

Investigation of Current Attitudes Towards Homosexuality

**An Investigation of Current Attitudes Towards Homosexuality; using Implicit  
and Explicit Measures**

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## **Abstract**

In light of recent changes to homosexual rights and marital laws within the Western world, it appears that attitudes towards homosexuality have become more positive in the past decade. This study examined attitudes towards homosexuality in the general population. Forty 18-48 year olds completed the Implicit Relational Assessment Procedure (IRAP) and completed the modified Homophobia Scale Questionnaire (HSQ). Participants also completed a modified 20-item Homophobia Scale Questionnaire. A mixed factorial ANOVA showed a significant interaction between sex and positive attitudes in predicting homophobic attitudes ( $F(1,48)=6.41, p<0.05$ ). Participants in the homosexuality group showed significant differences in attitude compared to those in the heterosexual group. The findings generally suggest that the negative attitudes towards homosexuals have evolved to become more positive. There were several limitations concerning this study including the sample and its size, the lack of reliability in the Implicit Relational Assessment Procedure (IRAP) as it is a relatively new measure and in the Homophobia Scale Questionnaire due to it not being empirically validated, practice effect on the IRAP, if it is known that the IRAP is superior over any other implicit measure, sample consisted of Western, Educated, Industrialized, Rich and Democratic (WEIRD) societies, It is suggested that future research development in this area may potentially result in strategies being implemented to make homosexuality accepted all around the world.

## Table of Contents

### Introduction

|                              |    |
|------------------------------|----|
| Background                   | 3  |
| Explicit measures            | 6  |
| Implicit attitudes           | 10 |
| Present study                | 12 |
| Research aims and hypothesis | 13 |

### Methods

|                      |    |
|----------------------|----|
| Participants         | 15 |
| Design               | 15 |
| Measures             | 16 |
| Table 1              | 17 |
| Materials            | 18 |
| Procedure            | 19 |
| Ethical Implications | 22 |

### Results

|                        |    |
|------------------------|----|
| Descriptive statistics | 24 |
| Table 2                | 24 |
| Table 3                | 25 |
| Inferential statistics | 26 |
| Table 4                | 26 |
| Table 5                | 27 |
| Table 6                | 28 |
| Table 7                | 29 |
| Figure 2               | 30 |

### Discussion

|            |    |
|------------|----|
| Discussion | 31 |
|------------|----|

## Investigation of Current Attitudes Towards Homosexuality

|   |    |
|---|----|
| Implications  | 35 |
| Strengths and limitations                                     | 36 |
| Conclusion  | 39 |
| <b>References</b>   | 40 |
| <b>Appendices</b>   |    |
| <b>Appendix A:</b> Homophobia Scale Questionnaire             | 54 |
| <b>Appendix B:</b> Information sheet supplied to participants | 55 |
| <b>Appendix C:</b> Informed consent document                  | 56 |

## **Introduction**

Homosexual men and women have been subject to an extensive history of discrimination and have been faced regularly with negative attitudes (Meyer, 2013). Prior to the Stonewall Riots in 1969, researchers considered homosexuality to be a psychopathological disorder and solely investigated its cause and treatments (Foucault, 1967; Cullen & Barnes-Holmes, 2008). This approach to “diagnosing” patients continued up to the 1950’s and homosexual individuals were considered mentally ill and often imprisoned, subject to shock therapy, medication and execution (Terry & Urla, 1995). Fortunately, in the 1960’s researchers veered their focus from diagnosing to understanding the development of attitudes towards homosexuality.

There was a dramatic change in history for homosexuals, when in 1973 the American Psychiatric Association (APA) removed homosexuality from the 3<sup>rd</sup> edition of the Diagnostic Statistical Manual (DSM; Reich, 1973). This meant it was no longer recognised as a medical condition which greatly reduced the stigma towards homosexuals (Drescher, 2010, Greenberg, 1997). The problematization in this field changed to those who perceived homosexuality as a disorder, this emerged from the generational changing of the head professors within the APA consisting of younger leaders influencing and making the organization conscious to greater social changes occurring (Drescher & Merlino, 2007). The most influential catalyst for the diagnostic change during that time was gay activists, subsequent to this arguments regarding homosexuality gradually moved away from medicine and psychiatry and instead delved into moral and political realms as such governmental, media and educational institutions were deprived of medical or scientific rationalization for discrimination (Drescher, 2015).



## Investigation of Current Attitudes Towards Homosexuality

In terms of social cognition research, one of the most crucial developments in the past 15 years has been the growth in literature surrounding implicit measures of attitudes, stereotypes and self-concept (De Houwer, 2003; Farrell, Cochrane, McHugh, 2015; Nosek & Banaji, 2001). These measures have been developed to assess automatic mental associations which are problematic to attain with explicit self-report measures (Hofmann, Gawronski, Gschwendner, & Schmitt, 2005). In 1995 Greenwald and Banaji debated that implicit measures assess unconscious cognitions which are not attainable using explicit self-report measures, thus the realm of explicit measures is limited to conscious cognitions (Greenwald, Banaji, Rudman, Farnham, Nosek, & Mellott, 2002).

Behaviour for the most part is predicted by a person's personal attributes and beliefs of a particular individual or group (Ajzen, 1987). Implicit attitudes are automatic judgements and evaluations which take place unconsciously, occurring without the individual introspecting on their feelings (Blair, Dasgupta, & Glaser, 2015). In comparison, explicit attitudes are conscious occurring knowingly and are selected behaviours and beliefs which one exhibits when interacting with their environment. For instance, an individual brought up in a family or culture with extreme prejudice against homosexuality openly expressing their opinions, which results in implicit attitudes becoming deeply ingrained. These implicit attitudes are unconscious and uncontrolled, although as one matures these with age, education and they may choose to adopt an inclusive and non-prejudiced "explicit attitude" (Greenwald & Banaji, 1995).

Research from the Western world has shown a gradual decline in the negative attitudes towards homosexuality (Ayoub & Garretson, 2017; Steffan & Wagner, 2002; Yang, 1997), this echoes people's enthusiasm to meet with a modern-day society demanding equality. Thus, when questioned about personal attitudes towards the gay community one can feel they need to provide

## Investigation of Current Attitudes Towards Homosexuality

an altered response if their true belief is not consistent with what is politically correct, which gives an inaccurate perception of their genuine attitude towards gay marriage. In recent years there has been an influx in the passing of gay marriage referendums within the Western world voting for equal rights in many countries, such as Ireland (2015), the United States (2015), Germany (2017) and Malta (2017) (O'Mahony, 2017). Further, despite the shift toward a greater acceptance and recognition of gay rights in the western world, stigmatisation towards the gay community still lurks beneath the surface. This sexual prejudice displays an internalization generally from heterosexuals exhibiting a cultural stigma which can manifest into negative discriminatory behaviour and dialogue against homosexuals (Gregory & McLemore, 2013). A study in the U.S. investigating mental processes of the LGBT community assessed the level of both life time and day to day discrimination experienced by homosexual individuals, results found that approximately 42% of 2917 participants reported that any discriminatory or negative behaviours made towards them attributed to their sexual orientation (Lombardi, Wilchins, Priesing, & Malouf, 2002).

It is plausible to suggest that individuals with more traditional views on gender beliefs such as that the man should be the breadwinner and the woman the homemaker, display impulsive negative judgements towards homosexuals that are beyond their conscious control. Homosexual individuals appear to have a greater perceived threat influence in the eyes of people with traditional views relating to religion and moral beliefs attitudes. This increased level of homonegativity is more prevalent among males in comparison to females, which has been explicitly and implicitly displayed in many cross-sectional and meta-analytic studies (e.g. Petersen & Hyde 2011; Smith, 2011; Steffans & Wagner, 2004). The suggested reason for males having a more negative attitude towards homosexual individuals has been due to ego-defensive

## Investigation of Current Attitudes Towards Homosexuality

automatic functioning which is related to gender associated beliefs, an example of this would be when in a pub setting which is generally male dominated the pride of one of the men following being “slagged” has been damaged for being overly emotional leading to the adoption of a defensive attitude to prove their masculinity (Blashill & Powlishta, 2009). Implicit measures allow one to assess implicit cognitions related to homophobia which are outside of conscious awareness. This ego-defensive automatic functioning suggests that males feel they need to always portray a masculine or “macho” front and believe if they exhibit compassion or acceptance towards homosexual males they will be mocked by peers for it. This has been observed in explicit self-reports (Blashill & Powlishta, 2009). It is believed that males may suppress their actual beliefs due to a fear of being slandered or of derogatory remarks being made about them by peers questioning their sexuality (Phelan et al., 2017).

### **Self-Report Measures of Homonegativity**

Traditionally, when investigating homonegativity researchers have used self-report methods like questionnaires (De Houwer, 2006). There have been a number of tools developed to measure homophobic attitudes, Homophobia Scale Attitudes Toward Homosexuality (Cullen, Wright, & Alessandri, 2002; Hussey & Bisconti, 2010). In 1965, in a wide scale study examining perceptions towards homosexuality in the U.S, of 1,335 participants ,70% believed that homosexuals were damaging to American life (Herek, 2002). Further, another study which consisted of a national representation of households in the U.S found that 70% (30,018) of the respondents believed that sexual acts between homosexual individuals was “always wrong” (Levitt & Klassen, 1974, p. 31). 80% of the respondents reported that if possible, they tried to avoid associating with homosexual men and women (p.42) Furthermore, 73.5% of respondents

## Investigation of Current Attitudes Towards Homosexuality

believed it was dangerous to have homosexual individuals working as teachers as they could engage in sexual relations with the children whom they worked with.

Following the evaluation of questionnaires on attitudes towards homosexuality in the past three decades, it appears that within the Western world, there has been a decline in self-reported negative attitudes towards homosexual individuals (Herek, 2000; Hicks & Lee, 2006; Steffens & Wagner, 2004; Yang, 1997). A study conducted by Herek and McLemore in 2013, evaluated data from 1980 to 2010 of a representative sample of the U.S. adult population attitudes towards homosexuality. Their study involved three explicit instruments; the Index of Homophobia (Hudson & Ricketts, 1980; Herek & McLemore, 2013) the Attitudes Toward Lesbians and Gays Scale (Herek, 1988) and the Homophobia Scale (Wright, Adams, & Bernat, 1999) However, there were several limitations to these as some of the questions were biased and other questions forced one to give an altered response in order to be perceived in a more favourable way, for example one would not want to be perceived as being homophobic as it is an undesirable trait and therefore would chose the non-homophobic response (Herek & McLemore, 2013).

Over thirty types of measures evaluating homophobic attitudes have been evaluated, however there have been issues surrounding reliability and validity among each of them (Schwanberg, 1993). Explicit self-reports on attitudes towards homosexuals suffer another limitation in that the majority of the measures were developed in the U.S. with the current political evolution and majority of definitions relating to homosexuality having derived from the U.S. making it an important factor to consider when using these measures cross-culturally (Costa, Bandeira, & Nardi, 2013). Herk (2000) from the U.S suggested that the term homophobia should be replaced with the more universally accepted “sexual prejudice”, meaning the negative attitudes and beliefs one has toward another as a result of their actual or perceived gender

## Investigation of Current Attitudes Towards Homosexuality

orientation. This has been stated as homonegative attitudes are more so a prejudice compared to a phobia, also originating from the U.S. (Morrison & Morrison, 2002).

Research on self-reported attitudes towards homosexuality has generally been based on traditional measures which are now outdated due to their concentration on religious and moral beliefs (Morrison, Kenny & Harrington, 2005). These explicit self-report measures include statements relating to whether homosexual individuals should or should not be permitted to be members of a religion, and if homosexuality has the potential to cause the “downgrading of civilisation” (Hudson & Ricketts, 1980). The past 30 years have had a non-monotonic liberalization in attitudes towards homosexual individuals which are based on the questionnaires of traditional measures of homonegativity. The most recently developed measure the Modern Homonegativity Scale (MHS; Morrison & Morrison, 2002) was developed to measure the construct of “modern homonegativity”. The objective of this measure was to expose a more subtle and indirect type of prejudice towards homosexuals. Modern homonegativity consists of at least one or more of the following beliefs:

“... (a) Gay men and lesbian women are making unnecessary demands for social change (e.g., the right to marry); (b) prejudice and discrimination against gay men and lesbian women have become a thing of the past; and (c) gay men and lesbian women place too much emphasis on their sexuality and, in so doing, are culpable for their own marginalization” (Morrison et al., 2005, p. 220-221).

A study conducted in Germany investigating negative attitudes towards lesbians, gay men, bisexual women and men which used the Modern Homophobia Scale Questionnaire (MHS) noted a neutral favourable attitude towards gay, lesbian, and bisexual individuals in a sample of heterosexual people under the age of thirty (Steffans & Wagner, 2004). However, questions

## Investigation of Current Attitudes Towards Homosexuality

arose over whether this was a prompt change in people's attitudes or if the self-measurement aspect of the Modern Homophobia Scale were flawed. There is evidence to suggest that these self-report measures are influenced by social desirability (Chivers, Seto, Lalumiere, Laan, & Grimbos, 2010) which refers to the answering of specific questions so one appears "politically correct" and is perceived better in front of others. Additionally, this self-measure may lack reliability as respondents may be unaware of prejudices they subconsciously hold such as coming from a religious upbringing that was homophobic, even if one's explicit beliefs have changed they may subconsciously hold a negative attitude towards the gay community (Spitzer, Kroenke, Williams & 1999).

The construct of modern homonegativity as measured by the MHS gives more attitudinal and behavioural evidence to support the reliability and validity of this measure compared with more traditional self-reported measures (Morrison et al., 2005; Morrison & Morrison, 2002). This was clearly evident from a study that was conducted in the West of Ireland in 2005 whereby 46% of male respondents agreed with the statement "Gay men should stop shoving their lifestyle down other people's throats", and a lesser 29% of the males agreed with this statement in the case of lesbians (Morrison et al., 2005, p. 243). A Canadian study found that respondents who scored low on modern homonegativity using the MHS, actively evaded sitting next to an individual with a t-shirt displaying a pro-homosexual slogan in a situation where doing so could potentially be recognized as non-prejudicial (Morrison, Kenny, & Harrington, 2005).

In summary, although self-report measures over the past three decades suggest that attitudes towards homosexual individuals have become more positive, it appears that traditional forms of homonegativity have been replaced by more indirect and subtle forms. Moreover, in recent years there has been substantial evidence showing that what people explicitly say they

## Investigation of Current Attitudes Towards Homosexuality

believe contradicts what they inherently believe in terms of their views of homosexuality (de Jong, 2002; Gemar, Segal, Sagrati, & Kennedy, 2001; Raja & Stokes, 1998; Teachman, Gregg, & Woody, 2001). It should be noted that there has been a steady decline in homonegativity since 1970 rather than a monotonic decrease. A limitation with self-reported measures is that if participants are conscious that their beliefs and attitudes towards homosexuality are socially offensive they could potentially engage in an approach to try to disguise them from the researcher (Paulhus, 1984; Rust & Golombok, 1999). Alternatively, respondents may be unaware of certain prejudices they may hold at an unconscious level and therefore do not report them (Dambrun & Guimond, 2004).

Another influencing factor is the way in which statements or questions are phrased in these self-reports as this has the potential to influence a participant's response. Respondents may answer to personify an altered attitude they may have of homosexuality, so they are not judged by others on their beliefs (Rasinski, 1989). Furthermore, despite the fact that the MHS was developed to control for subtle prejudices, it is still relatively easy to engage in an egalitarian view (Fazio, 1995), when the participant is conscious of what is a subtle bias or prejudice.

### **Implicit Measures of Homonegativity**

Implicit attitudes have been defined as “the automatic association people have between an object and an evaluation (whether it is good or bad)” (Rudman, 2004). The main feature of implicit attitudes is that they are generally unconscious resulting in particular behaviours which may be overlooked and unrecognised. As implicit attitudes are usually unconscious in nature, self-report questionnaires do not detect this implicit prejudice.

## Investigation of Current Attitudes Towards Homosexuality

To counteract this, researchers have created a measure based on participants' reaction time whereby implicit attitudes are measured according to response time and accuracy levels (De Houwer, 2006). The most empirically validated implicit instruments of measurement are the Affective Priming Task (Fazio, 2001), the Implicit Association Task (IAT; Greenwald et al., 1998) and the Approach-avoid computer mouse movement task (Clow & Olson, 2010). These were created in order to assess the associations of implicit cognitions with its basic effect being reproduced in a diverse range of studies relating to unconscious thoughts (Greenwald, Nosek, Banaji, & Klauer, 2005; Parrott & Zeichner, 2005).

However, in recent years an advanced measure of implicit attitudes has been developed called the Implicit Relational Association Test (IRAP; Barnes-Holmes, Barnes-Holmes, Power, Hayden, Milne, & Stewart, 2006). This was developed from present behaviours; analytic human language and cognition known as the Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001). The main premise of RFT is that the fundamental elements of both language and cognition are related, which have resulted in the approaches from this topic being directed at stimulus relations and their networks (Barnes-Holmes, Healy, & Hayes, 2000). Relating to this method the IRAP also concentrates on stimulus relations and is an approach which enables the ability to manipulate appropriate relational responses. The IRAP has been best explained as a mixture of the IAT and earlier RFT based method called the Relational Evaluation Procedure (REP), which has been implemented to investigate relational responding among a variety of investigations (Cullinan, Barnes-Holmes, & Smeets, 1998; Barnes-Holmes, Roche, & Smeets, 2004; O'Hora, Pelaez, & Barnes-Holmes, 2005; Stewart, Barnes-Holmes, & Roche, 2002). The IRAP displays certain relational terms (e.g. similar, opposite, better, worse) which allows the elements of the relations of specific stimuli to be examined, much like the REP.



## Investigation of Current Attitudes Towards Homosexuality

Similar to the IAT, the IRAP requires its participants to respond as quickly and accurately as possible to each of the prior established relations. The IRAPs primary principle refers to when participants are placed in time and accuracy stressed circumstances, their responses aim to exhibit implicit attitudes with inconsistent trials due to embryonic relational responses. These responses often correspond with consistent apparent trial retorts. Therefore, throughout inconsistent tasks individual's responses are predicted to be slower, as they responded to their more likely incipient relational responses.

When assessing homonegativity, IAT results have shown to be consistent with that of other studies using implicit measures (Rohner & Björklund, 2006). In these studies, the only indication of implicit out-group prejudice was shown for straight individuals on just one trial type. It is suggested that as the effect which developed from the gay-negative trial type could be perceived as consistent with research that proposes the effect of a negative prejudice in the construction of an attitude (Kunda, 1999). Moreover, when negatively associated stimuli are displayed along with "homosexual" words, this stimulates the activation of an implicit anti-homosexual bias, this is not seen when positively associated stimuli are displayed (Cullen & Barnes-Holmes, 2008).

### **Present Study**

There has been a dearth in research examining people's perceptions towards homosexuality despite the improvement in legal rights, social acceptance and visibility for gay men and women. This lack of research has been particularly evident since the development of the MHS in 2002 as this resulted in a halt in the development of explicit self-report measures, and indeed the investigation of attitudes towards homosexuality with implicit measures, such as the IRAP. The current study therefore aimed to investigate both implicit and explicit attitudes

## Investigation of Current Attitudes Towards Homosexuality

towards homosexuality and the differing attitudes among males and females towards homosexual individuals.

The main objective was to investigate the current explicit and implicit attitudes towards homosexuality. Holding negative attitudes towards homosexual individuals prevents true inclusion and diversification. Therefore, if those in power were made aware of inherent prejudices among society towards homosexuals, educational strategies could be implemented in schools to teach young children about individuality and equality which would foster a more open and accepting society (Kite Bryant-Lees, 2016).

Due to the evolving acceptance of homosexuality within society it has become a topic of common conversation which has led to certain taboos and stigmas surrounding gay men and women to weaken, allowing for more negative attitudes to grow more positive (Souza & Cribari-Neto, 2015). This has occurred through increased familiarity with gay men and women, encouraging homosexual individuals to feel it is okay to openly state their sexuality by “coming out”. This acceptance has normalized homosexuality among much of the population within the Western world. However, there is still a large number of people who subconsciously hold prejudice beliefs towards homosexuals, which often originate from a religious upbringing condemning homosexuality, and/or from parents who bestowed their homophobic moral beliefs on their children (Adamczyk & Pitt, 2009). Even in the case of breaking away from a certain religious group or being part of one and not sharing the same specific views on homosexuality, this can cause someone to withhold an implicit attitude towards the gay community which they may not report through self-report measures (Roggemans, Spruyt, Droogenbroeck, & Keppens, 2015).

## Investigation of Current Attitudes Towards Homosexuality

Throughout many studies investigating attitudes towards homosexuality there has been an evident gender difference from their findings, with males generally scoring more homonegative on both implicit and explicit measures. It is suggested that this is due to gender associated beliefs especially in the case of self-report measures of men, that displaying positivity towards homosexuals indicates in some way they are less masculine or “macho” through showing equality towards gay individuals, particularly gay men (Herek & McLemore, 2013). This is an image which society has constructed and if damaged by exhibiting acceptance males may feel as though they will be perceived as weak by others.

The present study will focus on current attitudes towards homosexuality. It was hypothesised that participants would have a positive attitude towards homosexuals but that this attitude would be less positive than their attitudes towards heterosexuals. In addition, it was hypothesised that participants which scored highly on the explicit self-report homophobia scale questionnaire (HSQ) will correlate with positive homosexual IRAP trial types. Further, it was hypothesised that males would respond to the HSQ and IRAP measures in a more homonegative way than females.

This study is the first of its kind within Ireland to directly assess current attitudes of homosexuality using implicit and explicit measures, the findings from this study will give a better insight into Ireland's present perceptions of homosexual individuals, homosexuality is a recurring topic of interest globally within recent years. As there is currently no published literature using the IRAP to specifically measure attitudes towards homosexual males without taking participants sexuality into account this is the first study which has produced findings of solid empirical bases for future research.

## Method

### Participants

Forty healthy adults participated in the study (21 females, 19 males, age:  $M = 26.7$ ,  $SD = 5.1$ ). An additional 6 participants were excluded as they did not meet predetermined performance criteria (as discussed below). Participants were recruited through email and from direct face to face approach. All participants were Caucasian, spoke fluent English and had normal or corrected-to-normal vision. There were no incentives offered for participation and were informed that they could terminate their participation at any time during the experiment without any personal disadvantage and that data would be recorded anonymously. The research project was approved by the Ethical Committee at the National College of Ireland, and procedures were undertaken in accordance with current ethical standards in psychology and behaviour analysis.

### Design

The dependant variable was the IRAP D-score (effect). The within-subject independent variable (IV) was trial-type (4 levels) and the between subjects-IV was gender (male versus female). There were control factors in all reported studies; firstly, the order of congruent and incongruent tasks of the IRAP was alternated for each participant i.e. the initial was homosexual positive followed by homosexual negative (and vice versa for heterosexuals).

The experiment involved a combination assessment combined with 3x2x2 factorial design. The between-participant independent variable was the strategy of participants being instructed to use was operationalized on 2 levels: Straight – Positive / Homosexual - Negative and Straight – Negative / Homosexual Positive. The within-participant independent variable was the IRAP condition (consistent versus inconsistent tests). The dependant variable was the

## Investigation of Current Attitudes Towards Homosexuality

response latency on each trial, defined as time in milliseconds from the point of stimulus presented on the screen to the first correct response in accordance with the stimulus.

### **Measures**

#### **Homophobia Scale Questionnaire (HSQ) – Explicit measure**

The explicit self-report used in this study was modified for the current research in order to make the statements more applicable to modern day perceptions of homosexuality held in the year 2018, and to detect modern day subtle prejudices which may have evolved since the last measure presented in 2002 by Morrison (Wright, Adams, & Bernat, 1999; Morrison & Morrison, 2002). The MHSQ self-report measure served as a tool for gathering information on beliefs about homosexuality. The items of the MHSQ included “gay people make me nervous” and “marriage between homosexual individuals is acceptable”. Participants were instructed to provide their opinions to 20 statements and choose an option from a 5-point Likert scale which ranged from 1 which represented strongly agree to 5 which represented strongly disagree. Higher response scores indicated a more positive attitude towards homosexuality (See Appendix. A). Questionnaire statements numbered 2, 5, 6, 7, 8, 10, 11, 13, 15, 18 were reverse coded, to ensure validity of the measure. Reliability testing revealed that Cronbach’s Alpha for Homophobia Scale Questionnaire = .56.

#### **Implicit attitudes towards homosexuality – Implicit Measure**

The Implicit Relational Association Procedure (IRAP Homosexuality) (Dermot Barnes-Holmes, 2006) was used to measure participants’ level of homonegativity bias. This was administered using the computer-based IRAP software (The Ghent-Odysseus IRAP) and was written in Microsoft Visual Basic 6 by Professor Dermot Barnes-Holmes. Participants completed

## Investigation of Current Attitudes Towards Homosexuality

the IRAP program on a standard laptop computer (HP Pavilion, Intel core i3), standard keyboard and colour monitor. The IRAP program controlled all stimulus presentation and recording of participant output (both participant time latency and accuracy). The stimuli presented by the IRAP were made up of 6 'Positive' (e.g. 'Acceptable', 'Safe') and 6 'Negative' words (e.g. dangerous, abnormal), these words were not directly related to heterosexuality or homosexuality. The IRAP simultaneously presented either a positive or negative word alongside one of 12 images, 6 representing gay couples and 6 representing straight couples. Each IRAP trial presented one of two types of sample images; either an image of a straight couple or an image of a gay couple. Above each image a single positive or negative word was presented (See Table 1), with the response options 'Yes' and 'No' displayed below the image (See Fig. 1). Reliability testing revealed that Cronbach's Alpha for the IRAP = .67 (Barnes-Holmes, Barnes-Holmes, Stewart, & Boles, 2010).

**Table 1.** Sample, target, and relational stimuli presented in the IRAP.

| <b>Sample 1</b>   | <b>Sample 2</b>   |
|-------------------|-------------------|
| Straight couple   | Gay couple        |
| Response option 1 | Response option 2 |
| Yes               | No                |
| Consistent target | Consistent target |
| Acceptable        | Dangerous         |
| Safe              | Abnormal          |
| Normal            | Sick              |
| Decent            | Unnatural         |
| Natural           | Offensive         |
| Healthy           | Unacceptable      |

# Investigation of Current Attitudes Towards Homosexuality

**Fig. 1.** An example of each of the four IRAP trial -types

| <p align="center"><b>Consistent Trial</b><br/>(Straight / Positive)</p>   | <p align="center"><b>Inconsistent Trial</b><br/>(Straight / Negative)</p>  |
|---|--|
| <div data-bbox="220 396 781 709" data-label="Image"> </div> <p data-bbox="201 747 370 814">Press 'D' for<br/><b>Yes</b></p> <p data-bbox="581 747 750 814">Press 'K' for<br/><b>No</b></p>      | <div data-bbox="862 396 1378 724" data-label="Image"> </div> <p data-bbox="824 762 993 829">Press 'D' for<br/><b>Yes</b></p> <p data-bbox="1230 762 1399 829">Press 'K' for<br/><b>No</b></p>      |
| <p align="center"><b>Consistent Trial</b><br/>(Gay / Negative)</p>  | <p align="center"><b>Inconsistent Trial</b><br/>(Gay / Positive)</p>   |
| <div data-bbox="332 942 667 1360" data-label="Image"> </div> <p data-bbox="201 1398 370 1465">Press 'D' for<br/><b>Yes</b></p> <p data-bbox="613 1398 782 1465">Press 'K' for<br/><b>No</b></p> | <div data-bbox="898 942 1343 1371" data-label="Image"> </div> <p data-bbox="824 1409 993 1476">Press 'D' for<br/><b>Yes</b></p> <p data-bbox="1214 1409 1383 1476">Press 'K' for<br/><b>No</b></p> |

## Materials

There was one set of words and pictures used for the IRAP, associates of the target category and the evaluative category. For the evaluative category, adjectives with distinctly positive and negative valence were taken from main selection criterion of words that have no obvious relation to the concepts of gay and straight couples.

## Investigation of Current Attitudes Towards Homosexuality

The materials included an information sheet (Appendixes B), an informed consent form (Appendixes C), a paper questionnaire (Appendixes A), and for the IRAP task as previously mentioned was carried out in a psychology lab in the National College of Ireland.

### **Implicit Relational Association Procedure**

All participants were given both verbal and visual instructions to complete the IRAP task (Barnes-Holmes, Barnes-Holmes, Power, Hayden, Milne, & Stewart, 2006). The visual instructions were played on their computer screens and were in correspondence with similar studies using the IRAP (e.g. Rönspies, Melnikova, Krumova, Zolfagari & Banse, 2015). The researchers verbal instructions for the IRAP were stated before the completion of the first practice block. If the participant communicated a lack of understanding at any point the researcher repeated and clarified the information, so the participant fully understood the information before continuing with the task.

Participants were informed that the screen would display positive and negative terms that were not related to either heterosexuality or homosexuality. These would be accompanied with the words, “YES” and “NO”, and the participants were asked to respond to each of the presented image and word by either pressing the ‘D’ key on the keyboard which represented the answer ‘yes’ or by pressing the ‘K’ key on the keyboard which represented the answer ‘no’. Following this, they were informed that there were only two rules and these rules would change following each of the blocks, and this would be noted on screen. In the practice rounds at the beginning participants were directed to go as *slowly* as they needed in order to ensure maximum accuracy, as with practice, participants would naturally become faster at responding and accuracy levels would increase. Participants were informed that they needed to complete two practice trials to achieve a score above 80% accuracy and to reach a certain speed criterion that would be



## Investigation of Current Attitudes Towards Homosexuality

communicated to them on screen following each block. Following this the six test blocks would commence. Finally, participants were informed to complete the rest of the tasks alone while the researcher left the room, and when all of the tasks were complete a notification would appear on the screen asking the participant to notify the researcher that the tasks were complete.

### **Implicit Relational Association Procedure (IRAP)**

The sequence of events was controlled by the computer programme 'GO-IRAP'. The original IRAP task (Barnes-Holmes et al., 2006) was modified to assess implicit attitudes towards homosexuality. Before the task took place, each of the participants' age and sex was recorded by the researcher on the GO-IRAP programme and the participant to disclose whether he/she had a disability (e.g. any diagnosed learning difficulties such as dyslexia) which could alter their ability to complete the task.

Each block in the IRAP consists of 24 trials consisting of the 12 target stimuli. 6 heterosexual and 6 homosexuals were presented twice in quasi-random order, once in the presence of the 2 labelled stimuli. In each trial one of the 12 target stimuli images (heterosexual or homosexual couples) were displayed in the middle of the screen, with an accompanying positive or negative label stimulus (e.g. "Acceptable", "Abnormal") presented above the image, and two differing response options below ("YES" and "NO") with one of the left and right of the screen. The participants were instructed to either agree or disagree (by pressing the D key for YES and the K key for NO) to differing combinations of terms (positive or negative) and images (gay or straight couple) presented on the screen in each trial. As stated in the IRAP instructions, the allocation of each response option was fixed across trials for the entire duration of the task. Participants were asked to respond as quickly and accurately as they could to each trial. A

## Investigation of Current Attitudes Towards Homosexuality

correct response started a 400ms inter-trial interval the screen went black and then proceeded to show another trial. Incorrect responses were indicated by a red X presented under the image displayed on the screen and participants could not continue onto the next trial until they had corrected their responses by pressing the correct answer key.

Participants had to achieve specific criteria (80% correct responding and a median latency under 2000 milliseconds) in each practice block (of the same pair) in order to move on to the six test blocks. If accuracy was not above 80% and the response time did not meet criteria on the starting two practice blocks, the participants were again presented with the practice block and could complete up to six practice trials depending on their accuracy and response time. If the participants were unsuccessful in meeting the necessary criteria in the practice tests, they were not permitted to participate in the study, were informed of this and their data was discarded. However, these criteria were not necessary to advance from one test block to the next test block.

The procedure for the practice and actual tests was identical; when the participants had completed a block, they continued to the next block with the instruction of having to respond to stimuli present on screen in the reversed order to the previous block. As with standard practice, the participant could choose how much time he/she needed as a break between the two blocks. Following each of the practice blocks the participant received more detailed feedback containing the necessary criteria to succeed in the test blocks. This information was not displayed following each pair of the test blocks. In blocks one, three and five participants were instructed to respond to an image of a straight couple on display with a positive word as 'YES' and if with a negative word 'NO'. Straight - Positive and Homosexual – Negative. This pattern was congruent with straight positive attitudes. In blocks two, four and six the instructions were reversed, and participants were asked to respond in a homosexually congruent way. Participants were required

## Investigation of Current Attitudes Towards Homosexuality

to respond to a positive word and an image presented simultaneously on screen of a homosexual male couple with YES, and if a negative word appeared on screen with an image of a homosexual male couple with NO. The trials were arranged so that every new participant had a different combination than the participant who preceded him/her. Once all test blocks were complete, a message was presented on screen requesting the participant to alert the researcher that the experiment was complete.

### **Modified Homophobia Scale Questionnaire**

The questionnaire was administered to the participants following completion of the IRAP. Again, participants were asked to read instructions carefully, and not to spend too much time on each question. The questionnaire consisted of 20 items related to homophobia in a 5-point Likert scale and participants were required to choose the answer most relevant to them. Following this, the participants were allowed to leave.

### **Ethical Implications**

At the beginning of the study, participants were supplied with an information sheet and an informed consent form. The researcher instructed the participants to read the information sheet carefully and sign the consent form if they understood the experiment and were willing to partake in it. Candidates were asked if they had a history of seizures and if so, would be excluded from participation. Approximately, mid-way through the experiment procedure following completion of a test block, the participants were reminded that participation was voluntary and if they wished to withdraw they could withdraw at any time without any consequences. Participants were also informed that any information provided would not be personally identifiable by the researcher following the completion of the experiment, and due to this they would *not* be able to

## Investigation of Current Attitudes Towards Homosexuality

withdraw their information once the study had been completed. They were also informed that only the group results could be presented to them if following the research, they requested to see the data as the data would be statistically analysed as a group not on an individual level.

Participants were also informed that the data would be stored in an encrypted file and retained for the length of time specified by the university according to legal requirements.

## Results

### *Descriptive statistics*

#### **Categorical variables**

Descriptive statistics for each of the measured variables in the current study are presented in Tables 2 and 3.

A preliminary analysis was run to test for normality. The Q-Q plots, histograms, standardized skewness and Shapiro-Wilks test indicated that the measured variables were normally distributed ( $p > 0.05$ ).

#### **Table 2**

Presenting descriptive statistics for categorical variables, male and female

| Variable      | Frequency | Valid Percentage |
|---------------|-----------|------------------|
| <b>Gender</b> |           |                  |
| Male          | 21        | 52.2             |
| Female        | 19        | 47.5             |

**Continuous variables**

**Table 3**

Presenting descriptive statistics for Age, IRAP trial types and HSQ scores

|       | Mean (95% Confidence Intervals) | Std. Error Mean | Median | SD    | Range |
|-------|---------------------------------|-----------------|--------|-------|-------|
| Age   | 21.98 (20.73 – 23.68)           | .77             | 21.00  | 4.87  | 30    |
| TT1SP | .17 (.89 - .26)                 | .04             | .20    | .27   | 1.25  |
| TT2SN | -.03 (-.16 - .09)               | .06             | -.02   | .41   | 1.63  |
| TT3GP | .16 (.04 - .26)                 | .06             | .18    | .36   | 1.86  |
| TT4GN | .64 (-.08 - .16)                | .06             | .10    | .39   | 1.89  |
| HSQ   | 85.53 (81.43 – 89.47)           | 2.07            | 87.50  | 13.01 | 50    |

*Inferential statistics*

**Correlation analysis**

The relationship between IRAP and HSQ scores investigated using the Pearson product-moment correlation coefficient. A preliminary analysis was performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a medium negative correlation between straight positive on the IRAP and HSQ variables ( $r = -.30, n = 40, p = .12$ ). This indicates that the two variables share approximately 9% of variance, and higher scores on the HSQ are associated with greater levels of accuracy on the trial type straight sportive on the IRAP (See table 4).

**Table 4**

Pearson product-moment correlation between measures of IRAP and HSQ

| Scale              | 1    | 2   | 3    | 4    | 5 |
|--------------------|------|-----|------|------|---|
| Straight positive  | 1    |     |      |      |   |
| Straight negative  | -.19 | 1   |      |      |   |
| Total gay positive | .13  | .11 | 1    |      |   |
| Total gay negative | .20  | .28 | .29  | 1    |   |
| HSQ                | -.30 | .01 | -.20 | -.10 | 1 |

***Mixed between-within subject analysis of variance ANOVA***

A 2x4 mixed factorial analysis of variance (ANOVA) was conducted to assess the impact of sex on IRAP scores across four trial types (straight positive, straight negative, gay positive, and gay negative). There was no significant main effect between trial type and gender,  $F(2, 2.5) = 0.12, p > 0.05, \eta^2 = 0.00$ . There was no significant effect for trial type  $F(2, 2.5) = 2.50, p < .001, \eta^2 = .17$  and there was no significant main effect for gender,  $F(1, 38) = .037, p = .85, \eta^2 = 0.01$  (see Table 5).

**Table 5**

IRAP scores for females and males across four trial types

|       | Female |      |     | Male |      |     |
|-------|--------|------|-----|------|------|-----|
|       | n      | M    | SD  | n    | M    | SD  |
| TT1SP | 40     | .16  | .31 | 40   | .18  | .22 |
| TT2SN | 40     | -.45 | .38 | 40   | -.22 | .45 |
| TT3GP | 40     | -.45 | .38 | 40   | -.22 | .45 |
| TT4GN | 40     | .03  | .42 | 40   | .05  | .36 |



**Independent samples t-test**

An independent samples t-test was conducted to compare the Homophobia Scale Questionnaire scores for males and females. There was no significant difference in the scores between females ( $M = 86.38, SD = 13.29$ ) and males ( $M = 84.58, SD = 13.18$ ),  $t(38) = .43, p < .67$  (two-tailed).

**Table 6**

Group differences between males and females on IRAP and Homophobia Scale Questionnaire

| Variable   | Group   | N  | M     | SD    | t    | p   |
|------------|---------|----|-------|-------|------|-----|
| <b>HSQ</b> | Females | 21 | 86.38 | 13.29 | .430 | .67 |
|            | Males   | 19 | 84.58 | 13.18 |      |     |

**Paired samples t-test**

There was a statistically significant difference in IRAP scores between TT1SP ( $M = .16, SD = .27$ ) and TT2SN ( $M = -.03, SD = .41$ ),  $t(39) = 2.43, p < .019$  (two-tailed). The mean difference in IRAP scores was .20 with a 95% confidence interval ranging from .03 to .37. The eta squared statistic (.36) indicated a medium to large effect size.

A paired sample t-test was conducted to evaluate the impact of participants different trial type scores on the IRAP. There was a statistically significant decrease in the IRAP scores between TT2SN ( $M = -.03, SD = .41$ ) and TT3GP ( $M = .04, SD = .36$ ),  $t(39) = -2.38, p < .02$  (two-tailed). The mean difference in the IRAP scores was -.19 with a 95% confidence interval ranging from -.36 to -.03. The eta squared statistic (-.137) indicated a negative effect size (See Table 7).

Investigation of Current Attitudes Towards Homosexuality

**Table 7**

Group differences between trial type scores on the IRAP

| <i>Group</i> | <i>N</i> | <i>M</i> | <i>SD</i> | <i>T</i> | <i>p</i> | <i>Cohens D</i> |
|--------------|----------|----------|-----------|----------|----------|-----------------|
| TT1SP        | 40       | .16      | .27       | 2.43     | .019     | 0.36            |
| TT2SN        | 40       | -.03     | .41       |          |          |                 |
| TT1SP        | 40       | .17      | .27       | .165     | .87      | .02             |
| TT3GP        | 40       | .16      | .36       |          |          |                 |
| TT1SP        | 40       | .17      | .39       | .193     | .06      | 0.26            |
| TT4GN        | 40       | .04      | .39       |          |          |                 |
| TT2SN        | 40       | -.03     | .41       | -2.48    | .02      | -.14            |
| TT3GP        | 40       | .04      | .36       |          |          |                 |
| TT2SN        | 40       | -.03     | .41       | -.98     | .33      | -0.15           |
| TT4GN        | 40       | .04      | .39       |          |          |                 |
| TT3GP        | 40       | .16      | .36       | 1.68     | .10      | .27             |
| TT4GN        | 40       | .04      | .39       |          |          |                 |

## Investigation of Current Attitudes Towards Homosexuality

### *Single sample T-test*

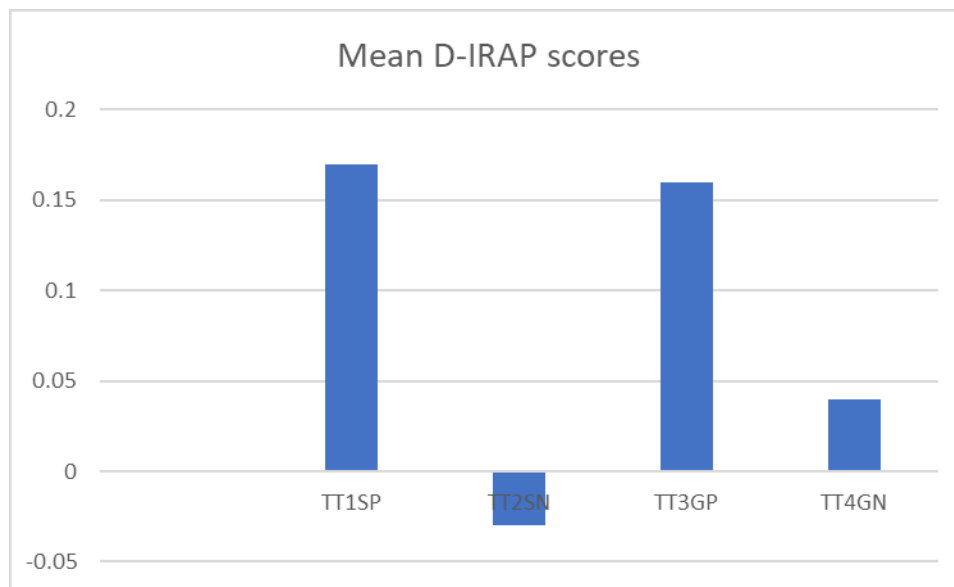
A one samples t-test was conducted with the D-IRAP scores for each of the 4 trial-types, to determine which trial-type (/s) differed from zero at the statistically significant level and display the difference among attitudes towards homo and heterosexual individuals (See Figure 2).

Participants scored statistically significantly higher on trial type 1 straight positive ( $M = .17, SD = .27$ ) ( $t(40) = 4.02, p = .000$ ), and trial type 3 gay positive ( $M = .16, SD = .36$ ) ( $t(40) = 2.78, p = .008$ ).

There were no statistically significant differences in trial type 2 straight negative ( $M = -.03, SD = .41$ ) ( $t(40) = -.53, p = .603$ ), or in trial type four gay negative ( $M = .04, SD = .39$ ) ( $t(40) = .66, p = .511$ ).

### **Figure 2**

Bar chart of IRAP trial type responses in correspondence to 0



## Discussion

The main objective of this study was to determine whether negative attitudes towards homosexuality still exist. The measures of homonegativity in previous literature used explicit self-report measures which display a range of limitations relating to reliability and validity (Blackwell & Kheel, 2008; Lewis & White, 2009; Plumm, Terrance, Henderson, & Ellingson, 2010). The present study aimed to combat this issue by comparing the results of both explicit and implicit attitudes using a specifically modified HSQ and the IRAP. Further, homonegative attitudes among males and females were compared and trial types were compared to determine if there was a statistically significant difference among the varying trial types. There have been significant improvements in the rights of homosexual individuals in the past 10 years, with the introduction of gay marriage to countries including Ireland, Germany and the U.S (Winter, Forest, & Séna, 2018). Further, homosexual individuals appear to have greater freedom to express their sexuality in modern life compared to in the past with gay nightclubs being common features in cities across the world (Vorobjovas-Pinta & Hardy, 2016) and there appears to more accepting attitudes towards the gay community compared to that of the past (Roughgarden, 2017). However, despite these developments and heterosexual's apparent acceptance of homosexuality, it appears that implicit negative attitudes towards homosexuals or homonegativity still lurks beneath the surface of modern day life. In the past, attitudes could only be measured through explicit measures such as questionnaires or surveys, however since the introduction of the Implicit Association Test (Greenwald et al., 1998) in particular the (IRAP) attitudes which exist at a subconscious level can now be analysed.

Results of the IRAP found that attitudes towards homosexual individuals was only slightly inferior than attitudes towards heterosexual individuals. These findings are consistent

## Investigation of Current Attitudes Towards Homosexuality

with the changing Irish landscape relating to the acceptability the Irish population is gaining towards gay people (Morrison, Kenny, & Harrington, 2014). The success of the Gay marriage referendum, a remarkable political event within the Irish state ignited food for thought among many Irish people in 2015, this was the first of its kind in Irish politics which has transformed from the 1980's. Throughout the referendum there was a balance of opinion and a liberal majority in evidence across all social classes, religions and genders (Winter, Forest, & Sénac, 2018).

In addition, the positive change in attitudes towards homosexuality, specifically within Ireland may be related to the lack of reliance and movement away from the Catholic church among the Irish population (Barr & Corráin, 2017). It appears that this movement may be due to the exposure of the childhood abuse which had taken place under the governing bodies in the Church in Ireland over recent years (Harper & Perkins, 2018). Homosexuality was condemned by the Catholic Church, an organisation which had held great power over Irish citizens and many of Ireland's laws surrounding marriage, health care and education. As a result of this, many Irish people did not believe that homosexuality existed and/or stigmatised homosexual individuals and homosexual acts. Many past members of the Catholic Church members have since become much more liberal and accepting in their perceptions of gay individuals, which is reflected in this study's findings when compared with earlier studies (e.g. Norris, 1981). Surprisingly although the Irish sample display a much more positive attitude towards gay individuals 67% of males and 45% of the females in the current study strongly agreed with the statement "I make derogatory remarks about gay people" including 45% of females. This is a notable percentage of response to this specific negative statement when compared to the high levels of positive attitudes towards homosexuality gathered from this study's findings. It seems to be that derogatory, slander

## Investigation of Current Attitudes Towards Homosexuality

remarks are a common component of modern day vocabulary whether they signify homophobic behaviour or are derogatory terms that are used without thought given to their meaning. Such demeaning assertions relate to hegemonic behaviours that males tend to engage in as part of “lad culture” and do so in order to fit in with their peers (Emslie, Hunt, & Lyons 2013).

Secondly, this study investigated whether there was a correlation between explicit and implicit measures of attitudes of homosexuality. There has been extremely limited research surrounding this area using the IRAP in comparison to the IAT. Overall the results of the present study provide evidence that the IRAP engages in the same construct as explicit self-report measures, with both the pattern of group means showed as expected, more positive attitudes towards homosexuality on the implicit measure resulted in more positive scores on the HSQ. These results provide evidence for the validity of both explicit self-report measures and implicit attitude measures.

Similar studies using the IAT as the implicit measure, have found that there has been an evolving change in responses with implicit and explicit results having a stronger correlation than earlier studies which compared the two measures, which again supports the idea of a change in people’s negative prejudices of homosexuality (See Anselmi, Voci, Vianello, & Robusto, 2015). The MHSQ developed by Morrison and Morrison (2002) provides more attitudinal and behavioural evidence than traditional self-report measures exposing subtle indirect negative attitudes towards homosexuals. It should be noted however, that this measure was developed 16 years ago thus may not be as applicable to modern society as when first implemented.

The present study suggests that homosexuality is no longer perceived as a “taboo”, it is now a widely positively spoken of topic among families, schools, peers, and in the workplace. Prejudice and the feeling of the need to suppress attitudes towards homosexuals has weakened,

## Investigation of Current Attitudes Towards Homosexuality

this is believed to be based on the liberalization over recent decades in the West with efforts from gay rights activists pledging for equality (Andersen & Fetner, 2008). Although concerns relating to self-presentation in previous studies have displayed a considerable impact on explicit self-report measures were participants may have altered their response for either personal or social perception reasons (Greenwald & Banaji, 1995; Nosek, 2005; Wilson, Lindsey & Schooler, 2000), which lead to a weak correspondence between implicit and explicit measures. However, as stated the current study findings are interesting as they display a correlation between the two measures which support the prediction and over all research aim.

The final intention of this study was to investigate whether males and females scored differently on the two measures of homonegative attitudes. The results from neither support the hypothesis that males would score more homonegative than females. This finding although not consistent with the hypothesis suggests that there is a positive change in male's attitudes towards gay men. This reverts to the point relating to the growing change within the Western world, people's perceptions and attitudes of homosexuality is that it is generally accepted and normal. Much earlier investigations relating to explicit self-report measures surrounding the differences among gender had displayed a more profound disparity in negative attitudes with males compared to females. Aforementioned, in 1965 the Harris poll revealed 82% of males believed that homosexuals were harmful to the country versus 58% of females, with a similar pattern being found in a range of national surveys in probability samples around the same time (Haeberle 1999; Lewis & Rogers 1999; Strand 1998). In the vast majority of studies relating to this topic the male population have consistently been more homonegative, thus this study contradicts previous literature (e.g. Scott, 1998; Yang 1998). Thus, it is implied that men previously have perceived homosexuals more negatively than women possibly due to ego-

## Investigation of Current Attitudes Towards Homosexuality

defensive automatic functioning linked to their gender associated beliefs, which suggests that individual's perception of others are masculine or feminine in one aspect of their behaviour, they are more likely to be masculine or feminine in another behaviour (Blashill & Powlishta, 2009). In relation to homosexuality and gender associated beliefs they are clearly more apparent throughout research in males with these beliefs about "macho" masculinity (Channon & Matthews, 2015). Men have gravitated to be more rigid about these beliefs than women, hence breaking such roles is much more of an issue for men than women (Glenn, Meaney & Rhye, 2010). This could be the reason for previous studies finding similar issues, however with recent liberalizations of homosexuality and its acceptance being more apparent in men, males have become more comfortable with their sexuality and are condoned to less pressure to defend their masculinity (Pascoe, 2011).

### **Implications**

The findings of the current study suggest that homonegativity still exists but to a lesser extent than that of the past. It has a number of implications for behavioural psychology literature particularly the domain devoted to attitudes surrounding homosexuality. As there is currently no published literature using the IRAP to specifically measure attitudes towards homosexual males without taking participants sexuality into account this is the first of its kind which has produced findings of solid empirical bases for future research.

The present study's findings could be used to educate individuals on the progress related to the acceptance of homosexual individuals among people in Ireland. This is especially the case for other devoutly religious nations who tend to hold homophobic beliefs as Ireland was such a religiously devout country in the past and these nations could look up to Ireland as a good example. The positive results from the current study could be widely communicated and used to



## Investigation of Current Attitudes Towards Homosexuality

encourage those in schools and the workforce to spread a positive message about the benefits of inclusion and as a result, reduce derogatory homophobic terms that are commonly used by young adults in vocabulary when referring to something out of the norm or overly emotional (Goodman, Schell, Alexander, & Eidelman, 2008). These positive results could also be used to foster a sense of positivity towards homosexual individuals and be used to create inclusion strategies in schools, colleges.

There are 74 countries where homosexuality is illegal and even punishable by death in 13 of these including Saudi Arabia, Sudan, Iran Afghanistan if found engaging in homosexual relations, these strict laws are commonly seen in the Middle East. Therefore, by drawing attention to this area through research, it facilitates a platform for these restrictive countries to take a step forward from traditional laws and views and encourage a change of perception among the governing bodies to implement new laws in favour of more ethical treatment of homosexuals (Schmitt & Schifter, 2013). The current study has shown the change in homophobic attitudes especially among males in Ireland over recent years and could be used as a prime example for policy makers in Middle Eastern and homophobic countries to create safe and welcoming cultures for homosexual individuals.

### **Limitations and strengths**

There are several limitations to this study which should be considered when interpreting the results and with respect to future research. The first limitation concerning this study is the limited sample size, the sample size was only 40 participants. Thus, makes this study less reliable and causal but nonetheless an addition to the literature. It is suggested for further research that a larger sample size is used and to be looked at over a longitudinal study to display how attitudes evolve.

## Investigation of Current Attitudes Towards Homosexuality

The second limitation was that the sample did not represent a true sample of the population as all the participants were students at the National College of Ireland thus, not as generalizable to the Western world population.

The third limitation was a lack of control when measuring current homophobic attitudes to attitudes in the past. The IRAP is a relatively new measure as it has only been in use since 2006, therefore no suitable control could be made to measure implicit homophobic attitudes 30+ years ago.

The fourth limitation was the lack of validity and reliability in one of the measures used. As the HSQ measure was adapted by the author to suit modern day views of homosexuality this was not an empirically reliable and valid measure. For future research using a measure which is specifically designed to capture modern day views of homosexuality would be more appropriate.

A fifth limitation was the practice effects experienced by participants due to the serial position that occurred in the IRAP concerning subsequent trial types as participants would become better at the task with consistency raising accuracy levels and quicker response times (Bluemke & Friese, 2008).

The sixth limitation relates to the case of the IRAP measure, it seems important to question how exactly it provides a superior analysis compared to the IAT ( indeed above other present measures available of implicit attitudes). In 2002, De Houwer contended that the IAT was based on associations rather than what they presumed they were measuring with relations between stimuli, thus can only provide an indirect measure of belief. There is an issue to be addressed regarding the study of implicit cognition and the development of refinement of procedures created to display beliefs and attitudes (REF). For instance, it is yet to be discovered

## Investigation of Current Attitudes Towards Homosexuality

whether performance on the IRAP will foresee “prejudiced” actions in day to day life, therefore it is asked to be cautious when concluding that implicit prejudice leads to an individual being homophobic (Scheel, Fischer, McMahon, Mena, & Wolf, 2011). Nevertheless, the present study has suggested that the IRAP may be used to reveal negative attitudes towards gay men, when comparing heterosexuality and homosexuality, which may not be expressed when using a standard self-report measure.

The seventh and final limitation of this study relates to how behavioural psychologists often publish large assertions regarding human psychology and behaviour in the planets best journals are sourced from samples derived solely from Western, Educated, Industrialized, Rich and Democratic (WEIRD) societies (Henrich, Heine, & Norenzayan, 2010). Behavioural psychologists have stated that there is significant variability in the findings from varying populations in which WEIRD subjects are especially unusual when tested and contrasted against the rest of the worlds population, providing outliers quite often. Thus, notably these studies are generally not applicable to the Middle and Eastern world as the visual perception, fairness, cooperation, spatial reasoning, categorization and inferential induction, moral reasoning, reasoning styles, self- concepts and related motivations, and the heritability of IQ, of populations in different regions have all been assessed to show their perceptions are much different to the West (Arnett, 2008). It is suggested due to the success over the past few decades regarding attitudes concerning homosexuality that such a study be conducted, particularly in the Middle East, where religion has a major hold over one’s ability to express their sexuality, by consistently highlighting as a topic of issue thus potentially and gradually making it more acceptable and safe to be part of the gay community. As researchers often treat their findings as universal when not the case (Henrich, Heine, & Norenzayan, 2010).

## Investigation of Current Attitudes Towards Homosexuality

A strength of this study is that there is currently no published research which has specifically investigated this topic area relating to the IRAP and attitudes towards homosexual men. The findings provide preliminary support for the IRAP as a behaviour-based implicit measure which is sensitive to attitudes towards homosexuality and can provide information regarding directionality and gender differences in homosexuality. It is expected that the present study will contribute to the relatively contemporary research surrounding implicit attitudes relating to homosexuality in modern society.

### **Conclusion**

In conclusion, from the findings of this study it is suggested that the IRAP is an effective indirect measure to examine attitudes towards homosexuality as it imparts an assessment of relational associations between concepts the IRAP also lets the researcher develop inferences about the power of the associations (unlike the just relative measures of association like the IAT). While the homophobia scale questionnaire showed a slight correlation to the implicit responses, there are still considerable dissimilarities among the measures, thus the IRAP can be used as an assessment of “attitudes” (Barnes-Holmes et al., 2006) which could provide a useful attitudinal adjunct to the already validated and more established indirect measures surrounding attitudes towards homosexuality such as IAT unlike direct measures such as self-reports. Attitudes towards the gay community over the last 7 decades have been shifting with the change in the social climate which has led to the steady increase in legal rights, social acceptance and visibility for gay men and women (Kite & Bryant-Lee, 2016). Finally, the findings from this study although there is no research to directly compare against are plausible and generally consistent with what was predicted which solidifies the purpose of this study to investigate the current attitudes of homosexuality.

## Investigation of Current Attitudes Towards Homosexuality

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**Appendices**

**A**

**Modified Homophobia Scale Questionnaire**

**Thank you for taking part in my experiment. Finally, I please ask of you to carry out this questionnaire which is designed to measure your thoughts, feelings, and behaviors with regards to homosexuality. It is not a test, so there are no right or wrong answers. Answer each item by circling the number after each question as follows:**

- 1 Strongly agree
- 2 Agree
- 3 Neither agree nor disagree
- 4 Disagree
- 5 Strongly disagree

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. Gay people make me nervous.   | 1 | 2 | 3 | 4 | 5 |
| 2. Homosexuality is acceptable to me.                                      | 1 | 2 | 3 | 4 | 5 |
| 3. If I discovered a friend was gay I would end the friendship.            | 1 | 2 | 3 | 4 | 5 |
| 4. I make derogatory remarks about gay people.                             | 1 | 2 | 3 | 4 | 5 |
| 5. I enjoy the company of gay people.                                      | 1 | 2 | 3 | 4 | 5 |
| 6. Marriage between homosexual individuals is acceptable.                  | 1 | 2 | 3 | 4 | 5 |
| 7. It does not matter to me whether my friends are gay or straight.        | 1 | 2 | 3 | 4 | 5 |
| 8. It would not upset me if I learned that a close friend was homosexual.  | 1 | 2 | 3 | 4 | 5 |
| 9. I tease and make jokes about gay people.                                | 1 | 2 | 3 | 4 | 5 |
| 10. Organizations which promote gay rights are necessary.                  | 1 | 2 | 3 | 4 | 5 |
| 11. I would feel comfortable having a gay roommate.                        | 1 | 2 | 3 | 4 | 5 |
| 12. I would hit a homosexual for coming on to me.                          | 1 | 2 | 3 | 4 | 5 |
| 13. Homosexual behavior should not be against the law.                     | 1 | 2 | 3 | 4 | 5 |
| 14. I avoid gay individuals.   | 1 | 2 | 3 | 4 | 5 |
| 15. It does not bother me to see two homosexual people together in public. | 1 | 2 | 3 | 4 | 5 |
| 16. When I meet someone I try to find out if he/she is gay.                | 1 | 2 | 3 | 4 | 5 |
| 17. I have rocky relationships with people that I suspect are gay.         | 1 | 2 | 3 | 4 | 5 |
| 18. I would feel comfortable working closely with a homosexual.            | 1 | 2 | 3 | 4 | 5 |
| 19. I would feel nervous in a group of homosexuals.                        | 1 | 2 | 3 | 4 | 5 |
| 20. Homosexuality should not be allowed in our society.                    | 1 | 2 | 3 | 4 | 5 |

**B**

**Information Sheet**

**‘An investigation of current attitudes towards homosexuality’**

The study you are volunteering to participate in “An investigation of current attitudes towards homosexuality, using implicit and explicit measures” will be conducted on the National College of Ireland campus. It is recruiting 40 NCI students to investigate the association and relationship of explicit and implicit attitudes college students have towards a sexual orientation (homosexual, heterosexual). This study will be completely confidential, your identity will remain anonymous. This study has been approved by NCIs ethics committee.

The method behind this study entails two parts; the first part of the experiment is an Implicit Relational Association Procedure (IRAP) this measure will assess your implicit attitudes of homosexuality. The IRAP generally takes 10 minutes to complete. The second part consists of a 20-item explicit self-report homophobia scale questionnaire about your attitudes towards homosexuality.

If you have any questions or feedback following the experiment pleased feel free to come forward at any time my email is [x15733479@student.ncirl.ie](mailto:x15733479@student.ncirl.ie) and I would be happy to answer any queries you may have.

Many thanks,

Laura Murphy.

C

**INFORMED CONSENT FORM**

**Title of Project:** An Investigation of Current Attitudes Towards Homosexuality

**Named Researcher:** Laura Murphy

**Email:** X15733479@student.ncirl.ie

**Clarification of the purpose of the research**

You will take part in an Implicit Relational Association Procedure (IRAP) and an explicit self-report a Homophobia Scale questionnaire both assessing your attitude of homosexual males. The primary aim of this research is to gain a better understanding of the association between explicit and implicit attitudes towards sexuality by looking at the variability and relationship of the two and investigate whether attitudes have changed over time.

***Participant – please complete the following (Circle Yes or No for each question)***

- |  |        |
|--|--------|
| Have you read or had read to you the Information sheet               | Yes/No |
| Do you understand the information provided?                          | Yes/No |
| Have you had an opportunity to ask questions and discuss this study? | Yes/No |
| Have you received satisfactory answers to all your questions?        | Yes/No |

**Confirmation that involvement in the Research Study is voluntary.**

I have read, or had read to me, this consent form. I have had opportunity to ask questions about the consent form and all the questions have been answered to my satisfaction. I freely and voluntarily agree to be part of this research study, which respect my legal and ethical rights. I am aware that I may withdraw at any time, without giving reason, and without this decision affecting me in any way. I have received a plain language statement.

**Advice as to arrangements to be made to protect confidentiality of data, including that confidentiality of information provided is subject to legal limitations.**

My identity and other personal information will not be revealed, published or used in further studies. All information will have my name and address removed to protect confidentiality. Any other information that may identify me will also be removed. Confidentiality is assured but I am aware that confidentiality of information provided can only be protected within the limitations of

## Investigation of Current Attitudes Towards Homosexuality

the law. It is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions.

**Signature:**

I have read and understood the information in this form. My questions and concerns have been answered by the researchers, and I have a copy of this consent form. Therefore, I consent to take part in this research project

**Participants Signature:** \_\_\_\_\_

**Name in Block Capitals:** \_\_\_\_\_