely confidential. No names or identifiable data will be used during the interview. If you have any questions please reply to this email.

Thank you for your time.

Kind Regards,  
Liam Challenor.

## Appendix R - Interview Consent Form



**Dun Laoghaire Institute of Art, Design & Technology**  
*Institiúid Ealaíne, Deartha & Teicneolaíochta Dhún Laoghaire*

### Informed Consent Form for political attitudes research study

The aim of this research study is to examine the effects of advertising and captology on participant's attitudes towards Same- Sex Marriage, Gay men and Lesbians. By ticking the agree box below you give your consent to participate in this interview. This interview wishes to examine the content used in this research. The researcher aims to gather your thoughts on the two stages of advertising that you saw previously as well as the questionnaires you completed.

Your participation is greatly appreciated and your information will be protected at all times during the course of this study, you have the right to access your own data and may withdraw from this research at any point.

By choosing to participate in this interview you will further the knowledge in the area of attitudes towards political policy. Your participation is completely confidential and the researcher will protect all your information. The researcher will use your data during publication and presentations of this research this data will be anonymous.

Your participation is Voluntary. If you have any further questions please ask the researcher. Or contact me at [Liam.Challenor@iadt.ie](mailto:Liam.Challenor@iadt.ie), or my supervisors [Hannah.Barton@iadt.ie](mailto:Hannah.Barton@iadt.ie), [Irene.Connolly@iadt.ie](mailto:Irene.Connolly@iadt.ie)

I give my consent to participate in this interview and understand that I may withdraw from the study at any point.

Thank you for your participation.

I consent:

## **Appendix S - Pro Same-sex Marriage Policy Advertisement Questions**

You saw a pro same-sex marriage policy advertisement during this study. I am going to ask you about this advertisement.

1. What opinions do you think people may have about the pro same-sex policy marriage advertisement?
  - A. Do you think people will think it was professional?
  - B. Do you think people will think it was persuasive?
  - C. Do you think people will think it was creative?
  
2. Did you think it would affect people's answers on the questionnaires after viewing it?
  - A. Do you think the advertisement would make people answer more favourable towards same-sex marriage after viewing?
  - B. Do you think the advertisement would make people answer more negatively towards same-sex marriage after viewing?
  - C. Do you think the advertisement would make people answer more favourably on an attitude scale towards lesbians and gay men after viewing?
  - D. Do you think the advertisement would make people answer more negatively on an attitude scale towards lesbians and gay men after viewing?
  - E. Do you think this advertisement would affect a person's vote for same-sex marriage?

## **Appendix T - Anti same-sex Marriage Policy**

### **Advertisement Questions**

You saw an anti-same-sex marriage policy advertisement during this study. I am going to ask you about this advertisement.

1. What opinions do you think people may have about the anti-same-sex policy marriage advertisement?
  - A. Do you think people will think it was professional?
  - B. Do you think people will think it was persuasive?
  - C. Do you think people will think it was creative?
  
2. Did you think it would affect people's answers on the questionnaires after viewing it?
  - A. Do you think the advertisement would make people answer more favourable towards same-sex marriage after viewing?
  - B. Do you think the advertisement would make people answer more negatively towards same-sex marriage after viewing?
  - C. Do you think the advertisement would make people answer more favourably on an attitude scale towards lesbians and gay men after viewing?
  - D. Do you think the advertisement would make people answer more negatively on an attitude scale towards lesbians and gay men after viewing?
  - E. Do you think this advertisement would affect a person's vote for same-sex marriage?

## Appendix U - Avatar Group Interview Questions

You saw a pro same-sex marriage policy advertisement with an animated avatar during this study. I am going to ask you about this advertisement.

1, Can you remember the video that was shown to you with the avatar in it?

### Avatar Questions

1. Do you think people would notice avatar that was present in the pro same-sex policy marriage advertisement?
2. What do you think people will think about the physical appearance of the Avatar?
  - a. Do you think people will think it is human like?
  - b. What do you think people will think about its facial features?
  - c. What do you think people will think about the avatars smile?
3. What opinions do you think people may have about the avatar?
4. Do you think that people would identify that the avatar was agreeing or disagreeing with the content of the video?
5. Do you think people would find the avatar distracting?
6. Do you think the avatar will have an effect upon people's scores on an attitudes test towards lesbians and gay men?
7. Do you think the avatar will have an effect upon people's scores on an attitudes test towards same-sex marriage?
8. Do you think a view of the videos would identify the facial movements (gestures) of the avatar? (Indicate the mouth, eyes, and eyebrows).

9. Do you think people will recognise the movements the avatar made with its head?

(Indicate that it nodded and moved from watching the video to facing the audience).

10. Do you have any other comments or feedback on the avatar?

Audio Questions –

1. Irish actors dubbed the video you saw, did you think this helped you when viewing the video?
2. The video you saw may have been slightly out of sync with the sound. Was this dubbing distracting? Did it draw away from your attention to the video?

## Appendix V - Control Group Participant Questions

### Video questions

You saw two advertisements during this study. I am going to ask about the first and then the second advertisement you saw.

### Cadbury's Chocolate Advertisement

1. What were your first impressions of the Cadbury's advertisement you saw?
  - a. Do you think that people would think this is a creative advertisement?
  - b. Do you think this advertisement would make people feel nostalgic?
  - c. Do you think people would remember this advertisement easily when it is described to them?
  - d. Do you think people would find it to be entertaining and interesting?
  - e. Do you think that people would feel light hearted or happier after viewing this advertisement?
  
2. Do you think that many people would have seen this advertisement before?
  - a. Do you think that this advertisement would become annoying after to many views?
  - b. Do you think that people would enjoy this advertisement even after viewing it several times?
  
3. What about the music in the advertisement, do you think people would enjoy that song?
  - a. Do you think people would find this song to be enjoyable?
  - b. Do you think people would act along to the drum solo preformed in the advertisement?
  
4. What emotions do you think that the viewers of this video might feel while watching it?
  - a. Do you think people would feel happy after viewing?
  - b. Do you think people would feel joyful after viewing?
  - c. Do you think people would feel nostalgic after viewing?
  - d. Do you think people would feel calm after viewing?
  - e. What other emotions do you think people may feel after viewing?

5. Do you think this advertisement may influence people to feel any other emotional change to their mood after viewing?
6. Did you think it would affect people's answers on the questionnaires after viewing it?
  - a. Do you think the advertisement would make people answer more favourable towards same-sex marriage after viewing?
  - b. Do you think the advertisement would make people answer more negatively towards same-sex marriage after viewing?
  - c. Do you think the advertisement would make people answer more favourably on an attitude scale towards lesbians and gay men after viewing?
  - d. Do you think the advertisement would make people answer more negatively on an attitude scale towards lesbians and gay men after viewing?
  - e. Do you think this advertisement would affect a person's vote for same-sex marriage?

#### Guinness Advertisement

1. What were your first impressions of the Guinness advertisement you saw?
  - a. Do you think that people would think this is a creative advertisement?
  - b. Do you think this advertisement would make people feel nostalgic?
  - c. Do you think people would remember this advertisement easily when it is described to them?
  - d. Do you think people would find it to be entertaining and interesting?
  - e. Do you think that people would feel light hearted or happier after viewing this advertisement?
2. Do you think that many people would have seen this advertisement before?
  - a. Do you think that this advertisement would become annoying after to many views?
  - b. Do you think that people would enjoy this advertisement even after viewing it several times?
3. What about the music in the advertisement, do you think people would enjoy that song?
  - a. Do you think people would find this song to be enjoyable?

4. What emotions do you think that the viewers of this video might feel while watching it?
  - a. Do you think people would feel happy after viewing?
  - b. Do you think people would feel joyful after viewing?
  - c. Do you think people would feel nostalgic after viewing?
  - d. Do you think people would feel calm after viewing?
  - e. What other emotions do you think people may feel after viewing?
  
5. Do you think this advertisement may influence people to feel any other emotional change to their mood after viewing?
  
6. Did you think it would affect people's answers on the questionnaires after viewing it?
  - f. Do you think the advertisement would make people answer more favourable towards same-sex marriage after viewing?
  - g. Do you think the advertisement would make people answer more negatively towards same-sex marriage after viewing?
  - h. Do you think the advertisement would make people answer more favourably on an attitude scale towards lesbians and gay men after viewing?
  - i. Do you think the advertisement would make people answer more negatively on an attitude scale towards lesbians and gay men after viewing?
  - j. Do you think this advertisement would affect a person's vote for same-sex marriage?

## Appendix W - Interview Debrief Form



**Dun Laoghaire Institute of Art, Design & Technology**  
*Institiúid Ealaíne, Deartha & Teicneolaíochta Dhún Laoghaire*

### Debriefing Form

Thank you for participating as a research participant in the present study concerning the effects of advertising and captology on the attitudes towards Lesbians, Gay men and Same-sex Marriage. This interview wished to gather your opinions and thoughts towards the questionnaires, videos and the avatar used in this research. Regarding whether attitudes may be changed using persuasive political policy advertisements and avatar interaction that you participated in during your participation in this research.

Your opinions will provide more informative information which will further the understanding of persuasion and allow the researcher to understand if your attitudes were altered by the videos using the above scales and if your actions were influenced also when you casted your ballot.

Again, we thank you for your participation in this interview. If you have any questions regarding this study, please feel free to email the researcher or supervisors at any point.

Or contact the researcher at [liam.challenor@student.iadt.ie](mailto:liam.challenor@student.iadt.ie). Or contact the researcher's supervisor at [Hannah.Barton@iadt.ie](mailto:Hannah.Barton@iadt.ie) or [Irene.Connolly@iadt.ie](mailto:Irene.Connolly@iadt.ie). Or find a counsellor near you using [www.irish-counselling.ie](http://www.irish-counselling.ie) Or if you would prefer use these resources: <http://www.belongto.org/service.aspx?sectionid=89>,  
[http://www.yourmentalhealth.ie/images/uploads/Looking\\_After\\_Your\\_Mental\\_Health\\_English.pdf](http://www.yourmentalhealth.ie/images/uploads/Looking_After_Your_Mental_Health_English.pdf)  
[http://www.yourmentalhealth.ie/images/uploads/Mental\\_Health\\_LGBT.pdf](http://www.yourmentalhealth.ie/images/uploads/Mental_Health_LGBT.pdf)

In the event that you feel psychologically distressed by participation at any point in this study, we encourage you to contact any of the support groups or counsellors provided.