

**Investigating the Impact of Dehumanising Language on Implicit Biases Towards
Immigrants**

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Abstract

From the basis of social identity theory, the current research aimed to develop the current knowledge around intergroup bias. Introducing Relational Frame Theory into the domain, it sought to examine the impact of dehumanising language on implicit bias towards immigrant populations. Using an experimental design, the research offered differing prose to groups, and assessed their implicit association scores using the Implicit Relational Assessment Procedure. The results offered a deeper understanding of the subject of dehumanising bias than previous research, giving some insight into the strength of effect caused by language. The current study demonstrated that the language used to describe the actions of immigrants, produced significant implicit scores more-so when referring to immigrant, than Irish populations, as well as showing no correlation between implicit and explicit scores. The results suggested that the language we read may significantly impact implicit bias, even when explicit attitudes disagree. The implications of this study highlight the societal risks to immigrant populations, and the potential benefits of more stringent rules around communication regarding immigrants. The current study opens the door to an array of opportunities for further research.

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Introduction

Dehumanisation can be defined as the denial of human qualities to others, which may have the potential to result in cruelty and suffering to that group (Haslam, 2006). This study will identify some key theories which have been recognized as fundamental to the process of dehumanisation. It will discuss how identifying a group based on similarities or differences to the individual may be shown to bias behaviour towards an outgroup (Tajfel et al., 1979), before giving examples of the processes that may be involved in the escalation of this bias to a dehumanising level. It will go on to present research that shows how bias and stigmatisation may be said to impact the likelihood of engaging in discriminatory behaviour towards outgroups. It will also introduce Relational Frame Theory (RFT) (Hayes et al., 2001) to the domain of dehumanisation research. RFT is a cognitive behavioural theory of language, which proposes that the language used to describe a group, may be arbitrarily linked to any stimuli at random. Offering some insight into how it may be possible to create the necessary framing of a group to increase the likelihood of stereotyping and stigma, potentially leading to discrimination. It will identify gaps in recent research into dehumanisation, before aiming to investigate the extent to which language used to frame the actions of a group (in this instance immigrants) may impact implicit and explicit attitudes towards them.

Intergroup Bias, Stigma and Dehumanisation

Social Identity Theory (Tajfel et al., 1979) suggests that 'intergroup differentiation' is determined by 'ingroups' being identified by those who share similar properties, and 'outgroups' being those who do not share these similarities. This intergroup differentiation has been demonstrated to be achieved as easily as randomly attributing a difference between groups as trivial as correctly guessing the number of dots on a page (Tajfel, 1970). Even these trivial conditions were sufficient for members of one group to display preferential treatment to ingroup members over members of the other group. This research demonstrated clearly

how easy it may be to influence discriminatory behaviour, stereotyping and prejudice towards an outgroup (Mackie & Smith, 1998; Wilder & Simon, 2001). This shows that intergroup differentiation could be identified as a crucial step to facilitating bias,

Research has shown how easily intergroup biases may be instilled into a group (Tajfel, 1970; Cooley et al., 2017), and that these biases may lead to discriminatory decision making towards the group (Moss-Racusin et al., 2012). These discriminating biases have been shown to have a significant impact in the real world. For example, it has been shown that one percent pro-male bias can lead to a significant discrepancy in employment opportunities between men and women (Agars, 2004). Support for this has been shown by Russell et al. (2019), who suggest that implicit and explicit biases across a diverse array of domains may impact recruitment, progression and retention within academia. Further to this, it has been frequently shown that implicit biases can have a huge impact on decision making across the medical and legal domains, amongst others (Charman et al., 2019; Saposnik et al., 2016). A strong body of evidence has shown that biases towards immigrants in particular may be seen to impact macro-level fundamental domains, such as government policy (Messing & Sagvari, 2019; Wirz et al, 2018), employment opportunities (Zschirnt & Ruedin, 2016) and housing (Acolin et al, 2016; Auspurg et al, 2017; Bosch et al., 2015). The research presented here provides robust evidence that biases can have a significant impact on the treatment of outgroups on a societal level, reinforcing the significance of developing the understanding of how biases may occur, and the impact they may have.

Having seen how easily biases can influence behaviour towards a group, it is important to identify the possible ways that language may be used to influence these biases. The use of stigmatising language when talking about a group has been shown to increase the likelihood of stereotyping and ‘othering’ of a target group (Link & Phelan, 2001). This has been proposed to lead to a loss of social status for the outgroup, and strongly increase the

potential for discriminatory behaviour towards them (Hatzenbuehler et al., 2013). This appears to suggest that stigmatising an outgroup may be a way of exercising power over that group. Some research has suggested that there may be benefits to be seen as a result of stigmatising a group to influence behaviour. For example the overall health benefits of behaviour change, following the stigmatising of smokers, has been suggested to outweigh the negative effects on attitudes towards them (Alderman et al., 2010). The benefits suggested by this study refer to a change of behaviour in the target group, as opposed to attitudes towards them. It is therefore, important to recognise that stigmatisation of groups has frequently been shown to have a significant negative impact on attitudes towards the group, as demonstrated in a sizeable body of evidence. A significant negative impact has been identified across a broad range of domains, such as mental health, personal appearance, physical health and substance use (Barry et al., 2019; Phillips & Shaw, 2013; Room, 2005). These studies demonstrate that stigmatisation of a group may increase the likelihood of discriminatory behaviours towards that group over others. This research presents strong evidence that when framed with stigmatising language, there is a great potential for attitude and behaviour change towards outgroups on an individual, group and societal level. The evidence presented further emphasises the importance of understanding the impact of language that may be used to stigmatise a group, that may in turn have the potential to influence behaviours towards them

Having identified the ease with which intergroup bias can occur, and identified how stigmatising language may lead to biased attitudes, this has provided a theoretical foundation for how discriminatory behaviour may occur. This process, combined with hatred and fear towards a group, may help to facilitate the dehumanisation of that group (Haslam, 2006). Dehumanisation can be considered the denial of human characteristics to a group or individual, as a result of the discriminatory behaviour towards them (Hogg & Vaughan, 2014,

p. 358). This may be characterised by the attribution of non-human traits to the group, leading to the implicit denial of humanity towards them (Haslam et al., 2008). The extreme consequences of this process led to an explosion of research into the cognitive mechanisms that may lead to the extreme treatment of an outgroup. Bandura et al. (1975), theorised that dehumanisation of an outgroup would result in the denial of cognition attributed to them by the ingroup, leading to the subsequent belief that the target group may not be able to comprehend the fact that they are being discriminated against. This has been suggested to cause a moral disengagement by the perpetrating group (Bandura et al., 1996), enabling perpetrators to avoid moral castigation when imparting bad treatment on the outgroup (Bandura, 2002). These theories have been supported by Haslam (2006), who went further to suggest that as dehumanisation of the outgroup progresses, the outgroup loses the ability to evoke compassion. This may in turn cause a reduction in any emotional response to their plight, and that all of this is designed to defend the ingroup's social status against the potential threat of an outgroup.

The consequences of this previously described moral exclusion of an outgroup (Bandura et al., 1996) have been seen in frequent examples throughout history. It has been suggested that association of the outgroup with non-human entities, such as vermin or disease may be a crucial step in the processes that can lead to genocide (Stanton, 1998). This process has been theorised to have been a key factor in the extermination of the Jewish population in Nazi Germany, as well as the Rwandan slaughter of the Tutsi population (Harris & Fiske, 2011; Smith, 2020; Steizinger, 2018). It could be suggested that propaganda used in campaigns against these groups, may have created associations between parasites, snakes and vermin, and the target group, in order to create the necessary conditions for their extinction.

In addition to this, research has also demonstrated that the use of framing to elicit an emotional response, such as disgust towards an outgroup, may be considered key to the moral

disengagement necessary to treat them as less than human (Buckells & Trapnell, 2013). The results of their Implicit Association Test (IAT) (Greenwald et al., 1998) indicated that invoking emotion by using language to frame the group, increased the likelihood of implicit dehumanizing attitudes towards the group. Although limited in that it only uses sadness and disgust to test their hypothesis, this study shows that emotions may play a key part in generating dehumanising attitudes. The findings have received support in a further study by Utych (2018), in which the researcher surveyed attitudes towards immigrants, and showed that dehumanising attitudes were increased by using dehumanising language to describe them. More recent research has gone on to frequently support these findings, identifying dehumanisation as a crucial factor in attitudes towards weight (Valorta et al., 2019; Kersbergen & Robinson, 2019), neuro-diversity (Cage et al., 2019), socio-economic status (Sainz et al, 2020) and ethnic group (Kteily & Bruneau, 2017). The potential micro and macro-level impact of stigmatizing language to dehumanise, can be seen, underlining an urgent need to further understand the potential impact of language used to frame immigrant populations, on attitudes towards them.

Relational Frame Theory and the IRAP

The literature present here gives some insight into the how discrimination may be achieved in an integrative context; for example, Social Identity Theory attempts to explain ways in which cognition may influence behaviour. The current research aims to introduce Relational Frame Theory (RFT), in order to investigate the role of language with regards to dehumanising bias. Relational Frame Theory (RFT) (Hayes et al., 2001) can be considered a behavioural theory of language cognition, which may elaborate on previous theories in the context of how language may impact behaviour. RFT suggests that human behaviour can be seen as a relational response between language and cognition, and that language may be used to create a frame, through which a stimulus is viewed. The theory proposes that with

sufficient exposure and reinforcement, any stimuli may be linked together, even without direct experience of them; a process known as Arbitrarily Applicable Relational Responding (AARR) (Hughes & Barnes-Holmes, 2015). An example of this could be to use words associated with disgust around a stimulus. RFT asserts that with enough exposure and reinforcement, this may create a feeling of disgust when encountering said stimulus, even if the two have never been experienced together before, which may influence behaviour towards the stimulus.

RFT intimates that human behaviour can be described as a composition of relational acts (Hayes et al., 2001), that may be driven by the relationships arbitrarily created between stimuli (Hayes & Barnes-Holmes, 2004). Fundamental to RFT is the suggestion that these arbitrary associations are learned, and can influence the behaviour of the subject towards said stimuli. It also suggests that the arbitrary relations between them may be derived by the historical context of the language used (Hughes & Barnes-Holmes, 2015). RFT presents an opportunity to review how different aspects of language may impact implicit and explicit biases towards an outgroup. This study aims to investigate the extent to which this relational responding may be influenced when dehumanising language is used to describe the actions of an outgroup. This research will endeavour to use the Implicit Relational Assessment Procedure (IRAP) (Barnes-Holmes et al., 2006), as opposed to the Implicit Associations Test (IAT) (Greenwald et al., 1998), which has previously been frequently used to examine implicit bias. The IRAP is a computer based software, which uses a measure of response latency and accuracy to determine how consistent the required response is with the implicit belief of the participant. This has been theorised to be related to their learning history (Vahey et al., 2015). When viewed through a lens of RFT, it is possible to see how the use of non-human associated language may create arbitrary relations, that may stigmatise a group. The

evidence shown demonstrates how this may have the potential to lead to bias, which may in turn increase the likelihood of discriminatory behaviour towards them.

Summary and the Current Study

The evidence presented here demonstrates how language may be used to create arbitrary associations between stimuli. These arbitrary associations can be seen to have the potential to elicit an emotional response towards an outgroup, such as disgust or fear, which can in turn, lead to the moral disengagement necessary for dehumanisation (Buckells & Trapnell, 2013). Throughout the research a gap has been identified, in that there does not appear to be any distinction between the aspects of language used to elicit an emotional response strong enough to facilitate discriminatory attitudes. The aim of this study is to investigate the impact of dehumanising language when describing the actions of immigrants. This research will therefore focus on the impact of using language specifically associated with non-human actions, on implicit associations towards immigrant and Irish populations. The research will use words such as infest, swarm, contaminate, flood, leech and pour to describe the actions of immigrant populations and Irish populations, with the aim of investigating whether this language can have a significant influence on implicit and explicit bias towards each population.

Further to the specific aspect of the language used to create a frame for immigrant and Irish populations, this research will be the first to use RFT and the IRAP to measure implicit associations to immigrants. The vast majority of previous research has used the IAT to measure implicit associations towards an array of stimuli. One major limitation of the IAT is that it only goes so far so to suggest an implicit association, stopping short of investigating the direction of said association (Barnes-Holmes et al., 2006). The IRAP has been shown to facilitate a more thorough examination of biases whilst providing the direction of any biases identified (Murphy et al., 2015). It is hypothesised that the framing of the actions of

immigrant populations in dehumanising terms, will cause a significant shift in implicit bias. It is further hypothesised that the effect will be greater when relating to immigrant, than to Irish populations, and that the language used will not significantly impact explicit bias to the same extent as implicit.

Method

Ethical approval was obtained from the National College of Ireland Ethics board in order to conduct this research. All participants were required to give informed consent before taking part (see Appendix C), after the potential risks and benefits of taking part had been outlined, and were fully debriefed following participation (see Appendix D).

Participants

Participants were recruited using a non-probability, convenience sampling method. In line with ethical considerations, participants were required to be aged 18 or over, and required to give informed consent before proceeding (see Appendix C). Participants were recruited through the National College of Ireland, through a poster advertising the study, available in public areas of the college. The same poster was also posted within the apartment complex of the researcher (see appendix H). No internal or external mailing lists were used for recruitment purposes.

The study aimed to recruit a sample of 29-36 participants. This sample size has been shown to be required for independent samples t-test analysis, to provide a power rating of 0.8 (Vahey et al., 2015). In total 32 participants were recruited, of which 27 met the required parameters for participation ($n = 27$). Ages ranged from 19-46 ($m = 29.48$, $SD = 8.88$). The sample consisted of 12 males, whilst one participant did not disclose their gender. Condition A (Humanised) consisted of 13 participants and Condition B (Dehumanised) consisted of 14. Participants were randomly assigned to conditions, determined by the order in which they participated; odd-numbered participants were placed in the 'Humanising' condition, whilst even-number participants were placed in the 'Dehumanising condition'.

Measures and Materials

Implicit associations were measured using the Implicit Relational Assessment Procedure (IRAP), in order to measure participant's implicit associations to immigrant and

Irish populations. The test was carried out using the Go-IRAP software, provided through National College of Ireland. The IRAP uses the basic principle of the relational nature of language and cognition, integral to RFT, focusing on stimulus relations and relational networks (Power et al., 2009). The IRAP involved four ‘Trial-Types’ which were as follows: Immigrant-Dehumanised, Immigrant-Humanised, Irish-Dehumanised and Irish-Humanised (see Appendix E). Participants were presented with label-statements, along with a dehumanising word or a humanising word, and required to respond ‘True’ or ‘False’, in accordance with the rule presented at the start of the block (see Appendix M for screenshots). A minimum of 2 practice blocks were required to meet the mastery criteria or 80% accuracy and a mean response time of <2500ms, in order to proceed to the test blocks. The 6 test blocks then followed, and mean *D*-IRAP scores were provided for each participant, for each of the 4 trial types. See Table 1 below for full details of the trial types and the ‘Humanising’ and ‘Dehumanising’ language provided.

Table 1

Table 1: The four Trial Types and Stimulus Words Used in the IRAP

Immigrant-Dehumanised	Immigrant-Humanised	Irish-Dehumanised	Irish-Humanised
Infesting	Inhabiting	Infesting	Inhabiting
Swarming	Travelling	Swarming	Travelling
Flooding	Enriching	Flooding	Enriching
Leeching	Gathering	Leeching	Gathering
Pouring	Integrating	Pouring	Integrating
Contaminating	Living	Contaminating	Living

Explicit attitudes towards immigrants and Irish populations were measure using a self-report, 7 point Likert scale questionnaire presented through Google Forms (see Appendix

F). A Likert scale is a common method used in research into explicit bias. The Explicit Measure Questionnaire replicated the 24 label statements administered in the implicit measure, and asked people to indicate the extent to which they agreed or disagreed with each statement. 1 = “strongly disagree”, 7 = “strongly agree” and 4 was neutral. A 7 point scale was selected to offer a bigger scope of results, showing a more reliable result than the smaller 5-point scale (Joshi et al., 2015). This allowed for a positive score for each label statement, indicating the extent to which the participants explicitly agreed or disagreed. It is important to note that explicit attitudes were measured solely in order to offer a comparison to implicit metrics, and that the questionnaire results should be viewed with caution.

Research Design

The research was conducted using an experimental design, followed by quantitative analysis. The independent variable was the ‘Humanising’ or ‘Dehumanising’ condition, to which participants were randomly assigned. Dependent variables were *D*-IRAP scores and Explicit Measure Questionnaire scores. The implicit measure indicated implicit associations to immigrant and Irish populations, measured using the Implicit Relation Assessment Procedure (IRAP). Explicit attitudes towards immigrants were also measured using a 7 point Likert scale questionnaire. The independent variable consisted of 2 passages of text created by the researcher (see Appendix A). Condition A used terms associated with human activity to describe the actions of people in the text, whilst the Condition B replaced human-associated actions with text associated with non-human actions. Participants were be randomly divided into 2 groups, and required to read one of the texts, before completing the IRAP, followed by completion of the Explicit Measure Questionnaire.

The independent variable was created in order to divide the sample into 2 conditions; the ‘Humanised’ (condition A) and the ‘Dehumanised’ (condition B). Implicit and explicit scores were measured for participants within each condition, in order to determine whether

the language manipulation would be sufficient to produce a statistically significant difference in test scores. The data were further analysed to identify the conditions under which the effect had the greatest impact, before correlational analyses were performed to identify any significant correlation between implicit and explicit scores, as a result of the assigned condition.

Procedure

After expressing an interest in participation, either through the poster recruitment campaign or in person, participants were contacted by the researcher. Once they had obtained more information and confirmed their interest, they were then invited to attend a lab to carry out the procedure. Participation took place in a quiet room within National College of Ireland, and within a similar room inside the residence of the researcher. Care was taken to ensure minimal distractions throughout all tests.

On entering the lab the participants were presented with the Participant Information (See Appendix B). They were required to read this document and confirm they had read and understood the details of the study before proceeding any further. The researcher explained at this point that participation would involve reading a specific passage of text, followed by an Implicit Relational Assessment Procedure (IRAP) and an Explicit Measure Questionnaire. It was also made clear at this point, that all data were non-identifiable. If agreeing to participate further, they were then directed to a consent form (see Appendix C), to be signed, before being directed again to the study. At the start of the study, participants were presented with one passage of text to read, depending on their allocated condition (see Appendix A). Participants were assigned their condition according to their number in the sequence of participation. Odd numbered participants were assigned to Condition A (humanising), whilst even numbered participants were assigned to Condition B (dehumanising). Each participant was given 3 minutes to read the assigned text, before the researcher asked 1 of 2 questions by

way of a manipulation check (see Appendix I). This required a correct verbal response, to determine whether the participant had understood the text in their assigned condition. If the participant was unable to respond appropriately to the manipulation check, the procedure would have been brought to an end at this point.

Following a successful manipulation check the participant was then directed to the IRAP, which was completed using a standard ASUS laptop. The IRAP test was administered to assess implicit associations to immigrant and Irish populations, based on the stimuli presented. At the start of the IRAP, participants were presented with one of two rules; “Please respond as if immigrant populations are dehumanised and Irish populations are humanised” or “Please respond as if immigrant populations are humanised, and Irish populations are dehumanised”. These rules were reversed upon completion of each block, as the practice and subsequent test blocks progressed. Within each block, participants were presented with the label statements “Immigrant populations are...” and “Irish populations are...” at random, along with a target word (6 dehumanising actions and 6 human actions). They were then required to respond with “True” or “False”, by simply hitting the “D” or the “K” key, respectively. Once all 12 words had been presented under each of the label statements, the block was complete. Participants were required to achieve a mastery of the task across a minimum of 2 practice blocks before proceeding to the test blocks. If participants were unable to achieve the required mastery criteria, the test ended at the end of the practice blocks, and their data were not included.

Following completion of the IRAP, participants were then required to complete an Explicit Measure Questionnaire (see Appendix F) using Google Forms, employing the same laptop. The Explicit Associations questionnaire offered the same 24 label statements as the IRAP, with 6 human action and 6 dehumanising actions. Participants were required to respond on a 7 point Likert scale for how much they agreed or disagreed with each statement.

Simple, deidentified demographic information was requested (see Appendix G) to allow for more detailed analysis of the data. Once complete, the participant was fully debriefed (see Appendix D). If any participant indicated that they required any support as a result of participation, the contact details of the free counselling service Turn-2-Me were provided by the researcher. The study took no more than 30 minutes to complete from start to finish.

After completion of the study the data were analysed using IBM SPSS software to perform a series of one-sample T-Tests, to identify whether the *D*-IRAP scores, and the Explicit Measure scores were statistically significant. Further 2x4 between-within subjects ANOVA was conducted using the 2 conditions, and 4 trial-types presented as a result of the experiment design – Immigrant Dehumanising, Immigrant Humanised, Irish Dehumanising and Irish Humanised. This analysis was to determine whether trial type or assigned condition had any impact on test scores. Although the hypothesis suggests a direction to the relationship, analysis remained two-tailed, to ensure a more complete conclusion (see Appendix L). Correlational analysis then identified whether there a significant relationship existed between implicit and explicit test scores.

Results

Descriptive Statistics

The sample included 27 participants. 13 were randomly assigned to the humanising language condition (A), whilst 14 were assigned to the dehumanising condition (B). The Explicit Measure questionnaire consisted of 24 items which replicated the implicit measure label statements. Reliability analysis of the Explicit Measure Questionnaire revealed a Cronbach's alpha coefficient of $\alpha = .44$. The reliability score suggested that results of the explicit measure should be viewed with caution (Gliem & Gliem, 2003). The 24 items on the explicit questionnaire were divided into sub-scales to replicate the IRAP trial types. Implicit associations were measured using the Implicit Relational Association Procedure (IRAP). The response latency data was transformed using the IRAP software, to produce *D*-IRAP scores (Barnes-Homes et al., 2010). The IRAP procedure was divided into 4 trial types, each following the rules created by the researcher. The IRAP trial type and explicit sub-scale rules in order were as follows; 'Immigrant populations are dehumanised', 'Immigrant populations are humanised', 'Irish populations are dehumanised' and 'Irish populations are humanised'. *D*-IRAP scores above zero in the first and last trial would indicate a more natural "True" response, whilst *D*-IRAP scores above zero in the second and third trial type would indicate a more natural "False" response. The same rules applied when viewing the explicit sub-scales. The mean scores for the 4 *D*-IRAP trial types and for the 4 Explicit Measure questionnaire sub-scales, according to condition are shown in Table 2 below.

The results indicate that the 'Humanising' group participants responded almost neutrally to the 'Immigrants-Dehumanised' trial, whilst a stronger "True" response was seen in the 'Immigrants-Humanised' trial. Their responses were moderately stronger answering "False" in the 'Irish-Dehumanised' trial, and "True" in the 'Irish-Humanised' trial. Respondents in the 'Dehumanising' group showed strong positive scores across all four trials.

This indicates that they responded with “True” more naturally in the ‘Immigrants Dehumanised’ and ‘Irish Humanised’ trials, and responded more naturally with “False” in the ‘Immigrants humanised’ and ‘Irish dehumanised’ trials. These results will be analysed in more detail below. A graph showing the mean *D-IRAP* scores can be seen in Figure 1 below and mean Explicit Measure scores according to condition can be seen in Figure 2 (see Appendix K).

Table 2

Table 2: Mean and Standard Deviations for Condition A and Condition B Divided by Trial-Type

Group A (Humanising)	M(SD)	Group B (Dehumanising)	M(SD)
TT1	-.01 (.53)	TT1	.46 (.48)
TT2	-.14 (.49)	TT2	.53 (.40)
TT3	.19 (.42)	TT3	.50 (.46)
TT4	.30 (.42)	TT4	.41 (.51)
Exp SS 1	2.38 (1.57)	Exp SS 1	1.80 (1.02)
Exp SS2	6.03 (.92)	Exp SS2	5.75 (1.01)
Exp SS3	1.90 (.92)	Exp SS3	1.58 (.89)
Exp SS4	6.22 (.88)	Exp SS4	6.02 (.91)

Note. For Trial Types 1 and 4, a positive score relates to a more consistent ‘True’ response, and for Trial Types 2 and 3, a positive score relates to a more consistent ‘False’ response. For Explicit Sub-scale a score of 4 indicates a neutral response. A score of 1-3.9 would indicate a ‘Disagree’, and scores of 4.1-7 would indicate an ‘Agree’ response.

Inferential Statistics

Did the Test Demonstrate Significant Levels of Implicit and Explicit Bias?

Preliminary analysis of the data indicated that the implicit scores did not violate the assumptions of normality. Due to the sample size ($n < 50$), absolute z-values were calculated using skewness and kurtosis scores. The results showed despite the significance of the explicit scores, skewness and kurtosis remained within the boundaries of normality. The data were therefore treated as approximately normally distributed (Kim, 2013). One-sample T-tests were conducted to identify any significance to the implicit and explicit scores collected.

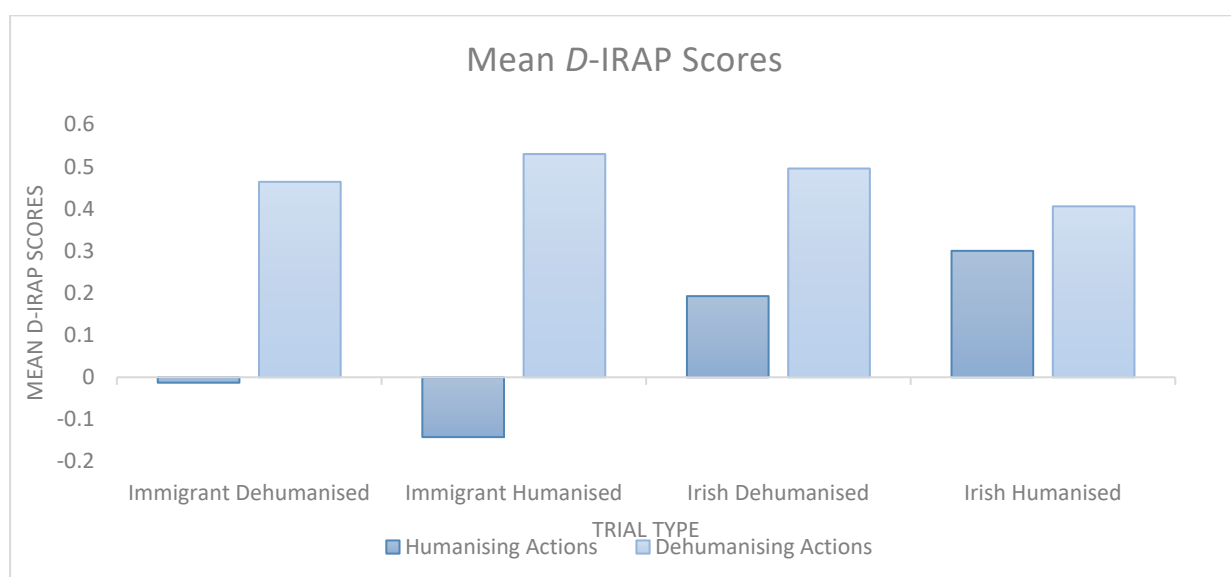
Within the 'Humanising' condition, results showed non-significant *D*-IRAP scores in 3 of the 4 trials. The Irish-Humanised trial was significant $t(12) = 2.59, p = .024$. Explicit scores were significant in the Immigrants-Dehumanised $t(12) = -3.71, p = .001$, Immigrants-Humanised $t(12) = 7.92, p < .001$, Irish-Dehumanised $t(12) = -8.27, p < .001$, and Irish-Humanised $t(12) = 9.08, p < .001$ subscales.

The 'Dehumanising' condition showed significant *D*-IRAP scores in the Immigrant-Dehumanised $t(13) = 3.64, p = .003$, Immigrant-Humanised $t(13) = 5.00, p < .001$, Irish-Dehumanised $t(13) = 4.00, p = .002$, and the Irish-Humanised $t(13) = 3.00, p = .010$ trials. Significant scores were also identified in the Immigrant-Dehumanised $t(13) = -8.07, p < .001$, Immigrant-Humanised $t(13) = 6.48, p < .001$, Irish-Dehumanised $t(13) = -10.18, p < .001$, and Irish-Humanised $t(13) = 8.30, p < .001$ sub-scales.

The results indicated both *D*-IRAP scores and Explicit sub-scale scores were impacted to a greater extent for participants assigned to the 'Dehumanising' condition, than for those assigned to the 'Humanising' condition. This suggests that the variation in language used in each condition was sufficient to significantly impact test scores. *D*-IRAP scores for both conditions can be seen in Figure 1 below.

Figure 1

Figure 1: Graph Showing Implicit Scores According to Condition



Note: Positive scores in the Immigrant Dehumanised and Irish Humanised represent a natural 'True' response, whilst positive scores in the Immigrant Humanised and Irish Dehumanised trials represent a more natural 'False' response.

Did the Condition Have an Equal Impact on Implicit Bias Towards Immigrant and Irish Populations?

A 2x4 mixed between-within subjects ANOVA was conducted to investigate the impact of trial type and condition on implicit *D*-IRAP scores. The Humanising or Dehumanising language condition was the between-participants variable, and IRAP trial type (Immigrant populations-dehumanised, Immigrant populations-humanised, Irish populations-dehumanised and Irish populations-humanised) was the within-participants variable. The results indicated that there was a significant, large main effect for condition $F(1,25) = 7.00, p = .014, \text{partial } \eta^2 = .22$. Additionally, there was a significant interaction between condition and trial-type, $F(3,75) = 4.18, p = .009, \eta^2 = .14$. The results did not show that trial type had a significant main effect on results $F(3,75) = 1.89, p = .14$. The results also showed that there

was no significant interaction between trial types. The results of the ANOVA indicated that the assigned condition had a large impact on variance in *D*-IRAP scores, irrespective of trial type.

Following on from the ANOVA, independent sample T-Tests were conducted to compare the 4 *D*-IRAP scores for each trial type and the 4 Explicit sub-scale scores. All scores for the Explicit sub-scales were non-significant, indicating no significant effect on explicit scores according to the assigned condition. The assigned condition was shown to have a statistically significant effect in the Immigrant-Humanised, $t(25) = -3.91, p < .001$ trial. Further statistically significant effects were seen in the Immigrant-Dehumanised $t(25) = -2.46, p = .021$ trial. There were no statistically significant effects in Irish-Dehumanised $t(25) = -1.77, p = .089$ and Irish-Humanised $t(25) = -.59, p = .563$ trials. The results indicate that the language used in each condition produced a significant effect on *D*-IRAP scores when testing implicit associations with immigrant populations, but did not have a significant impact when testing implicit associations with Irish populations.

Was there a significant relationship between implicit and explicit scores?

Correlational analysis was carried out to investigate the relationship between the 4 *D*-IRAP scores and the 4 Explicit Sub-scale scores, using a Pearson Product Moment correlation coefficient. The analysis showed large positive correlations between *D*-IRAP scores between the Immigrant-Dehumanised and Immigrant-Humanised trial types $r(25) = .72, p < .001$, indicating that a stronger 'True' response in the first trial, was linked to a stronger 'False' response in the second. A further strong positive correlation was seen between the Irish-Dehumanised and Irish Humanised trial types $r(25) = .72, p < .01$, indicating that a stronger 'False' response in the third trial, was linked to a stronger 'True' response in the fourth trial. Moderate positive correlations were observed between all other implicit trials, indicating that a stronger 'False' response in the Immigrant-Humanised trial was linked to the same in the

Irish-Dehumanised trial, and that stronger ‘False’ responses in both the Immigrant-Humanised and the Irish-Dehumanised trials linked to a stronger ‘True’ response in the Irish-Humanised trial. There was also a moderate negative correlation between implicit scores in the Immigrant-Dehumanised trial and the explicit scores in the Irish-Dehumanised subscale $r(25) = -.43, p = .027$, indicating that a stronger ‘True’ response in the Immigrant-Dehumanised trial was linked to a stronger ‘Disagree’ response in the Irish-Dehumanised trial. This was the only significant correlation between the implicit trials and explicit subscales.

Explicit subscale scores demonstrated a mix of moderate to strong positive and negative correlations between subscales. Full details of the correlational analyses can be seen in Table 3 (see Appendix J). Overall, the results indicate no significant correlation between the implicit and explicit test score, beyond the moderate negative correlation between the Immigrant-Dehumanised trial and the Irish-Dehumanised subscale.

Discussion

As the theories identified here suggest, the dehumanising of an outgroup may be seen to influence bias regarding a group, with the potential to influence behaviour towards them. The current study aimed to identify whether describing the actions of immigrants in non-human terms would have a significant effect on implicit bias towards them. Further to this, the research aimed to investigate any link between implicit and explicit bias, whilst attempting to identify the direction of any bias identified. The research also aimed to increase knowledge around how language may impact bias towards immigrants, using RFT as the framework.

The research first aimed to determine whether the using human-associated or non-human associated actions in the stimulus text, would have a significant effect on implicit and explicit test scores. A series of one-sample T-Tests were carried out to analyse the mean implicit trial, and explicit subscale test scores. The results indicated explicit scores were significant within both the Humanised and Dehumanised conditions. Implicit scores were significant in only the 'Irish-Humanised' trial within the Humanised condition. Within the dehumanised condition, all four implicit trials (Immigrant-Dehumanised, Immigrant-Humanised, Irish-Dehumanised and Irish-Humanised) produced significant scores. The results suggest that the language used in the Dehumanised condition, had a more significant impact on implicit test scores than that used in the Humanised condition, and that explicit scores, whilst significant, were consistent across both conditions. These results supported the first hypothesis; that the language manipulation between the conditions would have a significant impact on test scores. The result suggests that the language used in the different conditions had a more significant bearing on implicit scores than explicit. Although this result demonstrates the significance of the language used to describe the actions of immigrants, the current study is the first to use the IRAP to test this. The result supports previous research,

such as Buckells and Trapnell (2013), who identified a similar effect, using the Implicit Associations Teas (IAT).

The second aim of the research was to investigate the extent to which implicit test scores were impacted by the assigned condition. Analysis was carried out using a 2x4 Between-Within subjects ANOVA, for which the considered the 'between' participants variable could be considered the assigned condition, and the 4 trial types were considered the 'within' participants variable. The results showed that there was a significant, large main effect of condition, along with a significant interaction between condition and trial types. This suggests that the assigned condition had a significant, large impact on test-scores, and that this interacted with scores in each trial type. The trial types alone had no significant effect on scores. This result suggests that the condition, and therefore the language manipulation had the greatest effect on scores, irrespective of trial type.

A particular strength of the current study is the distinction between trial types within each condition. This allowed a deeper analysis to determine whether any effect could be observed specifically when testing associations with immigrant and Irish populations, across both conditions. As a result of this, further to the ANOVA, independent sample T-Tests were conducted to identify where in the test this effect was greatest. There was a significant effect of condition identified within the Immigrant-Dehumanised and Immigrant-Humanised trials, however no significant results were produced when analysing implicit scores in the Irish-Dehumanised and Irish-Humanised trials. The largest difference was seen in the 'Immigrants-Humanised' trial, which showed the largest variation of score between the 2 conditions. The results also indicated that explicit scores were not significantly impacted by the condition to which participants were assigned. This further analysis appears to suggest that the impact of dehumanising language had a greater impact on implicit scores, when the test was focused on immigrant populations, however not when the test focused on Irish populations. They also

suggest that explicit scores were not impacted significantly as a result of the condition. These results support the main hypothesis of this research, that dehumanising language will have a greater impact on implicit bias towards immigrant populations, than on implicit bias towards Irish populations. Further to this, the results indicate that the use of dehumanising language had a larger negative effect on participants natural associations with immigrants being human, than on immigrants being dehumanised. These findings show support to Infracommunication Theory (Leyens et al., 2007), which posits that the ingroup may be viewed as 'more human' than the outgroup, as a result of dehumanisation of the outgroup. These results also suggest that the outgroup may be at an increase risk of the consequences of the observe effect, than the ingroup. This demonstrates the need to develop understanding of the rhetoric used when communicating about vulnerable populations.

The third and final aim of the study was to identify if there was any correlation between implicit and explicit scores. A correlational analysis was performed, in order to identify whether there were any links between implicit trials and explicit subscales. As could be expected, explicit scores showed strong positive correlations when either humanised or dehumanised subscales were grouped together, and large negative correlations when subscales were mixed. The results indicate that explicit scores were not significantly impacted by the assigned condition assigned.

Within the implicit trials, scores saw significant, large positive correlations between immigrant dehumanised and Immigrant-Humanised trials and in between the Immigrant-Humanised and Irish-Humanised trials, indicating that as people responded 'true' more naturally to the Immigrant-Dehumanised condition, they responded 'false' more naturally to the Immigrant-Humanised trial. At the same time, they also responded more naturally to 'false' more easily in both the Immigrant-Humanised and Irish-Humanised trials. The 'dehumanising' condition presented significant positive correlations between all implicit

trials, with the exception of the Immigrant-Dehumanised, Immigrant-Humanised and Irish-Humanised conditions. Full details of the correlation analysis can be seen in Table 3 (see appendix J).

These results indicate that despite the difference between conditions, there was no significant correlation between implicit and explicit scores. This offers support to the third hypothesis of the study. It should be noted however, that the lack of reliability and scientific validity in the explicit measure questionnaire, mean that these results should be viewed with caution. Further research may wish to carry out a similar study, using a more reliable measure of explicit attitudes. These results support the findings of a recent met-analysis by Kurdi et al. (2018), which identified that explicit attitudes were not impacted to the same extent as implicit, across a variety of studies. It is important to acknowledge that the analysis in question reviewed many different studies, using a variety of implicit and explicit measures, however.

Strengths, Limitations and Future Research

One strength of the study is that the topic of immigration has become prevalent in Ireland, with frequent ‘anti/pro immigrant’ rallies, currently appearing in the media. This research attempts to contribute to the understanding of the implications of using dehumanising language to communicate about people entering the country. This may help to improve future communications to both local and immigrant populations. To the knowledge of the researcher, this study is the first to use RFT and the IRAP to investigate dehumanising bias. The use of dehumanising language to frame a target group may go some way to explaining how language can be key to creating dehumanising attitudes as has been shown in previous research (Buckells & Trapnell, 2013; Utych, 2021). The use of the IRAP may offer a deeper understanding of bias, such as the direction of the bias manipulated by the

experiment, than previous research using the IAT. This is a particular strength of this study, aiming to develop the empirical knowledge in a relevant domain.

As the first study of its kind, it is important to acknowledge that there were also limitations to the research. Firstly, the sample size was not sufficient to achieve the required power (Vahey et al., 2015). A sample of 29-36 was required for the IRAP to offer the desired level of reliability. The current study recruited 27 participants, mainly due to time and practicality constraints. As a 30 minute, in-person procedure, recruitment proved difficult at times, resulting in the cancellation of several pre-arranged participants. A further limitation within the current study was the lack of a reliable explicit measure. The explicit measure questionnaire was created by the researcher, and intended only as a comparative measure. This may limit the generalisability of the current study. Future research may wish to address this by conducting the study with a more reliable explicit measure, such as the 'Ascent of Man' scale (Kteily et al., 2015). In the same vein, some research has suggested that the IRAP, although offering a deeper analysis than previous research has allowed, may lack internal reliability and test-retest validity (Hussey & Drake, 2020). This suggests that further research is required in this domain to offer a more reliable and generalisable understanding of the findings of the current study.

The nature of the current study has delivered many opportunities for further research. The investigation into a specific aspect of the language used, in this instance to describe the actions of a group, opens the possibility to use a similar study to investigate the impact of dehumanising language to describe other aspects of the group – for example the group themselves, or their living situations. This may offer a deeper understanding of which aspects of language may have the biggest effect on implicit bias. Future research may also wish to investigate the impact of using dehumanising language to describe other target groups. The current researcher investigated the impact on implicit bias towards immigrants, based on the

current prominence of the target population in the media. Throughout previous research, other target populations have been shown to become victims of discriminatory behaviour as a result of bias. Therefore future research may wish to investigate the effect on other target groups. Another direction for future research to consider, may be to investigate the use of positive language when framing a target group, and whether this may have a positive impact on implicit bias. RFT states that arbitrary associations are learned (Hughes & Barnes-Holmes, 2015), and therefore it may be possible to use positive language in order to learn more positive arbitrary associations, in order to lead to more positive outcomes.

Implications

This study has shown that implicit bias may be encouraged by the use of dehumanising language when framing the actions of immigrants, even if the participants are not aware of the impact. As has already been seen in previous research, this bias may have a profound impact on behaviours towards a target group (Haslam, 2006). The practical implications of such a conclusion are potentially far reaching. Firstly, previous research has identified that refugees and asylum seekers may be at a much higher risk of mental health disorders (Tribe, 2002), including depression, PTSD and anxiety disorders (Fazel et al., 2005; Tempany, 2009). This has been seen to be heavily influenced by the discriminatory treatment they may receive across an array of fundamental life experiences, such as health care (Rivenbark & Ichou, 2020), employment opportunities (Zschirnt & Ruedin, 2016) housing (Silver & Danielowski, 2019) and government policy (Messing & Sagvari, 2019; Wirz et al, 2018). The fact that biases can be seen to have a real impact on the treatment of the target group across a variety of levels (Esses et al., 2021), emphasises the vast importance of understanding the impact of the language we use. The development of knowledge around effective communication, may help to develop less stigmatising messages when it comes to public discourse regarding target populations. This may, in time ease the burden on public

health systems, as a result of a decrease in perceived discrimination in the target population, whilst helping to address the issue of institutional bias.

The historical records of the severe outcomes of bias driven by dehumanisation, give a sobering example of the severity of the consequences of driving a discriminating culture against a target population. Recent research suggests that UK and US media has seen an increase of stigmatising and dehumanising metaphors towards immigrants, throughout the online domain (Musolff, 2015; Silber Mohamed & Farris, 2020). The use of dehumanising language may have the potential to determine the framing of immigrants in a stigmatising manner, and has been seen to be used frequently throughout politics to create emotion-driven attitudes towards them (Utych, 2018). Historically, this has been shown to lead to negative implicit and explicit attitudes towards immigrants (Jardina and Piston, 2021). This research has demonstrated that the use of dehumanising language may have a significant impact on implicit bias, and therefore increase the likelihood of discriminatory behaviour towards immigrants. The current study suggests that the effect of the language was greater when viewing the target population. This supports the suggestion by Sumnall et al., (2021) that a bi-directional relationship exists between language and stigma. The assertion of this is that once dehumanised, this may be a predictive factor of further stigmatisation, and therefore increase the likelihood of further moral disengagement concerning the target group. Given the scale and reach of online communication, anybody can have the access to a significant platform, with the freedom to promote any rhetoric they desire. Having identified the potential impact of dehumanising language on implicit bias, it may be suggestible to produce more a more stringent, rules-based framework, in order to intervene in this process, and responsibly regulate online communication.

Conclusion

In conclusion, the current study sought to introduce Relational Frame Theory into the domain of research into dehumanisation. It sought to identify the ways in which using language to describe the actions of a group, may impact implicit associations to that group, using the IRAP to assess the impact of arbitrary relations between dehumanising language and immigrant populations. It has shown support to the hypotheses that the use of dehumanising language in this way may be strong enough to have a significant impact on implicit association test scores, and that the effect seen was greater when relating to immigrant populations than to Irish. The current study has also demonstrated that the use of dehumanising language has no significant effect on explicit attitudes towards immigrants, however caution must be exercised when making this assertion, due to the lack of reliability of the explicit measure. For the first time, RFT and the IRAP were used as an attempt to offer a deeper insight into the issue of dehumanising language. From the results of the current study, it may be reasonable to suggest that RFT can provide a theoretical link between language and stigma, helping to explain how stimuli may be arbitrarily associated with a target group, and how this may influence behaviour towards them. The results emphasise the importance of developing less dehumanising narrative when communicating about immigrants, and highlight the implications of the freedom and potential large platform afforded by online communication. The results show that the framing of a target group in dehumanising terms can impact implicit associations towards them, which may influence behaviour. It can be seen that these behaviours may have a profound impact on the group, across a variety of levels. Further research is required to develop a more reliable understanding of this process, but the evidence suggest a need to become more considerate of the impact of the language used in public discourse.

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Appendix A

The passages of text used presented to the 2 groups. The first contains what can be considered humane text to describe actions of immigrants, and the second contains language usually used to describe non-human actions, to describe their behaviour.

Condition A – Humane Language

Since the beginning of civilised society, there has been a tradition of movement amongst humans. People have been crossing land since before countries were defined. As nomadic populations travelled all over the world, settlements sprung up in every corner. From the smallest village to the spread of gigantic metropolises, people have created every environment conceivable to inhabit. In some circumstances people may be forced to flee their own space, to look for safety. This urgent need to find security can lead to large numbers of people travelling to a new place, being defined as migrants or immigrants. In many cases this seeking of refuge can cause uncertainty in the existing community. The newcomers can sometimes be seen to be weakening their new community, although this is not always the case as they are often considered to be contributing to the community. The more enterprising seem to have the ability to make a living from their new culture

Condition B – Dehumanising Language

Since the beginning of civilised society, there has been a tradition of migrating amongst humans. People have been flooding over land since before countries were defined. As nomadic species spread all over the world, settlements sprung up in every corner. From the smallest village to the sprawl of gigantic metropolises, people have infested every environment conceivable. In some circumstances people may be forced to take flight from their own space, to look for safety. This urgent need to find security can lead to large numbers of people swarming to a new place, being defined as migrants or immigrants. In many cases this seeking of refuge can cause uncertainty in the existing community. The newcomers can sometimes be seen to be diluting their new community although this is not always the case as they can often be considered to be contributing. The more enterprising seem to have the ability to leech a living from their new culture.

Appendix B

Participant Information Sheet

Investigating the Impact of Language on Implicit Attitudes

You are invited to participate in a research study. Please take the time to read this document, which explains the reasons behind this research, and what would be required from you, before deciding whether you will take part.

If you have any questions about the information provided, please do not hesitate to contact me using the details at the end of this sheet.

What is the study about?

I am a final year student at the National College of Ireland, and for my final year project, I am required to conduct some independent research. My research project aims to investigate how language we may encounter in everyday life may impact attitudes towards an outgroup. My research is being supervised by Dr Lynn Farrell.

What will participation involve?

If you decide to participate, you will be requested to sign a consent form, detailing that you are aware that your participation is on a voluntary basis, and that you consent to your data being used for the purposes of the study. You will be given a short passage to read. After 3 minutes you will then be asked to provide an answer to a question about the text. Upon providing a satisfactory answer to this question, you will be asked to complete an Implicit Relational Assessment Procedure (IRAP), followed by a questionnaire, and some basic demographic information. This process will be followed by a full debrief. The process should take no longer than 30 minutes to complete.

Who can participate?

The study is open to all adults in Ireland, with a fluent level of English, aged over 18. If you are not 18 or over, or you do not have the required level of English, you are unable to take part.

Do I have to take part?

Your participation in this study is entirely voluntary; you have no obligation to take part, and your decision not to would be without consequence. If you decide to participate you retain a right to withdraw at any time during the procedure. Once the procedure is complete the data are unable to be removed from the study, as all data are de-identified.

What are the possible risks and benefits of taking part?

There are no direct benefits to your participation in this research. However the information gathered may contribute to the understanding of whether the language we see in everyday life can have an impact on the way we treat those around us.

There is a small risk that you may read some language that may impact implicit attitudes, although any impact will be short term. Care has been taken to minimise this risk when designing the experiment.

Will taking part be confidential and what will happen to my data?

Your participation will require the collection of demographic information, and informed consent. These are the only identifiable data. The only people able to access these data will be the researcher and their supervisor.

The IRAP and the questionnaire that will be used in the study are anonymous, and will be identified by code. It is not possible to identify participants as a result of their participation in these measures.

All data will be stored securely in a password protected file, and retained for 5 years, in accordance with the National College of Ireland data retention policy.

What will happen to the results of the study?

The results of this study will be presented as a part of my final thesis, which will be presented to National College of Ireland. They may also be presented at conferences and/or submitted to academic journals for publication. The anonymised data may also be stored in an online repository for secondary analysis, in accordance with the National College of Ireland data retention policy.

Who should you contact for further information?

The researcher can be contacted on the following details:

Researcher

Name: Carl Hood

Affiliation: National College of Ireland

Email: x17122686@student.ncirl.ie

Supervisor

Name: Dr Lynn Farrell

Affiliation: National College of Ireland

Email: Lynn.Farrell@ncirl.ie

Appendix C

Participation Consent Form

Investigating the Impact of Language on Implicit Attitudes

Consent to take part in research

- I..... voluntarily agree to participate in this research study.
- I understand that even if I agree to participate now, I can withdraw at any time during the procedure, or refuse to answer any question without any consequences of any kind.
- I understand that all data will be de-identified, and as a result cannot be withdrawn from the study once the procedure is complete.
- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that participation involves reading a short passage of text, before participating in the IRAP assessment and responding to a questionnaire which will measure my agreement with various statements on a 7 point Likert scale.
- I understand that I will not benefit directly from participating in this research.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that in any report on the results of this research, my identity will remain anonymous.
- I understand that signed consent forms and demographic information will be retained in the National College of Ireland until the exam board confirm the results of their thesis.
- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.

- I understand that I am free to contact any of the people involved in the research to seek further clarification and information, and that I have been informed of the names, affiliations and contact details of researcher and their academic supervisor.

Signature of research participant

Signature of participant Date

Signature of researcher

I believe the participant is giving informed consent to participate in this study

Signature of researcher Date

Appendix D

Debrief

Investigating the Impact of Language on Implicit Attitudes

Thank you for agreeing to participate in this study. The purpose of this research is to investigate the ways in which the language we may see, or use in everyday life may have an impact on the way we behave towards other people, in this instance immigrants.

We invited any adult in Ireland over the age of 18, with a fluent level of English to participate in this study. The researcher has no personal information about you, based on the scores of your test. In this study you were asked to read a short passage of text, before completing an Implicit Relational Assessment Procedure (IRAP). This test provides a numerical score, based on reaction times alone. The research has divided participants into 2 groups, one of whom were provided with a text which used dehumanising language to describe the actions of migrants, whilst the other group were provided a text with no dehumanising language. The researcher intends to collate all scores together, and use an average to determine the extent to which a brief different framing of the same group (in this instance migrants) can impact implicit and explicit attitudes towards that group. No individual scores can be related to a participant. The results from this study will help to inform further research into the impact that language may have on the way people behave.

If you feel concerned about any thoughts or feelings that came about as a result of your participation, I can recommend an online support platform called www.Turn2me.ie, which offers a free online support and counselling service. Thank you for your participation in this study.

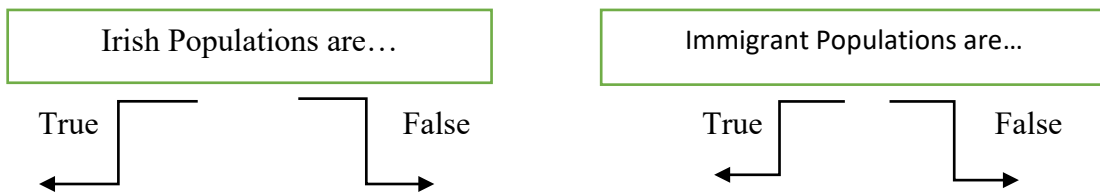
Appendix E

IRAP Stimuli

The Implicit Relational Assessment Procedure (IRAP) presented 2 label statements, accompanied by a sequence of words from 2 conditions – Humanised vs Dehumanised.

Details of the label statements and condition language can be seen in the diagram below.

Label Statements



Condition A	Condition B	Condition A	Condition B
Inhabiting	Infesting	Inhabiting	Infesting
Travelling	Swarming	Travelling	Swarming
Enriching	Flooding	Enriching	Flooding
Gathering	Leeching	Gathering	Leeching
Living	Contaminating	Living	Contaminating
Integrating	Pouring	Integrating	Pouring

Appendix F

Explicit Measure Questionnaire Sample

A screenshot of the google forms questionnaire used to collect explicit scores.

To what extent do you agree or disagree with the following statements about the activities of Irish and Immigrant populations? *

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
Irish Populations are Travelling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Immigrant Populations are Infesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irish Populations are Flooding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Immigrant Populations are Inhabiting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irish Populations are Swarming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Immigrant							

Note: The Explicit Measure Questionnaire asked for responses to the same 24 statements as the IRAP.

Appendix G**Demographic Information**

Please complete the demographic information below.

Gender: Male Female Transgender Non-Binary Prefer not to say

Ethnicity: White Irish White Irish Traveller Any Other White Background

Black Irish Black Irish Traveller Any other Black Background

Asian Irish Any Other Asian Background Prefer Not to Say

Age in years:

Appendix H

Participant Recruitment Poster

Research Participants Needed!

Do you have a spare 30 minutes, and an interest in psychology?

I am currently recruiting participants for my research investigating implicit and explicit attitudes.

If you are:

- Over 18
- Living in Ireland
- A fluent English speaker

...then I'd love to hear from you!

For more information, or to volunteer please feel free to email me on the address below.

X17122686@student.ncirl.ie

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Appendix I**Manipulation Check**

Question to be asked to all participants to check their reading of the text given at the beginning of the procedure. 1 correct answer required, dependent on whether the participant received the humanising condition or the dehumanising condition.

Q – Can you remember one word used in the text to describe the actions of the people in the text?

Q – Was a dehumanising/non-dehumanising word shown in the passage of text provided as an answer?

YES

NO

Appendix J

Table 3

Table 3: Correlations between D-IRAP scores and explicit subscale scores.

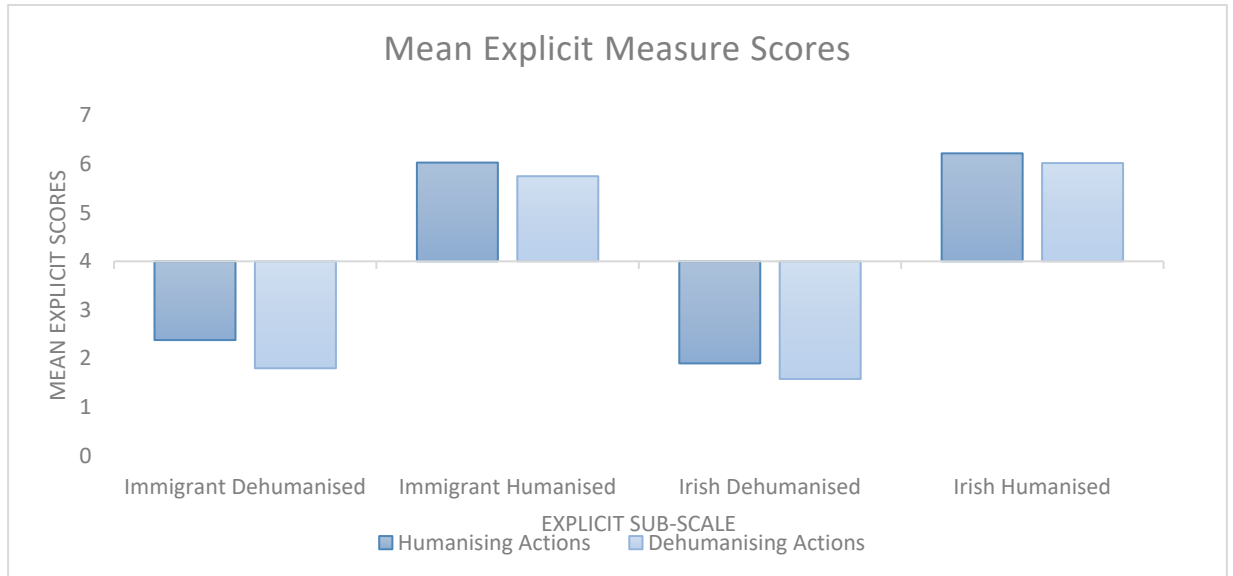
Variable	1.	2.	3.	4.	5.	6.	7.
1. Implicit Imm-DH							
2. Implicit Imm-H	.72**						
3. Implicit Ir-DH	.67**	.56**					
4. Implicit Ir-H	.48*	.43*	.72**				
5. Explicit Imm-DH	-.16	-.11	-.08	-.02			
6. Explicit Imm-H	-.01	-.24	.01	-.16	-.66**		
7. Explicit Ir-DH	-.27	-.27	-.06	-.003	.53**	-.59**	
8. Explicit IR-H	.08	.08	.01	-.18	-.46**	.79**	-.74**

Note: * indicates $p < .05$ (two-tailed) ** indicates $p < .01$ level (two-tailed)

Appendix K

Figure 2

Figure 2: Graph showing Explicit Measure Questionnaire scores according to condition



Note: Scores < 4 represent a 'Disagree' response, and scores >4 represent an 'Agree' response

Appendix L

Images showing evidence of data collection and processing.

Towhatexten doyou6or2w thefollowi...	Towhatexten tdoyou6or2w thefollowi...	Towhatexten tdoyou6or2w thefollowi...	TT1_J	TT2_J	TT3_J	TT4_J	Condi tion	Gen der	Ethnicity	Age	TT1_Expl	TT2_Expl	TT3_Expl	TT4
1	7	7	.014	-.051	.410	-.163	0	2	Any Other White Background	39	1.000	6.833	1.000	
5	4	4	.197	.569	.053	.074	0	2	White Irish	20	6.000	4.500	1.667	
2	7	5	.730	.339	.664	.981	0	1	Any Other White Background	31	1.200	6.500	1.000	
1	7	4	-.280	-.056	-.216	.216	0	2	White Irish	26	2.200	6.167	1.167	
1	7	7	.211	-.051	-.111	-.045	0	1	Any Other White Background	23	1.600	7.000	1.500	
2	6	7	-.446	-.995	.226	-.043	0	1	Any Other White Background	26	4.800	6.667	2.500	
1	6	6	-.764	-.663	-.300	.417	0	1	White Irish	42	1.600	6.000	1.500	
1	7	6	1.131	.352	.989	1.017	0	1	White Irish	43	1.000	6.833	1.000	
1	6	7	-.272	-.388	.298	.003	0	1	White Irish	23	1.800	6.333	3.167	
1	5	5	-.679	-.909	.584	.392	0	2	White Irish	31	3.000	5.500	3.833	
2	6	6	-.074	-.163	-.543	-.178	0	1	Any Other White Background	46	2.200	5.167	2.000	
3	5	4	.253	.375	.223	.813	0	2	White Irish	26	3.600	4.167	2.833	
1	7	7	-.189	-.207	.228	.422	0	1	Asian Irish	20	1.000	6.667	1.500	
1	6	7	.285	-.202	.096	.472	1	1	Other	39	1.000	6.667	1.000	
2	7	5	.014	.175	-.329	-.831	1	2	White Irish	22	1.400	6.500	1.000	
1	7	5	.750	.774	1.087	1.055	1	2	White Irish	43	2.000	6.500	1.000	
2	6	6	1.413	1.139	1.305	1.272	1	2	White Irish	37	2.400	5.333	2.000	
2	7	4	.772	.753	.832	.482	1	2	White Irish	22	2.000	5.667	1.000	
1	7	6	.700	.367	.131	-.240	1	2	Any Other White Background	32	1.000	6.500	1.000	
2	7	3	.683	1.103	1.054	.503	1	2	White Irish	23	1.200	6.333	1.000	
1	7	4	1.025	.709	.830	.470	1	1	White Irish	23	1.000	6.167	1.000	

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance One-Sided p	Significance Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval Lower	95% Confidence Interval Upper
TT1_J	Equal variances assumed	.062	.806	-2.456	25	.011	.021	-.477066	.194206	-.877041	
	Equal variances not assumed			-2.446	24.177	.011	.022	-.477066	.195015	-.879402	
TT2_J	Equal variances assumed	.283	.600	-3.914	25	<.001	<.001	-.672297	.171760	-1.026043	
	Equal variances not assumed			-3.882	23.057	<.001	<.001	-.672297	.173189	-1.030518	
TT3_J	Equal variances assumed	.530	.473	-1.772	25	.044	.089	-.303093	.171064	-.655407	
	Equal variances not assumed			-1.778	24.992	.044	.088	-.303093	.170439	-.654124	
TT4_J	Equal variances assumed	.016	.901	-.586	25	.281	.563	-.105467	.179836	-.475846	
	Equal variances not assumed			-.591	24.680	.280	.560	-.105467	.178527	-.473392	
TT1_Expl	Equal variances assumed	2.246	.146	1.156	25	.129	.258	.584615	.505590	-.456667	
	Equal variances not assumed			1.138	20.365	.134	.268	.584615	.513569	-.485442	
TT2_Expl	Equal variances assumed	.027	.870	.738	25	.234	.467	.275641	.373252	-.493087	
	Equal variances not assumed			.741	24.995	.233	.466	.275641	.371955	-.490422	
TT3_Expl	Equal variances assumed	.001	.980	.904	25	.187	.375	.314103	.347497	-.401582	
	Equal variances not assumed			.903	24.710	.188	.375	.314103	.347916	-.402870	
TT4_Expl	Equal variances assumed	.000	.999	.562	25	.290	.579	.194139	.345573	-.517581	

Appendix M

Screenshot of IRAP test in progress.

