A Critical Perspective on Researching Hate with Neuroscientific Methodology

Anna B. C. Trimborn, M.Sc., B.Sc.

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Thesis in submitted to Trinity College Dublin, the University of Dublin in partial fulfilment of the Degree Doctor of Philosophy in the School of Medicine, Discipline of Psychiatry

Conferral of Degree: 2026

Declaration

I declare that this thesis has not been submitted as an exercise for a degree at this or any other university and it is entirely my own work.

I agree to deposit this thesis in the University's open access institutional repository or allow the Library to do so on my behalf, subject to Irish Copyright Legislation and Trinity College Library conditions of use and acknowledgement.

I consent to the examiner retaining a copy of the thesis beyond the examining period, should they so wish (EU GDPR May 2018).

Anna B. C. Trimborn

Declaration and Statement of Plagiarism

I hereby state that the work in the present thesis is my own work.

The present study received approval from the Faculty of Health Sciences Research Ethics Committee and informed consent was obtained from human subjects.

Anna B. C. Trimborn

Acknowledgements

The current project was funded by the European Commission, in a Marie Skłodowska-Curie Innovative Training Networks (ITN) 'NETHATE', and I would like to express my sincere gratitude to the funder and the public, for the unique opportunity to engage in the research, secondments and exchange that led to the presented dissertation.

I am truly grateful to my supervisor Professor Arun Bokde, I appreciate your support, flexibility and understanding throughout the last years, and the last months especially. There were many changes, insights and new directions, and I am thankful for the possibilities to branch out and make use of the interdisciplinarity, I learned so much. I, too, am grateful to Professor Jan de Vries, my second supervisor, and would like to thank you also for the encouragement.

I would like to thank my thesis committee, Professor Clare Kelly and Professor Simon McCarthy-Jones, the meetings helped me question assumptions I came with, and helped me in the process of finding my academic and personal perspective. I also would like to extend my sincere gratitude to the inspiring staff at the Glencree Centre of Peace and Reconciliation, thank you Nadette, Sinéad, Michelle, and Amina in particular, for the shared thoughts and insights, I really appreciate it.

I am sincerely grateful to my internal and external examiner: Professor Brendan Kelly and Professor Des Fitzgerald for their time, valuable feedback and insightful discussion during my viva.

The last years were not easy for different reasons, but I learned so much -and I did so with others:

I am so moved and beyond grateful for getting to meet you in this consortium, Anuhya, for the friendship, the living and learning and carving out paths that we want to walk together.

Thank you, Azadeh and Mi, for making the office a space to feel more connected, it made such a difference.

Writing and researching can feel removed from real-life at times. This dissertation has not been me as an individual, I am shaped and inspired by, and indebted to the network of people around me:
To Roisin, for so many long and genuine conversations (and adventures), through all kinds of ups and downs. To Cormac, for making Dublin feel homely early on, and my first intro to Irish. To Ufuk, from the FES seminar, thank you. For being there, for growing up together.

Thank you to Anika, Sarah, Ian, Patrick, Mareike, Fabienne, Manon, Vab and others who've accompanied me. Thank you for Katherine Bryant, who brought me to critical reading groups and workshops, opening up new reflections. And Géza, thank you for the excitement for science.

And to you, Weggefährten: Marta whom I learned so much from, trusting in togetherness and more in my voice -by seeing you use yours. Flavia -I am so grateful for your presence, for all the deeper explorative and for creating a space to feel safe in to question together.

Thomas, you are so important to me, you are home. You believe in me in times I don't, and I am so grateful, to have you in my life for over 10 years -and hopefully that never changes. I am so glad I get to see you be the person full of integrity and skill you are, and share this with others.

I am really thankful for the support at Trinity Health and other College supports.

Thank you Albert, Renee, Christa, Cornelia, Denise, Melanie, Lothar: Ich habe es auch euch zu verdanken, dass ich es bis hierhin geschafft habe -das hab ich ganz lange für etwas gehalten, das ich zwar versuchen, aber wahrscheinlich nicht schaffen kann. Vielen Dank für Eure Unterstützung auch in Zeiten, die schwerer waren.

I wish to acknowledge the German Academic Exchange Service, and the Friedrich-Ebert-Stiftung in particular for scholarships, without which I would never be at this point.

For my mother: Christine Maria Trimborn. Du hast Menschen bewegt und deine Werte vertreten, auch unter widrigsten Bedingungen. Ich lernte von dir Alles, was ich brauche. Wie viel (mit-)fühlen ausmachen kann, dass ich Ungerechtigkeit nicht akzeptieren muss und dass **Miteinander** immer wichtiger ist.

Table of Contents

List of Abbreviations 9
List of Figures 9
List of Tables 9
Abstract 10
1 Introduction 12
1.1 Hate 12
1.2 Research Questions 13
1.3 Contribution to research on complex, social emotions 15
2 Literature Review 18
2.1 Experimental Studies directly on Neuroscience of Hate 18
2.2 Relevant Theory 20
2.2.1 Emotion Theories 20
2.2.2 Definitions and Theories of hate 24
2.3 Related Social Psychology and Neuroscience Results 28
2.4 Challenges to the Neuroscientific Study on Hate directly 30
2.5 Research Gap 32
3 Epistemic considerations 33
3.1 Empirical studies to illustrate 33
3.2 Emotions as meaning making: Epistemic value of emotions 35
3.3 Emotional experiences of making sense of the world are influenced by power disparities 41
3.4 Process of researching emotions itself also influenced by power disparities 44
3.5 Critical neuroscience 47
3.6 Specific assumptions for the current project 48
4 Methodology: stimuli and paradigm development 51
4.1 Stimuli development 51
4.1.1 Facial expressions 51
4.1.2 Narratives as stimuli 53
4.1.3 Reading vs audio vs video: engagement 56
4.1.4 Longer narratives 56
4.1.5 Writing process and editing 57
4.1.6 Speaker perspective 57
4.1.7 Identities (Incl Gender) 58
4.1.8 Setting or situational context 59
4.1.9 Directness of threat or violence 60
4.1.10 Types of hate and (hate) crimes 61

4.1.11 Gender aspects 62
4.1.12 Audio 62
4.1.13 Actors 63
4.1.14 Audio processing 64
4.1.15 Ethical matters and limitations regarding stimuli 64
4.2 Paradigm development 65
4.2.1 Participants and sample 66
4.2.2 Rating task 67
4.2.3 Online vs. In-Person experiment 70
4.2.4 Self-report vs. implicit or physiological measures 70
4.2.5 Power calculations 71
4.2.6 Control Measures and Questionnaires 72
4.3.7 Gender aspects 73
4.3.8 Procedure 73
4.2.9 Ethical matters regarding paradigm development 74
4.3 Open Science and Research Integrity 75
5 Results 77
5.1 Summary 77
5.2 Sample 78
5.3 Emotion Elicitation 79
5.3.1 Co-Occurrence when hate was reported as elicited 81
5.3.2 Free-Text input for the narratives with highest hate 82
5.3.3 Interpretation 83
5.4 Continuous rating across the duration of each stimulus 83
5.4.1 Time-Course patterns and variability 84
5.4.2 Derivative for trajectories and variability of interaction with task 86
5.4.3 Intersubject Correlation 87
5.5 Emotion Meaning 93
5.5.1 For all stimuli 93
5.5.2 For narratives, that were rated high in hate 93
5.5.3 Free Text replies emotion meaning 93
5.6 Pitfalls and learnings 95
5.6.1 For paradigms on complex emotions 95
5.6.2 Learnings for future fMRI studies 96
5.7 Data preparation and added information 96
5.7.2 Social Dominance Orientation 96

5.7.3 Data pre-processing 97
6 From friction to focus: Reflection on ITN, secondments and more 98
6.1 Developing my research angle 99
6.1.1 Alienation in the academic environment 101
6.1.2 Belonging: experiences that inspired and showed change is happening 103
6.1.3 PhD in Ireland -consequences of neoliberalisation of the university 103
6.1.4 Need for (dis-)continuities 105
6.2 Beyond the ivory tower (or: the Campanile) 106
6.2.1 Secondments and related experiences as situated knowledge spaces 106
6.2.2 Additional Events and their impact 107
6.2.3 The study in the context of current developments 109
7 Discussion 110
7.1 Contextualising the presented work 111
7.2 Possible harm 112
7.3 Learnings in and for interdisciplinary projects 113
7.4 Current stance 115
7.5 Larger implications and future directions 115
Bibliography 117
Additional literature, that inspired more indirectly 141
Appendix 142
Approval Letter Ethics Committee 142
Participant Information Sheet Study 143
Measurement: Social Dominance Orientation (SDO) 155
Standard Operating Procedure : Debriefing 156
List of Selected Stimuli (Subset of 40) 157
Full List of Stimuli 164
Additional Analyses 184

List of Abbreviations

Abbreviation	Explanation
fMRI	functional magnetic resonance imaging
Neuroimaging	Referring to multiple techniques, functional MRI (fMRI), Magnetic Resonance Imaging (MRI), Computed Tomography (CT), Positron Emission Tomography (PET), Electroencephalography (EEG), and Magnetoencephalography (MEG), analysis methodology: Intersubject Correlation (ISC), and brain regions: Inferior Frontal Gyrus (IFG)
ITN	Innovative Training Network: a Marie Skłodowska-Curie Actions funded training network including intersectoral secondments, workshops and consortium meetings and interdisciplinary review panel
ESR	Early Stage Researcher
Glencree	Glencree Centre for Peace and Reconciliation

List of Figures

Figure 1 Adopted Epistemic View on Emotions 40
Figure 2 Broader Societal Influences and Context 41
Figure 3: Variety of Identity Markers for Selection of 40 Identities used 59
Figure 4 Situational Setting in Selected Narratives 60
Figure 5 Paradigm and Stimulus Design 68
Figure 6 Illustration of Task Order 69
Figure 7 Age and Gender Identification Distribution 78
Figure 8: Elicited Emotion Frequencies 81
Figure 9: Co-Occurrence of Elicited Emotions 82
Figure 10: Time Course Illustration (High Hate) 84
Figure 11: Time Course Illustration (High Joy) 85
Figure 12: Time Series and Associated Derivatives 87
Figure 13 Inter-Subject Correlation Heatmap 88
Figure 14: Highest and lowest ISC per Narrative and Emotion 90
Figure 15: Time Resolved ISC (Hate) 91
Figure 16: Time-Resolved ISC (Anger) 91
Figure 17: Time-Resolved ISC (Fear) 92
Figure 18: Contempt Ratings 92
Figure 19: Elicited emotions word cloud 93

List of Tables

Table 1: Social Dominance Orientation Means and Standard Deviation 97

Abstract

Hate is an intense negative emotional state that has had significant political, historical, and social consequences across many societies yet has not received significant investigation from a neuroscientific perspective. Very few studies have approached 'hate' directly. The central research question of this thesis is if, and if so, how societally relevant phenomena like 'hate' can be studied meaningfully and ethically with empirical, neuroscientific methodology.

A literature review was conducted to assess the state of research: theoretical frameworks on complex emotions with related neuroscientific conceptualisations and methodology and ethical considerations were reviewed on the one hand, and definitions of hate, theories and taxonomies of hate with moral and ethical considerations on the other. The literature review revealed the need to explore epistemic consideration more thoroughly, which was subsequently done, drawing on insights from history, sociology and meta science, and outlining the need for theory building and a critical neuroscience approach, where implicit, often paradigmatic assumptions are reflected upon and made explicit. Aiming for a higher ecological validity and an integration of some of the epistemic findings, we developed an extensive dataset of 112 contextualised, emotional narratives with many including hate, discrimination, fear or other related, negative emotionality. All narratives were spoken in by actors (yielding a rich resource designed to be reused by other researchers) and an accompanying task and paradigm were designed to test if the narratives evoke emotion recognition, and secondarily also if the narratives elicit emotions. Importantly, in an extended methodology chapter, learnings and discontinuities are shared, not just the outcome. We testing the developed paradigm with N=66 participants and a subset of 40 narratives (12 positive, 28 negative), and found that the developed narratives: I) successfully elicited a wide range of emotions and showed a co-occurrence in elicited, negative emotions such as hate and anger, for many of the narratives. II) looking at the dynamic rating, the inter-individual and inter-narrative variability is generally high, but there also are narratives which prompted higher vs lower similarity of participant responses across the time-course of a given narrative and emotions (analysed via intersubject correlations). III) free text input of participants showed interesting patterns of what people focus on when expressing what an emotion means for them, and revealed that many participants misunderstood 'contempt' specifically, which was taken into account in the other analyses. Relevant insights and recommendations for future studies into complex emotions using narratives stimuli, potentially also with functional MRI, are discussed.

Closely related to how we view ourselves and others as part of the social world we inhabit, research on the neuronal processes related to hate are likely to have societally relevant

implications. Given that historically, the research programme and its' methodology is associated with empiricism or reductionism, neuroscientific studies are more likely to adopt a perspective that views *hate* to be within a person (or even their neurophysiology), an individualisation could obstruct the important consideration of the effects of structural injustices and resulting accountabilities (on personal and societal level). The operationalisation of 'hate' in empirical research, therefore, can easily be harmful. Besides the database and paradigm development, the unique contribution of the present dissertation is the synthesis of theoretical accounts across disciplines on the concept of hate and a critical interrogation of paradigmatic assumptions of the neuroscientific discipline specifically. outlining recommendations for future research projects within and beyond academia.

1 Introduction

This dissertation presents an investigation into the opportunities and challenges of operationalising research questions on hate: theoretical frameworks, historic influences and epistemic considerations when studying emotions and their neuronal correlates generally and hate specifically are reviewed. A newly developed stimulus set of 112 emotional stories was developed, with an accompanying experimental paradigm (designed to also allow for acquiring functional MRI data): a behavioural study showing that the developed narratives successfully yielded recognition of hate, contempt and other complex emotions by participants. A personal reflection follows on the expansive/perspective-shifting, intersectoral experiences within and outside the Innovative Training Network this PhD was embedded in. This thesis closes with a discussion situating the research in the current societal context, by highlighting accountabilities and future directions.

1.1 Hate

Hate has received significant attention in philosophy, psychology, law, and sociology, with their different perspectives and methodologies contributing to our greater understanding of hatred and its impact on the individual and society. The neuroscience of hate, however, has largely been unexplored.

When asked what they hate, answers tend to range from inconsequential, e.g. hating spinach, to hate that can lead to serious consequences for oneself and, crucially, for others e.g. hating an individual in one's own social environment or a whole group of people in society (Sullivan et al., 2016). Defining and demarcating hate is part of an ongoing debate (Fischer et al., 2018; Opotow & McClelland, 2020; Sternberg, 2003; Szanto, 2020; Vendrell Ferran, 2018) and while there is agreement on some characteristics or types of hate, many aspects in the development of hate are contested, and their application and interpretation dependent on the specific paradigmatic and theory-associated assumptions. Given that there is an existing body of neuroscientific research on a variety of different emotional phenomena, also more complex affective states like contempt see, e.g. Sambataro et al. (2006) or dehumanisation Bruneau et al. (2018), it makes sense to assume that an investigation of the neuronal correlates of hate can be of benefit.

1.2 Research Questions

The main research question of the present thesis is: **Can societally relevant phenomena like 'hate' be studied meaningfully and ethically with neuroscientific methodology? If so, how and which aspects have to be considered?**

To this end, sub questions are:

- What is the existing state of research?
- What are the ontological and epistemological assumptions research studies hold (made explicit or not)? Is there scientific neutrality when employing neuroscientific methodology to such research questions on complex, societally-relevant emotions?
- How can existing theory on emotions and on hate be used when defining an affective phenomenon and designing and operationalising studies?
- For empirical project: is hate different from other, related affected states like anger or contempt?
- What can be learned for interdisciplinary research projects including neuroscience?
- What potential implications are there? How can the knowledge be applied?

Innovative Training Network and NETHATE consortium on the study of hate

Funded by and embedded in a larger consortium of 34 researchers in different countries, the research project contributes part of a jigsaw of knowledge about and surrounding hate. Colleagues looked at the legal frameworks, the economic circumstances or communication patterns, studied betrayal, and developed technological interventions on online hate. Within the wide range of projects in the consortium, the present project can be considered more fundamental research and started with the goal of investigating the neuronal correlates of hate. The funding through a Marie-Curie 'Innovative Training Network' included secondments at NGOs and other research institutions, for me at the Glencree Centre for Peace and Reconciliation, learning about the legacy of violence on the island, and ongoing community efforts, at the Institute of Criminology, University of Helsinki, and the Irish Centre for Human Rights, University of Galway. The time spent at the partner organisations influenced the work considerably, with valuable insights across different disciplines crucially: also outside of academia. Frequent meetings with the researchers in the consortium offered opportunities to present research designs and exchange with colleagues based in different countries and working on the related projects. Workshops conveying knowledge on e.g. Human Rights and Religion or the development

of the Far-Right, and training in skills development of research methodology and questioning disciplinary assumptions and positionality and were an essential part of the doctoral training. Continuous learning about theoretical, ethical and critical matters as desired and encouraged by the funder (European Commission), which is reflected in the present thesis (more in Chapter 6).

As the reader will see in the next chapter, there current state of empirical research on neural correlates of hate directly is very scarce. Zeki & Romaya (2008) provided an initial account on re-evoking hate using photos of 'hated' people participants brought in and report changes of brain activation, Pluta et al. (2023) focussed on the effects of witnessing hate speech on neuronal activation patterns. Seki et al, however, did not include a specific definition of hate or types of hate, and Pluta's study provided insights on the short-term effects on bystanders when exposed to a specific type of written or read hate speech specifically. There further are neuroscientific studies on topics related to hate, such as on dehumanization (Bruneau et al., 2018a; Mendez, 2023b), moral disgust (Gan et al., 2024), injustice perception (Dang et al., 2022), numbing (Ye et al., 2020), and contempt (Sambataro et al., 2006). Recent behavioural research by Martínez et al. (2022) directly tested e.g. if hate is different from other affective states such as contempt or fear or combinations of those, and Pretus et al. (2023) showed a moral aspect to be one of the unique characteristics of hate differentiating it from intense dislike, but there are no neuroscientific results on these distinctions yet.

With recent advances in social and affective neuroscience and progress in related analysis techniques, such as Intersubject Correlation (Nastase et al., 2019), using more naturalistic, ecologically-valid stories (narratives, e.g. in the form of audio or video) as stimuli in neuroimaging studies has become feasible and more common (Jääskeläinen et al., 2021; Nastase et al., 2021; Willems et al., 2020). Some larger studies provide fundamental insights into how emotions are processed in the brain (Nummenmaa & Saarimäki, 2019a; Saarimäki et al., 2025), however, did not directly study or include 'hate', and therefore also did not define or test hypotheses directly on the topic.

To evaluate if and how hate can be operationalised for empirical, neuroscientific studies, for instance by using more natural and contextualised stimuli, the present thesis first draws on theoretical work in social and affective psychology and neuroscience for conceptualisations of complex emotions on the one hand, and on theories of hate and related phenomena as well as necessary critique in philosophy, sociology and psychology and meta science on the other. The development of a stimulus dataset and accompanying paradigm serve as an illustration of how

relevant epistemic and theoretical considerations are for societally relevant research into hate (or *hate in the brain*). The task and paradigm were designed to be suitable for behavioural data acquisition (data was acquired and is presented), but also to test participants in the MRI scanner, and to use state-of-the-art methodology like Intersubject Correlation. To illustrate pitfalls and problems, the methodology and results are discussed extensively, not just highlighting insights and learnings, but intentionally also pitfalls and dead ends.

1.3 Contribution to research on complex, social emotions

Research framed as providing results on 'the neural correlates of hate' raises the hope to help understand the development of dangerous dynamics on an inter-individual and broader societal scale, and is therefore also more likely to have societally-relevant implications than other research questions approached in the neurosciences. The unique contribution of this dissertation, besides the developed stimulus dataset and paradigm, is therefore a critical interrogation of how such endeavours can shape (or assert) how we view ourselves and others in society: Given that historically, neuroscience and psychology and related methodology is associated with reductionism and imprinted by a history of colonialism and now too situated and affected by neoliberal value-systems, neuroscientific studies are more likely to adopt a perspective that views hate to be within a person (or even their neurophysiology). This is likely to lead to biological essentialism rather than considering the effects of structural injustices and resulting accountabilities (on personal and societal level). Abiodun (2019) concisely illustrates the point: "By depicting of a man's hatred for his immigrant neighbor as a specified pattern of activation in fusiform face area and amygdala rather than an act of ignorance and hatred, we create a much more docile interpretation of the situation, which negates and justifies the potential violence of one human's emotions toward another." (Abiodun, 2019, p. 2). This shows how neuroscientific results -like other research output too- can be used by or even legitimise existent systems of power (Kokorikou et al., 2023). The current dissertation presents an interrogation of the research question with theoretical, empirical and reflective elements, which developed not in separation, but mutual and dynamic influence.

This thesis is structured in the following way:

After the introduction, the second chapter reviews relevant literature on theoretical models and frameworks of emotions, complex emotions, and hate in particular, which is then connected with existing, empirical neuroscientific and psychological research relevant to the study of hate. The

literature review includes bordering topics and emotional states such as contempt and dehumanization, because their relation has been debated, but also because there is not a lot of existent research on the neuroscience of hate yet. Ethical and methodological challenges in the empirical study of hate are outlined. The chapter also introduces the question what kind of research could or should be included in the research programme 'neuroscience of hate'.

The third chapter builds on this and focuses on epistemic considerations relevant to the study of hate: Philosophical accounts on hate specifically (Althoff, 2024; Kurt, 2023; Landweer, 2021a; Szanto, 2020) complemented by critical accounts on neuroscience and society by neuroscientists and psychiatrists (Heinz, 2023; Slaby & Choudhury, 2011) allow for an interrogation of the concept of hate and its meaning and function within broader discourse taking historic influences and power dynamics into account, not so much only to emphasise their importance, but echoing the argument of scholars that without it, research can be meaningless and/or harmful (Gershman, 2021; Roberts & Rollins, 2020; Rollins, 2021a).

The fourth chapter contains the extensive work developing a novel, emotional narrative stimuli database of 112 narratives, which were spoken in by voice actors and recorded. An accompanying experimental paradigm was developed and implemented in PsychoPy3 to acquire emotion rating data in two parts: **I)** elicited emotions assessed by a one-off multiple choice and free text input after participants heard each narrative for the first time, and **II)** perceived emotions, measured over the time course of a given narrative using a vertical slider for real time ratings. **III)** The participants' understanding of the target emotions using a free-text input. Comprising a resource for the research community, the dataset and paradigm are ready to be made available to other researchers in line with Open Science practices.

In the fifth chapter, the results of the behavioural study with N=66 participants are summarised, the variability and similarity of participant responses to the subset of 40 narratives are illustrated. The developed narratives: **I)** successfully elicited a wide range of emotions reported by the participants, including hate, anger, and shame, as well as co-occurrence in elicited, negative emotions. **II)** the interindividual and inter-narrative variability of the narratives is generally high. Intersubject correlations on the dynamic rating data reveal similarities across participants across the time course of a given narrative, yielding lists of narratives with most and least participant alignment. **III)** The free-text input, results show that many participants understood hate as deeper as dislike and associated it with heightened intensity and discomfort, and that 'contempt' was not understood by a number of participants. Learnings, also for potential future functional MRI studies with the same or similar stimuli and paradigm are discussed.

Chapter 6 is a personal reflection illustrates my experiences throughout the PhD, in the Innovative Training Network, Trinity and beyond academia, sharing insights from secondments, teaching and encounters in the community, which influenced my perspective on knowledge generation more generally.

Chapter 7 completes the dissertation with an overall discussion, outlining limitations, scope, potential harm, and recommendations for future research projects.

2 Literature Review

The following chapter is a literature review starting with the current state of research on the neural correlates of hate directly, followed by theoretical accounts on emotions in psychology, neuroscience and philosophy, first general theory followed by implications for the study of hate specifically. Then, definitions of hate are connected to theories and taxonomies of hate. As the existing state of research on neuroscience on hate is so sparse, but there are research results in connected areas studied in the social and affective neuroscience, the following section discusses research findings that are relevant to the present project. Ethical and methodological challenges are discussed. The chapter closes with clearly defining the research gap.

2.1 Experimental Studies directly on Neuroscience of Hate

An initial, frequently cited study was conducted by Zeki & Romaya (2008) who viewed hate as a "complex biological sentiment" and did not provide a restricted definition of types of hate but rather asked their participants to bring in photos of people they hated with the empirical stimuli then ranging from ex-partners over competitors at work to political figures, which were compared with images that the participants said they felt neutral towards. Zeki and Romaya's findings provide an initial account of potential brain regions involved, reporting increased activity in e.g. the medial frontal gyrus, right putamen, medial insula, and other regions when viewing the photo of a hated person. In addition, the authors reported that the level of hatred was linearly correlated with magnitude of activation in the right insula, premotor cortex and fronto-medial gyrus. The study had a small sample size and only volunteers who "experienced an intense enough hate for an individual" were recruited, which -without e.g. examples or a definition- potentially influencing the cohort who contacted the research group. The presented stimulus for the study (photo of the target of hate) also varied: 16 subjects chose someone personally known to them, an ex-lover or a competitor at work, while one person chose a political figure. The study, therefore, focused on hate towards individuals but without defining or demarcating of the type of hate they aimed to study. Theories and taxonomies of hate often describe different types of hate, highlighting the need to refer to theoretical frameworks and concepts clarifying which types of hate are studied, for instance in an empirical study.

Focussing on the impact rather than the experience of hate, (Pluta et al., 2023) studied the effects of hate speech (towards a specific group labelled in the study as '*foreigners/'Arabs'*) with a narrative pain empathy task in an fMRI setup in a homogenous, non-foreign identifying student sample (27/30 Polish -so people who are not generally targeted by this type of hate speech

themselves). Derogatory comments towards a specific group of people labelled as foreigners (‘*Arabs’*) were presented in written form and participants were asked to read the comments attentively and remember those. Measuring the brain activation changes in a subsequent pain empathy task, the authors found a decrease in activity in the right temporal parietal junction after exposure to derogatory comments. This effect tested in a short-term study was existent in the pain empathy task for the pain perceived in avatars of people whose identity aligns with the identity of the slurs, but also for avatars of those who the comments did not concern (privileged status group). The authors make the case that because the TPJ is associated with perspective taking, and hate exposure lowered the activity in this region, the effects of hate might be wide-reaching in terms of (dis-)engaging with others’ pain.

The examples of two empirical studies that more or less directly concern aspects of hate and related neuronal correlates illustrate that there are a lot of theoretical (e.g. level, assumptions, concepts) and experimental (operationalisation- and methodology-related) choices when approaching the empirical study of hate. In both of these studies, hate was more indirectly set up, by the included stimulus material. Seki et al allowed participants to decide whom they feel hate towards and bring photos in, leading to ‘hate-targets’ as different as ex-lovers and personally unknown politicians. In the study by Pluta et al, the ‘hate’ comments were selected by the authors based on hate speech reported in a national, Polish opinion poll from 2014 and comprised quite broad strokes towards ‘*immigrants and refugees’*. The control conditions also deserve attention: in Seki’s study, volunteers were asked to bring in photos of people they said they felt neutral towards, which is a difficult decision to make in itself (Grupe et al., 2018; Lee et al., 2008). In the operationalisation by Pluta et al (2023), the control condition was chosen to also represent negative commentary of different intensity, but rather than on ‘immigrants/refugees’ or another minority-group, the authors report the comments were on ‘economic and legal issues, as well as international and domestic politics’ -the authors provide the full list of translated comments on OSF[1], and while having limited knowledge on Polish references on international politics, some of the ‘neutral’ condition’s comments could be viewed by some as different forms of hate (e.g. “*The whole legal system of this country is designed to protect criminals, those "from a million and up". A 10 year trial, then a dismissal. A major achievement of 25 years of post communist democracy.”).*

[1] for reference, see https://osf.io/m9xz7/overview

2.2 Relevant Theory

This highlights the necessity of outlining the theoretical grounding and epistemic assumptions of a given study, which feed into different stages of the research process. Critiques like (Abend, 2017; Rollins, 2021a) argue that definitions and demarcations are often lacking in neuroscientific studies, which can pose an epistemological obstacle. To be clear on what type or aspect of hate is investigated in a given study (and crucially also being clear about what is not studied as 'hate') is particularly important in research that could be applied to or used in explanations for e.g. conflict and thereby has potential real-life consequences. In line with recent progress in the cognitive sciences, a better theoretical basis for research related to human behaviour is called for, and guides were proposed (see e.g. van Rooij & Baggio, 2021). To have a reference frame of theories, a short review follows on how (complex) emotions have been conceptualised in psychology and social and affective neuroscience, followed by the specific definitions, characterising features and theoretical accounts on hate.

Power relations are not an essential part in most of the discussed theory, and only in some of the empirical studies. At some points, power relations are referred to as existent, but not necessarily factor into many of the epistemic assumptions on emotionality. A number recent approaches have integrated unequal power distribution on the development and sustaining of hate (see (Althoff, 2024; Heinz, 2023; Kurt, 2023; Landweer, 2021a) which are discussed more extensively in the next chapter.

2.2.1 Emotion Theories

Broadly speaking, most scholars recognise emotions to have different parts, ranging from a subjective feeling, a physiological response, motor responses (like facial expressions), action tendencies and potentially different appraisals (Barrett et al., 2007; Scherer & Moors, 2019), offering different avenues through which emotions can be studied. Relatedly, studying emotions can be done approaching different aspects of processing, but also from different perspectives: on the level of experience (related to phenomenology) and on the interpretation side, studying, for instance, the processing, perception or recognition of emotions. Overarching work on clarifying how a specific study or theory approaches emotions has been proposed by e.g. (Adolphs, 2017). Thinking about empirically studying hate, it becomes apparent how some parts of the emotion process might be highly unrealistic to study in the laboratory, when the aim is to not elicit hate proper (but e.g. evoke a re-experience of already established hate-sentiment, as done in (Halperin et al., 2011))

Historically, and part of an ongoing debate, there are different views on emotions with consequences for the study of hate. Firstly, going back to Ekman & Friesen (1971a), newer account by Panksepp et al. (2017), a group of theories categorizing emotions by their basic expression and suggested clear, neuronal correlates that can be uncovered. A second string of theories, looking at the functions of emotions, associated goals and action tendencies (Adolphs & Andler, 2018; Keltner & Gross, 1999a), and a third group viewing emotions as constructed, based on some core affective elements (Barrett & Lida, 2024; Barrett & Russell, 2014).

Building on early theories of e.g. (Cannon, 1927; Schacter & Singer, 1962), a well known view conceptualised six basic emotions (anger, fear, surprise, sadness, happiness and disgust) as innate, automatic and stable across cultures as well as visible in facial expressions and related to a distinct physiology, and existent in other primates too (Ekman, 1992; Ekman & Friesen, 1971a), while more complex emotions were described to be more context-dependent and variable, and theorised to be made up of combinations of different basic emotions (Ekman & Cordaro, 2011). According to (Ekman 1992), basic emotions go in line with automatic appraisals, and have evolved to deal rapidly with interpersonal challenges efficiently, taking into account what worked well in the past (both of the species and the individual). There are different older and updated models with varying sets of emotions classified as 'basic' (Panksepp & Watt, 2011; Tracy & Randles, 2011), with the updated assumptions on demarcating criteria also include that there are distinct neuronal correlates for basic emotions and that basic emotions cannot be divided into more fundamental psychological parts (Lindquist et al., 2012), that emotions are or can be rapid in onset and brief in duration, and that they are associated with distinctive thoughts, memories and experiences and distinctive subjective experiences, and that the target of the emotion is unconstrained (so does not just apply to very specific set (quoted from and for a full account, see Ekman & Cordaro, 2011). Considering hate specifically, none of these models categorise hate as a basic emotion. Contempt, on the other hand, is included in some of the basic emotion lists. The rapid onset of hate is debated, which is related to an automaticity of basic emotions named by Ekman & colleges: while 'immediate hate' can occur, it might be more likely to linger rather than ebb off fast. The subjective experience of hate might differ significantly across and also within a person (see for the phenomenology on hate, for instance (Ferran, 2018; Salice, 2021), and while specific thought patterns are reported to accompany hate, and a relation to memories is thought to be existent, this is not sufficient for hate-classification as a basic emotion. Also, if hate can be deconstructed into other affective states is debated (see next subchapter).

Appraisal theories, another group of psychological theories focus on the importance of cognitive influences in the development of an emotion (for foundational work see (Arnold, 1960)), placing

those earlier in the emotion processing time line than e.g. Schachter (1964), for an overview see Moors (2009). Emphasising the adaptive characteristics of emotion development Ellsworth & Scherer (2002) state that emotions allow for flexibility in appraisal, offering different interpretation and ideally allow selecting the most suitable choice in a given situational, triggering setting (ref). In some theories, the emotional process is conceptualised as a two-step model, with an initial appraisal into 'positive, dangerous, irrelevant' and a second, more nuanced and capacity needing process for more complex emotionality (Lazarus, 1991). (Roseman & Smith, 2001) note that specific stimuli do not necessarily always lead to the same emotional response, and that various triggering factors can lead to the same emotion, and that this is in addition to interpersonal variety. Recent accounts build on research results in experimental psychology (e.g. about 'valence' as an important dimension in emotions, goal-directedness and approach and avoidance tendencies, agency) to clarify how, within the frameworks of appraisal theories, a specific appraisal leads to a physiological response (Scherer & Moors, 2019).

Rather than looking at basic emotions with physiological correlates as a starting point, functional theories of emotions propose that emotions are differentiated by their functionality ('what they do'), focussing on causal relations to behaviour and other cognitive states and components (Adolphs & Andler, 2018) and emphasise the social function of emotions. (Keltner & Gross, 1999a) highlight the change towards asking *why* humans have emotions rather than what they are, also viewing emotions as solving specific evolutionary or adaptive challenges. (Adolphs & Andler, 2018) further conceptualise emotions "as relational, that is, individuated by the web of causal relations they have to all other internal states, as well as to stimuli and behaviors" (Adolphs & Andler, 2018, p. 195). The effect on the situational and different levels of societal context on emotions and their expression is highlighted by (Parkinson et al., 2005). Keltner & Gross (1999b) argue that a functional view of emotions often favours certain empirical approaches, such as "studies that examine the consequences of emotion, both in terms of proximal effects on the social environment and long-term outcomes" (Keltner & Gross (1999b), p.477). This relates to the study of hate, because the effects of hate can be lingering and carry weight and can influence different people in a dynamic system, including, e.g. bystanders (Pabian et al., 2016). Also, related to the social functions of emotions, there can be normative pressure on the expression of hate due to social desirability, and also depending on who might be expressing it (see Althoff, 2024; Kurt, 2023).

Constructivist accounts view emotions as continuous rather than based on a discrete number of hard-wired emotions as the smallest psychological categories to break these affective phenomena into, e.g. as is the case in models of basic emotions. Switching the direction of

inquiry, rather than looking for the physiological basis of emotions, the theory of constructed emotions looks at the organisation of the brain in general and asks how within this system emotions develop (Barrett & Satpute, 2019). The theory integrates work e.g. by (Russell, 1980), who arranged emotions on two dimensions in a continuous space of affect (positive-negative) and arousal (calm-aroused) and approach avoidance mechanisms (previously studied e.g. by Adams et al. 2006), and proposes that there are core affects, but views emotions besides that as flexible, ambiguous and experience dependent (Barrett & Russell, 2014). Constructivist theories conceptualise emotions as one of many types of adaptive information processing, cite the insula and frontal areas (for the integrating prior experiences) as important to emotional processing (Barrett & Lida, 2024) and are in line with predictive coding models frequently used in neuroscience (see, for instance, Friston, 2005). A discrete neuronal correlate for a unique, isolated type of emotion is, according to Feldman-Barrett not aligned with the theory. With the complexity, number and characteristics of different hate-types and experiences described and how social experiences and narratives frequently seem to factor into its development, constructivist accounts are highly relevant to the study of hate. Often hate is thought to only appear after repeated other emotions occurred (which can be framed in a predictive coding manner of integrating experiences). The theory views the brain as making sense of incoming input, and emotions as a part of understanding and interacting the social reality, which gives room to viewing hate as a form of (formerly or depending on the view still) adaptive emotionality (for this argument, see also Saxe, 2019).

Recently, scholars have called for emotion theory convergence (see, for instance Lange et al., 2020; Lange & Zickfeld, 2021; Scherer, 2022), and interestingly, Dukes & Sander (2024) proposed that different views on emotions could combined, arguing that the different main strings of emotion theories actually focussed on different aspects of affective processing and, as he assumes that these processes are interconnected, proposes that the epistemic differences between the emotion theories can be mutually informing and can be read and taken into account, rather than having empirical studies approaching different aspects in an isolated way. This, too, is highly relevant to consider for studies on hate, as the expression, experience (target), recognition, exposure (witness) and processing of hate and societal consequences of hate certainly can be expected to be related and affect one another. Therefore, taking different epistemic and theoretical viewpoints and assumptions into account is particularly crucial with such a complicated emotional concept, that can be instrumentalised (explicitly or implicitly different persons in society e.g. to incite or condemn, but also as part of public discourse).

2.2.2 Definitions and Theories of hate

There are a multitude of conceptualisations and definitions of 'hate'. Often, the specific definitions are situated within a theoretical account and bigger frameworks on emotions, reflecting ontological assumptions about emotions, their origins, functionality, experience, or processing.

Definitions and characteristics

Hate has been described as a viscerally felt emotion, which goes in line with target-oriented, intense negative views, readiness to behave hatefully, intent to harm, and related changes to worldviews (Opotow & McClelland, 2007). Fischer et al. (2018) characterise hate as a state that comes with appraisals, the generalisation over the entirety of the hate target also see Salice (2021) and the goal to eliminate it, with a stability in the negativity of how a person or whole group is perceived and an inability to change that view. Sell et al also note that hate does not have constrained 'terminating conditions', Althoff (2024) views this differently and outlines that certain forms of hate can have clearly outlined factors leading to an end of hate, for instance oppression. Vendrell Ferran (2021) conceptualises hate as a unique state that cannot be broken down into other affective states, which is contrary to Sternberg (Sternberg, 2003) who proposed different types of hate to be made up of a combination of components, such as negation of intimacy or commitment. Salice (2021) notes that "hatred presupposes the attribution of moral agency to its target" (Salice, 2021, p. 618), which differentiates such hatred *proper* from '*hatred*' for e.g. inanimate objects, and highlights the importance of a moral aspect, also found empirically by Pretus et al. (2018). Perceived helplessness or powerlessness were named as a possible factor in the development of hate (Salice, 2021; Sternberg, 2003), but questioned to be a necessary condition for hate to develop (rather than more a feeling of having been offended or threatened (see e.g. Fitness & Fletcher, 1993; Halperin, 2008). Vendrell Ferran (2021) illustrates this with an example of a xenophobe who expresses hate towards foreigners, but does not have to feel powerless in this behaviour. Hate had been defined as intense dislike (Brown, 2017), recent studies found, however, when the experience of hate was compared to the experience of other affective states such as dislike, disgust or contempt, that there was tentative evidence for hate to be qualitatively not just quantitatively different from other affective experiences (Fischer & Giner-Sorolla, 2016; Martínez et al., 2022; Pretus et al., 2018).

Emotion or Sentiment

One aspect highly debated to begin with and intertwined with assumptions on 'hate' is the question if hate is to be considered and emotion or a sentiment or possible to occur as both/either. Referring to duration, emotions usually are characterised as short, reactive incidents,

while sentiments are seen as longer lasting affective attitudes (Deonna & Teroni, 2012). Contrary to using the duration as the essential, differentiating aspect, Vendrell Ferran (2022) argues that an intentional structure (distinct affective intentionality) is what distinguishes emotions and sentiments, and draws on axiology. Another approach by Giner-Sorolla & Fischer (2017) proposes that hate and contempt can occur as both an emotion e.g. as 'immediate hate' to be one of multiple types of hate (Halperin, 2008), with Fischer et al. (2018) noting that the repeated occurrence of the emotion of hate making sentiment development more likely, and in turn an existing hate sentiment facilitating an intense hate episode more likely. Notably, the phrasing here is careful rather than mechanistic (which would mean e.g. after X exposure times, an experience would turn into hate-sentiment), allowing for other influences e.g. social variables and context to come in too.

Specific theories on hate

One theoretical view to studying emotions, developed from an evolutionary approach, have addressed emotions by analysing their function as motivated behaviour towards procreation and survival. In a recent theory about hate, Sell et al. (2021) proposed that hate is an emotional mechanism that evolved to deal with individuals in the social environment who have a negative effect on one's own social status and reproductive chances. In this theory, hate is thought to have a structuring and reorienting effect on perception, attention and cognition: for instance, hate might lead to decreased empathy towards the target, or by weighting negative consequences to the hate-target as benefits to the person hating, even if those might be costly to themselves too. The authors outline specific action strategies associated with the experience of hatred: individuals (or their standing in the social group) are sought to be '*neutralised*' which, according to the authors, can come in different forms ranging from spreading of rumours to directly aggressive actions (to be selected depending on situational factors). Sell and colleagues distinguish hate from other related emotional systems such as fear or anger, highlighting that hate has unique situational cues that trigger hate arising and, in comparison to anger, does not have defined conditions evoking an end to the emotion. The theory proposes that other affective states such as anger and envy, fear and disgust are used as sources to calculate which individuals might be costly. Based on the theory, testable predictions can be made, such as "if someone hates you, they will lie about you, look for costs to put on you, and fantasize about harming you" (Sell et al., 2021, p. 171).

The philosopher Kolnai (2003) views hate as a mode of aversion that shares commonalities with other aversion-related affective states such as fear or disgust, but notes that while fear or disgust are related to distinct qualities of the object, hate is different in that "we feel hate towards what

threatens and harms us and towards what we identify as evil, but hatred is neither a reaction to them nor discloses them" as summarised by Ferran (2018) in a comparative review.

Landweer (2021), on the other hand takes into account societal power dynamics to distinguish between hate and contempt connecting her analysis to normative associations (discursive appropriateness in the public sphere) of those two emotions, noting that contempt usually receives less attention, even though she proposes contempt to be not less dangerous of an emotion than hate. Landweer makes the case that while the two emotions share similarities, e.g. a tendency to seek distance, contempt usually is felt and expressed from a position of power and goes in line with ignorance and devaluation, in extremer cases: dehumanization. Hate, she proposes, in contrast is usually experienced from a position of felt social inferiority, humiliation/helplessness and exclusion or limitation of power and discrimination by the hated. Landweer notes that "Hate can mobilize powers to overcome the situation experienced as unbearable, the powerless experiences themselves in hating a bit more capable to act" (my translation, Landweer, 2021b). Landweer's account provides additional depth to studying such moral and justice-related emotions and highlights the importance of connecting theory of emotions to societal dynamics those are studied in, and related epistemic questions (for more, see Chapter 3). Opotow & McClelland (2020) made a case of studying also more frequently occurring forms of hate and not only the most extreme cases.

In a recent theoretical approach on hate, (Ferran, 2021) explicates that "in hate we respond to a belittlement of our feeling of self-worth with an extreme form of self-affirmation which consists in regarding the other as evil and as deserving of being annihilated" (Ferran, 2021, p. 409), and describes a characteristic of hate to be the generalisation over the whole person or group. Vendrell-Ferran proposes a taxonomy, with two variables that are structuring the experience of hate, namely if the target is replaceable (individual or group hate) and if the focus of concern is based on a real threat or not, yielding 4 different types of hate. This model provides a structure in empirical studies to specify the type of hate and to establish potential generalisations as well as to make limitations clear. There are philosophical accounts arguing that hate is associated with the feeling of helplessness e.g. Salice (2021), but following Vendrell-Ferran hate does not necessitate the subjective perception of helplessness. Evidence that helplessness is not necessary for the development of hate in the area of hate crimes show that "hate-motivated violence is used to sustain the privilege of the dominant group, and to police the boundaries between groups by reminding the Other of his/her "place."" (Perry, 2002).

A moral aspect was highlighted as important in theoretical approaches and in empirical, psychological accounts for hate to occur. Relatedly, Vendrell-Ferran argues that besides e.g. physical threat, hate can develop when a person feels their norms or values are attacked. Vendrell-Ferran posits that hate is one single, distinct sentiment, and views hate as different -in experience and consequence- to other emotions, sentiments, or combinations thereof (Vendrell Ferran, 2021). Testing if hate can or cannot be decomposed into other affective states is a research objective that researchers have recently begun to investigate. Vendrell-Ferran argues that when hate is experienced in a specific instance, it is often 'accompanied' by other affective states (e.g. anger or fear) that have previously contributed to the development of the hate. This is congruent with Sell et al's theory, who also raise that anger has different goals than hate (often to flag unjust treatment and negotiate a solution). Similarly to Sell et al, Vendrell-Ferran views the co-occurrence as a *reactivation* of those states when confronted with the target of hate, and does not see the fact that related affective states might come up again as evidence that hate is a composition of other states.

Another theoretical perspective on hate, Sternberg (2003), proposes that hate can be characterized by a triangular model depending on the occurrence of different components of hate: negation of intimacy, commitment and passion. These different components are target-directed and, according to the authors, go in line with specific emotions, for instance, negation of intimacy is related to repulsion and disgust. Through different combinations of the components, first-person experiences of hate are categorised into 7 types of hate. Following Sternberg, commitment to the emotion is one of the components relevant for a subset of hate types to develop and persist (also noted by Szanto, (2020)) a component he associates with contempt too (see for comparison also Fischer & Giner-Sorolla (2016)). Crucially, following Sternberg, an active commitment is not viewed as necessary for all types of hate, which aligns with other scholars responding to a broader discussion on the question if hate is to be defined as an emotion (so immediately occurring) or rather a longer, lingering sentiment with the suggestion that both can occur (A. Fischer et al., 2018). Sternberg views hate to be decomposable into other affective states. Sternberg's theory on hate relates to a prior theory of love with different but aligning components, including commitment and passion. While the authors note that 'hate is neither the opposite of love nor the absence of love', the link to love is established by stating that 'hate is very closely related psychologically to love'. This has been contested by Althoff (2024), who critiqued that the work of Sternberg & Sternberg on hate, stating it promotes the association with love 'love seeks closeness, whereas hate seeks distance and disengagement' (Althoff, 2024, p. 56), which illustrates common narrative of hate necessarily being bad and removed from norms, as

Althoff argues. He refers to Sara Ahmed's Economies of Happiness as a bigger framework, and highlights that a condemnation of hate is often used to assert the status quo, while 'hate as a response to harm can be part of anti-racist, abolitionist, feminist, and queer struggles and provide valuable epistemic effects grounded in theory rather than conspiracies' (Althoff).

Narratives has been noted as important aspects for the development of hate have been noted by e.g. by Cervone et al. (2021) or Sternberg (2018). According to the authors, narrative aid the depiction of the hate target and facilitate that hate spreads socially. Sternberg argues in his updated account (2018) that there are facilitating factors for hate to spread rapidly, which can be instrumentalized e.g. through narratives by charismatic leaders (for instance see Sternberg, 2018 noting 'obedience to authority' p. 3, or 'amplification of arousal' p. 5 as factors). Psychological theory about social and observational learning e.g. see Bandura (1989), which can provide reasoning for hate to not only occur with direct, personal threats but also by learning about a hate-target from others via narratives about them.

2.3 Related Social Psychology and Neuroscience Results

There is significant prior knowledge about the brain activation patterns of relevant affective and social-cognitive states. Reviewing this is beneficial with the goal to link theory with existing research results, to use in definition, specification of research question or the design and operationalisation of concrete studies. There are more neuroscientific results on anger, fear and (moral) disgust (Chapman et al., 2009; Gan et al., 2024), which are emotions that frequently (co-)occur with hate (for a general overview on the neuroscience of emotions see Barrett & Satpute (2019); LeDoux (2012)). As Saxe (2019) views hate as an extension to adaptive behaviour originating in in- and outgroup dynamics, turning to essential concepts in Social Psychology and Neuroscience can add perspective and insights: In- and outgroup categorisations have been shown to correlate with biases e.g. in-group favouritism and have effects on emotions, cognition and behaviour: group membership was shown to affect trust (Hughes et al., 2017) and empathy extended towards others (Bruneau et al., 2017), as well as emotion recognition of other people (Reyes et al., 2018). Complementary to this, there is existent knowledge about neuronal correlates of numbing (Slovic, 2007; Ye et al., 2020), dehumanization (Bruneau et al., 2018; Jack et al., 2013), and extremism (Hamid et al., 2019; Pretus et al., 2019a).

There is existing research on numbing, Ye et al. (2020), for instance, studied how people react to the suffering of one individual compared to the suffering of many people, and found the medial prefrontal Cortex (mPFC), an area frequently associated with value-based decisions (Gläscher et

al., 2009), and the core empathy network to be less engaged for many people compared to a single person, potentially indicating indifference or numbness. Genevsky et al., (2013) looked at why there are charitable giving preferences when individuals (beneficiaries of donation) are 'known', and found the nucleus accumbens to be involved, connecting the effect that authors call 'identifiable victim effect' to an added affective component, which promotes donation.

Dehumanization, which has been defined in experimental psychology as "perceiving a person or group as lacking humanness by degree" (Vaes et al., 2021, p. 28) has been associated with hate. Simon & Gutsell (2021) found that the degree of dehumanization predicted the level of empathy towards and neural mirroring of outgroup members. In a neuroimaging study, Bruneau et al. (2018) reported neuronal correlates for dehumanization (regions in the left inferior parietal cortex and left inferior frontal cortex) and showed that dehumanization is different from other, related affective states such as like-dislike, for which activation in a region in the posterior cingulate cortex was indicative (for further discussion also see Harris & Fiske, 2009). Mendez (2023b) proposed mechanisms for two different types of dehumanization: animalistic (due to heightened inhibition of empathy and with relating to the Inferior frontal gyrus (IFG)) and mechanistic dehumanization (not viewing target at human anymore).

As hate often gets named as a driving factor in the development of extremism, looking at studies with extremist samples might give insights of relevance. There are a small number of neuroimaging studies conducted on different groups of extremists: Hamid et al. (2019) focussed on the development and processing on so-called 'sacred values', which are defined as moral values that stand above material trade-offs in comparison to other values. Their results show that when extremist participants think about sacred values, cognitive control areas (such as bilateral dlPFC, inferior frontal gyrus, and parietal cortex) are deactivated, which does not happen for non-sacred values. In another sample of people who are willing to fight or die for a cause (in the study shortened as 'WFD'). Pretus et al. (2019) report that "WFD more prominently relies on brain areas typically associated with subjective value (vmPFC) rather than integration of material costs (dlPFC) during decision-making" (Pretus et al., 2019 p. 569). Research like this can have meaningful implication for policy, also e.g. in conflict-affected societies.

Coming at the topic of hate from a psychiatric clinician view, Mendez, (2023a) wrote a viewpoint piece on hate building on his dual-model of dehumanization (Mendez, 2023b). He defines hate as "intense dislike that encourages the elimination of others, involves dehumanization, or the denial of human qualities to others"(Mendez, 2023a, p. 262) and associates neuropsychological findings to the study of hate. Mendez hypothesises the inferior frontal cortex (IFC) to be involved in the

mediation of dehumanization and empathy reduction towards hate targets -with higher activity in the IFC thought to lead to higher disgust and devaluation of the hate target. This is a theory, which is not yet supported by empirical evidence.

2.4 Challenges to the Neuroscientific Study on Hate directly

There is a difference between studying a broad range of complex emotions and designing a study approaching research questions relating to hate specifically, in terms of potential discomfort of participants, epistemic assumptions and impact and methodology.

When a study focusses on hate, contempt or other challenging and moral emotions, participant discomfort or even distress have to be approached additional care, and potentially triggering experiences are of utmost importance to consider and plan for. Weighting stimuli numbers, including positive stimuli and rest phases or having a distress protocols and comprehensive information and debrief are aspects that can mitigate distress, but certainly there are ethical concerns when confronting people with hate or negative emotions in any experimental setup.

Looking at grasping the concept, it has been suggested that hate is often colloquially used as an umbrella term for many different emotional phenomena (see Brudholm, 2020), which can vary widely (for a thorough discussion see Chapter 3). Therefore, not properly defining and demarcating the object of inquiry risks leaving space for misinterpretation or over-generalisation of aspects that were not actually studied, especially considering the credibility bias (over-credibility) of neuroscientific results and images, see Weisberg et al. (2015) or Meloni (2011).

Additionally, being clear about a selected theoretical framework (e.g. view on emotions more generally) and assumptions built into the stimuli and operationalisation is crucial to meaningful research. Recognising that the laboratory context conveys scientific authority also means that e.g. consequences need to be anticipated: any set of shown stimuli could, for instance, affect participants in ways that were not intended. Even small operationalisation features of the paradigm could therefore have an impact on participants, for instance in terms of pathologisation of emotions, further normalisation or silencing of certain types of hate present in public discourse, or undesired amplification of stereotypes. Unintended consequences should, whenever possible, be anticipated and planned for or mitigated (Pearlman, 2023).

Methodologically, when a psychological survey was conducted with a convenience sample of students in a western, industrialised country, a considerable part of the participants report that they have never experienced hate (Aumer et al., 2015), which adds to the point that such a

selected sample poses for external validity (Henrich et al., 2010). Social desirability is important to consider in studies about hate (for a longer discussion, see Methods chapter).

Looking at the history of the psychological sciences, the disciplines development embedded in the development of neoliberal societies, with valued associated with individualism and self-reliance (meritocracy), and individual psychology has frequently been critiqued for searching the causes for broader issues in individual people (Broer & Pickersgill, 2015; Goudarzi et al., 2021; Rose, 1998), and more recently, scholars have pointed towards the neurosciences feeding into reasserting similar views (Pitts-Taylor, 2010 and Chapter 3). In functional neuroimaging studies, participants are usually shown stimuli to prompt a reaction, which then can be recorded. Usually, participants are tested individually in a laboratory settings, e.g. while lying in an MRI scanner, which is necessarily a different setting than the embedded, social situations, in which moral emotions mostly happen, an individualisation in the testing method that might implicitly also affect how we think about emotions. More technically-oriented, functional MRI specifically is not a direct measure of neuronal and synaptic function (Ramsey et al., 2010). The setup and operationalisation of the experiments (Klapwijk et al., 2021), as well as the subsequent flexibility in analysis pipelines of brain data (e.g. described by Poldrack et al., 2017) has been shown to significantly affect the results of neuroimaging results (for an example of the variability of analyses of a single dataset by many teams see (Botvinik-Nezer et al., 2020).

There further are general methodological challenges in affective neuroscience when aiming at studying the elicitation and processing of emotions. There is high variability in emotion vocabulary from person to person, and different abilities to differentiate emotions were shown to affect empathy levels (Erbas et al., 2016) and other factors have an influence on if and which emotions are reported. Feeling a varied range of different emotions (e.g. if participants are asked to imagine themselves in a given situation) is more taxing than other experimental tasks, especially when there are many changes in intensity and emotion category (Eckart et al., 2023).

The choice of data analysis methodology has implications on task and paradigm design, and can also pose constraints on the type of stimuli to be able to obtain useful results. If one wants to use an event-related fMRI paradigm (e.g. with a General Linear Model, see Beckmann et al. (2003), for instance with already predefined regions of interest based on previous studies), stimuli tend to be shorter in total, and need to be more comparable. Intersubject Correlation and other methods, on the other hand, are less constrained (also regarding statistical assumptions that need to be fulfilled) and open up new possibilities, but the number of data points generally has to

be higher, as the method is intended to reveal patterns of similarity across participants and time course (Nastase et al., 2019).

When using narratives in a scanner environment, which has become more common when studying complex emotions moving away from the previously dominating use of facial expressions (Jääskeläinen et al., 2021; Morgenroth et al., 2023; Saarimäki, 2021; Willems et al., 2020), the emotional intensity of negative stimuli can be high, especially in studies with a high number or an extended length of narratives. In a recent empirical study employing fMRI, Saarimäki et al. (2025) used of a wide range of movie clips (including positive and neutral ones) to study differences in perceived vs felt emotions. Some of the movie clips include quite harsh scenes, e.g. a child's death due to negligence and addiction of caregivers from the movie 'Trainspotting'. If one would imagine employing a whole array of similarly intense, negative movie clips, e.g. in a study focussing on hate vs e.g. fear only, distress would certainly have to be into account (and likely lead to discounting or rethinking the endeavour).

2.5 Research Gap

Advancements in our knowledge and understanding about neuronal processes related to specific aspects of hate could have societally-relevant implications. Existing research and progress in social and affective neuroscience and theoretical accounts on hate are helpful, but considering the sensitivity of the topic, and that power relations necessarily play into any research project on hate, this literature review has revealed the need for a more thorough analysis of epistemic considerations, ethical implications, and an interrogation of often implicit (at time paradigmatic) assumptions, which is the goal of the upcoming chapter. Working towards answering the main research question, if societally relevant phenomena like *hate* be studied meaningfully and ethically with neuroscientific methodology, an attempt of operationalising for a concrete research question on hate is outlined in the subsequent chapter, outlining complexity and pitfalls, empirical results from a study using the paradigm were analysed and learnings acquired during the process shared. Limitations and future directions and humble recommendations for this line of research are discussed at the end of the thesis.

3 Epistemic considerations

This account on the neuroscientific inquiry into complex emotions was informed (successively, over the years), by affect theory, feminist inquiry and meta science and philosophy of science. Critical neuroscience as proposed by Slaby & Choudhury (2011) as an angle is roughly adopted, to facilitate the reflection and questioning of paradigmatic assumptions of our field in general and within interdisciplinary research projects. The research builds on current work on the phenomenology of emotions, highlighting the situatedness of emotions and the epistemic value/dimension (Heinz, 2023; Salice, 2021; Szanto & Slaby, 2020; Von Maur, 2022) and combines this with the theory of constructed emotions (Barrett & Lida, 2024) as the framework to view emotions as intances of social information processing in the brain. Philosophical accounts on hate specifically (Althoff, 2024; Kurt, 2023; Landweer, 2021a) allow for interrogation of the concept itself and in broader discourse and potential consequences of a bottom-up/data-driven approach (Gershman, 2021) to studying neuroscientific correlates of hate. With this, I aim to expand the focus often present in psychology and neuroscience, highlighting influencing factors on historic, environmental and society level; not so much only to emphasise their importance, but echoing the argument of scholars that without taking this into account, epistemic fallacies can occur more frequently, rendering the research not applicable to society or potentially even harmful.

Remark on derogatory and dehumanizing language cited: the following chapter includes citations that contain dehumanizing language by the author. I am distancing myself from such accounts. Any references made in the chapter on work of those authors does not constitute endorsement of those ideas. The inclusion of a limited number of quotes was necessary to illustrate problematic aspects and historic influences.

3.1 Empirical studies to illustrate

Thinking through the sparse existing literature on the neuroscience of hate and the broad knowledge on neuronal correlates of basic and complex emotions revealed the need to draw on epistemology, sociology and critical neuroscience more thoroughly, which is the aim of this chapter.

Recent studies on emotions have been moving beyond basic emotions and provide a wealth of data about emotions and their processing in the brain. Many also employ new data analysis approaches (such as Intersubject Correlation, see, for instance, Nummenmaa & Saarimäki, 2019; Saarimäki et al., 2022, 2025; Schiller et al., 2024). In specific setups e.g. using movie clips or short

stories, wide arrays of emotions are studied, including positive, negative, complex and basic emotions. Often, stimuli are pre-selected and were empirically found, either in prior studies or in a pilot part of the given experiment, to elicit either emotions themselves or to a perception or recognition response (Saarimäki, 2021). Many of these projects adopt a more data- or algorithm-driven approach (e.g. by emotion decoding) studying patterns of neuronal activity that was recorded (e.g. while listening to films or narratives Jääskeläinen et al., 2021)).

One of these studies includes complex emotions such as Contempt, Despair (*check hatred* longer narratives). As an example for despair, a narrative goes: "*You are going to be the master of ceremony in the wedding of your best friend tomorrow. You ordered a dress online and it arrived only today. When you try on the dress, you notice it is too small. You only have time until tomorrow and you are sure you cannot find another dress.*" (Saarimäki et al., 2018, Supplementary Data, Table S1, p. 11). Narratives are influenced by references and social conventions: If as a person, I might have experienced '*despair*' that was related to poverty or serious conditions of illness or death of loved ones, I might not categorise a dress that does not fit as 'despair' at all. Alternatively, I could just have very 'laissez faire' friends, or I might not have been as embedded to pressure relating specific clothing and weddings or I might be a person who has many alternative dresses. Therefore, I might not react in the way (the research team expects) many participants might react, I might not be affected that way. Studying emotions (incl. recognising emotions) is intimately connected to social meaning making, and there are essential/inbuilt challenges to developing paradigms in affective neuroscience:

First, operationalisation necessitates a selection, so the scope of the experiment is biased by the characteristics (or set) of stimuli available in the first place, even in studies that include a high number of stimuli, there are constraints. When stimuli are selected or developed anew by researchers, stimuli often aim at referring to what the assumed sample might be familiar with or is able to relate to -what comes up in conversations, is 'salonfähig' (socially acceptable). If one aims at a certain level of understanding, resonance, maybe even identification, situating or matching narrative stimuli in similar environments makes sense. Relatedly, Szanto & Slaby (2020) argue that "the affective is always political, since emotions are not just subjective affairs but are governed by "feeling rules" (Hochschild 1983) and are modulated by shared or conflicting values" (Szanto & Slaby, 2020, p. 1).

On a practical dimension, such a data driven approach also frequently strips away complexity or diversity, hoping for a more familiarity/resonance. Combined with the common empirical research standard of aiming for more control within a given experiment, this can and has led to the

(implicit or explicit) exclusion of social identity information or more complicated power relations. This can be challenging, because emotions, especially social and moral emotions carry meaning and are closely related to values and power. As researchers too are embedded in their own social environment, they might be likely to (un-)consciously draw on what they know or believe others to know when writing or selecting stimuli. Therefore, there necessarily are inbuilt assumptions in such stimuli (e.g. that as a bridesmaid, its of utmost importance that you have the appropriate dress to the degree of *despair*). The above mentioned studies likely were not designed to tackle specific, single emotions and the research questions are more about identifying affective networks in the brain. Barrett & Satpute, (2019), argue more generally that "What we learn (or fail to learn) about emotion in any experiment is determined by how we define emotions in the first place" (Barrett & Satpute, 2019, p. 13).

In the few studies directly targeting the psychology or neuroscience of hate, the boundaries of what is included or studied in one emotion category can be widely different from study to study (for hate specifically sometimes e.g. ex-partners or a personally unknown celebrity as in Zeki & Romaya (2008), other times a different group, who are more likely pose a real-life threat). Having hate or other emotion labels *defined* by empirical observation of participant self-report can pose an epistemic challenge, as there still is a biased set of stimuli options to begin with.

There are different conceptualisations of emotions in general, and it is beyond the scope of this chapter to review them all, but this chapter outlines the epistemic framework for the present project. In an additional step, some historic and societal influences on 1) how emotions are understood, and 2) influences of those systems on research and academia more generally will be discussed, as both are proposed to influence research and the paradigmatic and operationalisation-related assumptions in studies on complex emotions. These epistemic views are broadly relevant, but also specifically relevant to hate, illustrated at the end of the subchapter. The chapter continues by highlighting recent work in Critical Neuroscience as one way forward and closes with an attempt of explicating some of our own assumptions in the present project.

3.2 Emotions as meaning making: Epistemic value of emotions

To start, as reviewed recently by Harris (2025), it is beneficial to consider, that with social psychology (and social neuroscience), there are challenges stemming from the inherent situation, that regarding these research questions, humans are thinking about themselves and others, while also being embedded in their respective contexts and social world with prior experiences and influences, which they are exposed to shape (and are able to share to differing degrees).

Barrett & Satpute (2019) point out that emotional labels are not 'discovered' but rather 'stipulated', so are 'prescriptions', outlining that the initial framework is set up by the researchers, which then determines questions, operationalisations and subsequent interpretation. The authors also question the notion that 'emotions' are natural categories, developing the critique that "Ultimately, this approach is revealing that emotional events are constructed by domain general processes, meaning that the category of emotion is not a natural kind [57], just as emotion categories themselves are not natural kinds [58]" (Barrett & Satpute, 2019, p. 13). Following the authors constructivist view of how and to which end emotions arise and are processed in the brain, the authors proposed to view emotional labels as predictions using core affect and prior experience as information, rather than being automatic reactions as such.

Emotions have been an object of interest for a long time, early philosophers like Aristotle or Plato theorised about emotions, and throughout the centuries, different approaches to emotions have been published (for an overview see). While a thorough review of the history of emotion theory development and research is beyond the scope for the present thesis, I have selected three aspects to illustrate epistemic dimensions and differing views:

Often when turning towards historic accounts of emotions, and negative emotions specifically, scholars refer to Aristotle, and such fundamental work had wide reaching impact on later conceptualisation. Aristotle, according to Kurt, describes functional virtues (e.g. justice), and different affect-types that can be hindering. Despite recognising that negative affective states happen, there seems to be a hierarchisation or categorisation of useful emotions and hindering other affects, with anger often being associated with people who are hindered from receiving what they need (e.g. poor), particularly towards those who restricted access and look down on them (see also Kurt, 2023). Aristotle considered hate in comparison to anger and other emotions (for more on the ongoing debate on interpretation and reading see Duff (2025)), with hate being described to be longer lasting, anger is thought to have an expiry date and focused on individuals, with hate mostly on groups of people like thieves, and hate is thought to be focussed on destruction of the target (A. H. Fischer, 2024a). Aristotle, according to Fischer, also included contempt, but not as an emotion, rather as an attitude. In times of Aristotle, reason and the ability of it, was not attributed to everyone, but only to those who are included in the civic world (highlighted by Kurt (2023)). Anger and hate were seen as affects that need to be controlled (otherwise destructive to the virtuous civilisation), and, for instance, later included in the 7 sins in Christianity, according to Kurt (2023). Often presented as advancing science and reason for betterment, rationale and secularity, the enlightenment was European-centric, and a time of

colonialisation (Rollins, 2021). Ideas of mind-body duality were introduced by Descartes, and had an effect on theorising and thinking about neural processing.

In a recent book, entitled 'The colonised brain and the paths to revolt' (my translation, see Heinz, (2023)) Professor Andreas Heinz lays out a historic account on how colonialisation has affected the way researchers view(ed) and studied the brain across the last centuries (which informed Figure 2). He, for instance, outlines how historically, emotions have often been instrumentalised or disregarded: People who were to be colonised or not complying to norms were labelled as '*primitive'/'savage' or 'insane'* when showing resistance to oppression. Darwin is often cited in the study and history of emotions, and the following quote (notably dehumanizing and racist), is illustrative of how intertwined these emotion views are with power and injustice: Darwin dedicated a chapter to anger and hatred in his book entitled 'Expression of the Emotions in Humans and Animals' (see Darwin (1872), Chapter X, p 239-253). The expression of the emotions in man and animals. London: Murray.) and proposes that 'if we have suffered or expect to suffer some wilful injury from a man, or if he is in any way offensive to us, we dislike him; and dislike easily rises into hatred, after recognising that hatred might not be clearly expressed when moderate, he goes on proposing a distinction: "if the offending person be quite insignificant, we experience merely disdain or contempt. If, on the other hand, he is all-powerful, then hatred passes into terror, as when a slave thinks about a cruel master, or a savage about a bloodthirsty malignant deity" (Darwin, 1872, p. 239). This also illustrates how frequently negative emotions such as anger or fear are attributed as characteristic of groups of people -here enslaved and colonized people. Analysing the history of the neuroscientific and psy-disciplines is essential to Professor Oliver Rollins work (Rollins, 2021a)

Historically, another question was to which level emotions are dependent on physiological processes. William James (James Lange Theory) read Darwin's study on emotions, and viewed emotions to happen after a bodily reaction (Cannon, 1927).

Ekman, who had read and likely was influenced by Darwin, famously studied the universality of emotions using photographs of (western) emotional facial expressions with predetermined emotion label options to people around the world, also to people e.g. on remote islands, which was criticised. The approach and universality of emotions were criticised by (Barrett et al., 2011; Mesquita, 2022), and shows an assumption of 'western' epistemology (Mignolo, (2009) referred to this as 'zero point epistemology') and an influence of colonial thinking in psychological research on emotions. Relying on critique by Barrett and Mesquita, Cottingham (2024) critiques aspects of Ekmans (and other research groups') approaches that "Methodological protocols that give

subjects predetermined emotion terms to choose from, far from showing the universality of basic emotions, can indicate how researchers, perhaps unintentionally, bring their own cultural and social experiences into the research enterprise, even when trying to study phenomena supposedly untouched by culture" (Cottingham, 2024, p. 6).

Many examples serve as an illustration of historic and more recent scientific racism that were extremely harmful on the one hand, and different studies, which show different consequences of the medicalisation and individualisation of structural injustice. The Tuskegee Syphilis Study is an infamous example of racism in medical research: in 1932, black American men were recruited into a study, including a high number of men infected with Syphilis, with reports (papers) published in fixed intervals (see Brandt, (1978). The study ran until 1972, and was only stopped because national press revealed details: Even though penicillin was available as a cure for Syphilis by the early 50ies, the participants did not get treatment, on the contrary, according to Brandt, (1978) the U.S. Public Health Service obstructed participants getting treatment, and as late as 1969, the Centre for Disease Control approved a further continuation of the study. Related to neuroscience specifically and situated in similar times and geographic context, (Rollins, Oliver, 2021), in a recent talk, drew attention to a letter to the editor of the renown journal JAMA published in the in 1967 entitled 'Role of Brain Disease in Riots and Urban Violence' (Mark et al., 1967), which contained an racist associations (with many of the people on the streets being African Americans), medicalisation and delegitimization of the causes of the riots with oppression clearly apparent. Racism and has also been shown to obstruct access to healthcare and related resource allocation (which is beyond the scope of this thesis, but is well documented elsewhere, for an early case study in which the human rights of an indigenous woman in Australia were neglected, see (Lowe et al., 1995).

Looking at the European Context, the atrocities committed against millions of Jewish people, and other groups of people who were persecuted by Nazis Germany during the Holocaust and the time leading up to it have to be noted (this is a vast topic that is beyond the scope of this thesis, Heinz, (2023) provides an in-depth review and discussion of the historic context. There also were forced sterilisations of mixed-race African German and Vietnamese German children and adolescents which were prepared by the Nazis from 1933 onwards (see Heinz (2023) p. 38 and Weindling (2022)) and killings that were perpetrated in medical and psychiatric institutions, and medical and twin trials in concentration camps. Research based on Nazi-Ideology and Eugenics continued after Germany was liberated (e.g. a Eugenicist got the first post-war chair of genetics in Frankfurt in 1951, see e.g. Müller-Hill (1999)). Psychological research on proclaimed (false) differences in IQ between people in different countries was conducted and published until

recently, for instance by the highly criticised Professor Richard Lynn continued until just a few years ago (see e.g. Thomas (2025), who outline direct links to UK policy in the 60ies and 70ies, illustrating real-life implications).

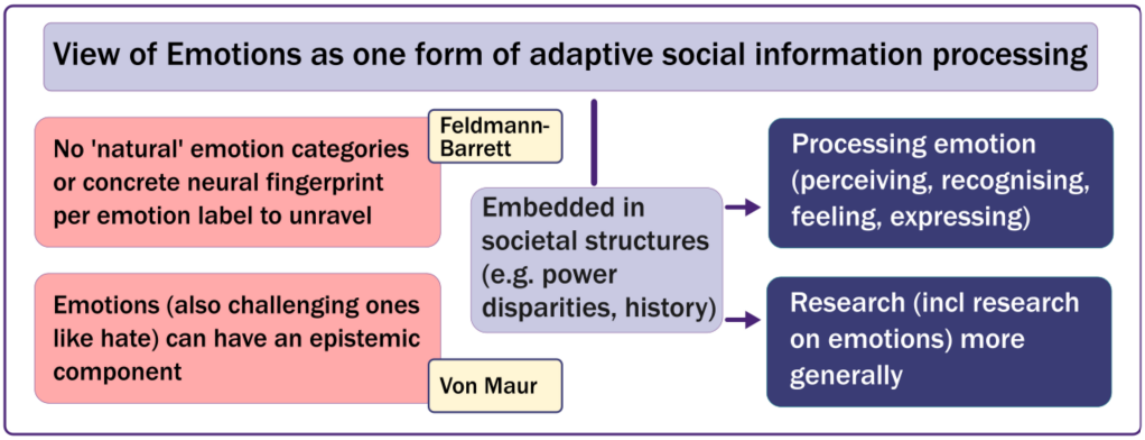
Against medicalising and racist currents in neuroscience and psychology, Frantz Fanon, a Psychiatrist (in his work Fanon et al., (1963)) and Ignacio Martín-Baró (work on liberation psychology in San Salvador and by others in South America, see Martín-Baró (1996)) centred systemic issues and psychological consequences of oppression in their influential work from the 70ies onwards.

Back to the current study of emotions, in action-oriented and functional approaches, researchers in psychological disciplines have argued that emotions evolved and function to initiate and/or sustain action (Adolphs & Andler, 2018; Sell et al., 2021 -Fischer). This does not mean they always do or that all emotions are adaptive in every scenario, emotions might have been goal-directed in the past, but are not functional to reach goals anymore (see Vendrell Ferran (2021) on when Hate can be leading to desired goal, even if, according to her, never being morally-justified)

Existing work in philosophy, that focusses on 'political emotions' at times conceptualise emotions as means to attach meaning to abstract, collective goals e.g. discussed by Szanto & Slaby (2020), who focus on 'affective intentionality' in regard to political emotions specifically, as an 'evaluative world-orientation of emotions, their capacity to disclose the world in light of specific concerns' (Szanto & Slaby, 2020, p. 5).

Following von Maur (Von Maur, 2022), emotions are not random instances of affect and are not detached from bodies but rather develop and are present situated in the word we (a person) exist(s) in. Emotions happen in a world of people feeling and being *affected* a certain way - this is an ability/skill shaped by personal experience ('Emotionsrepertoire') and influenced by norms and discourse (see Figure 1 and Figure 2). In contrast many layperson views (discounting selectively as 'you're being too emotional' as away from reason) and other philosophical accounts (viewing emotions mainly as hinderance to epistemic thought, e.g. by Martha Nussbaum 2001), emotions are conceptualised to hold/facilitate epistemic '*begreifen'(grasping, understanding*) and the author outlines how there are situations in which meaning can only be understood through including the emotional dimension. Importantly, *Not being (able to/willing to be) affected* is also thought to hold meaning. Emotions are viewed as essential to meaning-making within society -are shaped by it and are shaping the social world, Figure 1 illustrates the general, epistemic assumptions on emotions for the current project.

Figure 1: Adopted Epistemic View on Emotions

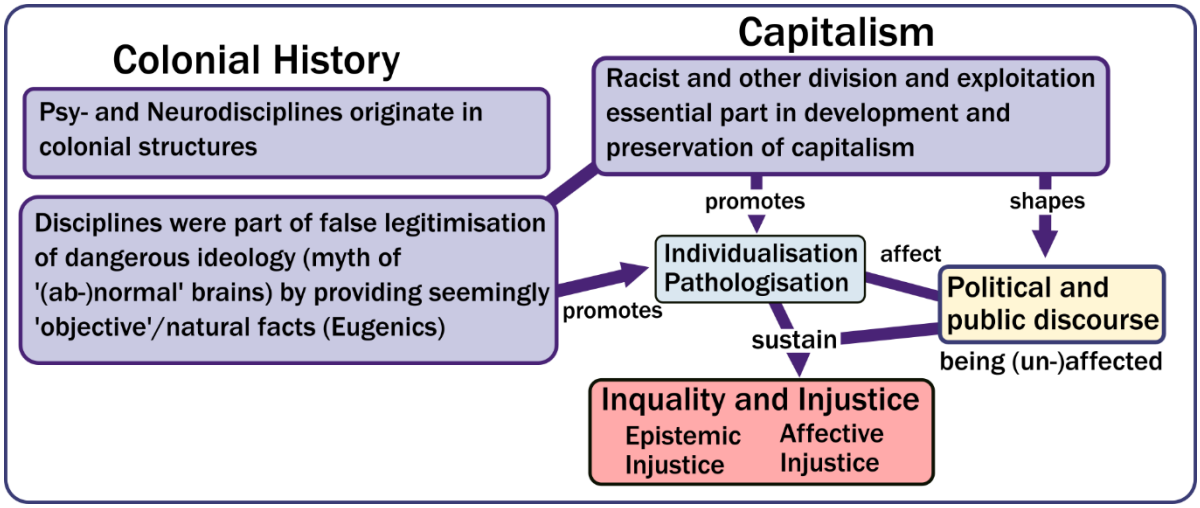


Selected epistemic view on emotions in the current project, informed by a) social neuroscience-based Theory of Constructed Emotions by Prof Felmann-Barrett and collegues, and b) work on grasping social-affective reality by Professor Von Maur

Looking at epistemic matters for the conceptualisation of hate specifically, different aspects have been pointed out by scholars. It has often been argued that the affective state *necessarily* brings about/leads to/comes with an overgeneralisation of the target (individual or group) and is thereby generally imprecise and potentially false, this is, in multiple accounts of hate noted as a characteristic, and there certainly are many examples of hate that illustrate this aspect[2]. Hate has been argued to be a broad category (Althoff, 2024; Kurt, 2023) and often not clearly defined - especially in public discourse. It has more recently been debated, whether an imprecise overgeneralisation is necessarily present in all types of hate.

[2] Hate Crime on someone targeted because of their skin colour or group membership

Figure 2: Broader Societal Influences and Context



Broader influences, some historic and current societal factors and connections that can affect the processing of emotions and research on social and moral emotions. Informed by Heinz (Ahmed, 2013; Fricker, 2017; Heinz, 2023; Kofi Bright et al., 2025; Marya, 2024; Robinson et al., 2023)

The following two sections are going to refer to and elaborate on these factors as they are proposed to be useful considerations the study of complex emotions like hate.

3.3 Emotional experiences of making sense of the world are influenced by power disparities

> "*Capitalism, currently in its neoliberal, globalized stage, is inextricably linked with inequality, but more importantly for us, it constitutes the context in which brains exist, develop, and function.*" (Kokorikou, 2023, p. 6)

The way of perceiving and understanding the world around oneself, values and therefore one's way of being affected or not is influenced and by the economic and historic societal system around us[3]. This also includes political systems and work in media studies has enabled further understanding on how discourse is framed through the use of narratives, for instance, influencing what's to be attended to and viewed as *meaningful* and what not (Butler, 2016; Ahmed, 2013). Following Von Maur (2020), meaning can only be seen in the light of economies of affect and the

[3] Olúfémi O. Táíwò and Liam Kofi Bright on 'Racial' in Racial Capitalism *"The point of the adjective is to focus our attention on the broader forms of social organization that are constitutive of social life under capitalism, beyond how it organizes work and production' 'a system in which race and capitalism are mutually supporting",* see Táíwò & Kofi Bright, (2020)

normativity of emotions (and their appropriateness). These are not static, but can change over time.

This ties in with empirical research on research on numbing (Bergh & Reinstein, 2021; Slovic, 2007), showing that people are more likely to donate to charitable causes when they are presented with single 'victims' rather than larger numbers of people suffering. Drawing, for instance, on Slovic (2007), von Maur reasons that the way people are affected, does not necessarily rationally follow the severity of situations, but is rather affected by affective habitualisation (patterns in feeling described as 'emotion repertoire', closely related to how one interprets and understands the world around), which itself is influenced by family dynamics, personal experience, discourse and more. Her concept of 'disruptive affectivity' builds on this, and notes moments of rupture in those familiar patterns as important, epistemic opportunities (Von Maur, 2022).

Recent research combining quantitative and qualitative measures (Critical Discourse Analysis that included policy documents), Goudarzi et al. (2021) studied the perception of injustice and equity is affected by larger, societal and economic systems (Gini Coefficient and Human Development Index were taken into account to adjust for inequality). Reviewing policy documents and longditudinal questionnaire data on equity beliefs from a dataset that includes 160 countries, the authors showed that neoliberalism affected equality perception. (Waldfogel et al., 2021) investigated participant's attention to inequality in an experimental paradigm, and found that political ideology shapes the degree to which inequality is noticed or not.

Not every person is able to contribute to discourse, shape hegemony and normativity equally, meaning that also the participation in the structuring of our understanding of the social world is not equal: power, status and resources play a role here too. Epistemic Injustice, a concept coined by Fricker (2007) can be helpful to consider, it is described as "forms of unfair treatment that relate to issues of knowledge, understanding, and participation in communicative practices. These issues include a wide range of topics concerning wrongful treatment and unjust structures in meaning-making and knowledge producing practices" (Kidd et al., 2017), for an extended account and different types of epistemic injustice, see Fricker (2017)). On the affective side of injustice, scholars have noted that how people are perceived when they are expressing emotions (or how likely discarded in their apt expression of emotionality see (Srinivasan, 2018)) also is shaped by a given system and existing (and historic) power structures.

These aspects closely relate to conceptualising and researching hate: some types of hate might be solely between e.g. two individuals (e.g. hating an ex-partner -while interpersonal relationships

exist in social environments with normative ideas about relationships), but even those examples are embedded in larger contexts and normative ideas about emotionality. Context and power relations plays into individual and group-based hate, without this implying that individual accountability is not relevant.

Different scholars have discussed how negative emotions are embedded in and function in relation to power. Professor Hilge Landweer in a publication called 'Erlaubte und verbotene Aggressionsaffekte im öffentlichen Raum' (‚Permitted and prohibited aggression-emotions in the public sphere' my translation Landweer (2021)) discusses how different emotions occur (or are hidden in plain sight) and used in and with effects on public discourse. Noting that hate and contempt often get mixed-up with, she analyses similarities and differences specifically. One of Landweers main claims is that contempt ('Verachtung') is mostly felt from people in privileged positions and connected to ignorance, looking down on others and dehumanising them, but not needing to engage. People in positions of less power, according to Landweer, are more likely to feel hatred. She warns, however, that even though (or exactly because) contempt seems to receive less attentions than hate, it is no less dangerous of an emotion. She views contempt to be an essential part of neoliberal societies, as those place particular importance on social differences to be self-inflicted: thereby, societal differences can be viewed and presented by the successful as justified. She argues that contempt then is viewed as an expression of one's own success, which, for many, is a morally-acceptable position towards people who have less. A neoliberal mindset thereby ensures hierarchy-inducing comparisons that are deeply rooted in and impactful for people's emotions (own translation, see Landweer (2021), p 279).

With the various definitions and lack of consensus and high frequency of reference in public discourse, 'Hate' has been described as a concept that often occurs as open for adaptation. Both Kurt and Althoff have argued (with reference to the normativity and economies of affect shaped by factors outlined), that while hate from some societal groups is frequently highlighted and heard as *concern*, the hate from e.g. (historically) oppressed people or activists often is condemned in what is presented as 'morally unambiguous position', which can serve as a 'securitization of the status quo' (Althoff (2024), p 47). Kurt in turn also refers to an example, where the association of 'hate' with misogyny (frequently referred to as 'hating women') functions to individualise, depoliticise and minimalize a widespread and structurally enforced issue for reference, see Kurt (2023) p. 19. Althoff outlines that there can cases of hate that can be conceptualised as *uncovering* structural contingencies in hegemony and highlights the epistemic function of this type of hate (rather than hate being necessarily generalising/imprecise, which hate has been described as in other accounts). Althoff argues that "Hate might therefore work in

conjunction with studies on racism, sexism, classism, among others, that allow a more nuanced critique of policies, actions and speech acts." (Althoff, 2024, p. 57). Landweer notes that contempt only seems to be further away from violence and aggression than hate, because the privileged person does not need to do anything to change the comfortable (and possibly also violent) status quo (my translation, p 294).

Looking at hate and contempt from a functional and social psychological (intergroup & interpersonal) approach, Fischer (2024) also summarises theories and experimental studies on hate and contempt which include dimensions of power relations, viewing contempt as related to disrespect and arrogance and looking down on others, while the power-position factoring into hate is less clear, but a powerlessness is mentioned to possibly contribute to the development of hate.

Empirically, studies show a moral component to be a relevant distinguishing factor of hate in comparison with other complex emotions Pretus et al. (2023), which highlights the specific closeness to meaning-making and values. Besides philosophers (e.g. Landweer, (2021)), also experimental psychologists have made the case that power factors into the inquiry into emotions and argued for power structures to be included in studies about societally relevant emotions (for conflict context, see Kassem et al. (2025)). However Hakim et al., (2023) warn that acknowledging that power asymmetries are present alone does not necessarily mean those will be accounted for in research in conflict settings.

3.4 Process of researching emotions itself also influenced by power disparities

> "In failing to recognize that science can be political, the scientific community allows the resurrection of dangerous ideas. Acting as if theories — especially those about humans — exist in cultural or political vacuums is a ridiculous fallacy" (Saini, 2020)

This is not just an issue to be criticised because of its general impact, but it is particularly relevant for politicised concepts such as 'hate', if one seeks to find (or others e.g. media outlets later are anticipated to communicate) a 'biological' basis of such a concept. To approach the epistemic point in hate (and related emotions like contempt), it is necessary to reflect on and take power and circumstance into account.

Drawing on work in philosophy of science, there are different epistemic views on how researchers and their relation to the process of knowledge generation are understood: on the one hand there

are proponents of positivism, viewing research and science as a process of a neutral process of uncovering existing facts (Park et al., 2020). On the other hand, one can place (social) constructivism, an angle that places importance on the active construction of social reality with its participants (Amineh & Asl, 2015).

Haraway (1988) has argued that science is a social process: We as researchers are *not excempt*, we are part of the environment we are embedded in, therefore we are creating knowledge socially and in a situated way. Referring to von Maur, we are also being affected by our time, political climate, the institutions we work in, current norms and predominant assumptions. How research in universities is conducted, incentivised, funded and the associated metrics have an effect on how and which questions are asked and how projects are approached (Fitzgerald & Callard, 2015). Choudhury et al., (2009) and Slaby (2010) highlight the researcher as part of the research and explained that knowledge about how the brain works also are connected to research processes and many scientists working together, highlighting the social nature of the scientific process, which is not a neutral endeavour (also connecting to Harris, 2025).

Besides disciplinary imbalances, there is relevant literature on the power relations within processes of knowledge generation, which warrant attention. Papoulias & Callard (2022) shed light on how material precarity and epistemic precarity can be and often is intertwined in academic research (on the example of mental health research). Notably emphasising the sociality of science and related processes (for this, see also Thompson (2021), and for an account on why this can be true and not necessitate epistemic realism, see (Fernández et al., 2022). Leaving out such aspects of power can be seen as a hinderance to the process of gaining new, societally relevant knowledge.

Many scholars have written about the effects of the Neoliberalisation of the University as an essential factor affecting the knowledge generation and research process: many are focussing on the changes in the last decades specifically (historic-political influences of the financial crisis and auterity in Ireland see Mercille & Murphy, (2017), or Morrissey (2015) for qualitative approach including interviews with senior management at an Irish University), others are pointing out that associated values originate in earlier thought (e.g. Lynch, 2010) or highlighting an earlier Cartesian view on the separation of emotions and knowledge and positivist norms prevalent in the organisation of universities). Urai & Kelly, (2023), outline need and possibilities to surpass some of the individualising and pressuring effects of the system to orient research towards climate emergency.

Pesch & Van Uffelen, (2024) focussed on interdisciplinary projects that deal with research objectives that have 'scientific uncertainties' and 'normative uncertainties', projects that the authors note to frequently be chosen by interdisciplinary teams. As a working assumption, I would argue this to be the case for neuroscientific research on hate too. Pesch& Van Uffelen (2024) argue that every discipline comes with normative assumptions that tend to be taken for granted, but that these assumptions differ substantially, also on their level of abstraction. Psychology and Neuroscience, they propose, usually locate moral positions to be on the individual level, while Critical Theory, Feminist philosophy or STS (Science and Technology studies) locate moral positions at the collective level, so in society while philosophy and ethics are seen by the authors to view morality as objective ideals. There might be differing views when it comes to specific questions, but this emphasises that paradigmatic assumptions are likely to shape how one approaches challenging research questions. Schools of thought and paradigmatic assumptions can result in different ways to select sub-questions 'worth' researching (which connects to axiology) the specific approaches to operationalise a question -many of such have to be reconciled in interdisciplinary projects. However, as pointed out by, e.g. Fitzgerald & Callard (2015), different fields and disciplines are not given the same value or credibility in current systems and societal discourse, there are differences in power that these can result in higher weighted credit to some assumptions or practices over others.

Kokorikou et al. (2023) explain and advocate for the relevance of the political and economic circumstances on how we conduct neuroscientific research providing an initial, reframing view and theoretical framework on investigating the harms of capitalism neuroscientifically, highlighting how inbuilt mechanism essential to capitalism, such as inequality, individualisation, precarity, overwork and splitting and depriving communities, and cross-interactions with oppressive structures can be included when studying complicated phenomena. The authors highlighting that "much neuroscience has bolstered medicalization of human suffering and dissemination of singular biological explanations for complex psychosocial problems." (Kokrikou et. al. (2023), p.7)

This, of course, can particularly be understood in light of the historic and ongoing context of the research programme (for an overview, see Figure 1 and Figure 2), and the type of the experimental methodology that comes with much of neuroscientific research, such as functional Magnetic resonance tomography (with Brain Scanners, abbreviation of the methodology 'fMRI') or Electrophysiology: Generally speaking, in empirical neuroscience, participants are tested individually, in lab environments, being shown a limited set of word-, image, and/or audio stimuli, rather than being within their natural environment (for a longer discussion on see Chapter 2 and

Chapter 4). Crucially, fMRI is not a direct measure of brain activity, and the images that are often part of research papers or other communications are the results of various steps of pre-processing to reduce different type of noise, and data analysis (at times including algorithms, more recently also with energy-extensive machine learning classifiers). The images, however, often appear or are understood as if those were natural, biological things, relations or facts.

Connectedly, Duchesne & Kaiser Trujillo, (2021) questioned if "an inherently reductive, quantitative approach to producing generalisable knowledge about the brain (i.e., the approach that forms the foundation of the scientific method)" (Duchesne & Kaiser Trujillo, (2021), p. 7) can be used to engage in highly socially relevant research without risking biological essentialization or harm.

There has been work towards a more critical approach to neuroscience, some of which will be introduced in the next section.

3.5 Critical neuroscience

"Since stakes are much greater than the knowledge itself, our analyses must pay careful attention to the ways in which neuroscience increasingly functions as a screen upon which to project everyday values about mental life, personhood, and kinds of people." (Slaby & Choudhury, 2011, p. 7)

Slaby & Choudhury, (2011), p. 78 have pointed to what they call 'hidden hermeneutics' in neuroscience, emphasizing, as many others, the interpretation of the data gathered to be essential part of neuroscientific experiments, but the authors criticise that some neuroscientists are "presenting them [results] as allowing factual descriptions of an intersubjectively valid sort." Connectedly, also Slaby and Chadhoury are concerned that in this way, the data seem to allow for normative conclusions and might thereby be assumed as "natural ethical facts". In their edited volume with different other scholars in 2012 is a resource to turn to, when aiming to work towards a more comprehensive way of approaching complex questions with neuroscientific methodology, and explicating choices and assumptions, and considering implications, notable without discounting the whole field, but through critique and engagement. Focussing on the neuroscience of mental health Webb et al. (2022) flag a "disconnect of neuroscience and other allied fields that have recognized health is undeniably linked to interactions between systems of power and individual characteristics." The authors recognise that neuroscience has considered "how sociopolitical context affects brain structure and function" but failed include "critical

sociological and historical perspectives" (Webb et al., 2022, p. 1), which to Webb et al leads to a loose end when it comes to the implications on societal and legal dimensions. Roberts & Rollins (2020) note that "Our analysis does not conclude that biological determinism is inevitable any time biological sciences or biotechnologies approach social problems (…). The problem is not the technological usage per se, but its ability to obscure ethical uncertainties and structural forces and to reconstitute problematic sociocultural assumptions that researchers relied upon uncritically to execute research" (Roberts & Rollins, 2020 p. 208).

We recognise that the way we as researchers conceptualise and operationalise shapes the framing of research, and our presentation of stimuli and questions with the authority of a lab/institution is also likely to have an effect on participants and the recipients of our communication in a certain way, we tried to explicate some of the assumptions for the present project next.

3.6 Specific assumptions for the current project

Leading up to the next chapter, which is discussing the concrete operationalisation and methodology, here are the explicated assumptions for the current empirical project, we were working with.

Preliminary working definition of hate: A directed, negative, affective state, harsh and complex, often develops over time. Social at its core.

Assumptions for/in the stimuli and paradigm development: which will be explained here, and are internally showing the assumptions prior to data acquisition and theoretical knowledge gain of the last part of the PhD project.

Based on existing literature reviewed and insights during the secondments, we view power differences to be important in the study of hate. In the development of stimuli and paradigm, this is relevant within narratives (between characters), but also in the distribution of *perpetrators* and *targets* in the overall dataset, for instance in cases where a person is targeted on the grounds of being a woman (women of course includes trans-women[4]), or being labelled as[5] women. Such incidents are more frequently perpetrated by cis-men.

[4] There also is trans-misogyny, which is frequently perpetrated by cis-women too, concrete statistics are still sparse.
[5] People who are non-binary or other gender identifications might also be targeted by misogyny while not identifying as women.

In the development of the stimuli, we include situations of different discriminatory actions, following the protected categories of the then proposed, now enacted in the *Criminal Justice (Hate Offences) Act 2024,* Section 3, which outlines the following categories: "(a) race, (b) colour, (c) nationality, (d) religion, (e) national or ethnic origin, (f) descent, (g) gender, (h) sex characteristics, (i) sexual orientation, or (j) disability.". 'Class' and housing-status were added, as people frequently are discriminated against based on this factor as well. We aimed at varying the degree of intensity of the situations, and explicitly (for ethical and scientific reasons) did not want only situations describing criminally punishable acts and situations. The stimuli, therefore, are developed to have different intensities ranging from verbal aggression that can be derogatory but unfortunately rather frequent in everyday contexts, to verbal and physical attacks, that threaten the targeted person very directly. While we have stimuli developed that e.g. besides Anti-Irish sentiment also include Anti-English sentiment, we did not include the Anti-English ones in the present rating study. In addition to the stimuli about misogyny, we did include a stimulus about a man being discriminated and belittled at his workplace in a historically female-dominated field, but we did not include misandry. This, in our assumption, connects to (historic and ongoing) power differences that cannot be equated.

All the stories include a social component, meaning that multiple people are involved, and no 'hate' against inanimate objects (food, SUVs etc) or animals were included. We also aimed at avoiding references to highly abstract concepts as targets of antipathy or different emotions, this might not have worked in every scenario.

Usually, in empirical, neuroscientific studies, the idea is to control for gender. In the past and without taking different gender identities than male and female into account, this often is operationalised by having an exactly 50:50 ratio in e.g. in a specific group of characters in a set of scenarios. In the present project, we are, however, operationalising real-life relevant emotional (and in a subset of the stimuli: discriminatory) situations, which are embedded in and referring to context. Choosing, e.g., 50% of the perpetrators of misogyny-acts to be women would be unrealistic, given the higher rate of cis-men acting as perpetrators. We, therefore, consciously decided to diverge from the 50:50 (balanced) ratio for a proportional ratio in certain cases. For many of the incidents and identity categories, getting statistics on 'perpetrators' is hard, and of course women also act in harmful ways (racist, trans-misogynist etc.). Considerations focussing on two genders can easily simplify complex situations while other important aspects might be discounted. For the present project, we kept track to not fall into biased proportions regarding gender and provide coded lists for the stimulus set on many characteristics of the scenarios, so

other researchers can also make conscious choices -and ideally report those too- should they want to use the stimuli (for more information, see Appendix).

We did not include animosity or 'hate' associated with someone previously loved (ex partner) or towards a coworker or celebrity, because we expect there to be conflations in the emotionality if e.g. someone was loved before, and familiarity and the impact of including such stimuli might be questionable.

Aiming at including situations with a level of relevance or situatedness to a variety of participants in our target population (mostly but not exclusively students, young adults 18-35, based in or familiar with Dublin), we tailored the scenarios to the Irish context, with some reference to local places to make the scenarios more vivid.

For the paradigm design, the intention is not that participants 'should' feel hate, or that we intend to induce hate. We expect that only few will report that they did feel hate, because of the condemnation and the pressure of social desirability. With hate being described as such a broad concept, intimately connected to previous experiences and raw, as well as lingering: eliciting hate is also ethically not our objective. We do hope that participants can identify hate in some of the narratives, therefore we included a high variety of discriminatory scenarios. There might be emotionality in the different scenarios (with a repetition of different negative scenarios, even when interlaced with positive scenarios) can and probably will affect participants in some way, we are uncertain about the carry-on effects.

Regarding the composition of stimuli, namely and the ascribed labels that the hate and derogatory behaviour is shown based on by characters in the scenarios and the ratio of positive and negative scenarios, we do expect this can affect assumptions participants assumptions about the goal or research questions of the study, which could bias their replies.

We included a Social Dominance Orientation (SDO) questionnaire in the study setup, because based on behavioural literature on ideology and injustice perception, see (Waldfogel et al., 2021), we assumed that the SDO index score could be correlated with the level of how sensitive participants might be towards the recognition of justice-related emotions. This does not have to be the case, but the aggregated average score of the prospective sample in the behavioural part could be compared to student-age norms, or future fMRI study participants.

4 Methodology: stimuli and paradigm development

Moving from the more abstract, epistemic consideration to the concrete operationalisation for empirical study, the present chapter discusses specific aspects of stimuli (part 1) and paradigm (part 2) development, going beyond a typical methods section, in that it describes not just the choices that were made for the present study, but also highlighting more generally applicable challenges in operationalisation of research questions about complex emotions.

4.1 Stimuli development

4.1.1 Facial expressions

Historically, emotions have often been (empirically) studied using facial expression as marker of emotional experience or as experimental stimuli to elicit emotional reactions or prompt recognition. For decades, researchers have studied when, in a child's development, facial expressions and the skill to interpret them occurs or if there are commonalities and differences in facial expressions across different cultures. Ekman et al distinguish basic vs complex emotions, and provided evidence for the early existence of those emotions in the development (already in babies, see Ekman & Friesen, (1971)) and for cross-cultural universality of 6 basic emotions (anger, disgust, fear, happiness, sadness, and surprise (see Ekman & Cordaro (2011) for neural correlates see Saarimäki et al., (2016a). The universality of basic emotions has, however, also been criticised, e.g. by Barrett et al., (2011) or Shioiri et al., (1999). Complex emotions, on the other hand, were not theorised e.g. by Ekman, to be universal, and associated facial expression more frequently described as varying between contexts and cultures. Ekman, for instance categorised hatred and love as 'emotional attitudes' that, according to him, 'are more sustained, and typically involve more than one emotion.' Ekman, (1992) p. 194). Facial expressions and their recognition are an important aspect of social life, as they are essential to communication.

Taking into account that the development and validation of stimulus databases require a lot of time and participants, it is unsurprising that many of the previously available databases focus on the 6 basic emotions (for a review, see Benda & Scherf, (2020)), that were argued to be most consistent across cultures (Ekman, 1972, 1992). In, e.g. the Radboud Face database (Langner et al., 2010), a vast resource with different camera angles and 'models' (volunteers), who were thoroughly instructions on how to perform the given facial expression (of 6 basic emotions and contempt) and had to practice before the shoot with a training manual.

Le Mau et al., (2021) used photos that were taken of professional actors, who posed after reading short scenarios. In their publication the authors highlight the limitations of inviting lay volunteers to perform facial expressions, showing that the facial expressions of trained actors significantly diverge from the stereotypical expressions that volunteers tend to resort to, as the actors have a higher variability in expressed emotionality. The authors found that participants are not able to reliably recognise the emotion from just the photo. Presenting the photos together with the text resulted in increased the reliability of emotion recognition, which is evidence for the importance of situational context. More recently, researchers developed databases that include more complex emotions and employing trained actors to convey the desired emotions, see for instance Benda & Scherf (2020) who included complex, what they frame as 'social sexual' emotions such as feeling betrayed, broken-hearted, contemptuous or jealous, emotional states also relevant for studying hate. Schmidtmann et al., (2020) worked with trained actors portraying 93 complex emotions, and used a 4-item forced-choice task to test if participants recognised the target emotions. With stimulus-related variance depending on actor and angle of the photo and a small sample size of N=32, the authors found emotions like playful or offended to be recognised with higher reliability, 'hateful' to be above chance recognised, and affective states like tentative or earnest to not be recognised above chance.

There is also limited research on induced emotion expression, see e.g. Ong et al., (2021), a database in which participants were recounting life events that they experienced themselves from memory and were then recorded. There are ethical questions around inducing emotions, in particular negative ones are an inherent part of emotion research. Ong et al further use a 'discrimination' task yielding the most apparent emotion, while based on previous literature on complex emotions -and particularly interesting for hate- there could be multiple emotions present at the same time.

Given that there is such a large amount of psychological and neuroscientific studies using facial expression in emotion research (see e.g. Fusar-Poli et al., 2009; Kliemann et al., 2018; Sprengelmeyer et al., 1998), investigating the neuronal correlates of hate with similar methodology appears as a logical extension of prior research.

In the first months of the project, we planned to have volunteers come in, present them with more complex instructions of emotional situations, sentences illustrating the context of the situation like Le Mau et al., (2021) and then take pictures of the volunteers facial expression imagining themselves in the given situation. We developed 120 narratives (1-2 sentences each) for emotions ranging from pride, gratitude or love to contempt, anger, betrayal, or hatred. While

some of the issues were resolved by that design other methodological matters were still present: Volunteers would still be untrained and recording participants (of course informing them thoroughly and having asked for consent), would require the acquisition of biometric data: another General Data Protection Regulation (GDPR)-related category of data that is particularly sensitive. Photos would be particularly harmful in case of misuse. As the safety of participants and their rights are highest priority, and because our interest was from the start of the project, to develop a database that could be made available for other researchers to use in further studies, we discarded this line of stimuli development.

In the Constructivist Theory of Emotions, emotions are not hard-wired, but rather occur based on previous experiences and situational factors (Barrett & Lida, 2024), which also means that its hardly possible to 'read' complex emotions a person feels by looking at their face. Rather than broadcasting inner emotions via facial expressions to the world, what is shown would rather influenced by cultural stereotypes (Gendron et al., 2014; Hoemann et al., 2019). For negative emotions towards others in particular, different and ambiguous facial expressions could be presented, but -given the lack off social desirability- the emotion could be non-expressed. In another situation, a positive expression could occur, e.g. smiling, but could be more complex signalling Schadenfreude or pleasure at outgroup misfortunes see (Cikara & Fiske, 2012). Based on theories on emotions and on hate specifically, describing very different types of hate, which necessitate including some of the social realities that people face when exposed to or witnessing hate and as hate relies on the integration of prior knowledge and experiences, we discounted the use of facial expressions as stimuli.

4.1.2 Narratives as stimuli

Recent approaches in the affective neurosciences used more naturalistic, ecologically-valid, nuanced stimuli and analysis methods to study complex emotions with stories in written form, videos (movies) (Morgenroth et al., 2023; Saarimäki et al., 2016b) or audio stories (Jääskeläinen et al., 2021; Saarimäki, 2021; Willems et al., 2020). Narratives are a potent way of eliciting, influencing and studying emotions, and additional context can be provided, however, until recently, narratives were less commonly used as stimuli (Wilson-Mendenhall et al., 2013). There are studies with shorter and longer narratives or movie clips, often with a sample size trade-off. Hanke et al., (2014), for instance, had participants listen to ~2h audio of the movie 'Forrest Gump' and Seeliger et al., (2019) acquired functional MRI data of a single participant watching 30 episodes of 'Dr Who', both datasets are openly available. In another vast resource, Nastase et al.

(2021) used audio files from storytelling competitions[6] of very different lengths as stimuli for fMRI participants. The benefits of more naturalistic and complex narratives as experimental stimuli have been pointed out and advocated for by different research groups, see e.g. (Jääskeläinen et al., 2020; Willems et al., 2020). Recent research further shows that audio stories allow for a higher degree of engagement in participants (assessed with an implicit measure, audio results in higher engagement than videos see Richardson et al., 2020a).

We had already developed short narratives with the aim to induce facial expressions for a whole array of complex emotions. These were reviewed by colleagues in the network as well as advisors from the Glencree Centre of Peace and Reconciliation (Glencree). Based on their feedback and further literature review, we realized that the short narratives would not suffice. Storytelling is highly relevant to social interactions, on a personal and society level, features in social interactions (Mar, 2018; or for applied perspective see: Opacin, 2021). Narratives are also particularly suited, because understanding can build up over the time course of the narrative rather than having just a one-off impression (Xu et al., 2005).

We, therefore, redirected our efforts towards longer, more contextualised narratives (alike (Saarimäki et al., 2022), who developed stimuli of similar length of up to ~1min), and decided to aim at the perception of emotions over (potentially) eliciting emotions in our participants for the present stimuli and paradigm for different reasons: These choices were necessary for both experimental and ethical reasons. When developing narrative stimuli that will be played alike audio stories, we needed to be able to have a spectrum on intensities (with the different emotions). Claiming to 'induce' emotions can be a problematic in general, because people can hear or read stories that they perceive to contain certain emotional content, but not feel this content themselves, or social-desirability makes it less likely to report having felt, e.g. hate, see (Rempel et al., 2019). Complex and social or moral emotions are usually more ambiguous and context-dependent and it is harder to predict which emotion will be elicited in participants (Jääskeläinen et al., 2022). Further, research in largely homogenous WEIRD (Western, Educated, Industrialized, Rich, and Democratic) college student samples further shows that a large proportion of participants report that they never experienced hate (summarised by Fischer et al. (2018), see also Aumer et al., (2015)). On the ethical dimension, aiming at inducing highly negative and potentially lingering emotions like contempt or hate in laboratory environments, even when balanced with positive emotional stimuli, would be hard without risking participants' distress.

[6] For instance 'The Moth' https://themoth.org/stories/

While studies in the field of psycholinguistics show that participants are able to best engage in imagery in the I-perspective (Hartung et al., 2016), we decided to phrase our stimuli to the bystander perspective we aimed to study from the outset. Our instructions tell participants to listen to the story attentively, as if you were listening to a friend. We hoped the included, additional distance might contributing to lessen the potential for distress in participants. Additionally, with the different identities introduced based on hate prevalent in Ireland at the time of the development of the study, choosing a first-person point of view would create an unrealistic mismatch that would hinder connecting with the story. A certain level of mismatch is still apparent, as identities are included that listeners might expect to sound a certain way, and we chose two actors only (one male, one female), which will be discussed later on.

The choices of which stimuli we present to our participants assuming some of those could constitute hate hold many implicit assumptions and are one essential part of an epistemic stance (Ref chapter 3). As reviewed, there are very different types of hate that occur and that have been conceptualised in theoretical accounts (Fischer et al., 2018; Salice, 2021; Sternberg, 2018; Vendrell Ferran, 2021). To illustrate here just briefly: hating an ex-partner or a competitor at work often is (or can be) inter-individual, while many other forms of hate, even if they might affect one person immediately, often also concern inter-group hate, for instance, if someone feels or incites hate towards a (the) 'foreigner(s)'. After initial discussions about limiting the type of hate in our database to inter-individual hate or potentially even only choosing stimuli that we think the majority of our expected college-age convenience sample might personally have experienced before, we decided against such a setup. We might have assumed a majority of our participants to potentially having hated only an ex -a hate that which is not broadly exemplary for other types. Taken together, a complex and social phenomenon necessitates complexity (Fitzgerald & Callard, 2015; Rollins, 2021a), and while limiting what is studied by how it is approached is always a part of operationalisation, limiting 'hate' in this direction was not desired for the present study.

Based on my learnings at Glencree and within the Innovative Training Network, we consciously decided to introduce a level of diversity of types of settings, identities and types of hate into our stories to reflect variation on what is theoretically conceptualised as hate and to have a broader range of stimuli that participants might resonate with. As its been established that cultural background and individual characteristics influence narrative processing (people might have different narratives that are more or less common in public discourse, or reference points (Bacha-Trams et al., 2018)), we assume that having a variety leads to better functioning of the task in terms of recognition of emotions in the set of narratives. The stimuli of the present database that were written with the intention to elicit a hate-recognition response concern groups in society

who often experience hate directed towards them and follow the protected categories in the (then proposed, now enacted) Hate crime legislation. We added class and homelessness as people are also often targeted with hate based on that. While the research for the stimuli included publications on officially reported incidents and crime statistics (The Irish Network Against Racism INAR, 2020), reports of advocacy and NGO groups and media accounts of lived experiences were also included (Eilam et al., 2021; Haynes & Schweppe, 2017; Higgins et al., 2016; Irish Council for Civil Liberties (ICCL), 2022, 2024; Irish Network Against Racism (INAR), 2019a, 2019b; Koay et al., 2022; Mayock et al., 2015; McBride et al., 2020; McNeil et al., 2013; National Women's Council, 2021; Ní Chonaill & Buczkowska, 2017; O'Brien, 2020; Pavee Point, 2025; Quinlan, 2021; Rath & McCarthy, 2021; The Irish Network Against Racism INAR, 2020)

This database and study does not claim to showcase a selection of types of hate that people in Ireland recognise or acknowledge to exist in Irish society (this is neither the goal, nor are any conclusions possible with the preselection or non-representative sample), and its crucial to note that this would be a potentially harmful and false inference. We will be mindful to educate against this by clarifying limitations and providing general-audience summaries of our research.

4.1.3 Reading vs audio vs video: engagement

Schirmer & Adolphs, (2017) compared face, voice and touch as modalities for emotion perception, taking also neuroscientific knowledge on the senses into account, and note that audio and touch each provide a 'distinct input channel and engages partly non-overlapping neuroanatomical systems' with different specialisations. Compared to reading, a modality where reading pace and understanding is different from person to person, in audio scenarios the delivery speed is the same (while understanding time might still differ). In a recent comparison, Richardson et al., (2020b) show how potently audio narratives elicit engagement measured by physiological responses and self-report, with audio stories yielding stronger physiological responses as videos presented to participants.

4.1.4 Longer narratives

Content warning: This part of the chapter contains written content (examples of narratives - selected and full list in Appendix) that falls into the category 'Stigma' of a recent typology of content warnings (see Charles et al., 2022)), defined as: 'content depicts negative stereotypes about or attitudes towards a specific group, such as racism or sexism'. Some of the stimuli include

references to e.g. domestic abuse, harassment, and other individual offences and also more systemic or institutional injustice. While we explicitly avoided using slurs and directly offensive language, these are referred to as used and, in a smaller number of scenarios, dehumanising behaviour towards groups based on their identity is described.

4.1.5 Writing process and editing

The development of the stimuli was an iterative process. For a period of months, following the news and public discourse on social media and reading different NGO reports. This was a heavy task, because besides joy and other emotions, we were, of course, mainly focussing on situations and scenarios that could be recognised to contain hate, fear, contempt and other heavy emotions.

There is a lot of diverse aspects in the scenarios, but we agreed to keep some parts consistent. At the start of the scenario, the setting and context is explained, at times a concrete identity is provided, and then a situation, often a specific interaction, is illustrated. Some stimuli include a reaction of e.g. by a bystander. We avoided using 'hate' or 'fear', in the specific wording to avoid biases in validation choices. The use of slurs was avoided (not actually writing or saying them, but a person in a narrative might refer to slurs having been used), and we used colloquial language but not overstated. Different anchor points (known points of interest) in and around Trinity College and in Dublin were included to make the stories livelier and more applied. We as the research team do not claim that the present stimuli resemble how everyday communication happens here because the research team does not include a person who grew up socialised into Hiberno-English (for more information on this, see Dolan, 2020) and none of us is in the target age group of our study participants, and also because the use of language differs from context to context.

We had a draft list of the narratives list copyread by someone familiar with the use of Hibernian English in everyday speech. Open communication with the copy reader about the type of text (emotionality) to be read was one of the aspects relating to research integrity and good practice by the research team.

4.1.6 Speaker perspective

Previous emotion research suggests that instructing participants to imagine themselves in the scenario would result in higher engagement (see Sambuco et al., 2022). Contrary to that, with our design decision to expand on provided contexts, types of hate and different identities, we viewed

an observer perspective for the participants to be most fitting (so participants hearing stories that others tell them). Ethical issues regarding the assumed proximity of intense emotions were considered in the choice of linguistic speaker perspective.

4.1.7 Identities (Incl Gender)

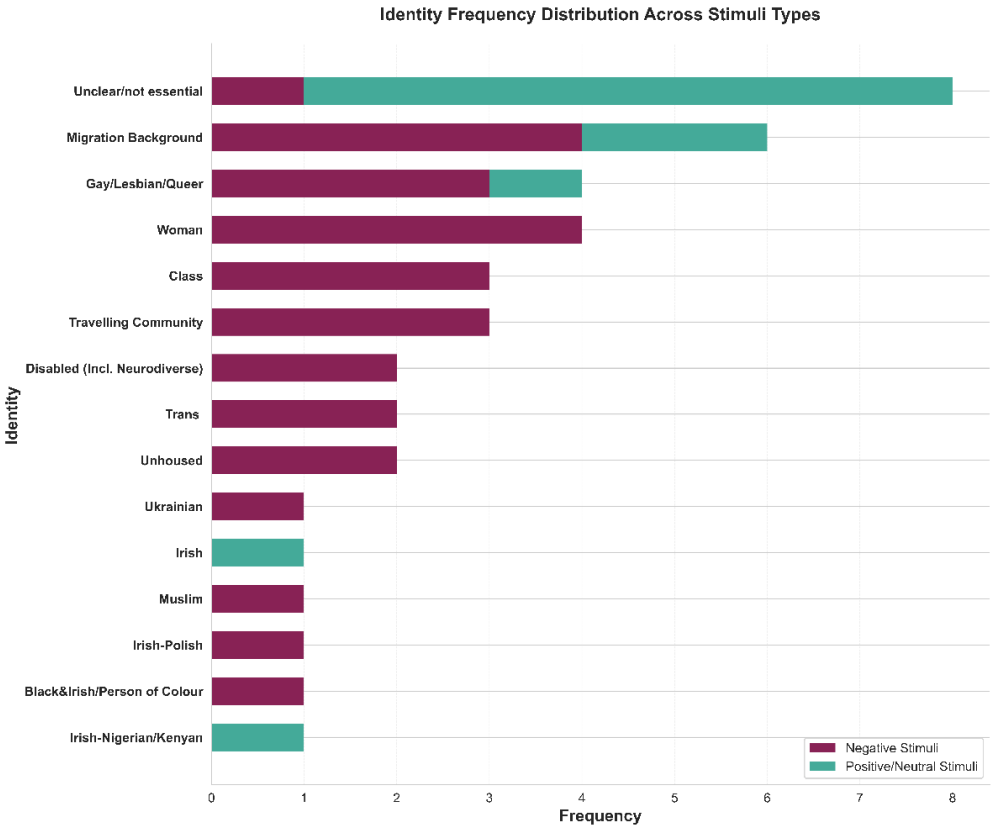
The developed database consists of a total of 112 complex, emotional narratives out of which 94 are uniquely assigned to either the male or female actor, and 18 narratives are spoken in by both the male and female actor.

The current database includes different scenarios and the following identities as targeted: Women, People who came to Ireland more recently or who are seeking international protection, people who are racialised, Muslim and Jewish people, ethnic minorities, Travellers/Pavees/Mincéirs[7] (of particular relevance in the Irish context), people who experience discrimination based on class or socio-economic background or housing status, Trans people, queer people (more specifically lesbian, gay and 'queer', no specific scenarios included that concern Asexual or Intersex folks), people with a disability, neurodiverse people. At times, there are intersections included, for instance queer identity and ethnicity/background (see Figure 3).

We did not include inanimate targets of hate, animals, ex-partners, or competitors. In many scenarios, the speaker discloses their identity, for instance starting with "My parents are from South Africa and I was born and raised in Cork", "My partner and I, we are both women", or "I am from Dublin and went over to London to do my masters. I am Irish-Nigerian". In other scenarios, the speaker witnesses a situation and either assumes the identity or the perpetrator labels the identity of another person, which often happens with discriminatory and racist acts, see e.g. *"I was heading home on the bus after doing some shopping and a woman came up to me, she seemed very annoyed, and she started to racially abuse me. I was stunned especially as someone else joined in and said that she was right to attack me because I should 'go back home to where I came from'. I replied that they were both racist and that their behaviour was a disgrace. I told the driver I wanted to report the behaviour and call the Gardai (assertive). The bus driver did not seem to care much but the woman's stop soon came and she got off followed by her friends."*).

[7] "As minority ethnic groups, Travellers and Roma experience persistent racism and discrimination on the basis of ethnicity, gender and other grounds. As a result, Travellers and Roma are among the most marginalised and excluded individuals and groups in Ireland." https://www.paveepoint.ie/wp-content/uploads/2025/05/NAPAR-Advisory-Committee-Pavee-Point-submision-1905.pdf

Figure 3: Variety of Identity Markers for Selection of 40 Identities used



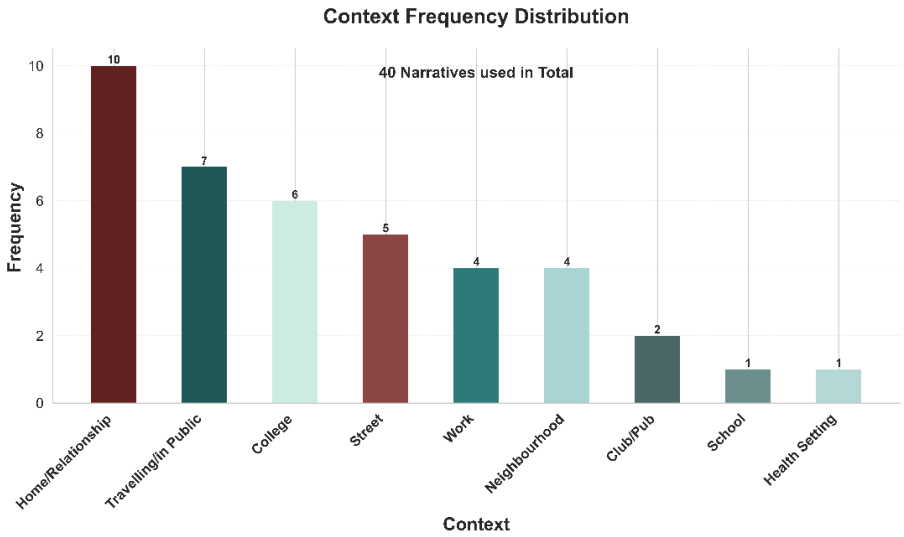
Variety of identity markers for selection of 40 Identities used, for the larger set of 112 narratives, see appendix

We did the best we could to include people who are marginalised in Irish society, screened news outlets, reports of interest groups, statistics of reported incidents and more to get a picture of where hate occurs and directed towards whom. In the stimuli that concern anger, fear, joy, relief, and other emotions, we included a variety of identities. While we did get feedback from collaborators, e.g. from the Glencree Centre for Peace and Reconciliation, the outcome is influenced and limited by the research team's positionality and the influences present at the time of writing and editing.

4.1.8 Setting or situational context

We included different everyday contexts of young people in Ireland. As there is only limited information on where reported incidents happen (see e.g. report INAR) and to depict diversity, we added ecologically valid contexts students would find themselves in and could witness situations.

Figure 4: Situational Setting in Selected Narratives



Variety of scene context for selection of 40 Identities used, for the larger set of 112 narratives, see appendix

4.1.9 Directness of threat or violence

The importance to study not just the more extreme forms of hate and discrimination, but a range of incidents was outlined by Gledhill,(2019). Relatedly, the developed stimuli contain short, verbal comments, biases, stereotypes, memories of exclusion, direct verbal aggression and dehumanization, and heavy threats, with some stimuli describing immediate danger and/or violence. An example for a stimulus that does not contain a direct threat is the following scenario on classism: *"I grew up in a traditionally working-class neighbourhood, in a council estate. I really enjoyed it and we had a good community (content, glad, appreciative), but when I got to college, the way I viewed that changed. I remember one time in particular, I had invited my new friends to a party at my house, my parents were away – we had a great time, I thought (happy, doubting). But the Monday after, I overheard one of my classmates denying that he attended, saying 'I would never hang out in a social housing estate, what the heck?!' (hurt, excluded, sad)".* While hurtful and excluding, which can have heavy consequences, there are narratives in the database that contain direct experiences (or imminent threat) of violence, such as the following: *"My partner and I went out to meet friends at a gay(queer) bar last Saturday night (joy) and were taking Dublin Bus back home early in the morning. On the bus, a group of young men started to mock my partner and me - trying to demean me and insult us in a very vile way. (fear, devastated, tense, panicked) We tried to ignore them hoping they would get tired and ignore us. One of the men came up to us and knocked my phone out of my hand and while I tried to retrieve it from the floor he hit the back of my head. (horrified, hurt, unsafe) His friends were laughing at us and we felt*

very alone – it seemed the entire bus was laughing at us. (betrayed, left alone, indignant, angry, despair, embarrassed)".

4.1.10 Types of hate and (hate) crimes

As reviewed, there are varying definitions and conceptualisations and taxonomies of 'hate'. Relatedly, the existing stimuli relate to different previous research in the following ways:

Different perspectives propose that types of hate can necessitate time or multiple encounters with the hate-target to develop (or a commitment following Sternberg, 2003)). Other research, suggests that there also can be 'immediate hate', that is thought to occur after destructive and violent events (for a summary see Fischer et al., 2018 or Halperin et al., 2012). Our paradigm concerns a bystander perspective, and while there are some more intense crimes described, it is unlikely that 'immediate hate' would happen in a laboratory situation.

During exchanges with researchers during my secondment at the Institute of Criminology and Legal Policy at the University of Helsinki, there was interest about situating the narrative stimuli in terms of their relation to (hate) crimes. The protected characteristics (relating to "a person or group of persons") in the current hate crime legislation[8] include: "(a) race, (b) colour, (c) nationality, (d) religion, (e) national or ethnic origin, (f) descent, (g) gender, (h) sex characteristics, (i) sexual orientation, or (j) disability.", while the footnotes note that transgender matters are included in 'gender' and members of the Travelling Community included in 'national or ethnic origin'.

We aimed at spanning a range on intensities of positive as well as negative emotionality which includes behaviour that is hostile and, in part of the stimuli, constitute crimes. We did include additional identity categories known to experience a lot of discrimination in Irish society and elsewhere, for instance people experiencing homelessness and class-based discrimination. It is known that a lot of racist and discriminatory acts -also in the cases those would constitute crimes- are underreported with the police for different reasons, and we therefore considered NGO reports as well as INAR and other databases, see e.g. (The Irish Network Against Racism INAR, 2020).

[8] *Criminal Justice (Incitement to Violence or Hatred and Hate Offences) Bill 2022* (Ireland), Bill No. 105 of 2022. Available at: https://www.oireachtas.ie/en/bills/bill/2022/105/ (Accessed: 31.10.2025)

4.1.11 Gender aspects

Following frequent choices in experimental operationalisation, we kept the ratio of scenarios spoken in be the actors (male/female) 50:50. Regarding hate occurrence, we have only limited information on the distribution of gender of perpetrators because many incidents do not get reported. Importantly, we included categories in which people are targeted due to their gender (for instance misogyny and sexism, domestic abuse that happens more frequently to women perpetrated by men, misogynoir, as well as trans and queer identities). Therefore, and while keeping a realistic level of distribution, there is an over-representation of men as 'perpetrators' (for the scenarios where this phrasing makes sense), so we intentionally diverged from keeping a 50:50 ratio in this aspect, because it would otherwise constitute an unrealistic skewing compared to what is estimated to happen within society with regard to misogyny: we would need to artificially increase the number of such scenarios to being equal with women being targeted by misogyny or gender-based violence would not be reflective of the current situation or historic oppression in society or ecologically valid, and would raise questions about the implicit takeaways we would possibly create in the participants of your study, even with debriefing of participants. We intentionally included a scenario in which a man is subjected to negative stereotyping at his workplace, and another one in which a man experiences violence from a female partner.

4.1.12 Audio

As copyright and protection of identity are important, we considered using AI voices for our stimuli, but discounted the idea after learning about identity theft of audio actors, who have their work online, so this would not be ethical. Also practically, the state-of-the art voices lacked important humanness and emotionality (documented as the 'human emotional intimacy effect' by Rodero & Lucas, 2021), had little intonation, and the Irish accent did not work.

There were online platforms available offering audio recordings in the form of cheap gig work, but the platforms were called out as breaching or undermining workers' rights and usage license were not always clear, so we decided against this and chose to find and collaborate with actors locally. Lastly, we considered options to de-personalise the audio recordings using AI to aim at protection of identity, but this too would have resulted in unnatural sound and unclear lines of where our recorded data would be used for.

4.1.13 Actors

We assumed that type of voice, intonation, and other characteristics would likely have an influence on the resonance with the audio stimuli, which is why we decided we need at least two actors. For feasibility reasons, chose one male-sounding and one female-sounding voice for our current recordings. Besides integrating the gender aspect that carries through all different projects of NETHATE, we have stimuli that include misogyny and discrimination of trans people, which necessitated speaker variety. We chose actors who sound college-age to match our sample population to aim at increasing identification when we instruct them to “listen to the story as if a friend would tell it to you”. Given that there is research about familiarity affecting emotion recognition (for a study with facial expressions, an effect we assume to be present also with voice stimuli, see Awad et al., 2023), we desired to select actors who were not famous, e.g. not in movies or advertisements yet.

Hiberno-English and accents in Ireland are deeply intertwined with matters of identity (Crowley, 2016), so we wanted someone with an Irish dialects, and for the constraints of this study ideally not two very different dialects (e.g. North Dublin - Donegal would be quite different). After consulting people who grew up and live in Ireland, we went for more neutral sounding accents (County Dublin). In future studies, this could be broadened.

The actors were instructed to enact emotions (target emotion parts of the written narratives were indicated by emotion words) in a way that feels natural to them rather than theatrical. As actors age matches our target population, we allowed for minor word changes if they felt natural to the actors, and encouraged input if they had any, while keeping the intended emotional direction intact. AT managed the technical aspects of the recording, present for additional questions about narratives and provided active guidance and feedback about the emotionality and delivery during the recording sessions. In this aspect of our research, we work at the intersection of science and the arts, so it was important to us to have open and attentive communication, striving for the actors to feel valued and part of this endeavour. To this end, tailored science communication, upfront conversations about fair pay and disclosure of intention of use for the stimuli were imperative. Of course, we had already undergone Ethical Review and Data protection Impact Assessment and approval for both at the time of reaching out to actors, and we conducted thoroughly informed meetings about how we are going to safekeep data and also about potential risks. Contractual agreements about the conditions of usage of the stimuli for research purposes were made, which also include making the stimuli available for other research projects under concrete limitations.

4.1.14 Audio processing

Limited audio processing was necessary, to remove empty time, and normalise the volume of the audios, so that the participant would not be disturbed by changes from one narrative to the next. The open source program 'Audacity'[9] was used to cut the narratives, so any initial noise or silence at the start and end of the recording were remove. The loudness was normalised, without clipping. The male actor more frequently turned away from the microphone, which could lead to a more realistic experience in listeners, this which was less the case for the female actor. Due to the differences in stimuli quality, in some of the narratives, it was necessary to amplify certain sections in addition to the first steps of cutting & normalising.

4.1.15 Ethical matters and limitations regarding stimuli

The dataset includes many different scenarios, but the scope of those is still limited and other situations and experiences would be important to include and could be highlighted. In line with these learnings, in particular also with the Glencree Centre for Peace and Reconciliation, and the secondment at the Irish Centre for Human Rights, in future projects, lived experience should be centred and in a longer timeframe for a project, research should be co-designed already in the conception phase of the study with affected populations (Kokorikou et al., 2023; Weng et al., 2020). to make them more relevant and naturalistic (but for this, ethical standards also have to be outlined).

Relatedly, the ethical issues affect our project on every step, and we are aware that just passing the ethical review once does not ensure that ethical communication of the results is going to happen. Distress plans and debriefing procedures were developed, particularly relevant because each group of participants will hear some heavier stimuli. We also considered the potential impact of our study results, which we anticipate being timely and of public interest, due to the global attention the topic of hate received lately.

Potential Misuse and mitigation

Our data protection impact assessment and ethics application included specific procedures for safekeeping of the data acquired (including the recorded scenarios). We do know, too, that it can be difficult for laypeople -such as journalists not trained in science communication- to understand the constraints of studies within neuroimaging and psychology and the limited generalisability of results. If interpreted wrong or extrapolated without ground, our results could potentially be

[9] See: https://www.audacityteam.org/

misused to back ideological claims, which we need to be mindful of. To mitigate this risk, we will provide laypeople abstracts with our papers, include impact statements whenever possible and provide clear limitations of our method and research, not only in the discussion but also in summaries and other forms of science communication.

Data Protection

We went through a thorough and repeated data protection impact assessment for the present project and were in frequent contact with the Data Protection Officer. Specifically for Ireland, the Health Research Regulations apply, and after consideration, we withdrew from acquiring pupillometry or skin conductance data for the present study. For the planned fMRI study, specific procedures and agreements between the Trinity Institute of Neuroscience and a consultant radiologist were established, and de-identification procedures for fMRI data outlines, as MRI images fall into another data category. Highest standards of encryption and data protection, additional training and protective steps apply and were approved.

Researcher mental health

The development of a large stimuli database on challenging emotions, hate, and discrimination necessitated a level of interaction e.g. with news or NGO reports, to learn about types of hate frequently occurring in Irish society. This can be and was heavy on the researchers involved and is also emotional labour. Collaborative work, supports and additional time and resources and exchange with others should be planned into projects from the start.

Relatedly, when presenting research work that concerns hate and discrimination, another learning is to be mindful of when and how a reference to potentially heavy scenarios are shared, possibly include a warning, or the possibility for readers or the audience to have a choice if and to which degree they would like to be confronted with e.g. highly discriminatory acts described in a scenario, on a given day.

4.2 Paradigm development

Our study builds on recently published behavioural studies aiming at the differentiation of hate from other affective states. Pretus et al., (2018) showed that hate is different from dislike not just in its degree of negativity, but also in its moral component. Martínez et al. (2022) conducted five preregistered studies with over 1000 participants, assessing subjective experiences of hate and related emotional states such as contempt, disgust and anger. The researchers looked at different dimensions such as valence arousal, but also threat and attack- or avoidance related action tendencies and which relates closely to the theories by Sternberg, Vendrell Ferran and Sell et al.

reviewed in Deliverable 1.2. Martínez et al. differentiated between interpersonal and intergroup hate. Relating to interpersonal hate-targets, the authors report that participants feel more *"emotionally aroused, personally threatened, and inclined toward attack-oriented behaviours when experiencing hate as compared with dislike, anger, contempt and disgust"* (Martínez et al., 2022), while the pattern are more complex for intergroup level hate. It is important to note, that when specific aspects of existing theories are operationalised, that the research results are not necessarily evidence for the theory itself or the theory as a whole. The process of operationalisation for empirical studies (also related to constraints of methodology) can come with different definitions or assumptions that have to be made explicit in the communication.

In the following we outline aspects of paradigm development and choices for the operationalisation.

4.2.1 Participants and sample

For the present project, we selected a convenience sample by testing people who contacted us based on poster advertisements around campus as approved by the Ethics committee and following data protection guidelines. In comparison with other Universities and Higher Education Institutions in Ireland, Trinity was reported to have the highest percentage of students from affluent areas in comparison to more deprived areas of the country (one possible marker for class, see also (O'Brien, 2020). Therefore, drawbacks and limitations of a rather homogenous sample of participants are to be considered, which poses clear limitations to the external validity (Henrich et al., 2010). This is especially important when studying hate as one of the affective states. On the one hand given that Aumer et al. (2015) showed that in a psychological survey which was conducted with a student sample in a western, industrialised location, a considerable part of the participants report never having experienced hate, the engagement of our participants in the recognition task could also be reduced (following the assumption that emotional experience and emotion recognition could be connected). On the other hand, the results have to continuously be put in perspective to avoid generalisations that were not actually operationalised or tested - potentially also by others in the process of science communication (e.g. journalists).

Language requirements, demographic variables, diversity of the current sample, differences in understanding/being affected can all have an effect, and vary from context to context and cross time. The presented task is novel, so we do not have a reference for effect sizes, for instance.

In- and exclusion criteria

We decided to keep the in- and exclusion criteria for the initial study minimal, with the following being communicated to participants on the poster:

- 18-35 years old, healthy adults
- normal hearing abilities and normal or corrected-to-normal vision
- no history of neurological or psychiatric illness or brain injury
- no history of epilepsy and not sensitive to flashing stimuli

The point with 'psychiatric illness' seems to be an unclear category, as there are people going to short-term counselling without having a diagnosis. No demographic variables aside from age and gender identification were included.

Age group

It was necessary to include a limit, otherwise differences in understanding and references would be too varied for an initial study, so we chose 18-35. In future studies this can be extended.

Language

The language(s) a person speaks can affects emotion categories and has to be considered, for the present study, we did not include participants based on this (for more see next chapter).

4.2.2 Rating task

Feeling/Experience/Perception/Recognition

Emotion tasks can be on different aspects on processing or expressing of emotions (Adolphs, 2017), and it is important to include clear instructions on what is asked. There is research on emotion differentiation, defined as the ability to differentiate between own emotions (Smidt & Suvak, 2015).

An assumption frequently made is that individuals who have difficulty recognizing their own emotions should have difficulty recognizing emotions in others (or those who are better able to recognise their own emotions being better in understanding others), but evidence is preliminary (Erbas et al., 2016).

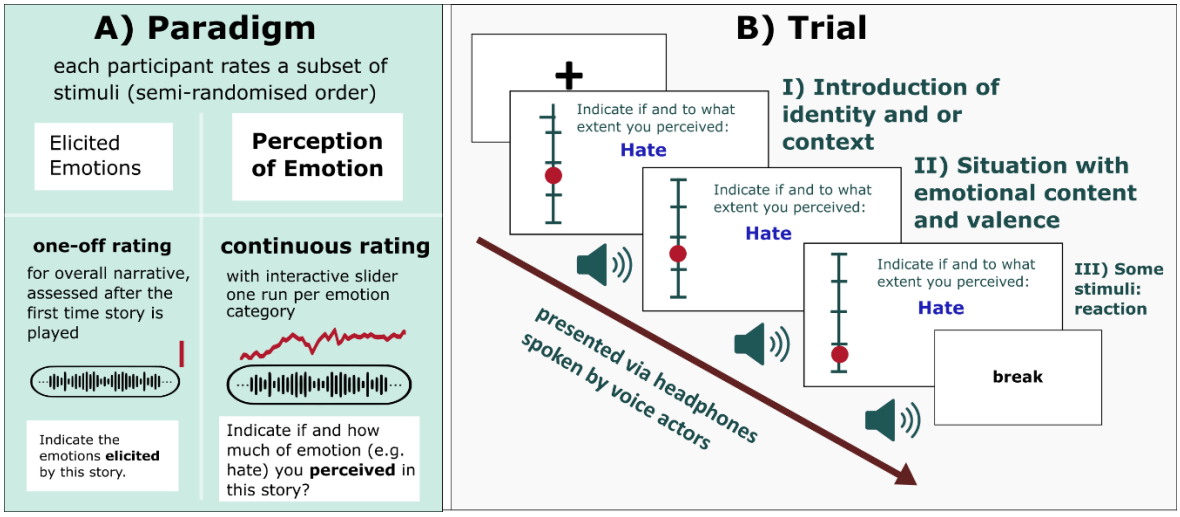
Giving a definition of hate or not

There are studies that include a definition of emotions at the beginning of the study, for the present study, we chose not to do this. We rather included a question on the main emotions after the main part of the experiment, asking 'What does X mean to you' (X = Hate, Anger, Fear, Contempt, Joy)

One-off or continuous measurement

If emotions are rated (semi) continuously, e.g. with a cursor or prompted in time intervals, or once after the stimulus was presented is another choice. In our paradigm, the impact of the stories on the participant (felt emotions), is assessed as a one-off measure after an initial round of listening to all narratives presented in a given block. We ask participants indicate elicited emotions in a one-off multi-item and free-word choice setup. Then, participants hear the narrative again and provide a continuous real-time rating of one emotion in each run, over the course of the whole auditory narrative (see Figure 5 and 6).

Figure 5: Paradigm and Stimulus Design



Paradigm design. Elicited emotion data is acquired with a one-off prompt after listening to a story for the first time. Paradigm focus on the perception of emotions. ***B)*** *Illustration of one trial and the continuous rating, which is acquired while the participant listens to the audio narrative played via headphones. Each emotion gets rated individually (hate is only an example).*

For the continuous rating (see Fig. 5, the task was designed similarly to previous studies assessing emotions (see e.g. Hudson et al., 2020), for an evaluation of continuous ratings see Hutcherson et al., 2005)) a vertically oriented slider on a screen ranging from zero (indicating none of the emotion present) to the maximum (indicating a high amount of the emotion present) was used. Participants are able to control the position of the slider indicating their response by moving the mouse up and down and get real-time indications of where their rating is at a given moment.

While there are studies that acquire data on two dimensions at the same time with a mouse cursor setup, the typical one being 'valence' and 'arousal' following the circumplex model of affect (Russell, 1980), but also further, more nuanced two-dimensional setups were developed, see e.g. (Cowie et al., 2000). Cowie et al (2000) note, however, that "There are distinctions that it fails to capture, notably the distinction between fear and anger. That is because the space of possible

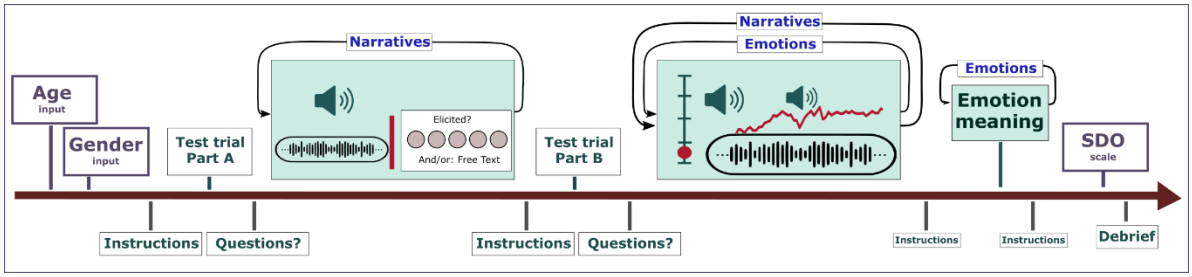
emotions has more than two dimensions." (technical report Crowie, 2000, last page). As we are particularly interested in the distinction between fear, anger, contempt and hate and expected that there are complex emotional states that include all of those emotions to a degree, we chose to have multiple runs of participants listening to the narratives and providing a continuous rating per emotion label to have fine-grained data to work with.
If the paradigm was tested with fMRI, the post-experiment, continuous rating would then allow for more analysis options, see e.g. Nastase et al. (2019).

Order of task parts

Initially, participants hear each story once to get familiar with those before heading into the continuous rating, which is the focus of the rating study. To get participants first impressions on the story, we decided to ask participants about how they felt after the initial time listening to the story.

To avoid priming effects or bias the emotion perception task, the Social Dominance Orientation scale was administered at the end of the study.

Figure 6: Illustration of Task Order



Demographic information was acquired first. The one off-rating (Part A) included a presentation of all 10 narrative a given participant hears throughout the course of the experiment, and a multiple choice and free text option after. In the dynamic rating (Part B), participants hear a given narrative 5 times (once per target emotion). After that, the next narrative is played and rated 5 times -meaning this is looped by emotions, and then narratives. Then, participants were asked about the meaning of all 5 target emotions, and the Social Dominance Orientation (SDO) scale was administered at the end. Afterwards, the participant got debriefed

Instructions and ergonomics task itself

The instructions and all task parts were administered via a PsychoPy program, while the experimenter was available for questions, particularly during and after the test trials. The continuous, dynamic rating with mouse in particular needed getting used to for many of the participants, as the cursor on the screen moves quickly up and down the vertical scale.
Instructions were administered both before each trial and a short version stayed visible on screen during the continuous trials, to make the distinction between a question about elicited emotions (feeling, in the one-off trials) and emotion perception (dynamic rating trials) clear.

4.2.3 Online vs. In-Person experiment

When rating stimuli, it can be helpful to do part of this with online studies, because it is easier to administer compared to getting participants into the laboratory at the university, and a diverse sample can be easier to achieve. There are platforms that facilitate access to groups of participants that can be selected based on demographic variables. Caution is warranted, however, because some of the platforms were recently criticised for both their validity of results (e.g. participants on Mechanical Turk failing validity checks and making more mistakes, see (Aruguete et al., 2019)) and the ethical dimension of low wages of participants (Moss et al., 2023). Other platforms focus specifically on addressing some of these issues, and with paradigm-related features (e.g. catch questions) it can be possible to achieve better data quality. For our database validation and paradigm, we decided to test participants in the laboratory, because listening to many audio stories requires a high level of attention and taking breaks, and the possibility of participants just starting the narrative and not paying attention anymore or not providing any reaction would likely be higher in online studies (Brühlmann et al., 2020; Webb & Tangney, 2024). From an ethical point of view, there are at least two points to consider: practically, the laboratory provides a different environment than the participants home, so if there was distress to come up during the experiment, the participant is in a controlled and supervised environment in which the research team is better able to provide assistance or signpost (see section 'Ethics' for distress protocol). We would not have any control over this, and a debriefing would be dependent on if the participants read a text on screen. Second, while more recently there are platforms with better working conditions for participants and usability for researchers, for mTurk (one of the biggest platforms to outsource online study participant acquisition to, run by Amazon), it has been questioned if participant recruitment using those platforms is or can be ethical looking at the working conditions of such corporate-mediated gig work (Haug, 2018).

4.2.4 Self-report vs. implicit or physiological measures

We considered introducing a measure of arousal or eye tracking to have comparability measures for arousal and a proxy for attention. The discussion about how able people are to identify and label emotions, e.g. when they are feeling them themselves, is part of scientific discourse in affective neuroscience (Richardson et al., 2020a; Teoh et al., 2023), and different ways of acquiring data related to emotions and affective states have been proposed (also moving beyond self-report measures, see for instance Jääskeläinen et al., 2022)). We hope that our design choice to test perception of emotions rather than eliciting emotions has a positive influence on how social

desirability might factor in less (e.g. participants might not want to disclose feeling or having felt hate, but he able to identify hate to be present in a given scenario).

4.2.5 Power calculations

The presented task is new, there were constraints to time and attention, as well as balancing positive and negative emotion stimuli. The continuous narrative rating while participants listen to the audios is particularly time-consuming and affected the trials that feasibly could be done by each participant. A within-subject design, for instance, would have meant cutting down drastically on the number of narratives included. The desire to keep variety in contexts and identities in the stimuli dataset was one reason to have a between-subject design for the rating of the narratives. The ratio of having positive or neutral narratives in the experimental setup was an essential part of our discussion.

Listening to negative audio stories repeatedly could make the likelihood of distress occurring higher, and a range of emotionality was desired. Interlacing the negative audio stories with positive and neutral stories resulting in a variety of valence for the participants was one of our considerations relevant for ethical research practices.

Combination of stimuli subset per group

As we selected longer narratives, it was necessary to narrow down the number of stimuli and the range of emotions. While the set of shorter narratives included e.g. embarrassed, or annoyed, as well as awe or curiosity on the positive side, longer narratives posed time constraints for the current project. Only 10 narratives were possible per group.

In contrast to behavioural work of Martínez et al. (2022), who looked at hate from an experiential or phenomenological angle (using e.g. self-report questionnaires), we were interested in testing the bystander perspective of hate and associated emotions such as anger, fear and contempt specifically, so we focussed on those target emotions to narrow down the variety of emotions. With many identities and contexts included in the developed narratives, the specific selection of stimuli could affect the participants ideas about the goal of the study (7 out of 10 stimuli were negative). There could be a spillover of one narrative/identity affecting the interpretation of the next story to come.

We aimed at including different identities and forms of discrimination in each groups subset, and developed a thorough debriefing procedure: particularly when participants hear different stories on discrimination and hate, it is important to clearly outline that e.g. the goal of the study was not, for instance, focused on one type of discrimination (which could risk perpetuating

stereotypes), but that other participants heard other stimuli broadening the variety of emotional experiences described in the audio stimuli developed to study complex emotional experiences. Therefore, we could not just randomly allocate all 28 negative and 12 positive stimuli to any group.

Randomisation vs Counter-balancing

Focussing in a task with dynamic and real-time rating while listening to audio stimuli likely requires a lot of attention, and switching between emotionality can be taxing (Eckart et al., 2023). Balancing emotionality, so having a positive or neutral scenario in between

We decided to first present all stimuli in a one-off format, with a question on elicited emotions after, so the participant was introduced to each story before heading into the second part, which is a continuous rating task. For the dynamic rating, we decided on a 70:30 (negative:positive) ratio, with different levels of intensity in the negative stimuli. The complexity of the developed stimuli could possibly additionally prevent higher levels of distress, as there are stories that e.g. start positive, but then later on contain hate or anger as emotionality. We added self-paced breaks after every single run (1 narrative, ~20-35 seconds), waiting for the participant to press a button to start the next trial. Additionally, a distress protocol was in place.

We anticipated that there could be order effects, which is why introduced variation in the order of audio stimuli per participant in each group. It was not possible to fully randomise this: Some level of counterbalancing was necessary to ensure that participants listen to a positive narrative after having listened to two negative ones, and that there is some alternation of audios spoken in by a male vs a female speaker were taken into account to determine stimulus order within one group. For the full order structure, see supporting information.

4.2.6 Control Measures and Questionnaires

Social dominance orientation

Social dominance orientation is an established measure to assess a persons support for an existing social hierarchy (including inequality) vs for egalitarian attitudes (Ho et al., 2015). We included this measure, as previous research shows an influence of view and ideology on attention to injustice (Waldfogel et al., 2021) and on perception of institutional racism (Marshburn et al., 2022).

Socioeconomic Status

Socioeconomic status can have an effect on emotional processing (see (Hao & Farah, 2020)). We carefully considered which measure of Socio-Economic Status would be applicable to our mostly student sample living in Dublin, that takes different aspects into account (e.g. assesses if people

had to worry about money growing up as well as their current situation) to get a picture about the self-perceived level of SES in our sample to use it making limitations clear.
Our measure consist of two parts, the first follows (Griskevicius et al., 2011) who take a life history approach, and the selected items relate to available resources growing up as well as current/future situation. The second is an established measure of subjective Socio-Economic-Status which was validated in an affluent university population (Evans et al., 2022), and we make the assumption that the validity of the measure will be approximately comparable in our convenience sample in Ireland.

The scale was intended to be used in the fMRI part of the study only, which is why we did not acquire nor report Socioeconomic status results.

4.3.7 Gender aspects

There are studies in the affective neuroscience that only include women (see e.g. Saarimäki et al., 2018) reasoning that this would increase the power of the experiment as they assume female participants to typically show (or experience?) more intense emotional reactions. Following cultural influences, norms and stereotypes, there can be socialised differences e.g. regarding self-estimated emotional processing, this is, however, part of an ongoing debate (see, e.g. Fischer et al., 2018) who did not find support for the so called 'Emotion sensitivity hypothesis' using a large sample and different measure). For the present project, we are interested in emotion perception from a bystander perspective in general, so we aimed at keeping our sample diverse in that aspect and chose not to exclude people based on their gender identity. We asked about the gender participants identify with to get an overview of our sample and know who, e.g., potentially might relate specifically with the stimuli concerning misogyny. Following the recommendation of Lindqvist et al. (2021), we provided a free-text input option for everyone.

4.3.8 Procedure

After (potential) participants got in touch with the research team, they received information material, and an appointment is scheduled. On the day of the experiment, each participant got a short, oral summary of important aspects of the study by the researcher. Emphasising that participation is entirely voluntary and that stopping participation will not lead to any negative consequences (no questions asked, no reasons needed, voucher given anyway) and reiterating data rights and the process of anonymization are essential part of this summary. Information

sheet and consent form are read by the participant, with the researcher present for questions. Once the forms are signed, the participant is seated in front of a screen (model, distance) and handed headphones (headphone model, volume adjustable). The experiment is started, and the participant is guided through instructions and the task (for illustration see Figure 6) via an interactive PsychoPy program. The experimenter is available in a room next door for any questions that might arise during the time course of the study but not present in the room of the experiment. Questions about the definition of a specific emotion are not answered with a definition, but the participant is ensured that the research team is interested in what the participant understands the emotion to be. Once the study is finished (or the participant desires to stop the experiment), the participant is given the copy of the information sheet and consent form and the voucher, the experimenter debriefs the participant, answers any questions.

4.2.9 Ethical matters regarding paradigm development

All researchers underwent DPIA training, as well as research integrity course and ethical practices and training regarding Health research regulations, which was necessary for participant rights. A thorough and iterative review of Data Protection matters was essential part of the Ethics application for the project.

The research project was submitted to and reviewed by the Faculty of Health Science Research Ethics Committee (which also reviews studies that have medical goals as main objective), the acceptance letter is attached to this thesis.
As our project concerns sensitive topics, we considered literature on distress protocols, which are more frequently applied with qualitative data acquisition (Draucker et al., 2009; Whitney & Evered, 2022), but we chose this to be relevant and needed for ethical practice for the present project.

Our experimental design includes that the participants perceive (hears) complex emotional stimuli, that also include e.g. anger, fear or hate, besides neutral and positive emotions. Therefore, distress or discomfort could be evoked in participants. To mitigate this, we made sure that the severity of the emotional situations in our narrative stimuli are comparable to e.g. what is reported in the daily news. For the unlikely case that a participant does experience emotional distress, there is a clear plan setup. We checked in with the participant during the course of the experiment and ask about their state. Should they report distress or show signs of it (seem distressed to the experimenter), the experimenter will stop the experiment, and guide the

participant in a different, calm room and will be provided with a beverage if desired. A debriefing by the experimenter or supervisor can happen, if wanted by the participant

We acquired questionnaire data with a Social Dominance Orientation scale as demographic control measure, and intended to assess Socio-Economic Status (in the neuroimaging part of the experiment only). The questions could potentially be intrusive for some participants, as for the SES measure, for instance, questions relate to resources and the social standing of the person. To detach this process from personal interaction with the experimenter, the questionnaires were (or were to be) assessed on a computer, ensuring privacy when responding.

Debrief

For a study involving complex and heavy emotions, an appropriate debriefing with time is particularly important. For the case that participants show or report distress while in the research facility, a standard operating procedure (SOP) was developed.

A debriefing after the participation included checking-in with each participant about how they feel, answer any questions, telling them the study goal again (getting more information on the newly developed narratives and paradigm to study complex emotions), and explaining that the study was not about specific identities, but about the emotions and that each participant only saw a subset of the total set of stories (for more documentation, see Appendix)

4.3 Open Science and Research Integrity

Open Science practices were considered essential, and included from the start of the project, and in this research field, with no existing databases to study 'hate', it was of particular importance for us to be transparent about our newly developed stimuli. We are making the developed narratives available to the research community in written form. This is crucial for readers to understand and critically question the content and variability of our emotional narratives. After waiting until one year has passed since the data acquisition was completed to ensure our participants have ample time to access their rights related to their data, we will anonymise the data. After anonymization, we will also provide validation data alongside the narratives. After the first publication of the study, we also are going to make the audio recordings available to other researchers upon request and under some conditions, which we put in place to protect the actors and limit the potential of misuse of the database. Approved by the Data Protection Officer and the Ethics Committee, explicit consent for the anonymization and data sharing/reuse was part of the information of the participants. Participants are informed about how the research team is going to process their

data, about data rights and about anonymization and subsequent sharing of the rating data along with the study database of other researchers to use.

Additionally, the PsychoPy paradigm and analysis scripts will be available to researchers to foster critique and re-use. The programming of the vertical slider component specifically was supported by https://opensciencetools.org/, a consultancy for Open Science oriented research programming, who were paid for their work.

Parts of this chapter, the reflective chapter and the thesis were specifically included and design decisions made to be able to share the learnings with others who are interested in studying (aspects of) the neuroscientific basis of hate and complex emotions.

5 Results

The current data analysis is an exploratory data analysis: 40 emotional, narrative stimuli (28 negative emotionality surrounding hate, anger, fear and contempt, 12 positive or neutral scenarios), were rated by N=66 participants, who were allocated to one of four groups, each group listening to the same 10 unique each. The main goal of the study and the analysis in the present chapter was to understand if the auditory stimuli led to 'recognition' or perception of complex emotions, and specifically to the perception of target emotions the research team desired to portray in the auditory stimuli. To get time-resolved information on the emotion perception, data was acquired using a dynamic rating task (slider) over the time course of each audio stimulus, for each of the 5 target emotions. A secondary goal was to test if the auditory stimuli elicited emotions, which was asked after the initial presentation of each narrative (no dynamic rating at that time), and operationalised by a one-off multiple choice and free text field. Data analysis methods such as Intersubject Correlation were employed to revel patterns of similarity and divergence in participants ratings across the time course of each narrative and emotion. Similar methods also are relevant and insightful for potential, future fMRI study setups, and learnings will be outlined.

AI-assisted coding support (Claude Sonnet v4, 2025) was used via GitHub Copilot to generate and refine Python scripts for data analysis.

5.1 Summary

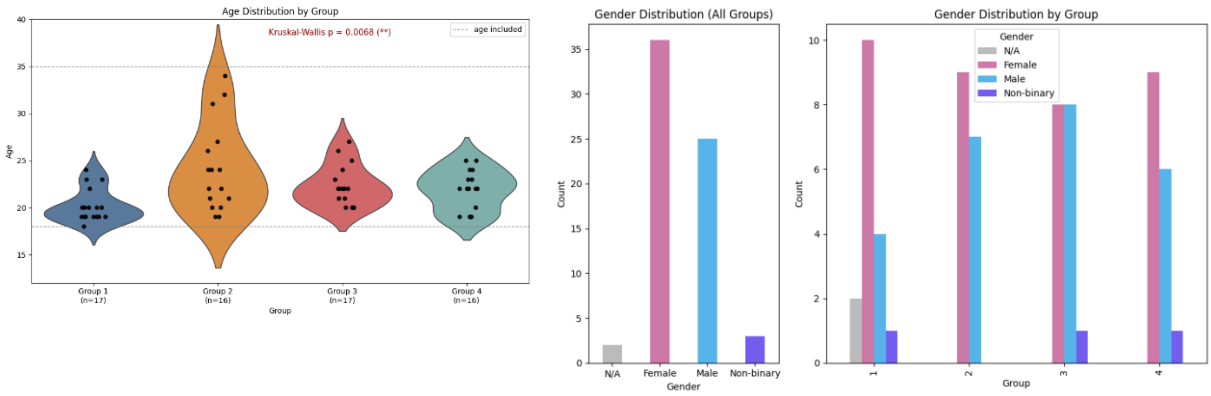
None of the participants who came to the lab dropped out and no distress was reported after the study. The results show that the developed narratives: I) successfully elicited a wide range of emotions reported by the participants, including hate, anger, and shame, as well as a co-occurrence in elicited, negative emotions. II) while, as expected given the complexity of the narratives, there is a high interindividual and inter-narrative variability, there are narratives for which there is higher alignment of participants across the time course given a specific emotion, and reverse patterns of emotion perception for joy and hate in a given stimulus were shown which supports the quality of the developed stimuli. III) The free-text input results show that many participants understood hate as deep dislike with a heightened intensity and discomfort, while fewer noted a conflict of values, connection to anger and disgust, or a desire for the hate target to not exist. In comparison, for anger, participants focussed more on physiological experiences, lower control, and aggression, with fewer viewing anger as a reaction to unfairness, and note it to be more frequent and shorter in duration than hate. Fear, for many, is the

(anticipation of) danger, helplessness, and connected to physiological alertness. For contempt, many participants mentioned superiority and looking down on others and a relation to disgust, with fewer viewing contempt to be less intense or passionate than anger or hate. These results broadly aligns with existing literature. Notably, part of the participants mention uncertainty about what contempt means to them or misunderstood the emotion label completely (further discussed in this chapter).

5.2 Sample

We tested a total of 66 participants, split in 4 groups, each group of 16 or 17 participants saw the same 10 stimuli (narratives). The participants were tested over the time course of 3 months, with the first 16 coming in allocated to group 1, the next 16 to group 2 and so forth. Every person who contacted the research team during the testing period replying to study advertisement posters placed across campus and public-facing notice boards, and fulfilled the inclusion criteria was invited. No mailing lists were used and no course credits awarded. No questions on native language or nationality were included in the current study, but there was a variety in the sample with regards to those aspects.

Figure 7: Age and Gender Identification Distribution



The total Mean **Age** was 22.09 years (with a SD of 3.19), when divided by groups: Age is statistically different between the groups: ANOVA: F=5.071, p=0.0034, Kruskal-Wallis: H=12.176, p=0.0068, and as visualized in Figure 7, the age distribution differed: especially group 2 had a broader scope of age range included with three participants over 30. It is important to note, in case there are general (group-based) differences, or specific narratives with references in a given group did not work.

The **gender identification** of participants was distributed across the groups (every person identifying as non-binary was in a different group), every group had men and women, but there are differences in the ratio of men and women. Overall, looking at the gender distribution: our sample had more women than men (35:25), with three participants identifying as non-binary and two participants who were tested, but no gender-identification data is available. The Non-binary participants were distributed across the groups.

5.3 Emotion Elicitation

After listening to a narrative for the first time, participants were asked *"Were emotions elicited by the story? Which ones? Select below and type with the keyboard."* And it was clarified in the instructions before *'this is about how you feel.'* The options on screen were 'hate', 'anger', 'fear', 'contempt' and 'joy', all were clickable and un-clickable. Multiple options could be selected, and free text could be inserted either additional or as the sole answer and written text could also be deleted with the keyboard. The participant confirmed their choice and input by pressing a button, which showed up with a minor delay on screen.

Notably, four choice-options were negative emotions, and only one option positive -which skews the affordances (participant might be more likely to choose existing options rather than putting in extra-effort of typing). Therefore, the frequency/number of clicked emotion buttons cannot be seen as a proxy for the overall intensity, emotional arousal or complexity of a scenario (someone might have clicked 'surprise', and 'pride' in addition to 'joy' if those options would have been present on screen). It is possible for participants to feel nothing or for surprising emotions to come up, for instance feel joy or be touched because they can relate to a situation even if its a negative or harsh scenario, or as an extreme example, someone could report to feel e.g. joy when others are suffering. Looking at the data, this is not frequently happening.

Looking at Figure 8, there are clear patterns of elicited emotions to be in line with what would be expected based on the emotionality present in a given, developed narrative, so when there is joy, participants tend to not report hate, anger or fear to be elicited. When participants report hate, anger or/and fear, joy does not generally co-occur. The narratives with different emotions indicated to be elicited, are also the narratives that are highest in hate, for instance narrative

number 4[10], 92[11] and 83[12], which are all about direct discrimination (misogyny, anti-Queer/anti-Trans) in real-life scenarios with direct physical violence or threat/danger for the targeted person(s).

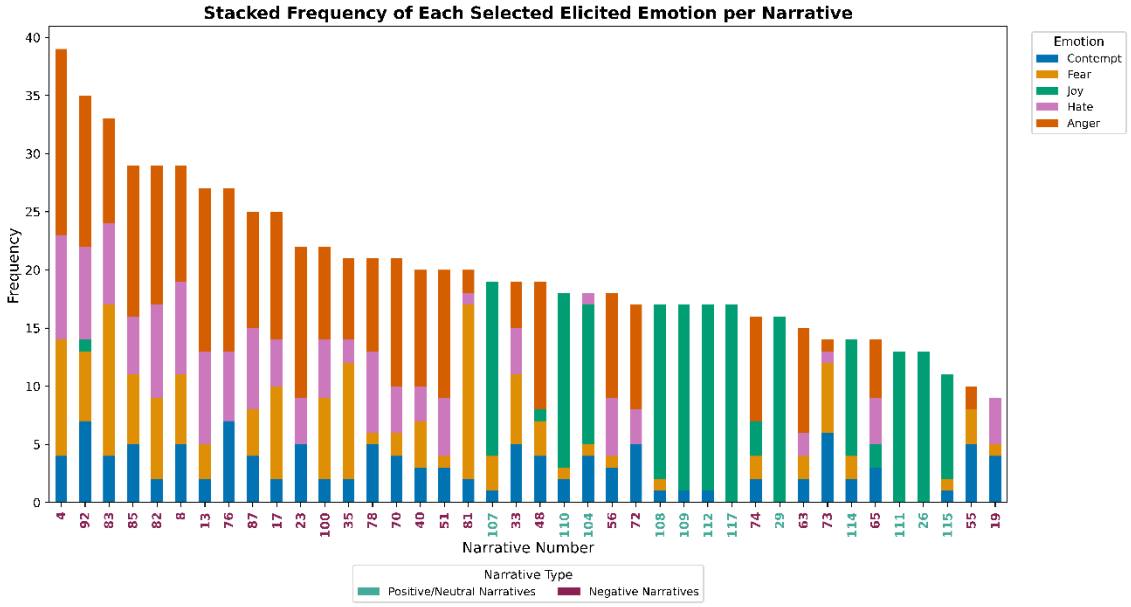
Looking at the stories that elicited the least (selected) emotions was one positive narrative (115), and two negative scenarios: one about a person from the Travelling Community talking about job rejections and the Access Program (Trinity-related, Program to facilitate college access for people from underrepresented groups), which necessitated prior knowledge and was phrased in quite general way (55), and another stimulus in which someone talks about discrimination experiences in the distant (childhood), while also mentioning that they found friends later on (19).

[10] **4**: "I went out with my friends in Dublin one night and then walked home. It isn't far and is well-lit and there are always plenty of people about at the time when the pubs close. That night though, I had a scary situation – 3 drunk men followed me down the road and started harassing me (alarmed). At first, I tried to ignore them, but one of them got angry and came closer (repulsed, scared). Before anything happened, one of his friends pulled him away (panicked, distressed). I was trembling when I got home shortly after (distressed, restless). The next day I told my colleague about it, hoping I'd get some support. But instead, he went all out blaming me for going home alone at night in the first place (bewildered, hurt, disheartened), and said 'if something had happened, it would have been your own fault, are you stupid?! You really are asking for it!'(telling this angrily, contempt)"

[11]**92**: "My partner and I went out to meet friends at a gay(queer) bar last Saturday night (joy) and were taking Dublin Bus back home early in the morning. On the bus, a group of young men started to mock my partner and me - trying to demean me and insult us in a very vile way. (fear, devastated, tense, panicked) We tried to ignore them hoping they would get tired and ignore us. One of the men came up to us and knocked my phone out of my hand and while I tried to retrieve it from the floor he hit the back of my head. (horrified, hurt, unsafe) His friends were laughing at us and we felt very alone – it seemed the entire bus was laughing at us. (betrayed, left alone, indignant, angry, despair, embarrassed)"

[12] **83:**"I am a young trans man and the other night, I was walking with 2 friends on a street that was quite empty when a man started asking if I was a guy or a girl (afraid, guarded). When I didn't answer and kept on walking, he started shouting louder threatening to hit me (terrified, helpless). He then decided I was a girl and started singing a song about how he was going to rape me (terrified). He followed us down the road singing this song, and it got really scary, you never know if they suddenly go from those words to attack. (shaken)"

Figure 8: Elicited Emotion Frequencies



Note: This cannot be seen as a proxy for positive/negative valence, because the multiple-choice options were skewed towards negative emotion labels (4 negative, 1 positive), and there was an additional free-text field.

5.3.1 Co-Occurrence when hate was reported as elicited

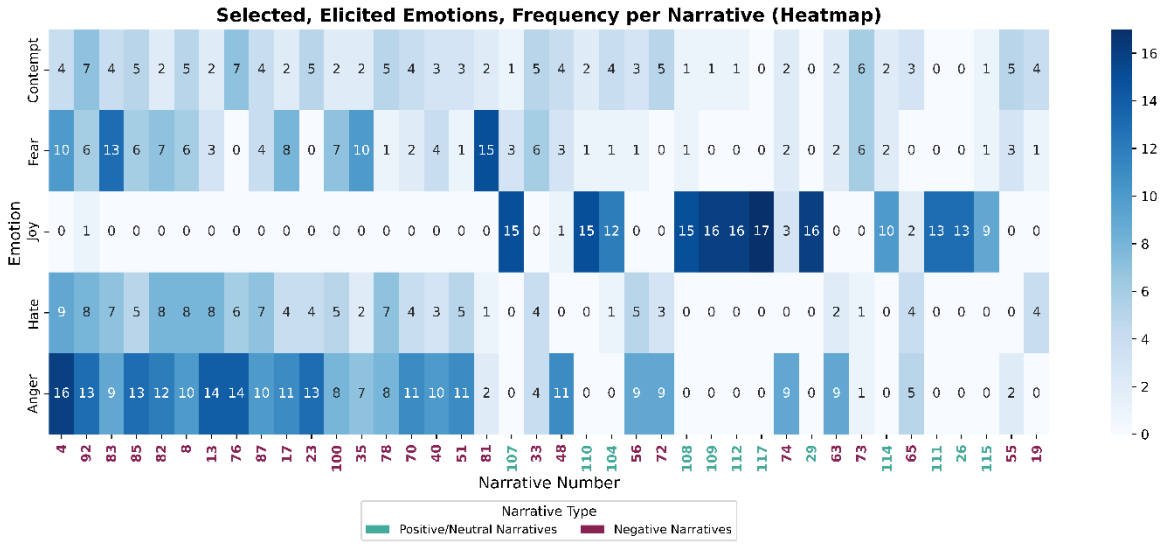
Anger most frequently co-occurred with hate the multiple-choice, with fear being the second most co-occurring emotion. Joy was not reported to be elicited by the narrative trials that participants indicated hate or anger to be present, and fear is also not generally associated with a co-occurrence of joy. Contempt is indicated in narratives that participants reported 'hate' to be elicited, but less often than anger and fear.

A smaller number of narratives show a more ambiguous co-occurrence, one of those being the already mentioned stimuli with the access program (55, showing anger, fear and contempt elicitation). Another ambiguous stimulus is 48[13], a story in which a person experiences verbal discrimination, however, the narrative ends with support by a bystander. For this story, 11 participant replies are anger, none replied indicating hate, one reply indicated joy, 3 fear and 4 contempt. Other narratives include a change in emotionality: a turning point. In narrative 74, for instance, a person describes how they grew up, and mentions good community, and then

[13] **48**: I am of Egyptian descent, and I was travelling back home to Dublin. At the airport check-in desk. I gave my passport for the usual check-in procedure. As I was standing there, a person walked up to me and said 'You are not going to blow up the airplane, are you?' (shocked, weary, scared) I was stunned at this and just like that, the person walked away. (angry) The person at the check-in was just as surprised.(relieved)

illustrates their negative and excluding experiences at college[14]. For this narrative, both anger and joy were indicated, which might reflect the complexity in the narrative. Separately, a significant part of participants misunderstood contempt as 'content' or associated something yet different with the emotion label (in total 28 out of 66), which became clear when analysing the free text inputs of the emotion meaning question at the end of the experiment. Some of the unexpected co-occurring emotions could also be due to this misunderstanding or misinterpretation of contempt. The examples illustrate the number of dimensions complexity can be introduced and expressed in narratives, and many factors that can have a possible effect on the elicited emotions (e.g. reactions of bystanders can have an effect).

Figure 9: Co-Occurrence of Elicited Emotions



5.3.2 Free-Text input for the narratives with highest hate

For narrative 4, participants noted elicited emotions such as annoyance, shame, disbelief, disgust, and sympathy in the free text. For narrative 82[15], sadness, resentment, and shocked/negatively

[14] **74**: I grew up in a traditionally working-class neighbourhood, in a council estate. I really enjoyed it and we had a good community (content, glad, appreciative), but when I got to college, the way I viewed that changed. I remember one time in particular, I had invited my new friends to a party at my house, my parents were away – we had a great time, I thought (happy, doubting). But the Monday after, I overheard one of my classmates denying that he attended, saying 'I would never hang out in a social housing estate, what the heck?!' (hurt, excluded, sad)

[15] **82**: I am a trans woman and the other night I went to a College society meeting in a pub. I was essentially forced by an awkward conversation with/interrogation by an acquaintance to admit my trans status (enraged, appalled), at which point she began to scream at me that I was 'a freak' (horrified, vulnerable, afraid). She forced me into a corner while threatening me with violence (scared). When I made a (feigned) motion to defend myself I was grabbed violently by a staff member of the pub and forced to leave. (repulsed, angry, contempt)

surprised was mentioned. Similarly, for narrative 92[16], participants reported to feel outrage, alone, shock, disgust, upset, frustration, rage and terror. Depending on the scenario, the elicited emotions that participants freely inserted in the text field show nuance, and different directions of being affected by the scenarios that were frequently named to elicit hate.

5.3.3 Interpretation

While common in many experimental accounts on emotions, in this study we did not measure arousal or valence. There are trends in the amount of emotion options clicked, which indicate a higher number for narratives about direct discrimination with physical threat. The narratives that participants responded with the highest number of emotions selected (from the 5 options given as buttons) aligned with the narratives that participants indicated hate to be elicited. Previous research suggests a general tendency for positive stimuli to be less arousing (McManus et al., 2024), for the present study the positive stimuli likely were lower on that dimension too, but given that we did not assess this directly, no clear interpretation on the perceived intensity of stimuli is possible.

5.4 Continuous rating across the duration of each stimulus

After listening a single time to each narrative of the 10 narrative set that each participant was to score, participants were instructed about the dynamic slider rating method. They saw the following on screen: “For this part, it does not matter how the story affects you or how you feel. This part is about if and to what extend you perceive an emotion in the story.”. While listening to each narrative, participants were asked: “Indicate if and to what extend you perceive the emotion: X” (X one emotion per trial, either hate, anger, fear, contempt, joy, in randomised order), the visual, vertical scale was from ‘not at all’ at the bottom of the screen, to ‘extremely’. This instruction stayed on screen throughout the duration of each narrative. Before the start of each trial, participants were instructed to move the cursor to ‘not at all’. The following subchapter lays out patterns of participant responses: variability, similarity, peaks and turning points across narratives are discussed. Importantly, the sample sizes are small for the present dataset (10

[16] **92**: My partner and I went out to meet friends at a gay(queer) bar last Saturday night (joy) and were taking Dublin Bus back home early in the morning. On the bus, a group of young men started to mock my partner and me - trying to demean me and insult us in a very vile way. (fear, devastated, tense, panicked) We tried to ignore them hoping they would get tired and ignore us. One of the men came up to us and knocked my phone out of my hand and while I tried to retrieve it from the floor he hit the back of my head. (horrified, hurt, unsafe) His friends were laughing at us and we felt very alone – it seemed the entire bus was laughing at us. (betrayed, left alone, indignant, angry, despair, embarrassed)

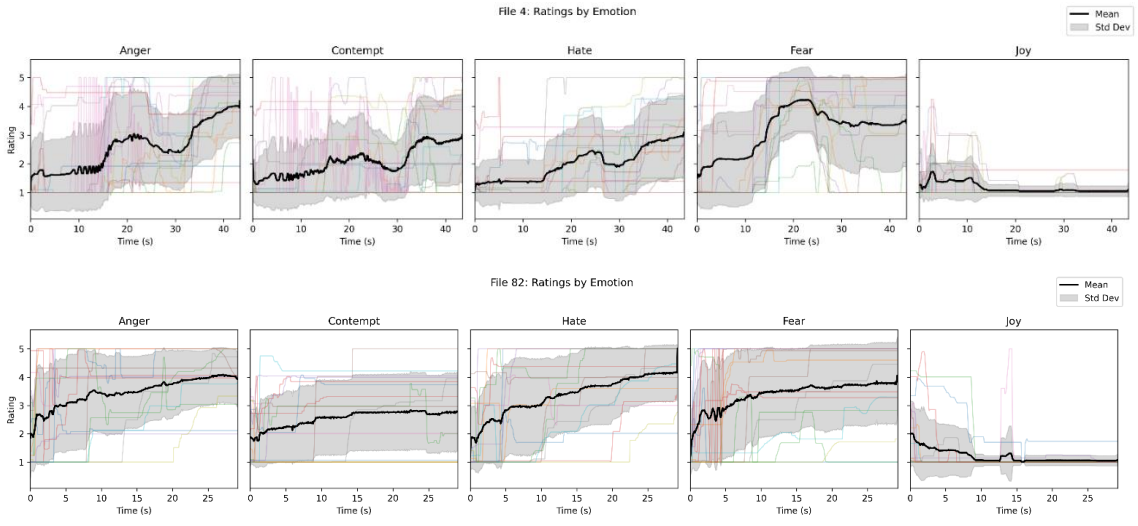
narratives, 16 or 17 participants per group). Considering this with the amount of data points, caution is warranted regarding the type of statistical tests (necessary statistical assumptions e.g. of linearity) and number of comparisons.

5.4.1 Time-Course patterns and variability

To get an overview of developed narratives that participants listened to and then reported a frequent elicitation of hate, Fig 10 shows the time-course data of each participant for the same narrative and the five different runs, one run per target emotion (two narratives were selected: No 4 and 82 were highest in hate elicitation, both stories contain explanations of direct, physical assault). A mean and standard deviation are overlayed in black/grey, but no smoothing applied in this initial step, resulting in, for instance, the rapid up-down movement of one participant causing minor distortions in the mean (e.g. see Anger and Contempt for File 4, rapid slider movement of one participant across the extremes of the scale is visible).

Figure 10, depicts the rating data on the example of narrative 4, which was indicated by the largest part of participants to elicit hate. The time series for anger, contempt, hate and fear start low, and then show an increase over the course of the narrative, with anger, fear and hate showing a peak around 20-25 seconds, with either a mild decrease after (e.g. for fear: the rating stays on a high level) or a more pronounced decrease, followed by another increase. In contrast to the negative emotions, small extends of joy are present at the beginning of the scenario, but then quickly decline to 'not at all'.

Figure 10: Time Course Illustration (High Hate)



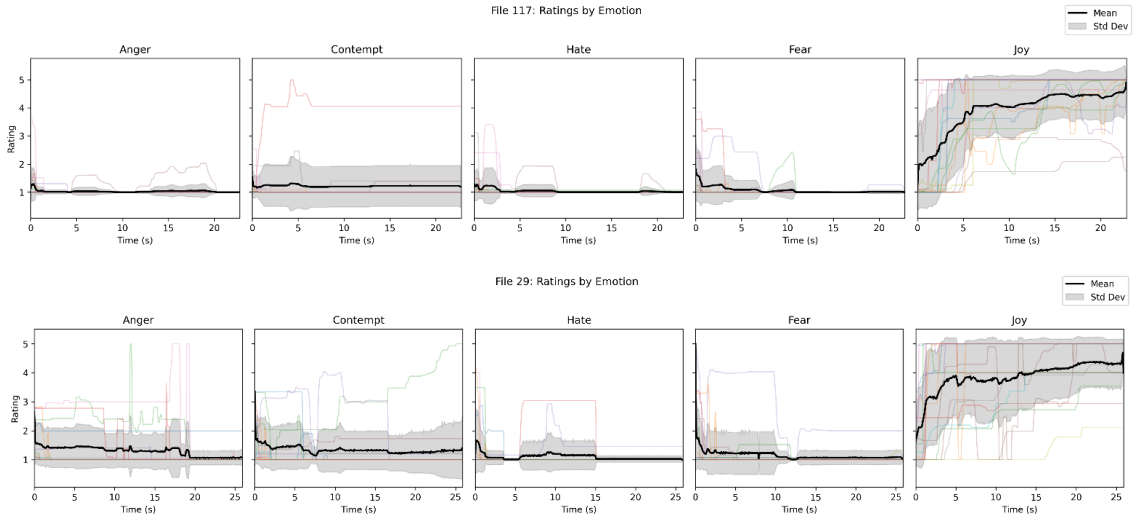
Time course illustration for two narratives highest in elicited hate (content: direct physical violence)

This pattern aligns with the way many of the narratives are structured: In the first sentence, the setting is described (e.g. narrative 4 starts with 'I went out with my friends in Dublin one night and then walked home. It isn't far and is well-lit and there are always plenty of people about at the time when the pubs close.'), which often is neutral, but it can, also for scenarios with negative emotionality, be positive. The problematic acts are often described in the middle or towards the end of a given scenario, which can be seen in the rating in Figure 10.

Figure 10 (second part on File 82) shows the narrative that is second highest in elicited hate (harsh aggression against a trans woman, no bystander support), and shows a different pattern. While the general trend in the negative emotions is increasing across the narrative for anger hate and fear (and contempt, but less pronounced), there is less of a clear 'peak' and there is no decrease of elicited, negative emotions, which aligns with the continued tension and lack of support in the scenario. Elicited Joy starts off a bit higher, but then decreases to nearly zero, with a small peak, highlighting that the (more extreme) slider rating of just two participants can affect the mean.

Looking at two examples of positive stimuli, Figure 11 depicts the time courses of elicited emotions, selected by the highest ratings in joy.

Figure 11: Time Course Illustration (High Joy)



Time course illustration for two narratives highest in elicited Joy

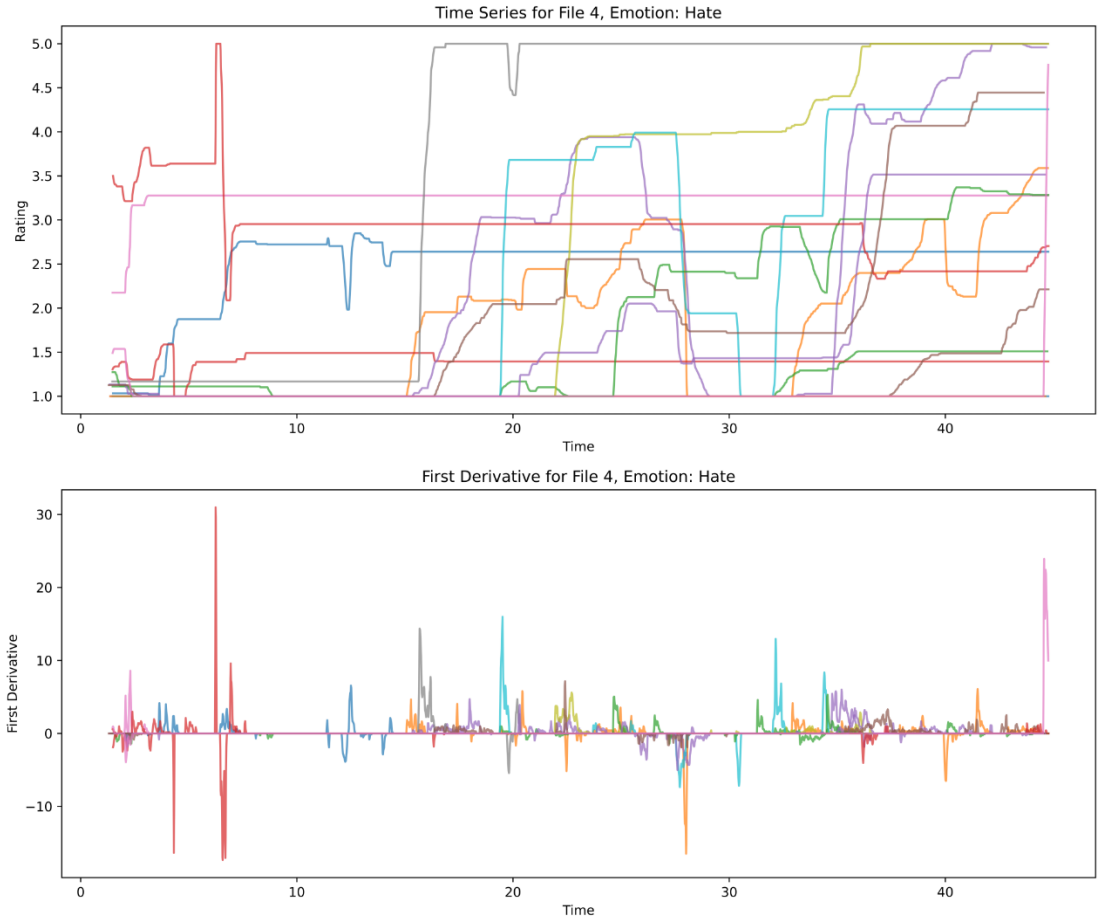
Generally, there is high variability in the participant ratings over time, with general trends across the length of the narrative. The frequency of horizontal lines might indicate that some participants were moving the slider more frequently, with others moving less often, more on turning points

and then leaving the cursor on the scale on screen (e.g. middle level of emotion), so it is important to consider that while we have data of ~60 data points per second, the actual information might be less due to how participants interacted with the task. The way the paradigm is programmed might have affected which behaviours are more or less likely, we, for instance, did not build in prompts of 'you have not moved the slider for X'. There was a lot of repetition in the narratives and the continuous rating per emotion (so 5 ratings per narrative in addition to the initial run), which can affect attention.

5.4.2 Derivative for trajectories and variability of interaction with task

To gain insights into the way participants interacted with the task, so to learn more on the rating time points when people did move the slider (vs when the time course rating is just a horizontal line i.e. no cursor movement happened), the first derivative of narrative 4 ratings were calculated (see Figure 12). The first derivate is the instantaneous rate of change at a given point, so for the present data: the lower graph shows when there was a change in rating (i.e. cursor movement), and this is visualised for each participant (differently coloured lines). The patterns of participants differ, some move mainly early on in the trial, others more frequently across the time course (e.g. light blue line).

Figure 12: Time Series and Associated Derivatives



Upper panel: Each line represents the time course of one participant, Lower panel: Each line represents the first derivative for the time courses of each participant (the colour matches the participant-colour in the top section)

The slider recorded any movement, and was quite sensitive, and no lag was built into the task. The question for the current and future studies is if people e.g. moved the slider once and then paid less attention to it, and how tiredness and attention matters feature in such a rating task, that can be quite attention demanding while also being repetitive.

5.4.3 Intersubject Correlation

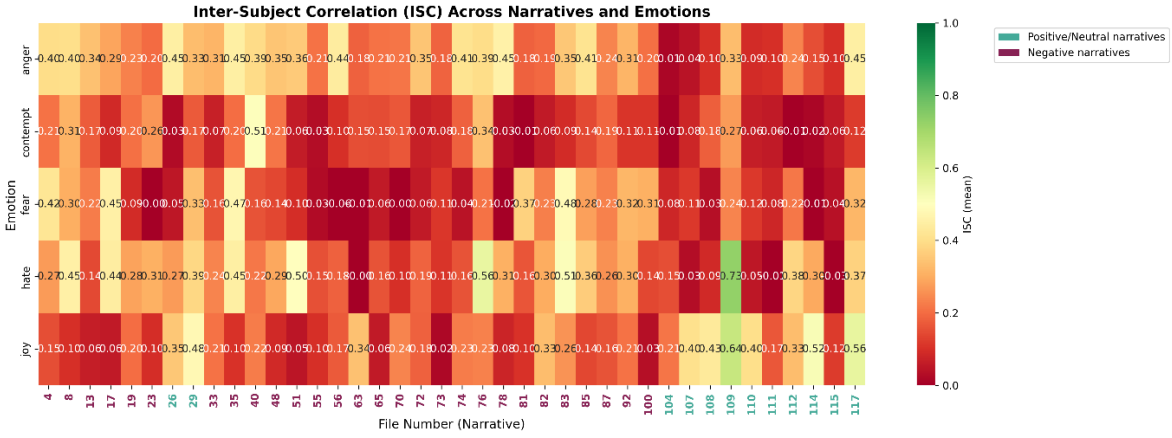
Looking at the variability of rating responses and complexity of the narratives, looking at patterns in the data with newer approaches is an essential part of this project. Intersubject correlations (ISC) are used in recent functional MRI studies that use movie or audio stimuli (Jääskeläinen et al., 2021; Morgenroth et al., 2023; Sachs et al., 2020), employed to make sense of particularly also the temporal changes and the complexity of the acquired data, and paradigms where standard other statistical tests cannot be applied. Directly connecting to epistemic considerations and views

on emotions, (Nastase et al., 2019) start their foundational paper on Intersubject Correlation by highlighting that “Our capacity to jointly represent information about the world underpins our social experience” and that naturalistic behaviour is dynamic and complex.

The continuous ratings acquired in the present project was intended to provide individual information that could later be considered in the fMRI analysis (post-experiment ratings), and combined with the voxel level brain activation data, see Nastase et al., (2019). The results, according to Nastase et al (2019) and as listed on the website of a Neuroimaging Analysis tool “Inter-Subject Correlation (ISC) analysis measures the consistency of stimulus-locked responses across individuals”[17].

For the current analysis, pairwise Intersubject Correlations were calculated per narrative per emotion (across N=16 or 17 participants per group) to analyse similarity and specificity: to find the narratives in which participant responses are most vs least aligned. Importantly, here, does not equal that e.g. all responses have to increase, but rather that a shared response happens. There are different ways to calculate Intersubject correlations, and here, all ISCs were calculated on the time-courses pair-wise and visualised per emotion, not aggregated. With the misunderstanding or misinterpretation of ‘contempt’, an aggregation could go in line with additional dimensions of replies.

Figure 13: Inter-Subject Correlation Heatmap



The narrative numbers are colour coded. The high ISC e.g. in a positive narrative (109) means alignment of participants regarding rating of e.g. hate, this does not have to mean that people rate hate highly. Ratings during the time-course of a given narrative can be highly correlated in one emotion but show low correlations in other emotions

[17] https://www.brainvoyager.com/bv/doc/UsersGuide/FuncConnAnalysis/ISC/Inter-SubjectCorrelation(ISC)Analysis.html

Figure 13 shows the pairwise intersubject correlations for all narratives and all emotions in a heatmap. The very low ISC scores in the dark red fields are insightful, as in those narrative-emotion combinations, there was little agreement between the participants who heard a given narrative. The fields that are lighter or yellow show more alignment of participants in a given narrative-emotion combination.

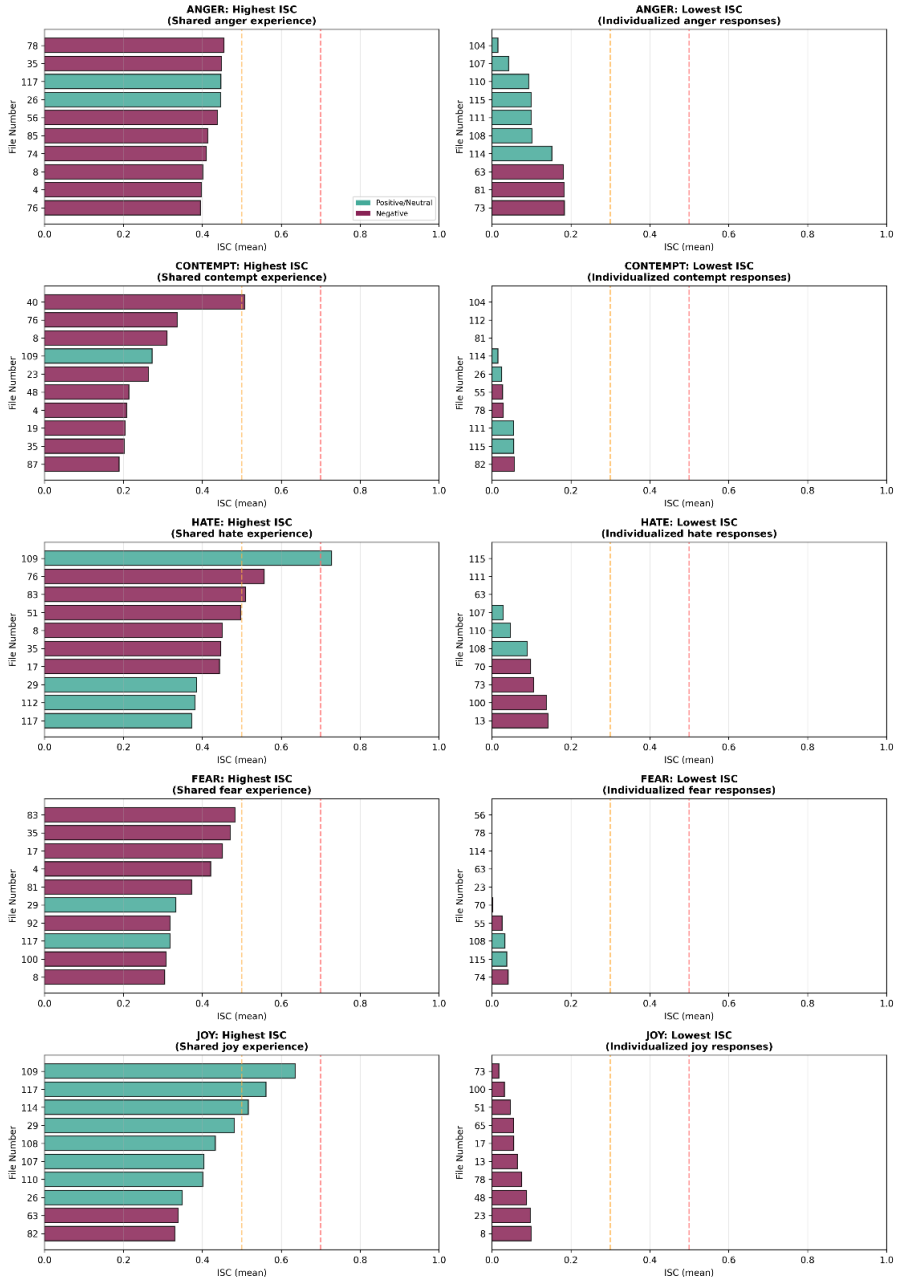
Looking at narrative 109 (a positive scenario), for instance, participants show a high level of alignment for both hate and joy, while the actual ratings for both of the emotions (on the scale) likely are very different (hate low, joy high). Narrative 83, for instance, shows a comparatively high ISC for hate, anger and fear, a smaller one for joy, and the lowest one for contempt, which could be a promising narrative in terms of eliciting a recognition of emotions, particularly considering that the misunderstandings of contempt likely lead to less agreement in many of the narratives. The overview graph is insightful for the benchmarking of stimuli: knowing which stimuli elicited similar responses across participants can be a criterion for the selection of stimuli. For hate, besides a positive narrative, which likely shows a high ISC as 'joy' was absent, narratives 76[18] (narrative violence against homeless person), 83[19] (narrative on anti-trans violence), 51[20] (narrative on discrimination of person who is part of Traveller community) show the highest ISC in the participants ratings. Narrative 83 also features in high ISC for fear, but not for anger, for instance. These matters are relevant especially, when research questions about combinations of emotions aim at disentangling complex affective states.

[18] 76: I was going through the north of Dublin that day. It was lashing, a typical autumn day, you know. As always, we passed by some folks sleeping rough. (heavy hearted) Driving by, I saw a man sleeping in a half-ripped sleeping bag in front of a big company building. (sad) A drunk man in an expensive suit walked by and threw his beer bottle at him. (angry, disgusted, horrified)

[19] 83: I am a young trans man and the other night, I was walking with 2 friends on a street that was quite empty when a man started asking if I was a guy or a girl (afraid, guarded). When I didn't answer and kept on walking, he started shouting louder threatening to hit me (terrified, helpless). He then decided I was a girl and started singing a song about how he was going to rape me (terrified). He followed us down the road singing this song, and it got really scary, you never know if they suddenly go from those words to attack. (shaken)

[20] It can be difficult to be accepted as a Traveller (frustrated). I wanted to buy a necklace for my mother's birthday and went to the jewellery shop in town. There is a security person at the shop entrance and the person started to ask me why I wanted to come in (irritated, annoyed, tense). I explained what I wanted to buy and the security person started to insult me and accuse me of lying (hurt, contempt, angry). I left angry, it happens so often.

Figure 14: Highest and lowest ISC per Narrative and Emotion

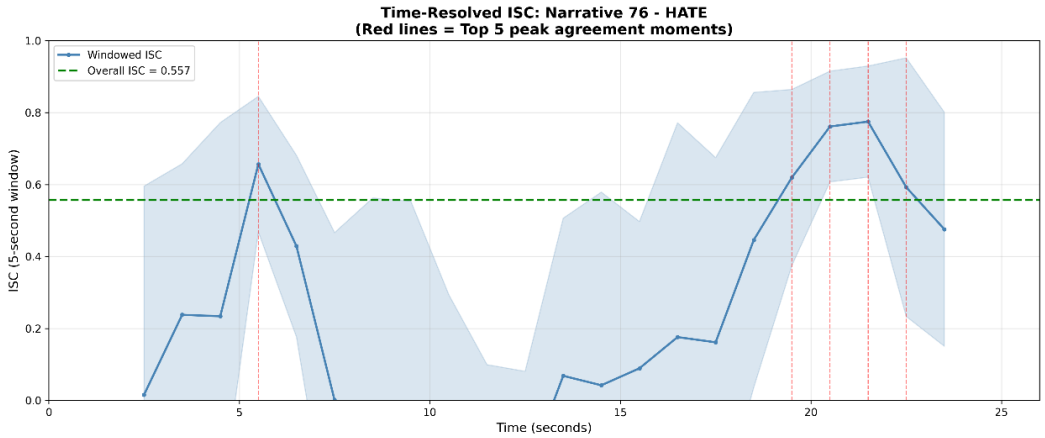


Note: 'higher' means more agreement of participant responses, not necessarily 'more emotion X'

Time-resolved (window) ISC for peaks of participant agreement

A second method to calculate Intersubject correlation is to have a time resolved analysis defining a certain window and step function. This can be helpful to understand peaks and turning points, for narratives and emotion combinations in which there is enough data (this method does not work for instances when e.g. there is joy only at the start and then ratings converge to 0).

Figure 15: Time Resolved ISC (Hate)



In Figure 15, for instance, a narrative with 'hate' runs, two peak times of alignment can be seen, one just after 5 seconds, and another one towards the end of the narrative. Figure 16 and Figure 17 show different patterns across the time course of the narrative, with peak agreement moments highlighted as orange, vertical lines.

Figure 16: Time-Resolved ISC (Anger)

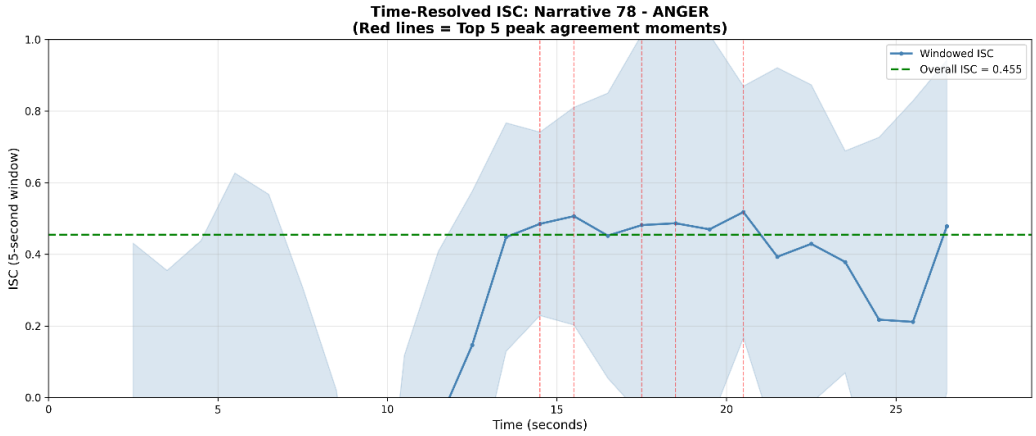
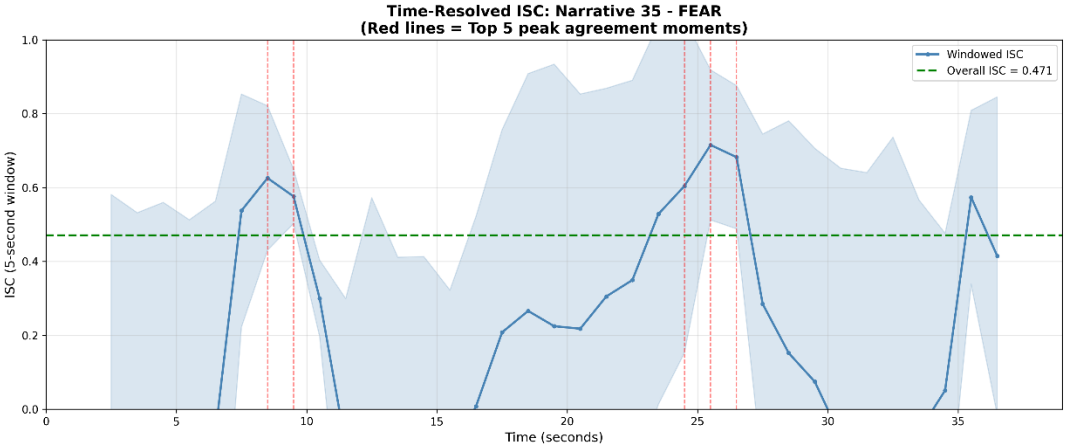


Figure 17: Time-Resolved ISC (Fear)



Contempt

To visualise the rating patterns regarding contempt specifically, Figure 18 shows two narratives, with participants grouped (by their responses to the question 'What does Contempt mean to you?' asked at the end of the experiment about each emotion to all participants.

There were four groups: Group 1 understood 'Contempt' as 'Content' in the direction of 'happy, satisfied, ok', Group 2 expressed confusion or provided non definitions or uncertainty, Group 3 named emotions that rather than 'looking down on others' are phrased from the other perspective (shame, guilt etc) and Group 4 understood contempt as contempt. In total Group 1-Group 3 comprised 28/66 participants.

Figure 18: Contempt Ratings

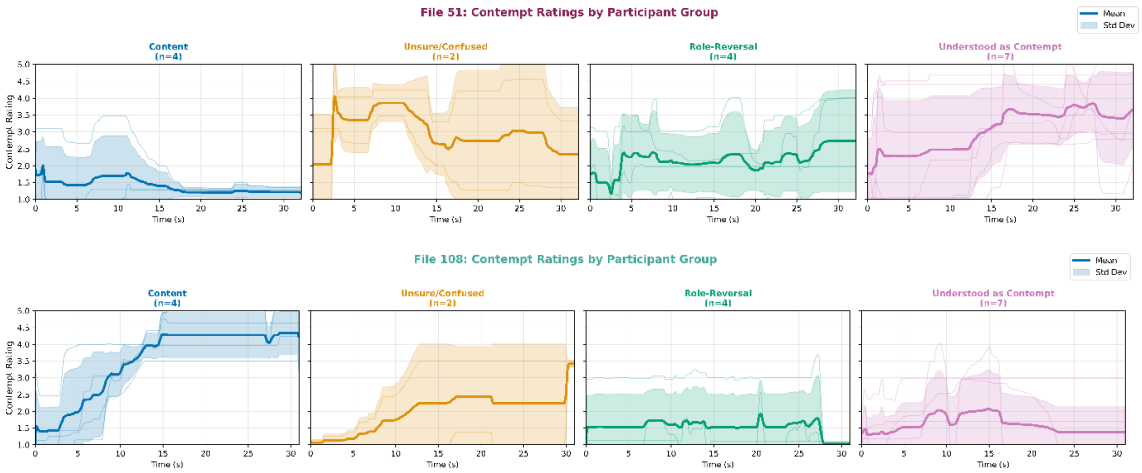


Fig: note this is within one group of participants for one negative and one positive narrative to illustrate, the misunderstandings were not equally distributed in the groups.

5.5 Emotion Meaning

This section gives insights about the conceptualisation of the five target emotions, and additionally served as a check to see e.g. if the stimuli we developed as positive/neutral stories were perceived in that way, as well as for 'contempt' understanding.

5.5.1 For all stimuli

We plotted the replies that participants inserted in the free text option, after hearing each of the narratives for the first time, to check if the emotionality valence is generally going in the right direction (see Fig. 19), showing that it is the case that reported elicited emotions for positive stories are generally positive, and for negative scenario negative.

Figure 19: Elicited emotions word cloud

5.5.2 For narratives, that were rated high in hate

For the narratives participants listened to and indicated hate to be elicited, the free-text input (following 'any other emotions?') were analysed. For those narratives, participants added emotion words such as 'sadness', 'shame', disgust, scared, shock, outrage, rage, frustration. Those align with these narratives being more intense in the situations and actions described. Positive or empathetic words like 'sympathy' or pity also were mentioned by fewer participants.

5.5.3 Free Text replies emotion meaning

After the main part of the experiment, participants were asked "We previously asked you about different emotions. We would now like you to think a bit about what those emotions (like 'happiness' or 'fear') mean to you.", "We will ask you a question about each of the 5 emotions.

Please type your answer with the keyboard. There are no wrong answers - Just tell us what comes to mind for you." on-Screen: "Please tell us what you think X is?" provided a free-text input.

A large part of the participants associated hate with deep dislike, a heightened intensity and discomfort when experiencing hate, other characteristics frequently mentioned were that it can be lingering, a relation to breach of values, a connection to anger and disgust, and a potential desire for the target to not exist. In comparison, for anger, many participants explain the emotion through physiological states and note a lower control over thoughts/actions, can be a reaction unfair treatment, aggression, and that it occurs more frequently and with shorter duration than hate. Regarding fear, many highlight the (anticipation) of danger (for oneself or others), ambiguity, helplessness, and physiological alertness. For contempt, participants mention less certainty on what it means to them, and a high number also misunderstood (taken together 28/66 participants either were not sure, or misunderstood 'contempt'), many participants mention superiority combined with looking down on others as worthless. Disgust and anger are associated with contempt, which some mention to be less intense or passionate, compared to anger or hate.

When asked what hate means for them, participants mention that it is a strong emotion, many people associate the emotion with intense dislike and/or anger, 'towards' someone or something, indicating a directionality towards a target. A part of the participants mention values and a longer duration or continuity, and note that its more rarely felt than other emotions. Either desire for distance from the emotion or a wish for the target not to exist or the potential for violence or rage (also with a physical feeling/passion) is raised by some participants to go in line with the emotion.

Using word clouds, patterns in participants free text replies were visualised. For this, the size of the words represents word frequency in total, pooled text responses prompted by the question on a given emotion. Stop words and the specific emotions asked in each trial were excluded (if hate was asked, hate only was excluded, not the other emotions to see references).

For both hate and contempt, participants used 'dislike' frequently to describe what they think the concept is. Both hate and contempt feature 'anger' as mentioned word. 'Towards' is mentioned more frequently regarding hate than when describing contempt, but for contempt, participants mentioned 'others'. Hate additionally features 'deep', 'intense', 'extreme' and 'disgust' in a lesser frequency. Anger features 'frustration', 'strong', 'negative' frequently. 'Unfair', 'rage' and 'action' are also mentioned. For fear, participants mention 'scared', 'danger', 'bad', and 'happening'. More can be found in the Appendix.)

Contempt

12/66 participants misunderstood 'Contempt' as content, 7 more provided non-definitions or expressed confusion, and 9 others participants showed a role-reversal so rather than 'looking down on someone' viewed contempt as 'guilt' 'selfless' or 'pity', 'regret', 'remorse', 'shame', so taken together 28/66 participants, which is a considerable amount.

For the present sample, we did not have strict language requirements. The familiarity, meaning and usage frequency in media formats for different emotion words, however, differs for people who are from different language-regions and socialisations.

Interestingly, Fischer, (2024b) recently highlighted that Widen et al. (2011) also reported the misunderstanding of the word 'contempt' to be a methodological hinderance.

5.6 Pitfalls and learnings

5.6.1 For paradigms on complex emotions

The stimuli and the task features and ergonomics, the response modalities and method of presenting the stimuli all massively influenece the data, which is important to take into account and understand as a limitation.

The restriction of five target emotions (anger, hate, fear, contempt, joy -in a multiple-choice format in the one-off elicitation rating, and in the prompted question on emotionality per run in the dynamic rating) is a clear limitation of the paradigm. While there was a free-text field in the one-off measure of emotion elicitation, the presented choice certainly could have affected and biased participants, considering that the free text option is more effort to fill in. Additionally, rating a majority of negative stimuli in real-time rating tasks and being asked more frequently about negative emotions certainly had an influence on participants idea about the task and possibly their behaviour. To illustrate, while the ratio of narratives was 70:30 in total, any stimulus in Part B of the experiment was played five times, and for four out of those five times, the participant was asked to rate -and thereby focus on- the extent of a negative emotion present in the given scenario. As discussed in Chapter 3 and 4, the selection of stimuli shown to participants in any study, including ours, affects how hate is operationalised, and is limited and biased by the experience, view, accessibility of information and ideas and positionality of the research team (in the 112 narrative dataset, for instance, there is added variety on identities and context). Even though NGO reports and other sources that were taken into account, for most stimuli containing recognisable hate in the form of discrimination of specific communities, personal lived experience

was not present in the development. The selection in each of the four 10-narrative subsets was even more limited and per group likely skewed with stimuli in one group being similar to one another on a specific dimension than in other groups.

While we were worried about potential distress of our participants, in the tested sample, no participant reported to be distressed. At the end of the full hour of the experiment, some reported tiredness, so in similar paradigm, I would not recommend a longer testing duration of one hour, especially when attention-heavy, real-time input is required of the participant.

The debriefing is really important, because thinking about ones own and other peoples' emotions can be confronting, and participants had questions about emotions, but also were interested in the study and potential application.

It was really important to instruct participants about that there is no right and wrong, to try to convey that no moral or normative imperatives should be deducted from the stimuli. The set selection (so which 10 narratives were played to participants in a given group) had an effect on the ideas participants had about the goal of the study, which came up in the debriefing.

5.6.2 Learnings for future fMRI studies

There Intersubject Correlations were calculated for behavioural ratings, but the methodology was developed for neuroimaging data, so it is possible to connect the time courses of ratings of a participant, to voxel-time course activation data, which could be done in future studies.
Then, a post-experimental rating with data points across the time course of a full narrative is recommended to.

5.7 Data preparation and added information

5.7.2 Social Dominance Orientation

To measure Social Dominance Orientation, a normed, 16 item scale was used (Ho et al., 2015). The 16 items are associated to 4 subcomponents: Pro-trait dominance, Contra-trait dominance, Pro-trait anti-egalitarianism, Contra-trait anti-egalitarianism (for full item list, see appendix).

During the testing sessions, multiple participants asked what was meant with 'Group dominance'. While the scale was validated in a student sample, the paper is from 2015, so there could be a difference in understanding or reference frame. The age average and range in Group 2 was higher than in the other groups, and we see a higher SDO mean in this group. Due to the small sample,

we did not use the SDO score to split participants into further groups for the analysis, but the average scores per group and overall average in SDO index are listed for reference.

Table 1: Social Dominance Orientation Means and Standard Deviation

Group	SDO Mean	SDO SD
Group 1	**1.9466**	**0.8266**
Group 2	**2.7573**	**1.0776**
Group 3	**2.2434**	**0.8546**
Group 4	**2.4102**	**0.9343**
Total	**2.3319**	**0.9509**

5.7.3 Data pre-processing

First, the specific part of the recorded slider time series corresponding to the time the stimulus was presented had to be extracted and cut for each individual trial (participant, narrative, emotion). Simple calculations were needed using the logged times in the output files, because the slider was recorded for longer than the audio stimulus was presented on screen. The start of the slider matched the beginning of the stimulus, but the slider was recorded longer than the stimulus played and until the participant clicked a button. This revealed that due to the hardware playback settings used in PsychoPy, the 41000hz stimuli were actually treated and presented as 48000hz across participants, making the stimuli slightly shorter than in the original .wav. (see check script). As the mild speed up of ~8.5% it is consistent across participants, logged and not noticeable in the presentation this is not an issue for the analysis, but, of course, had to be taken into account before analysing the time series across participants (the script will be provided later on). There is high variety in participants in the overall level of participants emotion rating across the narratives they heard and rating regarding the 5 emotions, and to retain the variability that is characteristic for this dataset, while outliers were analysed and checked, no participants were excluded.

6 From friction to focus: Reflection on ITN, secondments and more

This chapter encompasses reflections on the process and important influences on my current perspective. The angle I adopted for the project and thesis on the one hand, and directions of application of the projects results on the other. Because I learned a lot through secondments, trainings, community engagement, science communication and teaching, those two aspects are intimately connected in the present project.

Starting the PhD, after having been in research contexts during my Bachelor (Psychology, research work in experimental neuroscience w. brain stimulation) and Master (Cognitive Neuroscience, thesis on Social Neuroscience and methods development), I came into the project certainly more used to an empiricist perspective. I came with implicit ideas about how data-driven results can be achieved and then just have to be '*translated*' to the *outer* world. I was more and more socialised into scientific jargon and academic language, also because I wanted to belong to an institution ('the academic world') that still feels and most likely always be alienating to me. I got used to write in a way in which I hide myself behind 'neutral' and 'objective' (frequently equated with *expert*), non-*emotional* sounding language. The allure of that is part of the system and also related to the hierarchisation of research disciplines.

Aiming at making it concrete and personal, I went through my note books of the last years: a mixture of noticing and thoughts: conversations, sentences or witnessed developments. Some are included in the following, as examples of moments that led to a shift or rethinking. Following e.g. (Von Maur, 2022), who wrote about moments of affective disputability as possibility to diverge from habituated emotional schemes. The last years informed my research and with that also how I think about emotions and being affected personally as part of meaningfully understanding the world around us. Therefore, for me, research about emotions has personal component. Interweaving critique with learnings, the current chapter also highlights motivating encounters and formats illustrating how things are being done differently or how change could further be implemented.

6.1 Developing my research angle

‘Do I get to hate, or is it just them?’; ‘We know when we’re confronted with it, I know hate’. Interviews were not part of my research (as they were in other NETHATE projects), and as a white woman from a western, wealthy country, I have rarely been directly confronted with or affected by hate. There were many conversations when meeting people at work or community events or just with friends, telling others that my research is related to hate: Hate, frequent in public discourse, often elicits interest, so many shared their thoughts. Examples like the above stuck: those questions raised on whose hate is centred or condemned, who is listened to or silenced - these matters are epistemic, highlighting the embodied experience, questioning the focus of public discourse, something that empirical research is influenced by, part of, and likely to influence in turn.

Later, I read work of scholars and activists that have written about this e.g. Seyda Kurt who notes four different modi of hate, one of them being ‘der Modus des Nicht-Hassen-Dürfens’ (‘mode of not being allowed to hate’ (my translation, Kurt, 2023, p. 33[21]). Importantly, critique and knowledge was in those sentences, years ago, at a time when I had not thought about those questions and their impact yet.

The special funding type of an Innovative Training Network offered many active and participatory workshops and meetings integrated in the structured PhD. It was inspiring to realise that there are similarities in concepts in different disciplines or a drawing upon similar fundamental research results in human rights and psychology alike. This helped me to develop an enriched perspective on hate, but also more generally as a person and scholar, which was the point of the consortium.

The idea of interdisciplinary projects is often that there is an exchange disciplinary knowledge and perspectives (‘reciprocity’, see Fitzgerald & Callard, 2015)), and discussions and everyone contributes a piece of research from a specific disciplinary angle. For my project, the angle was empirical, cognitive neuroscience. Within universities and outside, unfortunately, there often are perceived or encouraged hierarchies of disciplines, that also (implicitly, e.g. via expectations) show up in interdisciplinary projects. Professor Des Fitzgerald, who worked in an interdisciplinary neuroscience project (who co-wrote articles about the (emotional and power) dynamics in such projects) writes: ‘interdisciplinary collaborations are structured through very different adjudications of epistemic authority’ and that ‘different actors have access to very different pots

[21] This is quoted from the German book, which will be published in English in Nov ’25

of money; that their practices of writing are differently legible, that they are differentially supported by governments and private foundations; that their views carry differential weights within policy communities, and so on.' (Fitzgerald & Callard, 2015, p. 101). Working within this tension between the natural sciences and humanities has been challenging. As discussed, with empirical neuroscience, the issue is not that we are not able to produce data (while adhering to ethical standards and good practices etc), but that with the large amounts of data, our research might still lack meaning. This is playing into the general imbalance of funding for empirical (STEM) results vs theory development most frequently done in the humanities and social sciences. Of course, this can and does have an effect on which ontological and epistemic views often are encouraged and adopted, because some are more feasible (and the pressure is high and going against the currents exhausting) vs discouraged. While the beginning of the project was imprinted by the pandemic, the rush to get to the start of the data acquisition was high. Even though probably envisioned before, appropriate time to ideate together or form solid collaborations to work together also on the theoretical level that precedes the design of an empirical study, was not really accounted for or feasible (funding restrictions).

Throughout the years, learning from community activists and scholars, working in sociology, history, law/human rights and humanities informed and changed my views. Early on those conversations sparked needed caution about power and inbuilt assumptions, I also learned that it is necessary to hold and communicate complexity. Learning about the history of the field and systemic issues helped illustrate where e.g. the tendencies to individualise and even medicalise issues that are inherently social and societal come from (while not neglecting that such issues -like hate- also can have a personal component to them). When I think back, crucial questions of peers, scholars and activists were often unravelling contingencies, asking about the systems and meaning rather than 'symptoms'. For instance, why not-being affected by harm done to others (e.g. by climate change or war) is often portrait as 'rational'. These kinds of questions are intimately related to what is considered or perceived as 'normal' to be affected by, and in the next step, why this might not always align with the actual level of harm. This necessary complexity stood against the 'the simpler the better', frequently named in Science Technology Engineering Math (STEM) disciplines as the standard of a good theory, doesn't necessarily work.

Facilitating these moments, was hard work and required learning to understand one another, know about key concepts, limitations of own knowledge and shared language. The additional thesis committee (related to the consortium and Innovative Training network) added interdisciplinarity expertise and the applied NGO-sector input from Glencree staff (thank you, Michelle, Amina, Nadette and Sinéad). There further were many opportunities to meet

researchers at Trinity and at other Irish Universities which were beneficial to the experience, e.g. at the Humanities and Social Science Research Festival, which other ESRs and I actively participated in, across disciplines and sectors.

6.1.1 Alienation in the academic environment

Yaa Gyasi, a novelist, in her book Transcendent Kingdom describes the protagonist of -a neuroscience PhD candidate dealing with grief- reflect on the standing of neuroscience in relation to what it means to believe, to question, and importantly then, feels herself to be perceived by others she encountered in her professional environment as '**unnerving and untraditional**' (Gyasi, 2020, p. 197). I relate to that, and learning to see this as something I stand with (it brought me closer to some others at the same time) while also still keep going with endeavours that are (possibly) meaningful has been a challenge in this PhD. Going a step further, though, realising that it's not just isolated/me, who is different, but rather the system not built for many was part of the process.

Edward Said described professionalism in academia as pressuring; "not rocking the boat, not straying outside accepted paradigms or limits, making yourself marketable and above all presentable . . ." (Said, 1994, p. 74) and I find there to be a lot in here: including the pressure of the neoliberal university, having to be polished (or already provide solutions). Connecting to Sara Ahmed, who highlighted some of the frequent failures of universities as large, hierarchical institutions (e.g. relating to complaint procedures), and recently included an analysis of how 'Common Sense' is frequently used to reassure power, with movements e.g. to diversify or decolonialising curriculum, as Sara Ahmed writes, being framed as 'not motivated by positivity', she notes "positivity is often tied to preservation. And this is why the judgement of negativity is more than a story of motivation. By locating negativity in the outsider, whether the killjoy or "the woke," culture and history are not only stabilised, they are given a positive quality."'(Ahmed, 2023). If this is combined with a common habitus in university spaces (and I am not talking Trinity specifically here) and the pressure to publish and produce, alienation does happen easily.

While there were isles of genuine change, reframing and constructive togetherness, there also were other experiences.

In a workshop -with agreed upon safe space guidelines- that specifically included and encouraged a personal reflection on positionality, I shared some critical views about the academic system as a whole. Afterwards, there was 'caring worry' shared to people I am in dependencies with, who are

relevant to my academic progression, that I might not be able to work in the system, and that I might need additional support in that.

While I feel the pressure to express experiences as positive, phrase them as learnings profitable for career-progression and can see the point of well-meant advice possibly relevant to succeed in current systems, I think there too should be a place expressing the emotionality of such experiences as being alienating (or heavy or excluding or …) when people experience them as such (many others have written about theirs, also from the perspective of a Professor, see White, 2025)). There can be next steps, but not everything (everyone) needs to be corrected or become a *polished* success story - this reasoning can be hindering positive-meaningful change by preserving the status quo.

In a recent publication -a reply to other authors whose work was a fundamental critique on their field (Linguistics)- Professor Kamran Khan, wo kindly spoke at one of the NETHATE workshop on critical perspectives (as suggested and invited by ESRs), noted the authors "asked that scholars lift these restrictive dichotomies in pursuit of a fairer and more just field in service of communities about whom some claim to care." He Adds: "This can be done through interrogating the roots of the status quo. In so doing, they have expanded the political imagination to rethink the concept of competence." (Khan, 2023, p. 318).

I learned about the specific role of Trinity College as an institution within Irish history with delay, bit by bit. Besides that, and certainly related to some degree but also relevant more generally, the reactions of people I talked to were interesting and telling. Multiple people, when I told them I'm doing my PhD research at Trinity, and told them we could meet and I'd show them around the campus, if they'd like, a person replied with 'I didn't know you could go in'. At a community-oriented event (a research launch, of a project that deliberately allocated ample time and resources to building research with people) I heard a participant say 'with them (project researcher team), I felt heard and invited, it was the first time, really, the walls are so high'. Metaphorically, I thought, but also quite *literally* -it took me some time to know where to get in and out, and I can only imagine people have a hard time believing you can go in.

Closing the doors is possible too. Locking away College from the public. After the pandemic restrictions had eased, this happened twice while I was there: when (what was referred to as) the 'Dublin Riots' in November 2023 were happening close by, across the Liffey. And again, when students set up a Palestine solidarity camp near front square in May 2024.

6.1.2 Belonging: experiences that inspired and showed change is happening

Besides in interactions with peers, a teach-in by Professor, Physician and Activist Rupa Marya entitled 'Farming is Medicine' (Marya, 2024) was planting new hope, and broadening my view of health and society. A research exchange with Dr Hannah Proctor illustrated how medical humanities and historic insights critically contribute to e.g. the understanding of trauma (as something often collective, but frequently individualised, with heavy consequences).

The Global Brain Health week was an inspiring example of how very different disciplines and professions, patients and the public can come together and engage, in formats that encourage discussion and engagement with people, and accounting for different ways of learning together, rather than speaking down to the public (which very often happens). I saw themes around love, conflict, empathy and community, with short talks and workshops, movies and installations and innovative initiatives highlighted. The way research centres and events were actively engaging in discussions also with policy makers in public health, professionals explaining the issues that are common and different in their respective country/context and very explicitly having many from what's labelled the 'global south' there, was something I experienced maybe for the first or second time only at this large scale event (when one or multiple Universities in Europe or the US were organising) -highlighting the dire need. Learning was (re-)focussed as learning from one another and highlighted the wisdom and knowledge in experience and connection with each other through art, food, and embodiment.

6.1.3 PhD in Ireland -consequences of neoliberalisation of the university

For the Innovative Training Network, it has been flagged that the generous funding provided by the European Commission is limited to 3 years, with 3 months of mandatory secondments in partner organisations and additional workshops and doubled reporting and review responsibilities (College level and Consortium, frequently resulting in extra work and different time frames). With this, funding insecurity was inbuilt to the present project from the start (as the case for many others, for some of the Marie Curie formats I heard the funding duration was extended for new calls). Of course, this is part of the reality of many researchers (and many are in funding situations that are worse, particularly in countries that charge high tuition and visa fees -disproportionately affecting researchers from non-EU countries, I participated in organising with others in the Postgraduate Workers Organisation), I want to highlight some consequences that I don't see receiving enough attention:

Needed applications for funding additionally take time and energy away from the work, and while largely normalised in the current academic system, many have questioned if this is an efficient use of resources. I see this as particularly relevant for Early Career Researchers. The planning possibilities of large-scale experimental projects delayed by the pandemic and other factors are different with less time left, and some of the directions are not possible (especially when extension confirmations are only known short-notice due to institutional procedures). It might have been possible with planning security, but not without, and there are carry on effects -one of them being the detrimental effect on researcher mental health. Material realities affect researchers, and this needs to be taken into account, not side-lined. For a recent publication highlighting the connection of material and epistemic precarity in the neoliberal university on the example of mental health research, see Papoulias & Callard, 2022).

Personally, and despite efforts and support regarding funding from my supervisor, navigating this insecurity has led to precarity towards the end of my PhD and living off of my savings to account for delay in the project, which occurred due to the pandemic, the project itself and health issues. I was able to take time off for health reasons and experienced support from supervisors and college health, which I am really grateful for, but the allocated, limited funding time remained the same, which is a systemic issue. Navigating the funding insecurity, pressures and unknown academic structures and expectations was exhausting, also as someone raised by a single mother having grown up (in a wealthy western country) on social welfare support.

Connectedly and generally discussed, particularly when one of the first in the family to study: I experience(d) constant insecurity that what I do isn't good enough. Particularly with the topic and learning about critique from e.g. Medical Sociology, I did and do struggle with a fear of being misunderstood or misconstrued, of causing harm, without adding any value, of writing a self-serving PhD for the sake of publishing. I struggled with varying reference frames and vocabulary in different disciplines and with learning different disciplinary assumptions, which is a vast scope. But with and because of peers, I am in the process of learning to sit with a bit more of the discomfort rather than just 'defending' what I already knew. Being questioned was really meaningful, and brought me back to believing that I too can contribute to knowledge generation when in community with others.

Representing the needs and wishes of the ERCs of the consortium presented another way of learning about the system of universities as institutions together with another ESR representative. This responsibility over the course of one year took a lot of time: participating in board meetings, preparing with peers and getting everyone's thoughts, writing summaries and relaying feedback

after. It also revealed how complex, hierarchical and institutional procedures work (or not). Considering these different tasks from research over representation to project planning and procedural/law-based aspects like GDPR and data rights, another learning was self-care and minding the limits of my own capacities, also in current political climate and relevant project. When I hear the word 'self-care' I think of the individualising aspects of the wellness industry and social media influences, but what I mean is thinking about what is possible and feasible, and which (frequently implicit) expectations I actively have to work against.

6.1.4 Need for (dis-)continuities

These interdisciplinary learning experiences reassured me in the need and merit in **discontinuities**- both within the research and as a researcher, spanning aspects from epistemic over operationalisation to personal level.

For me, the need to work on moving away from much of the academic jargon directly connects to the public-oriented function of universities. There is merit in being able to express oneself understandably and authentically (tying into epistemic humility too) because these are pre-conditions for engaging interactions with the public. I participated in multiple trainings on science communication.

Setting boundaries was essential. With many (often implicit) expectations towards me (and everyone in similar positions, others probably even more so), it was necessary to say no to side projects, organisation of workshops or academic service work. It also meant that it was not feasible for me to go to some of the interesting weekend or evening events associated with secondments, because it was too much. Working on hate in the current times can be a lot, and I tried to get some distance from checking the news, which was, at times, essential part of the project and hard to avoid.

Discontinuities occurred at more than one stage of the project. The initial idea to use images of facial expressions had to be abandoned. Writing extended narratives instead took time but was necessary. We also deliberately, even though this would have been easier, did not resort to cheap gig work or AI for voice recordings or, if the study was to be delivered online, to get participant data, due to ethical concerns. In line with research integrity, we did not acquire data on added variables that were not needed (e.g. personality traits). We further were cautious with analysing gender influences or claiming gender differences with a sample small and high variability across participants, narratives, emotions and time-courses.

Accompanied by peers who I have continuously learned from and with, I stood strong enough in my acquired convictions, to not acquire what likely would be meaningless, over-estimated and resource expensive brain data. Abandoning the planned brain imaging part (just like others in the NETHATE project had to do) meant readjusting. Seeing 'behind the scenes' of some parts of academia and looking at the work and experience of others, I feel I (and many other Early Career Researchers to a higher extent) are paying for such decisions with decreased academic success. Given the structural issues discussed, I refuse to believe that this is entirely my (or their) personal failure, nor that this is coincidental.

6.2 Beyond the ivory tower (or: the Campanile)

6.2.1 Secondments and related experiences as situated knowledge spaces

The Glencree Centre for Peace and Reconciliation

Being able to witness the work of people at the Glencree Centre for Peace and Reconciliation, seeing facilitation of community connection and leadership -by amplifying exactly the voices of people in the communities- had a lasting impact on how I think about togetherness and the power of people. I was deeply affected by seeing people coming together and express and share their truth, and pain and injustice (people whose life stories started and remained in Ireland, and others who might have had different and similar experiences elsewhere and are part of Irish society now). Learning about the historic and very present context and legacies of violence on the Island of Ireland and beyond through hearing survivors and victims talking about their experiences and trauma they went through was powerful. Hearing that 'forgiving' might not be (or have to be) the point, but living on might somehow be possible. Additional readings, and attending public events was special and I am so humbled that I got to be there. Hearing the Ballymurphy Families, who campaigned for justice for decades (with ongoing bills and interrelations highly present during the time of the project and now) particularly affected and moved me.

Complementary to these encounters were the workshops and the course on Mediation via the Women's leadership program of Glencree, focussing more on skills and community-based mediation, the other administered by TCD at Belfast, with a more theoretical account that included the peace process (and other country-level) Mediation. Hearing about some of the discussions in the field of peace and conflict studies and peacebuilding/making etc. including the importance of a situated response in the community that serves people in the situation, with attention to context and nuances ('conflict sensitivity') resulted in the learning that besides the importance of lived experience, power relations matter, and those good intentions (also or

especially e.g. on the side of peacebuilding efforts) do not protect from harm. I learned about nuances in language, in things that are said or questions avoided because the answer would be too revealing. Also, I realised and reflected on my own assumptions and patterns, when I listened to the experience of mediators and facilitators and while trying out some tools in hands-on exercises with others during practical parts of the courses. Importantly, inter-personal/family and community-mediation training helped me reflect on what conflict means to me personally and how that carries into conversations. Moreover, I realised that having a place to be heard can change so much.

Professor Fitzduff's talk on the intersection with my field was relevant because it discussed neuroscientific aspects relevant to understanding ('intractable' intergroup) conflict. Multiple other events on 'The Brain and Peace' (Berghof Foundation, 2024) illustrated that critical, practitioner-driven research is being done in the field, that can be translated into policy recommendations, e.g. on how to counter extremist behaviour using knowledge on neuronal processes behind identifying with sacred values.

Trauma has been an important factor in all aspects of this work in the different contexts, and something that needs attention without being simplified or generalised by terms that can feel hollow or might be alienating for people who live the reality of being affected every day. Taken together, all if this has been broadening the way I approached social and complex topics relevant to peace and drastically increased my humility of how much I do not and cannot know, because I have not lived through conflict myself

6.2.2 Additional Events and their impact

Further experiences related to events in the NETHATE programme are summarised below (more detail can be found in the submitted and publicly available EU deliverable D1.1.[22]).

Institute of Human Rights & Summer School on Religion & Human rights

This event addressed psychological aspects in law systems, relation between states/institutions and human rights (violations) and people campaigning/suing against this. I was particularly inspired by Prof Fineman vulnerability theory as a strategy to connect people. I also learned about Institutions and human rights violations, such as the Mother and Baby Homes & Magdalene Laundries here in Ireland and mental health (de-)institutionalisation.

[22] https://cordis.europa.eu/project/id/861047/results

Secondment in Helsinki

This focused on Criminology and got me to question how people expect 'neuroscience' to factor into that. I was questioned when I talked about the stimuli we were in the process of developing back then, directed towards 'would that constitute a crime', a question that I hadn't considered in a structured way (while having a range of actions there that did). It also taught me to question norms of the justice system and at the same time refer to legal frameworks and enacted legislation on hate on (hate)crime characteristics.

Public Engagement Activities

The Pint of Science festival and the Interview for BS Young Scientist helped me understand the need for research and communication of research on hate and other social emotions, and related neuroscience results, and realise public interest and the possible implications. Also learning from the lived experience, e.g. from the people in schools was highly beneficial.

Odyssey Program (UCC) & Work as CV reviewer

Besides in the secondments, I was able to realise the intersection and links of research with applications in the public sector and policy during the Odyssey Program, which is a professional skills program tailored to help PhD candidates realise career opportunities also outside of academia.

Working as a CV reviewer for the Career Service was insightful, because I helped students realise their strengths, and was able to share my knowledge and skills with students -another role in which I saw differences in how the academic environment is perceived.

Teaching

In the School of Medicine, I had the opportunity to work as a tutor in a Problem-Based-Learning seminar for first year medical students. Aiming to facilitate a space of learning, and of students learning with and from one another besides with my input, on applied case studies, was an interesting application of skills. The tutorials were designed to foster critical thinking, and the confrontation with new ideas, and questioning of e.g. what is seen as pathological, or researching how social determinants affect health, and mental health specifically. Groups were diverse and providing a space for people to feel they can speak and exchange was important. It was essential to view students as thinking people etc (teaching statement). Finally, a lot of the learnings from my PhD were applied -research design and critical thinking but also thinking around power and access to resources in society. I attended a seminar on how neurodiversity can be better included in teaching, which also facilitate a better teaching environment conducive to student engagement.

6.2.3 The study in the context of current developments

A few years ago, the far-Right was not widely present in Ireland (which stood in stark difference to, while different contexts exist per country, Germany, the UK or Poland); neither in mainstream politics, nor visibly in the media or communities. The last years brought change, and it was especially stark to see the pattern being similar, similar playbooks, similar moves and connectedness. I remember the day of, and days after the riots. A clearly explained post shared by Professor Arjumand Younus based at UCD, originally written by Professor Pragya Agarwal, warning news outlets and politicians specifically, not to fall into typical traps in communication after racist incidents -cautioning about the importance of emphasis (who is this about?) and danger of biased phrasing. And then reading and hearing people fall into exactly these common reporting patterns on many occasions. Seeing public figures (in Ireland and from abroad) incite hate online, using specific events (e.g. crimes or incidents), as similarly occurred in other countries and decades before.

The racist incidents in November 2023 and a steep increase in arson attacks on property named as or being considered as direct provision housing and higher hate crime rates are concerning developments, and are showing the urgency. This illustrates how necessary it is to learn from those who know, have seen and experienced, who have studied processes, and those who have raised alarm bells also in Ireland for years. There is a need to highlight differences to other places, as well as similarities and contingencies with care and caution.

Hate is no blank slate. How hate is used in public and political discourse affects researchers and the scope we might be thinking in as well. Working within the ITN helped me question the assumptions I come, and attending community, advocacy and activism events aided learnings too.

The events in Ireland, Europe and across the world illustrate the need for critical perspectives, applied and community-oriented research and communication, and activism.

In the last year, while I could have done way more, I attended conferences e.g. by the Irish Refugee Council, a UCD Science and Democracy conference, I went to a workshop on democracy literacy in The Federal Agency for Civic Education in Bonn, Germany. I also was active in community groups who organise against racist- and discriminatory far-right agitation. Different organisations, e.g. ‘Hope not Hate’, documented different cases of community action, and frequently provide helpful insights.

In summary, I view knowledge to be generated in dialogue. If we view emotions as part of shared meaning making, we need to do it together rather than isolated in closed rooms in the academy, and we need to use the privilege we have and organise together.

7 Discussion

This thesis sought to answer the question if societally relevant phenomena like 'hate' be studied meaningfully and ethically with neuroscientific methodology. Throughout the presented dissertation, I reviewed existing research and relevant theoretical accounts on hate specifically more generally complex emotions (chapter 2) and related, epistemic considerations (chapter 3), documented the extensive development of a novel database and accompanying empirical paradigm (chapter 4), reported data acquisition and analysis of a sample of students and illustrated possibilities and limits of the emotional narratives and paradigm (chapter 5). I shared crucial aspects of the reflective processes and change of perspective throughout the last years (chapter 6).

I started off this project working on an empirical operationalisation to the main research question, and ethical and methodological concerns became clear very rapidly. Due to the funding of the project within a bigger research network on hate, I presented at meetings frequently and shared early on what we intended to do, once participant testing would be possible again (of course this was suspended for safety reasons during the pandemic, I started this PhD in April 2021). Discussions with colleagues trained in other disciplines, with different perspectives, encouraged me to sit with the doubt and curiosity of what was missing in predominantly experimental approaches, which are often developed from an empiricist or positivist view. A reflective process, about societal context (and the consequences of the capitalism), research culture and power affecting all aspects of research and researchers was closely linked with the move towards further questions about the importance of epistemology in and for research on complex and social emotions. These three means of inquiry (empirical, theoretical, reflective) were, therefore, in no way silos. Even though the theoretical, empirical and reflective points are, for the most part, presented as separate in different chapters, in actuality, these processes were mutually and dynamically informing across the project timeline leading me to my current stance. I see the empirical chapters, with all its pitfalls, as illustrating the pressing need of the other contributions of this project, and I will attempt to weave them together. The answers to the guiding research question and sub questions of the present work and the unique contribution of the dissertation are heavily driven by theory work and reflection. Relatedly, for this discussion, scope, limitations and potential implications are crucial to consider not just on the empirical level (paradigm& data acquisition and results), but also for theory and reflection.

7.1 Contextualising the presented work

Initially, we aimed at an operationalisation of part of Sternberg's theory on hate, which poses that hate is decomposable into other affective states, with Vendrell-Ferrans theoretical account, that states that hate has a unique component. With newer functional MRI methodology, time courses of behavioural self-report (e.g. about the emotionality of stories) can be correlated with brain activation patterns when exposed to those narratives in the scanner. We present a new paradigm and (to a degree more) contextualised narratives than previous databases. It is possible to acquire data (also with fMRI) with the paradigm, analyse it, e.g. also by apply time course Intersubject Correlation, connecting behavioural time-course data with functional MRI data (facilitated by methodological progress in the affective and social neuroscience). I would expect that, while adhering to state of the art within social neuroscience, an empirical study testing the hypothesis if 'hate' is different from other, related emotions such as anger, or contempt as operationalised with the presented paradigm could be publishable -of course given rigorous peer review. Let us assume a study like this would get published: the paper likely would have 'hate' and 'neuroscience' in the title due to the pressure of the system. There could, therefore, be a high degree of public interest (or maybe not). Of course, there are many limitations and also advantages to the presented empirical approach, as discussed, and operationalisation decisions always include value-based decisions, no matter how thorough and iterative we were in developing our paradigm, and how scientific the outcomes that neuroscientists usually present might look.

But I want to ask a more general question: **What would such a study mean?**

The behavioural, empirical data show that there are narratives that elicited a hate 'recognition' response more frequently looking at the participants in our small, tested sample. The word 'recognition', however, can be misleading here, because there is no ground truth: these are emotional states and subjective to the rater group we asked (with a limited number of options to click in a presented multiple-choice). If a given scenario *elicited* a hate (or fear, or anger) response more frequently, this is no direct link to e.g. the specific identity category or categories that were mentioned in the scenario. With the complexity of the stimuli, many factors are likely to play a role, including how detailed or lively a story was written or spoken in by the actors. The importance of language and spoken languages on conceptualisations of emotions has been highlighted (Gendron et al., 2014; Kazanas et al., 2019). Going a step further, and thinking about the neuroscientific dimension of our hypothetical study: It has been discussed that research on emotions and the brain necessarily closely relate to how one conceptualises the brain and

information processing more generally. Coming from the viewpoint of constructed emotions, Westlin et al (2025a) re-analysed data from different emotion studies with a more explorative rather than categorical approach (varying stimuli, large sample of participants) and found the specificity of participant responses to be low if one compares to a specific norm, e.g. group average for an emotion label given a certain stimulus. In data driven studies Westlin et al., (2025b) showed that participants often chose multiple emotion labels (rather than having a single entry), and critique 'theory-laden' studies on the neuronal basis of emotions. Taking these new research results into account, our way of testing the hypothesis how hate is different from other affective states (if hate can be decomposed or has a unique component), is heavily relying on labels and emotion norms, while there is a more nuanced picture of co-occurring emotionality and broader scope present in the free-text data.

The point I am making is, however, larger: Emotion labels like 'hate' are not concrete objects (and in part drawing on Barrett & Satpute, 2019): I do not believe, therefore, that these categories naturally must have a neural correlate, ie. that there would be an objective truth behind 'hate' in the brain to unravel). I do not, see, how it can be meaningful -and relatedly ethical- to claim anything about a discrete 'neuroscience of hate', while 'hate' always will be a signifier, associated with different meanings and concepts (even if the types of hate is well defined by authors)[23].

Now, years on, there has not been significant empirical progress directly on 'the neuroscience of hate', even though the public interest in hate is high, this line of research is not being pursued or published (while there are other, larger research projects on the topic, and theoretical -as in conceptual- papers have been published (as discussed, see Mendez 2023a, 2023b).

7.2 Possible harm

Neuroscientific studies are usually targeting a small research question, with many limitations in design, tested on a specific sample. However, they can and often are generalised way beyond what was studied. This can, unfortunately, also happen if researchers very proactively engage in science communication of the results to general audiences and policy makers, as e.g. newspaper headlines often are drawn up to be catchy and capture attention. *Biologically* seeming data relating to the neuroscience of hate (particularly if framed or misunderstood as *brain activity of the hater*), can be harmful epistemically: it reduces the focus to the individual, while problems

[23] I do not question that there is scope to use the developed, emotional narratives, and other similar resources (e.g. with acquired brain data as already existent for e.g. movie data) for future studies.

like minority-discrimination (e.g. 'racist hate') are structural, this is a problem of resulting accountabilities. By focussing on certain types of expressions of hate over others in definitions and potential operationalisations in studies, researchers could implicitly contribute to maintaining what is currently socially accepted (status quo in Althoff, accepted to feel in an habitualised Emotion Repertoire in von Maur, Habits of affluence in Slaby) rather than questioning or disrupting it.

More generally speaking, and more removed from the limited context of a given study, such data could be misused and drawn to for data-based prediction of e.g. re-offending likelihoods (neurological and neuropsychological results in court proceedings have been discussed, see e.g. Fallin et al., 2019; Gkotsi & Gasser, 2016; Glenn & Raine, 2014; Poldrack et al., 2018). The idea of predicting '*threat*' is psychologically catchy: In different countries, discussions about the use of algorithmic programs that draw on large-scale, combined databases to aim at 'predicting' crime are to be used in decision-making by the police force are ongoing (as highlighted by civil society organisations e.g. in Germany, see Vieth-Ditlmann, 2025). Rollins et al., (2025) highlight how such 'predictive' approaches problematically reinforce structural biases, label and pathologize people who are innocent and individualise larger and structural problems. The thought that neuroscientific data could be fed into such models is not far-fetched, in particular with wearable EEG devices becoming more available. In line to the wide raging impact of racial capitalism on humans, neurotechnology can potentially be applied to surveil workers (see e.g. Muhl & Andorno 2023) and of course also data acquired, that, if not regulated against, could, in the future, be used and combined by large corporations who have the data, for instance promising 'neuroinformed' technology.

7.3 Learnings in and for interdisciplinary projects

This project has provided fruitful ground for reflection and learning in community, and this was not without friction. Turning towards social constructivist approach in the selected theories about emotions and the brain also meant questioning how academia works: if science is a social process, but research institutions excluding -how do *we* engage knowledge generation? And more so: in the knowledge generation about something as intimate (and publicly expressed and leveraged) as emotions. Relatedly, as Sara Ahmed points out, drawing on Angela David's work that "knowledge is not a one-way traffic system; it does not come *from* academia or academic disciplines and then go out *to* the world to be used by ordinary people and activists in our daily lives. We create new concepts by trying to change old worlds." (Ahmed, 2024, pp. 132-133).

Related to the sub question on learnings from interdisciplinary projects, I will briefly outline some of the learnings relevant for projects situated within academia, which include neuroscientists.

If I would plan a research project on a related topic (moving away from the label 'hate') from scratch, taking the learnings into account, I would plan a staged and deliberately slower co-design process: and begin this already at the planning stage: involving different groups to talk about which questions about a given topic should get researched in the first place. Of course, there are many ethical considerations to take into account when considering co-design processes, but there are research groups that directly work together with and in communities and have shared best practice guidelines (All Together in Dignity (ATD), Ireland, 2023; Whelan, 2024; Zamenopoulos & Alexiou, 2018). Time and flexibility for a project to change and develop have to to be built in, because these approaches, and teams science more generally takes time (Frith, 2020; Urai & Kelly, 2023), which ties back to the larger systems of funding and science policy: expectations and prioritisation of rapid, empirical output can obstruct which projects gets funding in the first place, and how interdisciplinary projects can develop (for consequences for research contexts as described e.g. by Fitzgerald & Callard, 2015; Kokorikou et al., 2023). Albeit individualising in itself, if I was in a position of power within academia, I would try -like more and more principal investigators do- to foster and encourage an environment that rewards and supports cooperation over competition as much as possible, trying to counteract existing and societally reinforced patterns of competition and resulting alienation. Turning towards researchers trained in neuroscience (including myself if I would start off again!), I would recommend engaging with others whenever possible to get challenged and interrogate commonly accepted assumptions early and build knowledge together.

7.4 Current stance

I view emotions as essential part of shared, social meaning-making.

I believe that emotions can be essential to *knowing*.

Emotions are not private (as in only on the side of the individual). To focus solely on the individual, risks losing track of the politics of feeling, and related accountabilities.

Power is particularly relevant to the study of hate (and related emotions that might receive less attention like contempt or ignorance).

Society, discourse and power relations influence if, how and what we feel. These factors also shape how we do research: I do not believe research into this topic to be neutral.

7.5 Larger implications and future directions

If feeling can be an essential part of knowing, and influenced by bigger societal structures (also in ways that blank out what should be felt), and are part of shared meaning making, there are resulting implications for research. The considerations outlined affect how we ask questions, approach them, and how teaching can be reformed and about how can we stay (or reconnect with) being affected -and able to act and organise in communities- in the current context we live in. I include this part, because I am convinced it matters, while also knowing that these implications and directions are larger than the presented project.

Many scholars and activists outline how teaching can and should be transformed to align more with social justice: In the renowned book *Teaching to transgress*, bell hooks (1994) outlines her experiences and knowledge about teaching as a practice for liberation and, besides many important points, highlights the frequent instrumentalization of theory building in the academy (where only a selected few are permitted to contribute), which, she argues, needs to change (hooks, 1994, another resource to turn to is Freire, 2020)). Robinson et al. (2023) are advocating for racial capitalism informed social psychology, and highlight that there is a "practical/political benefit in terms of fighting discrimination: if a great deal of prejudice is rooted in material/power imbalances, a more materially equitable world should help reduce that prejudice. If, on the other hand, prejudice is deeply ingrained psychology, it is more difficult to see what can be done or explain why inequality is so persistent." (Robinson et al., 2023, p. 407), which connects directly to questions of individualisation and whom a given approach to research is likely to serve. Professor Rollins notes that "The path toward antiracism, then, must revolutionize the very ethical bonds of

accountability between (neuro)science and society. More than a (neuro)ethics of race, I'm calling for a new politic—a purposeful, unyielding commitment to social justice. This new politic must pressure colleges and universities to rethink their own investments in racial capital." (Rollins, 2021, p. 1)**."** In a recent paper, entitled "Reimagining Neuroscience Education: Teaching "Life" as a Step Towards Social Justice", Rollins (2024) outlines concrete recommendations, such as actively building lessons about scientific racism, the politics of science and knowledge systems into the curriculum, and also encourage students to engage in reimagining how things can become better.

Building on their work about habituated emotions and the importance of 'Affective Disruptability' (Von Maur, 2022) and related political philosophy accounts on 'Habits of Affluence' (Slaby, 2025a), new directions for political education towards critical thinking and needed competencies are outlined by Slaby (2025b), with the goal to work in groups with young people to be(come) affected and disruptable, allowing friction and considering also when a level of distance might be needed. Their proposal for such a political education (in a footnote Slaby notes further education theory is currently in progress by Von Maur) hopes to enable confronting the reality of the world, without necessarily and directly falling into individualisation or helplessness this often tends to lead to.

Very similar questions are approached in the lived reality of community organising: conversations on how to stay "handlungsfähig" (my translation: retain capacity to act or engage) in activism and despite current challenges are discussed, for instance, in a podcast by Cuso Ehrlich[24] and in work by with Şeyda Kurt (2021, 2023), Sophie K. Rosa (2023) or Hannah Proctor (2024), which, of course, also involves reflecting and using privilege.

I read much of this work as a **call to action**: to organise, continue to highlight that issues are structural without neglecting the very material, psychological and emotional consequences for people and to learn in community with others.

[24] Podcast on community care, support systems and social justice hosted by Cuso Ehrich with episode featuring Şeyda Kurt, see https://inhausradio.de/hast-du-alles-mit-cuso-ehrich/

Bibliography

Abend, G. (2017). What are neural correlates neural correlates of? *BioSocieties*, *12*(3), 415–438. https://doi.org/10.1057/s41292-016-0019-y

Abiodun, S. J. (2019). "Seeing Color," A Discussion of the Implications and Applications of Race in the Field of Neuroscience. *Frontiers in Human Neuroscience*, *13*, 280. https://doi.org/10.3389/fnhum.2019.00280

Adams, R. B., Ambady, N., Macrae, C. N., & Kleck, R. E. (2006). Emotional expressions forecast approach-avoidance behavior. *Motivation and Emotion*, *30*(2), 177–186. https://doi.org/10.1007/s11031-006-9020-2

Adolphs, R. (2017). How should neuroscience study emotions? By distinguishing emotion states, concepts, and experiences. *Social Cognitive and Affective Neuroscience*, *12*(1), 24–31. https://doi.org/10.1093/scan/nsw153

Adolphs, R., & Andler, D. (2018). Investigating Emotions as Functional States Distinct From Feelings. *Emotion Review*, *10*(3), 191–201. https://doi.org/10.1177/1754073918765662

Ahmed. (2023, May 30). Common Sense as a Legacy Project. *Feministkilljoys*. https://feministkilljoys.com/2023/05/30/common-sense-as-a-legacy-project/

Ahmed, S. (2013). *The cultural politics of emotion*. Routledge.

Ahmed, S. (2024). *The Feminist Killjoy Handbook*. Penguin Books.

All Together in Dignity (ATD) - Ireland. (2023). *Breaking Barriers: Defining socio- economic discrimination – All Together in Dignity – ATD Ireland*. https://www.atdireland.ie/wp/breaking-barriers-defining-socio-economic-discrimination/

Althoff, S. (2024). The Condemnation of Hate and the Violence of the Status Quo. *Cultural Politics*, *20*(1), 45–59. https://doi.org/10.1215/17432197-10969201

Amineh, R. J., & Asl, H. D. (2015). Review of constructivism and social constructivism. *Journal of Social Sciences, Literature and Languages*, *1*(1), 9–16.

Arnold, M. B. (1960). *Emotion and personality.*

Aruguete, M. S., Huynh, H., Browne, B. L., Jurs, B., Flint, E., & McCutcheon, L. E. (2019). How serious is the 'carelessness' problem on Mechanical Turk? *International Journal of Social Research Methodology*, *22*(5), 441–449. https://doi.org/10.1080/13645579.2018.1563966

Aumer, K., Bahn, A. C. K., & Harris, S. (2015). Through the Looking Glass, Darkly: Perceptions of Hate in Interpersonal Relationships. *Journal of Relationships Research*, *6*, e3. https://doi.org/10.1017/jrr.2014.14

Awad, D., Emery, N. J., & Mareschal, I. (2023). Role of facial familiarity and emotional expression intensity in ensemble emotion perception. *Attention, Perception, & Psychophysics*, *85*(6), 1990–2003. https://doi.org/10.3758/s13414-023-02720-6

Bacha-Trams, M., Alexandrov, Y. I., Broman, E., Glerean, E., Kauppila, M., Kauttonen, J., Ryyppö, E., Sams, M., & Jääskeläinen, I. P. (2018). A drama movie activates brains of holistic and analytical thinkers differentially. *Social Cognitive and Affective Neuroscience*, *13*(12), 1293–1304. https://doi.org/10.1093/scan/nsy099

Bandura, A. (1989). Human Agency in Social Cognitive Theory. *American Psychologist*.

Barrett, L. F., & Lida, T. (2024). Constructionist Theories of Emotions in Psychology and Neuroscience. In *Emotion Theory: The Routledge Comprehensive Guide* (pp. 350–387). Routledge.

Barrett, L. F., Mesquita, B., & Gendron, M. (2011). Context in Emotion Perception. *Current Directions in Psychological Science*, *20*(5), 286–290. https://doi.org/10.1177/0963721411422522

Barrett, L. F., Mesquita, B., Ochsner, K. N., & Gross, J. J. (2007). The Experience of Emotion. *Annual Review of Psychology*, *58*(1), 373–403. https://doi.org/10.1146/annurev.psych.58.110405.085709

Barrett, L. F., & Russell, J. A. (2014). *The psychological construction of emotion*. Guilford Publications.

Barrett, L. F., & Satpute, A. B. (2019). Historical pitfalls and new directions in the neuroscience of emotion. *Neuroscience Letters*, *693*, 9–18. https://doi.org/10.1016/j.neulet.2017.07.045

Beckmann, C. F., Jenkinson, M., & Smith, S. M. (2003). General multilevel linear modeling for group analysis in FMRI. *NeuroImage*, *20*(2), 1052–1063. https://doi.org/10.1016/S1053-8119(03)00435-X

Benda, M. S., & Scherf, K. S. (2020). The Complex Emotion Expression Database: A validated stimulus set of trained actors. *PLOS ONE*, *15*(2), e0228248. https://doi.org/10.1371/journal.pone.0228248

Bergh, R., & Reinstein, D. (2021). Empathic and Numerate Giving: The Joint Effects of Victim Images and Charity Evaluations. *Social Psychological and Personality Science*, *12*(3), 407–416. https://doi.org/10.1177/1948550619893968

Berghof Foundation (Director). (2024, January 18). *The brain and peace: How can insights from neuroscience advance peacebuilding? - YouTube* [Video recording]. https://www.youtube.com/watch?v=wCoAdnbrrTk

Botvinik-Nezer, R., Holzmeister, F., Camerer, C. F., Dreber, A., Huber, J., Johannesson, M., Kirchler, M., Iwanir, R., Mumford, J. A., Adcock, R. A., & others. (2020). Variability in the analysis of a single neuroimaging dataset by many teams. *Nature*, *582*(7810), 84–88.

Brandt, A. M. (1978). Racism and Research: The Case of the Tuskegee Syphilis Study. *The Hastings Center Report*, *8*(6), 21. https://doi.org/10.2307/3561468

Broer, T., & Pickersgill, M. (2015). Targeting brains, producing responsibilities: The use of neuroscience within British social policy. *Social Science & Medicine*, *132*, 54–61. https://doi.org/10.1016/j.socscimed.2015.03.022

Brown, A. (2017). What is hate speech? Part 1: The Myth of Hate. *Law and Philosophy*, *36*(4), 419–468. https://doi.org/10.1007/s10982-017-9297-1

Brudholm, T. (2020). *What is hate?*

Brühlmann, F., Petralito, S., Aeschbach, L. F., & Opwis, K. (2020). The quality of data collected online: An investigation of careless responding in a crowdsourced sample. *Methods in Psychology*, *2*, 100022. https://doi.org/10.1016/j.metip.2020.100022

Bruneau, Cikara, M., & Saxe, R. (2017). Parochial Empathy Predicts Reduced Altruism and the Endorsement of Passive Harm. *Social Psychological and Personality Science*, *8*(8), 934–942. https://doi.org/10.1177/1948550617693064

Bruneau, E., Jacoby, N., Kteily, N., & Saxe, R. (2018a). Denying humanity: The distinct neural correlates of blatant dehumanization. *Journal of Experimental Psychology: General*, *147*(7), 1078–1093. https://doi.org/10.1037/xge0000417

Bruneau, E., Jacoby, N., Kteily, N., & Saxe, R. (2018b). Denying humanity: The distinct neural correlates of blatant dehumanization. *Journal of Experimental Psychology: General*, *147*(7), 1078.

Butler, J. (2016). *Frames of war: When is life grievable?*. Verso Books.

Cannavò, A., Castiello, A., Pratticò, F. G., Mazali, T., & Lamberti, F. (2023). Immersive movies: The effect of point of view on narrative engagement. *AI & SOCIETY*. https://doi.org/10.1007/s00146-022-01622-9

Cannon, W. B. (1927). The James-Lange theory of emotions: A critical examination and an alternative theory. *The American Journal of Psychology*, *39*(1/4), 106–124.

Cervone, C., Augoustinos, M., & Maass, A. (2021). The Language of Derogation and Hate: Functions, Consequences, and Reappropriation. *Journal of Language and Social Psychology*, *40*(1), 80–101. https://doi.org/10.1177/0261927X20967394

Chapman, H. A., Kim, D. A., Susskind, J. M., & Anderson, A. K. (2009). In Bad Taste: Evidence for the Oral Origins of Moral Disgust. *Science*, *323*(5918), 1222–1226. https://doi.org/10.1126/science.1165565

Charles, A., Hare-Duke, L., Nudds, H., Franklin, D., Llewellyn-Beardsley, J., Rennick-Egglestone, S., Gust, O., Ng, F., Evans, E., Knox, E., Townsend, E., Yeo, C., & Slade, M. (2022). Typology of content warnings and trigger warnings: Systematic review. *PLOS ONE*, *17*(5), e0266722. https://doi.org/10.1371/journal.pone.0266722

Choudhury, S., Nagel, S. K., & Slaby, J. (2009). Critical Neuroscience: Linking Neuroscience and Society through Critical Practice. *BioSocieties*, *4*(1), 61–77. https://doi.org/10.1017/S1745855209006437

Cikara, M., & Fiske, S. T. (2012). Stereotypes and Schadenfreude: Affective and Physiological Markers of Pleasure at Outgroup Misfortunes. *Social Psychological and Personality Science*, *3*(1), 67–71. https://doi.org/10.1017/CBO9781139084246.013

Cottingham, M. D. (2024). Neo-emotions: An Interdisciplinary Research Agenda. *Emotion Review*, *16*(1), 5–15. https://doi.org/10.1177/17540739231198636

Cowie, R., Douglas-Cowie, E., Savvidou, S., Sawey, E. M. M., & Schroeder, M. (2000). *'FEELTRACE': AN INSTRUMENT FOR RECORDING PERCEIVED EMOTION IN REAL TIME*.

Crowley, T. (2016). Language, Politics and Identity in Ireland: A Historical Overview. In R. Hickey (Ed.), *Sociolinguistics in Ireland* (pp. 198–217). Palgrave Macmillan UK. https://doi.org/10.1057/9781137453471_9

Dang, T. P., Mattan, B. D., Barth, D. M., Handley, G., Cloutier, J., & Kubota, J. T. (2022). Perceiving social injustice during arrests of Black and White civilians by White police officers: An fMRI investigation. *NeuroImage*, *255*, 119153. https://doi.org/10.1016/j.neuroimage.2022.119153

Darwin, C. (1872). The Expression of Emotions in Humans and Animals. *The Darwin Compendium*.

Deo, A., & Misbah. (n.d.). *Fear and HOPE 2024: The Case for Community Resilience*. Retrieved October 31, 2025, from https://hopenothate.org.uk/fear-and-hope-2024/

Deonna, J., & Teroni, F. (2012). *The emotions: A philosophical introduction*. Routledge.

Dolan, T. P. (2020). *A dictionary of Hiberno-English*. Gill & Macmillan Ltd.

Draucker, C. B., Martsolf, D. S., & Poole, C. (2009). Developing Distress Protocols for Research on Sensitive Topics. *Archives of Psychiatric Nursing*, *23*(5), 343–350. https://doi.org/10.1016/j.apnu.2008.10.008

Duchesne, A., & Kaiser Trujillo, A. (2021). Reflections on Neurofeminism and Intersectionality Using Insights From Psychology. *Frontiers in Human Neuroscience*, *15*, 684412. https://doi.org/10.3389/fnhum.2021.684412

Duff, A. S. (2025). Anger, Hatred, and Judgment in Aristotle's Rhetoric. *American Journal of Political Science*, *69*(1), 240–251. https://doi.org/10.1111/ajps.12830

Dukes, D., & Sander, D. (2024). Affectivism and the Emotional Elephant: How a Componential Approach Can Reconcile Opposing Theories to Serve the Future of Affective Sciences. *Affective Science*, *5*(3), 196–200. https://doi.org/10.1007/s42761-024-00272-y

Eckart, C., Kraft, D., Rademacher, L., & Fiebach, C. J. (2023). Neural correlates of affective task switching and asymmetric affective task switching costs. *Social Cognitive and Affective Neuroscience*, *18*(1), 1–13. https://doi.org/10.1093/scan/nsac054

Eilam, S., Kantor, A., Eshed, T., & Cohen, T.-O. (2021). *Contemporary Antisemitism in the Political Discourse of Five Western European Countries: Germany, France, Britain, Spain, Ireland* (No. 214). Institute for National Security Studies (INSS). https://www.inss.org.il/publication/contemporary-antisemitism-europe/

Ekman, P. (1972). Universals and cultural differences in facial expressions of emotion. *Nebraska Symposium on Motivation*, 207–282. https://doi.org/10.1037/0022-3514.53.4.712

Ekman, P. (1992). An argument for basic emotions. *Cognition & Emotion*, *6*(3), 169–200. https://doi.org/10.1080/02699939208411068

Ekman, P., & Cordaro, D. (2011). What is Meant by Calling Emotions Basic. *Emotion Review*, *3*(4), 364–370. https://doi.org/10.1177/1754073911410740

Ekman, P., & Friesen, W. V. (1971a). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, *17*(2), 124–129. https://doi.org/10.1037/h0030377

Ekman, P., & Friesen, W. V. (1971b). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, *17*(2), 124.

Ellsworth, P. C., & Scherer, K. R. (2002). Appraisal Processes In Emotion. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of Affective Sciences* (pp. 572–595). Oxford University PressNew York, NY. https://doi.org/10.1093/oso/9780195126013.003.0029

Erbas, Y., Sels, L., Ceulemans, E., & Kuppens, P. (2016). Feeling Me, Feeling You: The Relation Between Emotion Differentiation and Empathic Accuracy. *Social Psychological and Personality Science*, *7*(3), 240–247. https://doi.org/10.1177/1948550616633504

Evans, O., McGuffog, R., Gendi, M., & Rubin, M. (2022). A First Class Measure: Evidence for a Comprehensive Social Class Scale in Higher Education Populations. *Research in Higher Education*, *63*(8), 1427–1452. https://doi.org/10.1007/s11162-022-09693-9

Fallin, M., Whooley, O., & Barker, K. K. (2019). Criminalizing the brain: Neurocriminology and the production of strategic ignorance. *BioSocieties*, *14*(3), 438–462. https://doi.org/10.1057/s41292-018-0135-y

Fanon, F., Sartre, J.-P., & Farrington, C. (1963). *The wretched of the earth* (Vol. 36). Springer.

Fernández, N., Benitez, F., & Romero-Maltrana, D. (2022). Social Character of Science and Its Connection to Epistemic Reliability. *Science & Education*, *31*(6), 1429–1448. https://doi.org/10.1007/s11191-021-00290-3

Ferran, Í. V. (2018). *Phenomenological Approaches to Hatred: Scheler, Pfänder and Kolnai*.

Ferran, Í. V. (2021). Herabsetzung, Selbstwertgefühl und Hass. *Deutsche Zeitschrift für Philosophie*, *69*(3), 409–421. https://doi.org/10.1515/dzph-2021-0034

Fischer, A., & Giner-Sorolla, R. (2016). Contempt: Derogating Others While Keeping Calm. *Emotion Review*, *8*(4), 346–357. https://doi.org/10.1177/1754073915610439

Fischer, A. H. (2024a). Contempt and hate. In *Emotion Theory: The Routledge Comprehensive Guide* (pp. 88–99). Routledge.

Fischer, A. H. (2024b). Contempt and Hate. In A. Scarantino, *Emotion Theory: The Routledge Comprehensive Guide* (1st ed., pp. 88–99). Routledge. https://doi.org/10.4324/9781003469018-6

Fischer, A. H., Kret, M. E., & Broekens, J. (2018). Gender differences in emotion perception and self-reported emotional intelligence: A test of the emotion sensitivity hypothesis. *PLOS ONE*, *13*(1), e0190712. https://doi.org/10.1371/journal.pone.0190712

Fischer, A., Halperin, E., Canetti, D., & Jasini, A. (2018). Why we hate. *Emotion Review*, *10*(4), 309–320.

Fitness, J., & Fletcher, G. J. (1993). Love, hate, anger, and jealousy in close relationships: A prototype and cognitive appraisal analysis. *Journal of Personality and Social Psychology*, *65*(5), 942.

Fitzgerald, D., & Callard, F. (2015). Social Science and Neuroscience beyond Interdisciplinarity: Experimental Entanglements. *Theory, Culture & Society*, *32*(1), 3–32. https://doi.org/10.1177/0263276414537319

Freire, P. (2020). Pedagogy of the oppressed. In *Toward a sociology of education* (pp. 374–386). Routledge.

Fricker, M. (2007). *Epistemic injustice: Power and the ethics of knowing*. Oxford University Press.

Fricker, M. (2017). Evolving Concepts of Epistemic Injustice. In I. J. Kidd, J. Medina, & G. Pohlhaus (Eds.), *The Routledge Handbook of Epistemic Injustice* (1st ed., pp. 53–60). Routledge. https://doi.org/10.4324/9781315212043-5

Friston, K. (2005). A theory of cortical responses. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *360*(1456), 815–836. https://doi.org/10.1098/rstb.2005.1622

Frith, U. (2020). Fast Lane to Slow Science. *Trends in Cognitive Sciences*, *24*(1), 1–2. https://doi.org/10.1016/j.tics.2019.10.007

Fugo, J. I. (2024). Beyond the 'hubris of the zero point': Methods for resisting epistemic oppression. *Philosophy & Social Criticism*, 01914537241285590. https://doi.org/10.1177/01914537241285590

Fusar-Poli, P., Placentino, A., Carletti, F., Landi, P., Allen, P., Surguladze, S., Benedetti, F., Abbamonte, M., Gasparotti, R., Barale, F., Perez, J., McGuire, P., & Politi, P. (2009). Functional atlas of emotional faces processing: A voxel-based meta-analysis of 105 functional magnetic resonance imaging studies. *J Psychiatry Neurosci*, *34*(6).

Gan, X., Zhou, F., Xu, T., Liu, X., Zhang, R., Zheng, Z., Yang, X., Zhou, X., Yu, F., Li, J., Cui, R., Wang, L., Yuan, J., Yao, D., & Becker, B. (2024). A neurofunctional signature of subjective disgust generalizes to oral distaste and socio-moral contexts. *Nature Human Behaviour*, *8*(7), 1383–1402. https://doi.org/10.1038/s41562-024-01868-x

Gendron, M., Roberson, D., Van Der Vyver, J. M., & Barrett, L. F. (2014). Perceptions of emotion from facial expressions are not culturally universal: Evidence from a remote culture. *Emotion*, *14*(2), 251–262. https://doi.org/10.1037/a0036052

Genevsky, A., Västfjäll, D., Slovic, P., & Knutson, B. (2013). Neural Underpinnings of the Identifiable Victim Effect: Affect Shifts Preferences for Giving. *The Journal of Neuroscience*, *33*(43), 17188–17196. https://doi.org/10.1523/JNEUROSCI.2348-13.2013

Gershman, S. J. (2021). Just looking: The innocent eye in neuroscience. *Neuron*, *109*(14), 2220–2223. https://doi.org/10.1016/j.neuron.2021.05.022

Giner-Sorolla, R., & Fischer, A. H. (2017). Contempt, like any other social affect, can be an emotion as well as a sentiment. *Behavioral and Brain Sciences*, *40*.

Gkotsi, G. M., & Gasser, J. (2016). Critique of the use of neuroscience in forensic psychiatric assessments: The issue of criminal responsibility. *L'Évolution Psychiatrique*, *81*(2), e25–e36. https://doi.org/10.1016/j.evopsy.2015.10.006

Gläscher, J., Hampton, A. N., & O'Doherty, J. P. (2009). Determining a Role for Ventromedial Prefrontal Cortex in Encoding Action-Based Value Signals During Reward-Related Decision Making. *Cerebral Cortex*, *19*(2), 483–495. https://doi.org/10.1093/cercor/bhn098

Gledhill, J. (2019). Capitalism, the politics of hate, and everyday cosmopolitanisms. *Critique of Anthropology*, *39*(3), 310–328. https://doi.org/10.1177/0308275X19856418

Glenn, A. L., & Raine, A. (2014). Neurocriminology: Implications for the punishment, prediction and prevention of criminal behaviour. *Nature Reviews Neuroscience*, *15*(1), 54–63. https://doi.org/10.1038/nrn3640

Goudarzi, S., Knowles, E., & Badaan, V. (2021). *Neoliberalism and the Ideological Construction of Equity Beliefs* [Preprint]. PsyArXiv. https://doi.org/10.31234/osf.io/pc8zy

Griskevicius, V., Tybur, J. M., Delton, A. W., & Robertson, T. E. (2011). The influence of mortality and socioeconomic status on risk and delayed rewards: A life history theory approach. *Journal of Personality and Social Psychology*, *100*(6), 1015–1026. https://doi.org/10.1037/a0022403

Grupe, D. W., Schaefer, S. M., Lapate, R. C., Schoen, A. J., Gresham, L. K., Mumford, J. A., & Davidson, R. J. (2018). Behavioral and neural indices of affective coloring for neutral social stimuli. *Social Cognitive and Affective Neuroscience*, *13*(3), 310–320. https://doi.org/10.1093/scan/nsy011

Gyasi, Y. (2020). *Transcendent Kingdom: Shortlisted for the Women's Prize for Fiction 2021*. Penguin UK.

Hakim, N., Abi-Ghannam, G., Saab, R., Albzour, M., Zebian, Y., & Adams, G. (2023). Turning the lens in the study of precarity: On experimental social psychology's acquiescence to the settler-colonial status quo in historic Palestine. *British Journal of Social Psychology*, *62*(S1), 21–38. https://doi.org/10.1111/bjso.12595

Halperin, E. (2008). Group-based Hatred in Intractable Conflict in Israel. *Journal of Conflict Resolution*, *52*(5), 713–736. https://doi.org/10.1177/0022002708314665

Halperin, E., Canetti, D., & Kimhi, S. (2012). In Love With Hatred: Rethinking the Role Hatred Plays in Shaping Political Behavior1: ROLE OF HATRED IN SHAPING POLITICAL BEHAVIOR. *Journal of Applied Social Psychology*, *42*(9), 2231–2256. https://doi.org/10.1111/j.1559-1816.2012.00938.x

Halperin, E., Russell, A. G., Dweck, C. S., & Gross, J. J. (2011). Anger, Hatred, and the Quest for Peace: Anger Can Be Constructive in the Absence of Hatred. *Journal of Conflict Resolution*, *55*(2), 274–291. https://doi.org/10.1177/0022002710383670

Hamid, N., Pretus, C., Atran, S., Crockett, M. J., Ginges, J., Sheikh, H., Tobeña, A., Carmona, S., Gómez, A., Davis, R., & Vilarroya, O. (2019). Neuroimaging 'will to fight' for sacred values: An empirical case study with supporters of an Al Qaeda associate. *Royal Society Open Science*, *6*(6), 181585. https://doi.org/10.1098/rsos.181585

Hanke, M., Baumgartner, F. J., Ibe, P., Kaule, F. R., Pollmann, S., Speck, O., Zinke, W., & Stadler, J. (2014). A high-resolution 7-Tesla fMRI dataset from complex natural stimulation with an audio movie. *Scientific Data*, *1*(1), 140003. https://doi.org/10.1038/sdata.2014.3

Hao, Y., & Farah, M. J. (2020). The affective neuroscience of socioeconomic status: Implications for mental health. *BJPsych Bulletin*, *44*(5), 202–207. https://doi.org/10.1192/bjb.2020.69

Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, *14*(3), 575. https://doi.org/10.2307/3178066

Harris, L. (2025). The Who of Social Psychology: The Challenges of Humans Studying Human Behavior. In D. Gilbert, S. Fiske, E. Finkel, & W. Mendes (Eds.), *Handbook of Social Psychlogy 6th Edition* (6th ed.). Situational Press. https://doi.org/10.70400/GUQQ6109

Harris, L. T., & Fiske, S. T. (2009). Social neuroscience evidence for dehumanised perception. *European Review of Social Psychology*, *20*(1), 192–231.

Hartung, F., Burke, M., Hagoort, P., & Willems, R. M. (2016). Taking Perspective: Personal Pronouns Affect Experiential Aspects of Literary Reading. *PLOS ONE*, *11*(5), e0154732. https://doi.org/10.1371/journal.pone.0154732

Haug, M. C. (2018). Fast, Cheap, and Unethical? The Interplay of Morality and Methodology in Crowdsourced Survey Research. *Review of Philosophy and Psychology*, *9*(2), 363–379. https://doi.org/10.1007/s13164-017-0374-z

Haynes, A., & Schweppe, J. (2017). *Lifecycle of a hate crime: Country report for Ireland*. Irish Council for Civil Liberties.

Heinz, A. (2023). *Das kolonialisierte Gehirn und die Wege der Revolte: Das kolonialisierte Gehirn und die Wege der Revolte*. Suhrkamp Verlag.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, *466*(July), 2010. https://doi.org/10.2139/ssrn.1601785

Higgins, A., Doyle, L., Downes, C., Murphy, R., Sharek, D., & DeVries, J. (2016). *The LGBTIreland Report: National Study of the Mental Health and Wellbeing of Lesbian, Gay, Bisexual, Transgender and Intersex People in Ireland*. GLEN and BeLonG To.

Ho, A. K., Sidanius, J., Kteily, N., Sheehy-Skeffington, J., Pratto, F., Henkel, K. E., Foels, R., & Stewart, A. L. (2015). The nature of social dominance orientation: Theorizing and measuring preferences for intergroup inequality using the new SDO_7 scale. *Journal of Personality and Social Psychology*, *109*(6), 1003.

Hoemann, K., Crittenden, A. N., Msafiri, S., Liu, Q., Li, C., Roberson, D., Ruark, G. A., Gendron, M., & Feldman Barrett, L. (2019). Context facilitates performance on a classic cross-cultural emotion perception task. *Emotion*, *19*(7), 1292.

hooks, b. (1994). *Teaching to transgress: Education as the practice of freedom*. Routledge.

Hudson, M., Seppälä, K., Putkinen, V., Sun, L., Glerean, E., Karjalainen, T., Karlsson, H. K., Hirvonen, J., & Nummenmaa, L. (2020). Dissociable neural systems for unconditioned acute and sustained fear. *NeuroImage*, *216*, 116522. https://doi.org/10.1016/j.neuroimage.2020.116522

Hughes, B. L., Ambady, N., & Zaki, J. (2017). Trusting outgroup, but not ingroup members, requires control: Neural and behavioral evidence. *Social Cognitive and Affective Neuroscience*, *12*(3), 372–381. https://doi.org/10.1093/scan/nsw139

Hutcherson, C. A., Goldin, P. R., Ochsner, K. N., Gabrieli, J. D., Barrett, L. F., & Gross, J. J. (2005). Attention and emotion: Does rating emotion alter neural responses to amusing and sad films? *NeuroImage*, *27*(3), 656–668. https://doi.org/10.1016/j.neuroimage.2005.04.028

Irish Council for Civil Liberties (ICCL). (2022). *ICCL Report to the UN human rights committee*. https://www.iccl.ie/wp-content/uploads/2022/06/ICCL-report-to-UN-Human-Rights-Committee-2022.pdf

Irish Council for Civil Liberties (ICCL). (2024). *Policing and Racial Discrimination in Ireland: A Community and Rights Perspective*. https://inar.ie/wp-content/uploads/2024/04/1.-POLICING-AND-RACIAL-DISCRIMINATION-1.pdf

Irish Network Against Racism (INAR). (2019a). *Afrophobia in Ireland—Racism against people of African descent*. https://inar.ie/wp-content/uploads/2019/10/afrophobia_in_ireland.pdf

Irish Network Against Racism (INAR). (2019b). *Alternative report on Racial discrimination in Ireland: Civil society perspective*. https://inar.ie/wp-content/uploads/2019/11/INAR-ALTERNATIVE-REPORT-to-CERD-WEB.pdf

Jääskeläinen, I. P., Ahveninen, J., Klucharev, V., Shestakova, A. N., & Levy, J. (2022). Behavioral Experience-Sampling Methods in Neuroimaging Studies With Movie and Narrative Stimuli. *Frontiers in Human Neuroscience*, *16*, 813684. https://doi.org/10.3389/fnhum.2022.813684

Jääskeläinen, I. P., Klucharev, V., Panidi, K., & Shestakova, A. N. (2020). Neural Processing of Narratives: From Individual Processing to Viral Propagation. *Frontiers in Human Neuroscience*, *14*, 253. https://doi.org/10.3389/fnhum.2020.00253

Jääskeläinen, I. P., Sams, M., Glerean, E., & Ahveninen, J. (2021). Movies and narratives as naturalistic stimuli in neuroimaging. *NeuroImage*, *224*, 117445. https://doi.org/10.1016/j.neuroimage.2020.117445

Jack, A. I., Dawson, A. J., & Norr, M. E. (2013). Seeing human: Distinct and overlapping neural signatures associated with two forms of dehumanization. *NeuroImage*, *79*, 313–328. https://doi.org/10.1016/j.neuroimage.2013.04.109

Kassem, N., Nir, N., Perry, A., & Halperin, E. (2025). Intergroup Emotions in Intergroup Conflicts: Power Disparities Perspective. *The Handbook of Social and Political Conflict*, 31.

Kazanas, S. A., McLean, J. S., & Altarriba, J. (2019). Emotion and Emotion Concepts: Processing and Use in Monolingual and Bilingual Speakers. In J. W. Schwieter & M. Paradis (Eds.), *The Handbook of the Neuroscience of Multilingualism* (1st ed., pp. 313–334). Wiley. https://doi.org/10.1002/9781119387725.ch15

Keltner, D., & Gross, J. J. (1999a). Functional Accounts of Emotions. *Cognition & Emotion*, *13*(5), 467–480. https://doi.org/10.1080/026999399379140

Keltner, D., & Gross, J. J. (1999b). Functional Accounts of Emotions. *Cognition & Emotion*, *13*(5), 467–480. https://doi.org/10.1080/026999399379140

Khan, K. (2023). The Overrepresentation of Whiteness in Applied Linguistics – A response from Europe: A Commentary on "Undoing Competence: Coloniality, Homogeneity, and the Overrepresentation of Whiteness in Applied Linguistics." *Language Learning*, *73*(S2), 317–320. https://doi.org/10.1111/lang.12541

Kidd, C., & Birhane, A. (2023). How AI can distort human beliefs. *Science*, *380*(6651), 1222–1223.

Kidd, I. J., Medina, J., & Pohlhaus, G. (2017). Introduction to the Routledge handbook of epistemic injustice. In *The Routledge handbook of epistemic injustice* (pp. 1–9). Routledge.

Klapwijk, E. T., Van Den Bos, W., Tamnes, C. K., Raschle, N. M., & Mills, K. L. (2021). Opportunities for increased reproducibility and replicability of developmental neuroimaging. *Developmental Cognitive Neuroscience*, *47*, 100902. https://doi.org/10.1016/j.dcn.2020.100902

Kliemann, D., Richardson, H., Anzellotti, S., Ayyash, D., Haskins, A. J., Gabrieli, J. D. E., & Saxe, R. R. (2018). Cortical responses to dynamic emotional facial expressions generalize across stimuli, and are sensitive to task-relevance, in adults with and without Autism. *Cortex*, *103*, 24–43. https://doi.org/10.1016/j.cortex.2018.02.006

Koay, A., Galvin, M., Murphy, C., Cunningham, C., Buczkowska, T., Aquino, V., Doherty, L., Aremu, O., Arya, V., & Costa Sa, M. E. (2022). *Stand Up, Speak Out! Racial Justice in Healthcare Education: Experiences of Minoritised Ethnic Students*. https://discovery.ucl.ac.uk/id/eprint/10158273/

Kofi Bright, L., Gabriel, N., O'Connor, C., & Táíwò, O. O. (2025). On the Stability of Racial Capitalism. *Ergo an Open Access Journal of Philosophy*, *12*(0). https://doi.org/10.3998/ergo.7965

Kokorikou, D. S., Sarigiannidis, I., Fiore, V. G., Parkin, B., Hopkins, A., El-Deredy, W., Dilley, L., & Moutoussis, M. (2023). Testing hypotheses about the harm that capitalism causes to the mind and brain: A theoretical framework for neuroscience research. *Frontiers in Sociology*, *8*, 1030115. https://doi.org/10.3389/fsoc.2023.1030115

Kolnai, A. (2003). *On disgust*. Open Court Publishing.

Kurt, S. (2023). *Hass. Von der Macht eines widerständigen Gefühls*. HarperCollins eBook.

Kurt, S. (2025). *Hate: The Uses of a Powerful Emotion*. Verso Books.

Kurt, S. (2021). *Radikale Zärtlichkeit. Warum Liebe politisch ist*. HarperCollins.

Landweer, H. (2021a). Erlaubte und verbotene Aggressionsaffekte im öffentlichen Raum. *Helfritzsch, P., u. Müller Hipper, J.(Hg.), Emotionalisierung Des Politischen, Bielefeld*, 75–98.

Landweer, H. (2021b). Erlaubte und verbotene Aggressionsaffekte im öffentlichen Raum. *Emotionalisierung Des Politischen*, 75–98.

Lange, J., Dalege, J., Borsboom, D., van Kleef, G. A., & Fischer, A. H. (2020). *Toward an Integrative Psychometric Model of Emotions*.

Lange, J., & Zickfeld, J. H. (2021). Emotions as overlapping causal networks of emotion components: Implications and methodological approaches. *Emotion Review*, *13*(2), 157–167.

Langner, O., Dotsch, R., Bijlstra, G., Wigboldus, D. H. J., Hawk, S. T., & van Knippenberg, A. (2010). Presentation and validation of the Radboud Faces Database. *Cognition & Emotion*, *24*(8), 1377–1388. https://doi.org/10.1080/02699930903485076

Lazarus, R. S. (1991). Progress on a Cognitive-Motivational-Relational Theory of Emotion. *American Psychologist*.

Le Mau, T., Hoemann, K., Lyons, S. H., Fugate, J., Brown, E. N., Gendron, M., & Barrett, L. F. (2021). Professional actors demonstrate variability, not stereotypical expressions, when portraying emotional states in photographs. *Nature Communications*, *12*(1), 1–13.

LeDoux, J. (2012). Rethinking the Emotional Brain. *Neuron*, *73*(4), 653–676. https://doi.org/10.1016/j.neuron.2012.02.004

Lee, E., Kang, J. I., Park, I. H., Kim, J.-J., & An, S. K. (2008). Is a neutral face really evaluated as being emotionally neutral? *Psychiatry Research*, *157*(1–3), 77–85. https://doi.org/10.1016/j.psychres.2007.02.005

Lindquist, K. A., Wager, T. D., Kober, H., Bliss-Moreau, E., & Barrett, L. F. (2012). The brain basis of emotion: A meta-analytic review. *Behavioral and Brain Sciences*, *35*(3), 121–143. https://doi.org/10.1017/S0140525X11000446

Lindqvist, A., Sendén, M. G., & Renström, E. A. (2021). What is gender, anyway: A review of the options for operationalising gender. *Psychology & Sexuality*, *12*(4), 332–344. https://doi.org/10.1080/19419899.2020.1729844

Lowe, M., Kerridge, I. H., & Mitchell, K. R. (1995). "These sorts of people don't do very well": Race and allocation of health care resources. *Journal of Medical Ethics*, *21*(6), 356–360. https://doi.org/10.1136/jme.21.6.356

Lynch, K. (2010). Carelessness: A hidden doxa of higher education. *Arts and Humanities in Higher Education*, *9*(1), 54–67. https://doi.org/10.1177/1474022209350104

Mar, R. A. (2018). Stories and the promotion of social cognition. *Current Directions in Psychological Science*, *27*(4), 257–262.

Mark, V. H., Sweet, W. H., & Ervin, F. R. (1967). Role of brain disease in riots and urban violence. *JAMA*, *201*(11), 895–895.

Marshburn, C. K., Reinkensmeyer, B. A., & Knowles, E. D. (2022). Dominance motivated delusions: Whites with high social dominance orientation perceive equal amounts of institutional racism between Blacks and Whites. *Group Processes & Intergroup Relations*, *26*(6), 1244–1270. https://doi.org/10.1177/13684302221103984

Martín-Baró, I. (1996). *Writings for a liberation psychology*. Harvard University Press.

Martínez, C. A., van Prooijen, J.-W., & Van Lange, P. A. M. (2022). Hate: Toward understanding its distinctive features across interpersonal and intergroup targets. *Emotion*, *22*(1), 46–63. https://doi.org/10.1037/emo0001056

Marya, R. (2024). *Deep Medicine Circle—Farming is Medicine*. Trinity College Dublin. https://www.tcd.ie/healthsciences/assets/visitingprofessors/vp2024-RupaMarya-DMC Farming is Medicine.pdf

Mayock, P., Sheridan, S., & Parker, S. (2015). *The Dynamics of long-term homelessness among women in Ireland*. Dublin Region Homeless Executive Dublin, Ireland. https://www.homelessdublin.ie/content/files/publications/Dynamicsoflongtermhomelessness_May2015.pdf

McBride, R.-S., Neary, A., Gray, B., & Lacey, V. (2020). *The post-primary school experiences of transgender and gender diverse youth in Ireland*. University of Limerick.

McManus, M. D., Nakamura, J., & Siegel, J. T. (2024). Hiding in plain sight: The distinct importance of low-arousal positive affect. *Motivation and Emotion*, *48*(3), 336–422. https://doi.org/10.1007/s11031-024-10062-5

McNeil, J., Bailey, L., Ellis, S. J., & Regan, M. (2013). *Speaking from the Margins: Trans Mental Health and Wellbeing in Ireland*. Transgender Equality Network Ireland (TENI). https://www.teni.ie/reports/

Meloni, M. (2011). Philosophical implications of neuroscience: The space for a critique. *Subjectivity*, *4*(3), 298–322. https://doi.org/10.1057/sub.2011.8

Mendez, M. F. (2023a). A Brain Mechanism for Hate. *The Journal of Neuropsychiatry and Clinical Neurosciences*, *35*(3), 262–263. https://doi.org/10.1176/appi.neuropsych.20220121

Mendez, M. F. (2023b). A Functional and Neuroanatomical Model of Dehumanization. *Cognitive and Behavioral Neurology*, *36*(1), 42–47. https://doi.org/10.1097/WNN.0000000000000316

Mercille, J., & Murphy, E. (2017). The Neoliberalization of Irish Higher Education under Austerity. *Critical Sociology*, *43*(3), 371–387. https://doi.org/10.1177/0896920515607074

Mesquita, B. (2022). *Between us: How cultures create emotions*. WW Norton & Company.

Mignolo, W. D. (2009a). Epistemic Disobedience, Independent Thought and Decolonial Freedom. *Theory, Culture & Society*, *26*(7–8), 159–181. https://doi.org/10.1177/0263276409349275

Mignolo, W. D. (2009b). Epistemic Disobedience, Independent Thought and Decolonial Freedom. *Theory, Culture & Society*, *26*(7–8), 159–181. https://doi.org/10.1177/0263276409349275

Moors, A. (2009). Theories of emotion causation: A review. *Cognition & Emotion*, *23*(4), 625–662. https://doi.org/10.1080/02699930802645739

Morgenroth, E., Vilaclara, L., Muszynski, M., Gaviria, J., Vuilleumier, P., & Van De Ville, D. (2023). Probing neurodynamics of experienced emotions—A Hitchhiker's guide to film fMRI. *Social Cognitive and Affective Neuroscience*, *18*(1), nsad063. https://doi.org/10.1093/scan/nsad063

Morrissey, J. (2015). Regimes of performance: Practices of the normalised self in the neoliberal university. *British Journal of Sociology of Education*, *36*(4), 614–634. https://doi.org/10.1080/01425692.2013.838515

Moss, A. J., Rosenzweig, C., Robinson, J., Jaffe, S. N., & Litman, L. (2023). Is it ethical to use Mechanical Turk for behavioral research? Relevant data from a representative survey of MTurk participants and wages. *Behavior Research Methods*, *55*(8), 4048–4067. https://doi.org/10.3758/s13428-022-02005-0

Muhl, E., & Andorno, R. (2023). Neurosurveillance in the workplace: Do employers have the right to monitor employees' minds? *Frontiers in Human Dynamics*, *5*, 1245619. https://doi.org/10.3389/fhumd.2023.1245619

Müller-Hill, B. (1999). The blood from Auschwitz and the silence of the scholars. *History and Philosophy of the Life Sciences*, 331–365.

Nastase, S. A., Gazzola, V., Hasson, U., & Keysers, C. (2019). Measuring shared responses across subjects using intersubject correlation. *Social Cognitive and Affective Neuroscience*, nsz037. https://doi.org/10.1093/scan/nsz037

Nastase, S. A., Liu, Y.-F., Hillman, H., Zadbood, A., Hasenfratz, L., Keshavarzian, N., Chen, J., Honey, C. J., Yeshurun, Y., Regev, M., Nguyen, M., Chang, C. H. C., Baldassano, C., Lositsky, O., Simony, E., Chow, M. A., Leong, Y. C., Brooks, P. P., Micciche, E., … Hasson, U. (2021). The "Narratives" fMRI dataset for evaluating models of naturalistic language comprehension. *Scientific Data*, *8*(1), 250. https://doi.org/10.1038/s41597-021-01033-3

National Women's Council. (2021). *Improving the healthcare outcomes and experiences of the healthcare system for marginalised women.* [Report]. Department of Health. https://www.drugsandalcohol.ie/35242/1/NWC_Improving_the_Healthcare_Outcomes_and_Experiences_for_Marginalised_Women.pdf

Ní Chonaill, B., & Buczkowska, T. (2017, February 16). Taking Racism Seriously: Experiences of Racism and Racially Motivated Anti-Social Behaviour in Social Housing. *The European Migration Network*. https://emn.ie/publications/taking-racism-seriously-experiences-of-racism-and-racially-motivated-anti-social-behaviour-in-social-housing/

Nummenmaa, L., & Saarimäki, H. (2019a). Emotions as discrete patterns of systemic activity. *Neuroscience Letters*, *693*, 3–8. https://doi.org/10.1016/j.neulet.2017.07.012

Nummenmaa, L., & Saarimäki, H. (2019b). Emotions as discrete patterns of systemic activity. *Neuroscience Letters*, *693*, 3–8. https://doi.org/10.1016/j.neulet.2017.07.012

O'Brien, C. (2020, December 7). Class gap: More affluent students dominate high-points courses. *The Irish Times*. https://www.irishtimes.com/news/education/class-gap-more-affluent-students-dominate-high-points-courses-1.4429048

Ong, D. C., Wu, Z., Zhi-Xuan, T., Reddan, M., Kahhale, I., Mattek, A., & Zaki, J. (2021). Modeling Emotion in Complex Stories: The Stanford Emotional Narratives Dataset. *IEEE Transactions on Affective Computing*, *12*(3), 579–594. https://doi.org/10.1109/TAFFC.2019.2955949

Opacin, N. (2021). Learning from and about Violent Past through Storytelling and Challenging Narratives: An Approach for Peacebuilding Education Initiatives. *Storytelling, Self, Society*, *17*(2), 177–209. https://doi.org/10.1353/sss.2021.0015

Opotow, S., & McClelland, S. I. (2007). The Intensification of Hating: A Theory. *Social Justice Research*, *20*(1), 68–97. https://doi.org/10.1007/s11211-007-0033-0

Opotow, S., & McClelland, S. I. (2020). *Theorizing hate in contemporary USA.*

Pabian, S., Vandebosch, H., Poels, K., Van Cleemput, K., & Bastiaensens, S. (2016). Exposure to cyberbullying as a bystander: An investigation of desensitization effects among early adolescents. *Computers in Human Behavior*, *62*, 480–487. https://doi.org/10.1016/j.chb.2016.04.022

Panksepp, J., Lane, R. D., Solms, M., & Smith, R. (2017). Reconciling cognitive and affective neuroscience perspectives on the brain basis of emotional experience. *Neuroscience & Biobehavioral Reviews*, *76*, 187–215. https://doi.org/10.1016/j.neubiorev.2016.09.010

Panksepp, J., & Watt, D. (2011). What is Basic about Basic Emotions? Lasting Lessons from Affective Neuroscience. *Emotion Review*, *3*(4), 387–396. https://doi.org/10.1177/1754073911410741

Papoulias, S. (Constantina), & Callard, F. (2022). Material and epistemic precarity: It's time to talk about labour exploitation in mental health research. *Social Science & Medicine*, *306*, 115102. https://doi.org/10.1016/j.socscimed.2022.115102

Park, Y. S., Konge, L., & Artino Jr, A. R. (2020). The positivism paradigm of research. *Academic Medicine*, *95*(5), 690–694.

Parkinson, B., Fischer, A. H., & Manstead, A. S. (2005). *Emotion in social relations: Cultural, group, and interpersonal processes*. Psychology press.

Pavee Point. (2025, July 30). Pavee Point Submission to the European Commission Anti-Racism Strategy. *Pavee Point*. https://www.paveepoint.ie/wp-content/uploads/2025/07/Pavee-Point-Submission-to-the-European-Commission-Anti-Racism-Strategy-1.pdf

Pearlman, W. (2023). Emotional Sensibility: Exploring the Methodological and Ethical Implications of Research Participants' Emotions. *American Political Science Review*, *117*(4), 1241–1254. https://doi.org/10.1017/S0003055422001253

Perry, B. (2002). Accounting for Hate Crime—Doing Difference. In *In the name of hate: Understanding hate crimes* (p. 55). Routledge.

Pesch, U., & Van Uffelen, N. (2024). Normative Paradigms and Interdisciplinary Research. *Social Epistemology*, 1–15. https://doi.org/10.1080/02691728.2024.2403635

Pitts-Taylor, V. (2010). The plastic brain: Neoliberalism and the neuronal self. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, *14*(6), 635–652. https://doi.org/10.1177/1363459309360796

Pluta, A., Mazurek, J., Wojciechowski, J., Wolak, T., Soral, W., & Bilewicz, M. (2023). Exposure to hate speech deteriorates neurocognitive mechanisms of the ability to understand others' pain. *Scientific Reports*, *13*(1), 4127. https://doi.org/10.1038/s41598-023-31146-1

Poldrack, R. A., Baker, C. I., Durnez, J., Gorgolewski, K. J., Matthews, P. M., Munafò, M. R., Nichols, T. E., Poline, J.-B., Vul, E., & Yarkoni, T. (2017). Scanning the horizon: Towards transparent and reproducible neuroimaging research. *Nature Reviews Neuroscience*, *18*(2), 115–126. https://doi.org/10.1038/nrn.2016.167

Poldrack, R. A., Monahan, J., Imrey, P. B., Reyna, V., Raichle, M. E., Faigman, D., & Buckholtz, J. W. (2018). Predicting Violent Behavior: What Can Neuroscience Add? *Trends in Cognitive Sciences*, *22*(2), 111–123. https://doi.org/10.1016/j.tics.2017.11.003

Pretus, C., Hamid, N., Sheikh, H., Gómez, Á., Ginges, J., Tobeña, A., Davis, R., Vilarroya, O., & Atran, S. (2019a). Ventromedial and dorsolateral prefrontal interactions underlie will to fight and die for a cause. *Social Cognitive and Affective Neuroscience*, *14*(6), 569–577. https://doi.org/10.1093/scan/nsz034

Pretus, C., Hamid, N., Sheikh, H., Gómez, Á., Ginges, J., Tobeña, A., Davis, R., Vilarroya, O., & Atran, S. (2019b). Ventromedial and dorsolateral prefrontal interactions underlie will to fight and die for a cause. *Social Cognitive and Affective Neuroscience*, *14*(6), 569–577. https://doi.org/10.1093/scan/nsz034

Pretus, C., Ray, J. L., Granot, Y., Cunningham, W. A., & Van Bavel, J. J. (2018). *The psychology of hate: Moral concerns differentiate hate from dislike*. PsyArXiv.

Pretus, C., Ray, J. L., Granot, Y., Cunningham, W. A., & Van Bavel, J. J. (2023). The psychology of hate: Moral concerns differentiate hate from dislike. *European Journal of Social Psychology*, *53*(2), 336–353. https://doi.org/10.1002/ejsp.2906

Proctor, H. (2024). *Burnout: The emotional experience of political defeat*. Verso Books.

Quinlan, M. (2021). *Out of the Shadows – Traveller & Roma Education: Voices from the Communities*. Department of Education and Youth. https://1d3ad8c0-4fe5-46e5-9b07-dc213044ac84.filesusr.com/ugd/5cfafe_0dc001ab34414419b855ebe82b7890f1.pdf

Ramsey, J. D., Hanson, S. J., Hanson, C., Halchenko, Y. O., Poldrack, R. A., & Glymour, C. (2010). Six problems for causal inference from fMRI. *NeuroImage*, *49*(2), 1545–1558. https://doi.org/10.1016/j.neuroimage.2009.08.065

Rath, V., & McCarthy, P. (2021). *Ableism in academia in Ireland: Experiences of disabled academics & recommendations for the future*. Trinity College Dublin Forum for Disabled Staff and Postgraduate Students.

Rempel, J. K., Burris, C. T., & Fathi, D. (2019). Hate: Evidence for a motivational conceptualization. *Motivation and Emotion*, *43*(1), 179–190. https://doi.org/10.1007/s11031-018-9714-2

Reyes, B. N., Segal, S. C., & Moulson, M. C. (2018). An investigation of the effect of race-based social categorization on adults' recognition of emotion. *PLOS ONE*, *13*(2), e0192418. https://doi.org/10.1371/journal.pone.0192418

Richardson, D. C., Griffin, N. K., Zaki, L., Stephenson, A., Yan, J., Curry, T., Noble, R., Hogan, J., Skipper, J. I., & Devlin, J. T. (2020a). Engagement in video and audio narratives: Contrasting self-report and physiological measures. *Scientific Reports*, *10*(1), 11298. https://doi.org/10.1038/s41598-020-68253-2

Richardson, D. C., Griffin, N. K., Zaki, L., Stephenson, A., Yan, J., Curry, T., Noble, R., Hogan, J., Skipper, J. I., & Devlin, J. T. (2020b). Engagement in video and audio narratives: Contrasting self-report and physiological measures. *Scientific Reports*, *10*(1), 11298. https://doi.org/10.1038/s41598-020-68253-2

Roberts, D. E., & Rollins, O. (2020). Why Sociology Matters to Race and Biosocial Science. *Annual Review of Sociology*, *46*(1), 195–214. https://doi.org/10.1146/annurev-soc-121919-054903

Robinson, J. N., Korver-Glenn, E., & Besbris, M. (2023). Racial Capitalism and Social Psychology: A Note for Future Research. *Social Psychology Quarterly*, *86*(3), 399–411. https://doi.org/10.1177/01902725231159346

Rodero, E., & Lucas, I. (2021). Synthetic versus human voices in audiobooks: The human emotional intimacy effect. *New Media & Society*, *25*(7), 1746–1764.

Rollins, O. (2021a). *Conviction: The Making and Unmaking of the Violent Brain*. Stanford University Press.

Rollins, O. (2021b). Towards an antiracist (neuro)science. *Nature Human Behaviour*, *5*(5), 540–541. https://doi.org/10.1038/s41562-021-01075-y

Rollins, O. (2024). Reimagining Neuroscience Education: Teaching "Life" as a Step Towards Social Justice. *Journal of Undergraduate Neuroscience Education*, *22*(2), E11.

Rollins, O., Larregue, J., & Pullen-Blasnik, H. (2025). Technologies of Criminalization. *Annual Review of Law and Social Science*, *21*.

Rollins, Oliver (Director). (2021, March 18). *The Taboo of Race: "Color-blind" Racism and the Violent Brain* [Video recording]. https://www.youtube.com/watch?v=77XkelpPPFc

Rosa, S. K. (2023). *Radical intimacy*. Pluto Books.

Rose, N. (1998). *Inventing our selves: Psychology, power, and personhood*. Cambridge university press.

Roseman, I. J., & Smith, C. A. (2001). Appraisal Theory Overview, Assumptions, Varieties, Controversies. In K. R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal Processes in Emotion* (pp. 3–19). Oxford University PressNew York, NY. https://doi.org/10.1093/oso/9780195130072.003.0001

Russell, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, *39*(6), 1161.

Saarimäki, H. (2021). Naturalistic Stimuli in Affective Neuroimaging: A Review. *Frontiers in Human Neuroscience*, *15*, 675068. https://doi.org/10.3389/fnhum.2021.675068

Saarimäki, H., Ejtehadian, L. F., Glerean, E., Jääskeläinen, I. P., Vuilleumier, P., Sams, M., & Nummenmaa, L. (2018). Distributed affective space represents multiple emotion categories across the human brain. *Social Cognitive and Affective Neuroscience*, *13*(5), 471–482. https://doi.org/10.1093/scan/nsy018

Saarimäki, H., Glerean, E., Smirnov, D., Mynttinen, H., Jääskeläinen, I. P., Sams, M., & Nummenmaa, L. (2022). *Classification of emotions based on functional connectivity patterns of the human brain* [Preprint]. Neuroscience. https://doi.org/10.1101/2020.01.17.910869

Saarimäki, H., Gotsopoulos, A., Jääskeläinen, I. P., Lampinen, J., Vuilleumier, P., Hari, R., Sams, M., & Nummenmaa, L. (2016a). Discrete Neural Signatures of Basic Emotions. *Cerebral Cortex*, *26*(6), 2563–2573. https://doi.org/10.1093/cercor/bhv086

Saarimäki, H., Gotsopoulos, A., Jääskeläinen, I. P., Lampinen, J., Vuilleumier, P., Hari, R., Sams, M., & Nummenmaa, L. (2016b). Discrete Neural Signatures of Basic Emotions. *Cerebral Cortex*, *26*(6), 2563–2573. https://doi.org/10.1093/cercor/bhv086

Saarimäki, H., Nummenmaa, L., Volynets, S., Santavirta, S., Aksiuto, A., Sams, M., Jääskeläinen, I. P., & Lahnakoski, J. M. (2025). Cerebral topographies of perceived and felt emotions. *Imaging Neuroscience*, *3*, imag_a_00517. https://doi.org/10.1162/imag_a_00517

Sachs, M. E., Habibi, A., Damasio, A., & Kaplan, J. T. (2020). Dynamic intersubject neural synchronization reflects affective responses to sad music. *NeuroImage*, *218*, 116512. https://doi.org/10.1016/j.neuroimage.2019.116512

Said, E. W. (1994). *Representations of the intellectual: The 1993 Reith Lectures*. Pantheon Books.

Saini, A. (2020). World view. *Nature*, *579*, 175.

Salice, A. (2021). I hate you. On hatred and its paradigmatic forms. *Phenomenology and the Cognitive Sciences*, *20*(4), 617–633. https://doi.org/10.1007/s11097-020-09668-0

Sambataro, F., Dimalta, S., Di Giorgio, A., Taurisano, P., Blasi, G., Scarabino, T., Giannatempo, G., Nardini, M., & Bertolino, A. (2006). Preferential responses in amygdala and insula during

presentation of facial contempt and disgust. *European Journal of Neuroscience*, *24*(8), 2355–2362. https://doi.org/10.1111/j.1460-9568.2006.05120.x

Sambuco, N., Bradley, M. M., & Lang, P. J. (2022). Narrative imagery: Emotional modulation in the default mode network. *Neuropsychologia*, *164*, 108087. https://doi.org/10.1016/j.neuropsychologia.2021.108087

Saxe, R. (2019, October 4). *The Neuroscience of Hate* [Conference Presentation]. Part of the Project on Law and Applied Neuroscience, a collaboration between the Center for Law, Brain & Behavior at Massachusetts General Hospital and the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics at Harvard Law School., Online. https://vimeo.com/333105887

Schachter, S. (1964). The interaction of cognitive and physiological determinants of emotional state. In *Advances in experimental social psychology* (Vol. 1, pp. 49–80). Elsevier.

Schacter, S., & Singer, J. (1962). Cognitive, Social, and Physiological Determinants of Emotional State. In G. Parrot (Ed.), *Emotions in Social Psychology: Essential Readings* (pp. 76–88). Psychology Press.

Scherer, K. R. (2022). Theory convergence in emotion science is timely and realistic. *Cognition and Emotion*, *36*(2), 154–170. https://doi.org/10.1080/02699931.2021.1973378

Scherer, K. R., & Moors, A. (2019). The Emotion Process: Event Appraisal and Component Differentiation. *Annual Review of Psychology*, *70*(1), 719–745. https://doi.org/10.1146/annurev-psych-122216-011854

Schiller, D., Yu, A. N. C., Alia-Klein, N., Becker, S., Cromwell, H. C., Dolcos, F., Eslinger, P. J., Frewen, P., Kemp, A. H., Pace-Schott, E. F., Raber, J., Silton, R. L., Stefanova, E., Williams, J. H. G., Abe, N., Aghajani, M., Albrecht, F., Alexander, R., Anders, S., … Lowe, L. (2024). The Human Affectome. *Neuroscience & Biobehavioral Reviews*, *158*, 105450. https://doi.org/10.1016/j.neubiorev.2023.105450

Schirmer, A., & Adolphs, R. (2017). Emotion Perception from Face, Voice, and Touch: Comparisons and Convergence. *Trends in Cognitive Sciences*, *21*(3), 216–228. https://doi.org/10.1016/j.tics.2017.01.001

Schmidtmann, G., Jennings, B. J., Sandra, D. A., Pollock, J., & Gold, I. (2020). The McGill Face Database: Validation and Insights Into the Recognition of Facial Expressions of Complex Mental States. *Perception*, *49*(3), 310–329. https://doi.org/10.1177/0301006620901671

Seeliger, K., Sommers, R. P., Güçlü, U., Bosch, S. E., & Van Gerven, M. A. J. (2019). *A large single-participant fMRI dataset for probing brain responses to naturalistic stimuli in space and time*. https://doi.org/10.1101/687681

Sell, A., Scrivner, C., Landers, M., & Lopez, A. (2021a). The neutralization theory of hatred. *The Oxford Handbook of Evolution and the Emotions*.

Sell, A., Scrivner, C., Landers, M., & Lopez, A. (2021b). *The neutralization theory of hatred*. PsyArXiv.

Shioiri, T., Someya, T., Helmeste, D., & Tang, S. W. (1999). Misinterpretation of facial expression: A cross-cultural study. *Psychiatry and Clinical Neurosciences*, *53*(1), 45–50. https://doi.org/10.1046/j.1440-1819.1999.00469.x

Simon, J. C., & Gutsell, J. N. (2021). Recognizing humanity: Dehumanization predicts neural mirroring and empathic accuracy in face-to-face interactions. *Social Cognitive and Affective Neuroscience*, *16*(5), 463–473. https://doi.org/10.1093/scan/nsab014

Slaby, J. (2010). Steps towards a Critical Neuroscience. *Phenomenology and the Cognitive Sciences*, *9*(3), 397–416. https://doi.org/10.1007/s11097-010-9170-2

Slaby, J., & Choudhury, S. (2011). Proposal for a Critical Neuroscience. In S. Choudhury & J. Slaby (Eds.), *Critical Neuroscience* (1st ed., pp. 27–51). Wiley. https://doi.org/10.1002/9781444343359.ch1

Slaby, J. (2025a). Habits of affluence: unfeeling, enactivism and the ecological crisis of capitalism. *Mind & Society*, *24*(1), 165-186.

Slaby, J. (2025b). Surrogatgefühle. Politische Dynamiken des Ungefühlten in der Gegenwart. *Welten| Räume. Politische Bildungen im Medium gesellschaftlicher Materialität*, *2*.

Slovic, P. (2007). *Psychic Numbing and Genocide: (718332007-003)* [Dataset]. https://doi.org/10.1037/e718332007-003

Sprengelmeyer, R., Rausch, M., Eysel, U. T., & Przuntek, H. (1998). Neural structures associated with recognition of facial expressions of basic emotions. *Proceedings of the Royal Society of London. Series B: Biological Sciences*, *265*(1409), 1927–1931. https://doi.org/10.1098/rspb.1998.0522

Srinivasan, A. (2018). The aptness of anger. *Journal of Political Philosophy*, *26*(2), 123–144.

Sternberg, R. J. (2003). A Duplex Theory of Hate: Development and Application to Terrorism, Massacres, and Genocide. *Review of General Psychology*, *7*(3), 299–328. https://doi.org/10.1037/1089-2680.7.3.299

Sternberg, R. J. (2018). FLOTSAM: A model for the development and transmission of hate. *Journal of Theoretical Social Psychology*, *2*(4), 97–106. https://doi.org/10.1002/jts5.25

Sullivan, A. C., Ong, A. C. H., La Macchia, S. T., & Louis, W. R. (2016). The Impact of Unpunished Hate Crimes: When Derogating the Victim Extends into Derogating the Group. *Social Justice Research*, *29*(3), 310–330. https://doi.org/10.1007/s11211-016-0266-x

Szanto, T. (2020). In hate we trust: The collectivization and habitualization of hatred. *Phenomenology and the Cognitive Sciences*, *19*(3), 453–480. https://doi.org/10.1007/s11097-018-9604-9

Szanto, T., & Slaby, J. (2020). Political emotions. In *The Routledge handbook of phenomenology of emotion* (pp. 478–494). Routledge.

Táíwò, O. O., & Kofi Bright, L. (2020, August 7). A Response to Michael Walzer. *Dissent Magazine*. https://www.dissentmagazine.org/online_articles/a-response-to-michael-walzer/

Teoh, Y. Y., Cunningham, W. A., & Hutcherson, C. A. (2023). Framing Subjective Emotion Reports as Dynamic Affective Decisions. *Affective Science*, *4*(3), 522–528. https://doi.org/10.1007/s42761-023-00197-y

The Irish Network Against Racism INAR. (2020, March). *Understanding Racism: Defining Racism in an Irish Context*. https://inar.ie/understanding-racism-in-ireland/

Thomas, B. J. (2025). 'One of the few people I knew who would be in sympathy with what we are doing here': Richard Lynn, the Conservative Party and the construction of the New Right coalition. *Contemporary British History*, *39(3)*, 544–572. https://doi.org/10.1080/13619462.2025.2467436

Thompson, J. A. F. (2021). The Deep Sociality of Science • Understanding Science as a Cooperative Process. *Science for the People Magazine*, *24*(3). https://magazine.scienceforthepeople.org/vol24-3-cooperation/the-deep-sociality-of-science/

Tracy, J. L., & Randles, D. (2011). Four Models of Basic Emotions: A Review of Ekman and Cordaro, Izard, Levenson, and Panksepp and Watt. *Emotion Review*, *3*(4), 397–405. https://doi.org/10.1177/1754073911410747

Urai, A. E., & Kelly, C. (2023). Rethinking academia in a time of climate crisis. *eLife*, *12*, e84991. https://doi.org/10.7554/eLife.84991

Vaes, J., Paladino, M. P., & Haslam, N. (2021). Seven Clarifications on the Psychology of Dehumanization. *Perspectives on Psychological Science*, *16*(1), 28–32. https://doi.org/10.1177/1745691620953767

van Rooij, I., & Baggio, G. (2021). Theory before the test: How to build high-verisimilitude explanatory theories in psychological science. *Perspectives on Psychological Science*, *16*(4), 682–697.

Västfjäll, D., Asutay, E., & Tinghög, G. (2024). How Affective Science Can Inform Behavioral Public Policy. *Affective Science*, *5*(3), 213–216. https://doi.org/10.1007/s42761-024-00264-y

Vendrell Ferran, Í. (2018). Phenomenological approaches to hatred: Scheler, Pfänder, and Kolnai. *The New Yearbook for Phenomenology and Phenomenological Philosophy*, *16*, 158–179.

Vendrell Ferran, Í. (2021). Hate: Toward a Four-Types Model. *Review of Philosophy and Psychology*. https://doi.org/10.1007/s13164-021-00568-z

Vendrell Ferran, Í. (2022). Emotions and sentiments: Two distinct forms of affective intentionality. *Phenomenology and Mind*, *23*, 20–34.

Vieth-Ditlmann, K. (2025, March 28). Algorithmic Policing: When Predicting Means Presuming Guilty. *AlgorithmWatch*. https://algorithmwatch.org/en/algorithmic-policing-explained/

Von Maur, I. (2022). The Epistemic Value of Affective Disruptability. *Topoi*, *41*(5), 859–869. https://doi.org/10.1007/s11245-021-09788-5

Waldfogel, H. B., Sheehy-Skeffington, J., Hauser, O. P., Ho, A. K., & Kteily, N. S. (2021). Ideology selectively shapes attention to inequality. *Proceedings of the National Academy of Sciences*, *118*(14), e2023985118. https://doi.org/10.1073/pnas.2023985118

Webb, E. K., Cardenas-Iniguez, C., & Douglas, R. (2022). Radically reframing studies on neurobiology and socioeconomic circumstances: A call for social justice-oriented neuroscience. *Frontiers in Integrative Neuroscience*, *16*, 958545. https://doi.org/10.3389/fnint.2022.958545

Webb, M. A., & Tangney, J. P. (2024). Too Good to Be True: Bots and Bad Data From Mechanical Turk. *Perspectives on Psychological Science*, *19*(6), 887–890. https://doi.org/10.1177/17456916221120027

Weindling, P. (2022). The Dangers of White Supremacy: Nazi Sterilization and Its Mixed-Race Adolescent Victims. *American Journal of Public Health*, *112*(2), 248–254. https://doi.org/10.2105/AJPH.2021.306593

Weisberg, D. S., Taylor, J. C. V., & Hopkins, E. J. (2015). Deconstructing the seductive allure of neuroscience explanations. *Judgment and Decision Making*, *10*(5), 429–441. https://doi.org/10.1017/S193029750000557X

Weng, H. Y., Ikeda, M. P., Lewis-Peacock, J. A., Chao, M. T., Fullwiley, D., Goldman, V., Skinner, S., Duncan, L. G., Gazzaley, A., & Hecht, F. M. (2020). Toward a Compassionate Intersectional Neuroscience: Increasing Diversity and Equity in Contemplative Neuroscience. *Frontiers in Psychology*, *11*, 573134. https://doi.org/10.3389/fpsyg.2020.573134

Wesarg-Menzel, C., Gallistl, M., Niconchuk, M., & Engert, V. (2024). Reflections on the study of empathy in a sample of refugees and migrants from Arabic-speaking countries with

diverse experiences of war-related trauma. *Comprehensive Psychoneuroendocrinology*, *19*, 100253. https://doi.org/10.1016/j.cpnec.2024.100253

Westlin, C., Singh, A., Erdogmus, D., Stratis, G., & Barrett, L. F. (2025a). Exploring Theory-Laden Observations in the Brain Basis of Emotional Experience. *arXiv preprint arXiv:2507.00320*.

Westlin, C., McVeigh, K., Korogodsky, I., Fernando-McKinley, G., Erdogmus, D., Barrett, L. F., & Satpute, A. B. (2025b). *The inadequacy of normative ratings for building stimulus sets in affective science*. Emotion

Whelan, J. (2024). Policy Silences and Poverty in Ireland: An Argument for Inclusive Approaches. *Social Inclusion*, *12*, 7737. https://doi.org/10.17645/si.7737

White, E. R. (2025, September 25). *How I confronted my growing cynicism about academia—And rekindled my sense of purpose*. Science. https://www.science.org/content/article/how-i-confronted-my-growing-cynicism-about-academia-and-rekindled-my-sense-purpose

Whitney, C., & Evered, J. A. (2022). The Qualitative Research Distress Protocol: A Participant-Centered Tool for Navigating Distress During Data Collection. *International Journal of Qualitative Methods*, *21*, 160940692211103. https://doi.org/10.1177/16094069221110317

Widen, S. C., Christy, A. M., Hewett, K., & Russell, J. A. (2011). Do proposed facial expressions of contempt, shame, embarrassment, and compassion communicate the predicted emotion? *Cognition & Emotion*, *25*(5), 898–906.

Willems, R. M., Nastase, S. A., & Milivojevic, B. (2020). Narratives for Neuroscience. *Trends in Neurosciences*, *43*(5), 271–273. https://doi.org/10.1016/j.tins.2020.03.003

Wilson-Mendenhall, C. D., Barrett, L. F., & Barsalou, L. W. (2013). Situating emotional experience. *Frontiers in Human Neuroscience*, *7*. https://doi.org/10.3389/fnhum.2013.00764

Xu, J., Kemeny, S., Park, G., Frattali, C., & Braun, A. (2005). Language in context: Emergent features of word, sentence, and narrative comprehension. *NeuroImage*, *25*(3), 1002–1015. https://doi.org/10.1016/j.neuroimage.2004.12.013

Ye, Z., Heldmann, M., Slovic, P., & Münte, T. F. (2020). Brain imaging evidence for why we are numbed by numbers. *Scientific Reports*, *10*(1), 9270. https://doi.org/10.1038/s41598-020-66234-z

Zamenopoulos, T., & Alexiou, K. (2018). *Co-design as collaborative research*. University of Bristol : AHRC Connected Communites Programme.

Zeki, S., & Romaya, J. P. (2008). Neural Correlates of Hate. *PLoS ONE*, *3*(10), e3556. https://doi.org/10.1371/journal.pone.0003556

Additional literature, that inspired more indirectly

Adler-Bolton, B., & Vierkant, A. (2025). *Health communism*. Verso Books.

Ahmed, S. (2013). *The cultural politics of emotion*. Routledge.

Ahmed, S. (2021). Complaint!. In *Complaint!*. Duke University Press.

Bobba, A. (2026). "Chapter 5 Capitalist Racism as “Occupational Hazard” and Personal Responsibility: Immigrant Entrepreneurship in Finland". In *Racial Capitalism*. Leiden, Niederlande: Brill.

Butler, J. (2004). *Precarious life: The powers of mourning and violence*. verso.

David, O. (2024). *Von der namenlosen Menge: über Klasse, Wut & Einsamkeit*. Haymon Verlag.

David, O. (2022). *Keine Aufstiegsgeschichte: warum Armut psychisch krank macht*. Eden Books.

Frazer-Carroll, M. (2023). *Mad world: The politics of mental health*. Pluto Books.

Heinz, A. (2023). *Das kolonialisierte Gehirn und die Wege der Revolte: Das kolonialisierte Gehirn und die Wege der Revolte*. Suhrkamp Verlag.

Kelly, B. D. (2023). Asylum: Inside Grangegorman. Royal Irish Academy.

Kurt, S. (2021). *Radikale Zärtlichkeit. Warum Liebe politisch ist*. HarperCollins

O'Sullivan, K. (2023). *Poor*. Random House.

Rosa, S. K. (2023). *Radical intimacy*. Pluto Books.

Táíwò, O. O. (2022). *Elite capture: How the powerful took over identity politics (and everything else)*. Haymarket Books.

Appendix

Approval Letter Ethics Committee

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

Anna Trimborn,
Department of Psychiatry,
Trinity Centre for Health Sciences,
St. James Hospital,
James's Street,
Dublin 8

14th June 2023

Ref: 230204 - 1958
Title of Study: Neuroimaging of Complex Emotions

Dear Anna,

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in June 2023. We are pleased to inform you that the above project has ethical approval to proceed.

This study has been ethically approved. We would advise you to seek review and comments on your DPIA from the DPO if required prior to study commencement.

As a researcher you must ensure that you comply with other relevant regulations, including DATA PROTECTION and HEALTH AND SAFETY.

We wish you every success with this study and should you require any assistance in the future please do not hesitate to contact us.

Yours sincerely,

Prof. Jacintha O'Sullivan
Chairperson
Faculty Research Ethics Committee

Dámh na nEolaíochtaí Sláinte
Foirgneamh na Ceimice,
Coláiste na Tríonóide,
Ollscoil Átha Cliath,
Baile Átha Cliath 2, Éire.

Faculty of Health Sciences
Chemistry Building,
Trinity College Dublin,
The University of Dublin,
Dublin 2, Ireland.

www.healthsciences.tcd.ie

Participant Information Sheet Study

Perceiving Complex Emotions

Information Sheet

Site	Trinity College Institute of Neuroscience, Lloyd Building, Trinity College, Dublin 2
Principal Investigator	**Professor Arun Bokde** Trinity College Institute of Neuroscience, Lloyd Building, Trinity College, Dublin 2 Telephone: +3531896 4104 Email: bokdea@tcd.ie
Co-Investigator	**Ms Anna Trimborn**, M.Sc., MSCA PhD candidate Trinity College Institute of Neuroscience, Lloyd Building, Trinity College, Dublin 2 Telephone: +3531896 4102 Email: atrimbor@tcd.ie
Sponsor:	Horizon2020, MSCA
Data Controllers	Trinity College Dublin
Data Protection Officer	John Eustace DPO Secretary's Office Trinity College Dublin Dublin 2

Email: dataprotection@tcd.ie

Web: www.tcd.ie/privacy

Dear Participant,

You are being invited to take part in a research study that is being done by Professor Arun Bokde (Principal Investigator) and Ms Anna Trimborn at the Trinity College Institute of Neuroscience.

Before you decide whether or not you wish to take part, please read this information sheet carefully. Ask Professor Bokde or Ms Trimborn any questions. Don't feel rushed or under pressure to make a quick decision. You should understand the risks and benefits of taking part in this study so that you can make a decision that is right for you.

This leaflet has five main parts:
Part 1 – The Study
Part 2 – Data Protection
Part 3 – Costs, Funding and Approval
Part 4 – Future Research
Part 5 – Further Information

You will be given a copy of this information sheet!

---

1. The Study

We are doing this study to see how short stories describing emotional situations are perceived and interpreted by healthy, young participants. We are looking at how such scenarios, which include, for instance, aspects of joy, surprise, anger, love, boredom or hate affect participants' reactions.

To research this, we developed a database of different scenarios. We are now recruiting volunteers who are willing to participate in **a computer-based experiment,** in which **they are presented with a set of short scenarios (compact stories, about 2-5 sentences each) describing different, emotional or non-emotional situations**. After the presentation of each short scenario, participants will be asked questions about the scenario they were just exposed to, and respond to different questions via button-presses on a computer keyboard or by using a mouse to indicate their choice. The experiment is going to take **no more than 60 minutes in total** for which participants will receive a **15€ one4all voucher** as compensation.

Why was I invited?

You have been invited because for this study we are looking for healthy, young individuals.

Criteria for Participation:

For research and safety reasons, candidates must meet certain requirements to be eligible to participate. There are no risks associated with any of the procedures, however in order to participate, you must satisfy the following criteria. If you cannot confirm any of the conditions listed below, please inform the researcher.

	Yes	No
I am 18-35 years old	☐	☐
I have normal or corrected-to-normal vision	☐	☐
I have normal hearing	☐	☐
I have no personal history of neurological or psychiatric illness or brain injury	☐	☐
I have never suffered from epilepsy and I am not sensitive to flashing stimuli	☐	☐

Do I have to take part? Can I withdraw?

Participation in this study is entirely voluntary; you do not have to take part. Further, you can change your mind about taking part in the study and opt out at any time before or during the experiment. If you decide to opt out, this will not affect you negatively in any way. You don't have to give a reason for not taking part or for opting out. After your participation in the experiment, you can withdraw your consent up to the time point of data anonymisation (one year after completion of the data acquisition) and your personal data will be deleted. For this, please contact the research team.

How will the study be carried out?

If you decide to take part in the study, you will engage in a computer-based experiment, which will **last approximately 60min in total** for which you will receive a **15€ one4all voucher** as compensation.

The study will take place at the Trinity College Institute for Neuroscience, Lloyd Building, Trinity College Dublin. In the Institute there are extensive protocols in place to limit the risk of COVID transmission, and we will adhere to the Trinity-approved protocol, as well as the HSE guidelines meticulously.

Prior to your scheduled visit, we will inform you about current TCD and HSE Covid-guidelines, which might affect e.g. the recommended means of transportation to Campus. On the day of the testing, a research assistant is going to meet you in the Lloyd Building, or in the case if required by COVID-related guidelines meet you at the Lincoln Gate entrance to TCD (or the entrance by the Science Gallery) and escort you to the Lloyd Building. You will be informed by research team where we will meet you.

Upon arrival in the disinfected lab, the researcher with inform you about the study. If you decide to participate in the study, you then will sign the consent form. Prior to the testing, we are going to ask you to provide a limited amount of personal information about your date of birth and gender identification.

At the start of the testing, you will be seated in front of a computer on which we will **present short scenarios (approx. 2-5 sentences) to you**. After each scenario, we will ask you to **rate the scenario** by replying to different questions, indicating your choice via button presses on a computer keyboard or using the mouse.

In total, we are planning to recruit 100 participants for this study. The data acquisition for this study will be expected to finish in March 2025.

Are there any benefits to taking part in this research?

Taking part in this study will not directly benefit you. However, research performed with your data and information may help us to better understand the basis of complex emotions. This is a long-term research project, so the benefits of the research may not be seen for several years. By participating, you are helping to advance science and our understanding of the impact of different emotions on human behaviour, which is research of public interest.

Are there any risks to me or others if I take part?

You will be presented with scenarios (ca. 2-5 sentences long) describing situations that partly involve different emotions such as joy, surprise, anger, hate, and neutral states. You might find the task at times frustrating, or stressful. The order of presentation of the scenarios will be random, and making sure that the time you are exposed to scenarios that involve negative emotions will not be too long. Thus we hope to make the rating session as comfortable as possible for you. In the unlikely case that you should experience psychological distress during or after participating in our study, we have a procedure set-up to ensure you get appropriate support. We will also provide you with the contact details of TCD's student counselling services

There is a minor risk that **a connection to your identity** could be made. Great care will be taken to ensure the confidentiality of all data and the risk to participants due to breach of confidentiality is considered very low. The personal data will be kept until we anonymize the data, which will happen one year after completion of the data acquisition..

Will I be told the outcome of the study? Will I be told the results of any tests or investigations performed as part of this study that relate to me?

The proposed study has two parts in total, and you will participate in the **first part**. The studies will present only results averaged over a large group – there will be no results associated with an individual study participant. So you will not be informed about personalised outcomes of the study.

However, as part of the research project, we will establish a public interest group and recruit members from among the study participants. This additional participation is entirely voluntary and you do not have to participate in the interest group to join our study.

Public interest group: In the public interest group, we will updating the members about the progress and outcomes of our study. It will provide a forum for your input into the project and will provide transparency in regards the research being performed.

We intend to have short (30min-1h) meetings with the public interest group every 9-12 months and the group will run for approximately 4-10 years, depending on the interest of the members. The public interest group will likely consist of 5-10 volunteers. The meetings will initially be virtual, and may at a later stage be in-person depending on a feedback by the group. There will be no payment for participating in the group, although expenses related to attending a meeting will be reimbursed.

We expect the public interest group to be an interesting experience, starting a thought-processes around the topic of emotions in society and about research into such complex societal phenomena in general. If you decide to take part in the study and might want to join the public interest group, you can indicate this on the consent form.

---

2. Data Protection:

What information about me (personal data) will be used as part of this study? Will my medical records be accessed?

The goal of this study is to rate and validate a database of short, narrative scenarios describing a range of complex emotions. For this, a limited amount of personal data needs to be acquired, in particular age and gender of the participants and task-related rating scores. We will not access your medical records.

Under the Freedom of Information Act , and the General Data Protection Regulation (GDPR), you can have access to any information we store about you, if requested.

What will happen to my data?

Your personal information will be assigned a unique code number at the beginning of the testing session. This code will subsequently be stored by the research team in a single password-protected, encrypted Excel file. The entry linking your name with the identifier code will be deleted one year after completion of the data acquisition, at which time all data with the exception of the consent form will be irreversibly anonymized.

The **names and contact information** of participants will only be used to contact you about a suitable timeslot for the experiment. Should you be interested in joining the public interest group, we will ask you for explicit consent to be contacted after completion of the testing, so that we may send you information about the interest group (see below for further information).

The additional **personal data** (age and gender) will be used solely to provide demographic information about the participants (e.g. the average age of a participant) with the results. Once the data is anonymised , it will be made available to other researchers on an open science platform.

The data acquired through questionnaires will be ID-coded and will be irreversibly anonymised approximately one year after the completion of the data acquisition. The data that we collect in

relation to the **Covid symptom screening questionnaire** and contact tracing information will only be used for the purposes of minimising the risk of exposure and alerting any participant should we find out they may have been exposed to someone who subsequently tested positive for COVID. These data will be processed and stored entirely separately from the experimental data.

In addition to this, the **consent forms** signed by volunteers will be kept locked in a cabinet, in an office in TCIN for one year after completion of data acquisition. The consent forms will be destroyed at the time of anonymization.

How will my data be secured?

Your privacy is important to us. We take many steps to make sure that we protect your confidentiality and keep your data safe. Your identity will not be revealed in any scientific meetings or through any other public communication channels. Your data will be treated in full compliance with the General Data Protection Regulation (GDPR). Trinity College Dublin has appointed a Data Protection Officer and their contact details can be found on the front page of this document.

All data apart from the consent sheets will be in electronic form.

The **basic personal data** will be stored in an encrypted excel file on a password-protected computer. This file will be separate from the file linking participant names to their identifier codes. No identifiable personal information will be shared with other researchers under any circumstances. Your name will not be disclosed to the scientists carrying out the statistical analyses.

The collected **rating data** will be securely stored in a TCIN computer accessible only to the research team, and on a GDPR-compliant Microsoft OneDrive account accessible only to the involved experimenters.

Once the data is fully and irreversibly anonymised, the data will be shared on an openly accessible platform for further scientific research. The anonymisation will take place one year after the data collection has been completed.

The **Covid symptom screening questionnaire** and contact tracing information will be securely stored in a locked filing cabinet for a period of 6 weeks and then it will be destroyed.

In addition to this, the **informed consent sheets** will be securely stored in an office (which is locked when no researchers are present), in a locked filing cabinet in TCIN and destroyed at the time of anonymization.

What are my rights?

By law you can exercise the following rights in relation to your personal data, in relation to any identifiable information that we collect about you during this research study. You can exercise these rights by contacting the researcher (Anna Trimborn, atrimbor@tcd.ie) or the Trinity College Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. Email: dataprotection@tcd.ie. Website: www.tcd.ie/privacy. These rights do not exist once the data is anonymized.

You are entitled to:

The right to access to your data and receive a copy of it;

The right to restrict or object to processing of your data;

The right to object to any further processing of the information we hold about you (except where it is de-identified)

The right to have inaccurate information about you corrected or deleted.

The right to receive your data in a portable format.

The right to request deletion of your data.

While there is no foreseeable reason for such a situation to arise in the context of this study, **confidentiality may be breached** if required by law:

Irish law, as detailed in Child First Policy, states that specific reports of child abuse and maltreatment must be reported to the Health Service Executive (HSE) Children and Family Services for further investigation. A "specific report" is when information is disclosed to a third party (e.g. a NETHATE researcher) that implicates or names a person that might have committed child abuse and/or maltreatment. If we receive such information, we are required to break our participant-researcher confidentiality agreement with you, and submit a report to Tusla - the Child and Family Agency. We would ask for your assistance to complete the report. Under these circumstances this report is a legal requirement and must be submitted regardless of your wishes.

Confidentiality will be breached if the research team has a strong belief or evidence exists that there is a serious risk of harm or danger to either the participant or another individual (for example suicide risk and self-harm). In addition, disclosure is required as part of a legal process or Garda investigation. Where possible, a full explanation will be given to the participant regarding the necessary procedures and also the intended actions that may need to be taken.

By completing the consent form, you are agreeing to the confidentiality terms stipulated in this section of the information sheet.

How is the process, if I want to withdraw from the study?

Participation in this study is entirely voluntary; you do not have to take part. Further, you can change your mind about taking part in the study and opt out at any time before or during participation. Your consent can be withdrawn at any time during the experiment, which would result in immediate deletion of your personal data. After your participation and up to the time point of anonymisation, you can also withdraw your consent for us to use your personal data. In this case, we will destroy all data that are still in our possession. We will no longer use or share your data for research from this point onwards. However, it will not be possible to destroy data used in research studies prior to this time and in general data which has already been irreversibly anonymised as we will not be able to trace this information back to you. If you wish to opt out, please contact Anna Trimborn (at atrimbor@tcd.ie) who will be able to organise this for you.

3. Costs, Funding, and Approval:

Has the study been approved by the Research Ethics Committee?

Yes, this study has been approved by the Faculty of Health Sciences Level II Research Ethics Committee, approval was granted on the 14/06/2023.

Who is funding the research?

This research is being funded by the EU Horizon2020 Programme Marie Skłodowska-Curie Actions; Principal Investigator: Professor Arun Bokde (bokdea@tcd.ie). The current project and present study is part of Ms. Anna Trimborn's postgraduate PhD education.

Will I be paid for taking part?

For the approximately **60min of participation** in the study, you will be offered €15 in form of a one4all voucher as compensation for your time and travel expenses. You will sign a receipt to indicate your receipt of this remuneration. No expenses are required on your part if you agree to take part.

---

4. Future Research:

As this research is of public interest, the anonymised data collected in this study will be shared with the scientific community via an open repository on the internet, allowing the replication of the findings by reviewers and other researchers, open scientific dialogue, and planning of further research. **The data will be fully anonymised before sharing - no personally identifying data will be shared at any point**. The shared data will be accessible to researchers and members of the public anywhere in the world, not just the EU/EEA. As the data is openly shared, it can be used for other future research projects in addition to the study you are currently participating in. Those future projects may focus on any topic and might be completely unrelated to the goals of this study. Once the data are anonymized and shared, **they cannot be destroyed, withdrawn, or recalled, because they can no longer be linked with you**.

It is possible (albeit unlikely) that some of the research conducted using this data may lead to the development of technologies or commercial products. Should this occur, there is no plan to provide you with any part of the profits generated from such products, nor will you have any ownership rights to the products.

---

5. Further Information:

Covid-related Information:

There is a **risk of exposure to COVID-19**. It is important that you are aware that every effort has been made to minimise this risk and to protect the health and wellbeing of all participants and staff. A series of protocols have been designed to mitigate the risk of infection. The testing facility has been thoroughly cleaned before you arrive and you and the researcher will wear personal protective equipment at all times. The researcher will maintain social distancing at all times.

Upon arrival, you will be asked to complete a symptom-screening questionnaire to ensure you are not currently experiencing any COVID symptoms and your temperature will be measured. The researcher will also ask for your name, address, and phone number for the purposes of contact tracing. If you are unhappy with any of these expectations, you should let the researcher know. Remember, you are entirely free to withdraw from the study at any time.

Despite these protocols, we cannot eliminate all risk of infection involved in your participation. For this reason, it is important that you understand that testing imposes risks that go beyond those encountered currently in daily living and it is critical that you are in good health and have no underlying conditions (do not fall in the HSE's 'high risk' or 'very high risk' categories) if you wish to participate. If you have close contact to a person at high-risk (e.g. family members over 60, flatmates, partners), please also consider your participation carefully.

Whom can I contact with questions or concerns?

If you have any concerns or questions, you can contact:

- Principal Investigator: Professor Arun Bokde (bokdea@tcd.ie)
- Data Protection Officer, Trinity College Dublin: Data Protection Officer, Secretary's Office, Trinity College Dublin, Dublin 2, Ireland. Email: dataprotection@tcd.ie, Website: www.tcd.ie/privacy.

Under GDPR, if you are not satisfied with how your data is being processed, you have the right to lodge a complaint with the Office of the Data Protection Commission, 21 Fitzwilliam Square South, Dublin 2, Ireland. Website: www.dataprotection.ie.

Will I be contacted again?

You will not be contacted again.

If you would like to take part in this study, you will be asked to sign the Consent Form on the next page. You will be given a copy of this information leaflet and the signed Consent Form to keep.

If you are interested in the public interest group and give us consent to contact you again for that purpose, we will be in touch with further information after you complete the study.

Consent Form Study

CONSENT FORM: Perceiving Complex Emotions

Identification Number for study: 230204 - 1958

There are 4 sections in this form. Each section has a statement and asks you to tick if you agree. The end of this form is for the researchers to complete.

Please ask any questions you may have when reading each of the statements.

Thank you for participating.

Please indicate 'yes' if you agree with the statement or 'no' if you disagree. Please feel free to ask questions if there is something you do not understand.

1. General	YES	NO
I confirm I have read and understood the **Information Leaflet** for the above study and have been given a copy to keep. The information has been fully explained to me and I have been able to ask questions, all of which have been answered to my satisfaction.		
I understand that this study **is entirely voluntary, and if I decide that I do not want to take part at any time until the data is anonymised, I can stop taking part in this study without giving a reason**. I understand that deciding not to take part will not affect me negatively.		
I understand that I will receive a **one4all voucher** of **15€ in total** as payment for my participation.		
I know how to contact the research team if I need to.		
I agree to take part in this research study having been fully informed of the **risks, benefits and alternatives** which are set out in full in the information leaflet which I have been provided with.		
I am interested in the **public interest group** and consent to be contacted again about this matter after my participation in the study. *(voluntary)*		
2. Data processing	**YES**	**NO**
I agree to being contacted by researchers by **email** (for documents with further information) as part of this research study. *(mandatory for study participation)*		
I prefer and therefore agree to use **direct messaging** (private messaging) on a social media network, and I consent for research team to contact me through these channels, once I initiate the contact. *(voluntary)*		
I consent to the use of personal information (age, gender, social dominance orientation, rating scores related to the task) collected in the study for the purpose of this research.		
I understand that I can **withdraw personal information about me from** this study at any time **up until the data are anonymised** (one year after data collection has finished). I understand that if I request it, the researchers will delete all information related to me and I will be removed from the study.		

I understand that **after the data are anonymised** and combined for analysis **I will no longer be able to withdraw**, as all links between the study data and my identity will have been destroyed.		
3. Confidentiality		
I understand that **confidentiality may be breached** in circumstances in which: • The research team has a strong belief or evidence exists that there is **a serious risk of harm or danger** to either the participant or another individual. This may relate to issues surrounding physical, emotional and/or sexual abuse, concerns for child protection, rape, self-harm, suicidal intent, or criminal activity. • Disclosure is required as part of a legal process or **Garda investigation**. In such instances, information may be disclosed to significant others or appropriate third parties without permission being sought. Where possible, a full explanation will be given to the participant regarding the necessary procedures and the intended actions that may need to be taken.		
4. Sharing of Information	**YES**	**NO**
I understand that fully **anonymised data** (all of which has had all identifying information about me removed), will be made **available via a fully open database so that the broader scientific community** can use in subsequent research. This will be accessible to researchers and members of the public anywhere in the world. I understand that data shared to this database, cannot be recalled as it can no longer be linked back to me.		
I understand that **it is possible** (albeit unlikely) that some of **the research** conducted using this data **may lead to the development** of **technologies** or **commercial products**. Should this occur, I understand that there is no plan to provide me with any part of the profits generated from such products.		

Participant Name (Block Capitals) Participant Signature Date

To be completed by the Principal Investigator or nominee.

I, the undersigned, have taken the time to fully explain to the above patient the nature and purpose of this study in a way that they could understand. I have explained the risks and possible benefits involved. I have invited them to ask questions on any aspect of the study that concerned them.

I have given a copy of the information leaflet and consent form to the participant with contacts of the study team.

Researcher name

Title and qualifications

Signature

Date

2 copies to be made: 1 for participant, 1 for PI.

Measurement: Social Dominance Orientation (SDO)

Source:

Ho, A. K., Sidanius, J., Kteily, N., Sheehy-Skeffington, J., Pratto, F., Henkel, K. E., ... & Stewart, A. L. (2015). The nature of social dominance orientation: Theorizing and measuring preferences for intergroup inequality using the new SDO_7 scale. *Journal of personality and social psychology*, *109*(6), 1003.

SDO_7 Scale

Instructions: Show how much you favor or oppose each idea below by selecting a number from 1 to 7 on the scale below. You can work quickly; your first feeling is generally best.

1	2	3	4	5	6	7
Strongly Oppose	Somewhat Oppose	Slightly Oppose	Neutral	Slightly Favor	Somewhat Favor	Strongly Favor

Pro-trait dominance:

1. Some groups of people must be kept in their place.
2. It's probably a good thing that certain groups are at the top and other groups are at the bottom.
3. An ideal society requires some groups to be on top and others to be on the bottom.
4. Some groups of people are simply inferior to other groups.

Con-trait dominance:

5. Groups at the bottom are just as deserving as groups at the top.
6. No one group should dominate in society.
7. Groups at the bottom should not have to stay in their place.
8. Group dominance is a poor principle.

Pro-trait anti-egalitarianism:

9. We should not push for group equality.
10. We shouldn't try to guarantee that every group has the same quality of life.
11. It is unjust to try to make groups equal.
12. Group equality should not be our primary goal.

Con-trait anti-egalitarianism:

13. We should work to give all groups an equal chance to succeed.
14. We should do what we can to equalize conditions for different groups.
15. No matter how much effort it takes, we ought to strive to ensure that all groups have the same chance in life.
16. Group equality should be our ideal.

Standard Operating Procedure : Debriefing

- Some emotions are thought to be almost ‘pre-programmed’, rapidly occurring and shared by many people in similar expression like e.g. anger, joy, surprise or e.g. fear we feel when we see a large dog running towards up. Also babies show those emotions early on. Many animals also show signs of those emotions, sometimes called ‘basic emotions’

- There are many emotions that might be a bit more complex and potentially less immediate.
    - We as humans live in complicated social groups. Some emotions are related to that e.g. when we feel left out, ashamed, or jealous, or when we feel respected, valued or loved.
    - Other emotions can also be related to the different moral values we hold. I could, for instance, get annoyed because I assume they don’t care for others or the environment. when someone unwraps a sandwich and throws the plastic wrapper on the ground

In this study, we were interested in particularly emotions that are more complicated, some of those especially related to people experiencing hate or discrimination in their day-to-day life.

- To be able to study such negative and impactful emotions, it is important to have relevant and realistic stories we can use in future studies. To see if that is the case, we asked you and other participants if and to what extend they perceive and understand emotions in stories we wrote.

- With your participation you contribute to important, fundamental research relevant to society, and we thank you for that.

List of Selected Stimuli (Subset of 40)

4	I went out with my friends in Dublin one night and then walked home. It isn't far and is well-lit and there are always plenty of people about at the time when the pubs close. That night though, I had a scary situation – 3 drunk men followed me down the road and started harassing me (alarmed). At first, I tried to ignore them, but one of them got angry and came closer (repulsed, scared). Before anything happened, one of his friends pulled him away (panicked, distressed). I was trembling when I got home shortly after (distressed, restless). The next day I told my colleague about it, hoping I'd get some support. But instead, he went all out blaming me for going home alone at night in the first place (bewildered, hurt, disheartened), and said 'if something had happened, it would have been your own fault, are you stupid?! You really are asking for it!'(telling this angrily, contempt)
8	We met when I was 17, and he 18 and ended up doing the same course in college. He was verbally abusive towards me, in person and in texts (resentful, disheartened, alienated). One day, in class, I had to stand up and give a presentation and was using my phone as a timer. As I was giving the presentation, I kept receiving text after text from him telling me I was stupid (depleted, outraged), and what I was saying didn't make sense, that I wasn't smart enough to be doing the course and that everyone in the class thought the same (appalled, ashamed, miserable). My confidence diminished with each new popup notification and I was completely exhausted and tense, even when the presentation was over – but at least I could sit down (vulnerable, beat, shaky).
13	I went to a trad session in one of my local pubs – I love that one, and I've always felt welcome and part of it there (safe, belonging). The tunes, with friends, just having a great time (joyful, amused). While I was dancing, a guy chatted me up, poking my arms and asking for my number. I ignored him, but he kept bothering me (tense, stressed, afraid) saying things like 'Are you into married people? you look cute, I'd love to take you home'. Clearly upset, I tried to get him off me (overwhelmed). Instead of helping, a waiter intervened telling me to 'calm down, you are drunk, just enjoy the attention!'. (unsettled, contempt) What the heck?!
17	I went home to visit my parents and started to talk to our neighbours who are from Poland. Honestly though, they have lived here for so long already, that of course Ireland is as much their home as it's mine! (assured, confident) Recently, they got letters in the post, with xenophobic insults, labelling them as parasites of the welfare system (anger, contempt), and telling them to get out while it's still safe, …real threats like (shock). They have little kids, and as parents, they fear for their children's wellbeing (and their own..) (passionate, furious), but were afraid to report it for fear of retaliation, which others had experienced before.. (contempt, frightened, appalled)
19	My parents are from South Africa and I was born and raised in Cork – we lived in a comfortable estate. Growing up was difficult as we were not included in the community, really. My siblings and I were the only ones who were not invited to children's birthday parties in the estate (sad, hurt, remorseful). And when my mom sent out invitations to my birthday party, only a few kids would come (rejected) – most parents would ignore the invitation – we were mostly excluded. I didn't get why back then (hesitant, frustrated). I later formed friendships with others I met at school.
23	I was invited to speak as an expert on diversity and inclusion matters at a large organisation in Dublin. Very high-class, people who golf and drive fancy cars (suspicious, guarded). Even though it was being paid, I hesitated to go. The event was at a fancy hotel and when I saw my name on the programme, I felt like I had been invited, so they could tick a box, and outwardly show that 'they do their work'. Unsurprisingly, people, were distant and mispronounced or skipped my name (annoyed, angry). I also overheard heated comments questioning how I had

	been invited to the event (angry, contempt). It's the same over and over again, and I am angry and tired.
26	I rented a room in a larger house. Our landlady rented out 3 rooms in the house to students. I was lucky to find that accommodation, honestly. She was reserved towards me and the other students in the beginning, but over time started to be more welcoming and supportive particularly to me since I was from Brazil (surprised, moved). I think she saw how difficult it was to move to a new country far away from home (trusting, grateful). She organised Sunday evening dinners where she would cook a meal for all of us and it felt like we had a home there and were not simply renters (safe).
29	I was excited about coming to live and work in Dublin, as my mother's family was from Ireland. As someone with mixed ancestry from Ireland and Kenya, the excitement was not only about my new job, but I was also looking forward to the opportunities the country offered (engaged, curious). I mentioned to the taxi driver that I was coming from Manchester, and he jokingly said that he should force me out as he was a lifelong Liverpool fan (tense/amused). He said he was happy to see people come to Ireland to live and work – he remembers the 80s when the country was on its back and the only future people had was to emigrate. (relived, content)
33	I was at a company party and my colleagues joked that I was 'really' from Africa rather than Ireland (hurt, bewildered). I have known them for a couple of years and I was shocked by their behaviour. They had had a few pints and somehow that's apparently an acceptable excuse to be discriminatory or racist in the work environment (angry, contempt). In our company, there are no reliable complaint procedures, so I had to continue working with them, because raising the matter could have harmed my career. (repulsed, hopeless)
35	My partner and I were one of the first couples married after the marriage equality referendum was passed, so on our anniversary, we were celebrating not only our marriage (proud, joy, assertive), but also equality and justice (motivated, contemplative). That day, we were walking down Capel Street to our favourite pub when a group of young men walked past shouting slurs at us (angry, scared). We thought that we had left them behind, but a couple of them ran back and started to shout at us… aggressively screaming that we only needed a good seeing to by a real man to come to our senses and that they could do us a favour (shocked, afraid, disgusted, contempt). We were very afraid and shaken by what happened.
40	I was confronted repeatedly with racist remarks in class by one classmate and I finally reported it to my instructor (content, tense). The instructor was clearly uncomfortable with what I said (disappointed), and she started to blame me (angry, hurt). The class found out about what I had said and they bullied me for the rest of the module. (appalled, lonely, insecure) Even though I was just trying to assert my rights, I felt left alone and ashamed instead. (sad, alarmed)
48	I am of Egyptian descent, and I was travelling back home to Dublin. At the airport check-in desk. I gave my passport for the usual check-in procedure. As I was standing there, a person walked up to me and said 'You are not going to blow up the airplane, are you?' (shocked, weary, scared) I was stunned at this and just like that, the person walked away. (angry) The person at the check-in was just as surprised.(relieved)

51	It can be difficult to be accepted as a Traveller (frustrated). I wanted to buy a necklace for my mother's birthday and went to the jewellery shop in town. There is a security person at the shop entrance and the person started to ask me why I wanted to come in (irritated, annoyed, tense). I explained what I wanted to buy and the security person started to insult me and accuse me of lying (hurt, contempt, angry). I left angry, it happens so often.
55	I am applying to the Access Programme -a scholarship program for people from underrepresented backgrounds. I hope I'll get better chances in the job market then (exhausted, rejected) – I am a member of the Travelling community and have experienced a lot of discrimination when applying for different jobs because… my last name is enough for many, a sign of identity (beat, sad, angry). And my address as well, with the halting sites and all. I just don't get callbacks. (contempt, depleted)
56	I went to school a community school, and a handful of my schoolmates were from the travelling community, for some, I only learned about their identity later when I became friends with one girl from the group, who told us 'Teachers sit me all the way at the back of the class, they just assume I'd get married soon and drop out anyways. I want to learn though – this is so excluding' (betrayed, hurt, angry)
63	I saw a friend arrive late to class – the lecturer reminded him to come on time (annoyed, tense) – my friend seemed tired at the time – he uses a wheelchair and it can be time-consuming to manage to move around buildings. After the class, I asked him what was wrong, and he said 'When I made it to the Luas stop that I usually use, I saw an announcement that the lift is and will be out of order for the next 2 months… the next stop is far, and when I arrived at college, I was exhausted and late for the lecture.' (hurt, sad, angry, indignant)
65	About a year ago, I was really struggling with my mental health, and I hadn't been well for a while. I also didn't know how to talk about it (insecure, stressed, longing), but one day, I opened up to one of my best friends (tense, proud)– we know each other since our school days and I trusted her. I hoped to be understood (insecure, vulnerable), I just couldn't pretend and pretend anymore (beat), I felt really low. Her reply, though, was 'you just need to snap out of it, stop being lazy and whiny – other people have it way worse' (betrayed, hurt, rejected)
70	I'm a woman in my mid 20s now and have started talking about contraception with my friends. When I was maybe 15, my GP just decided to prescribe the pill to me, and even though I asked for alternatives throughout the years, he just would not give me information about other options (indignant, annoyed) and said 'this is the best for you, love, you wouldn't want to throw your life away now, would you?~~,~~ Now off you go.' (appalled, disgusted, shocked)

72	My mom raised me alone as a single parent, and even though she worked really hard, it was always a struggle to make ends meet (appreciative, heavy hearted). I've now made it to college, but it was a long journey (proud, exhausted). Recently, I was talking to a course mate who said 'but the leaving cert is the same test for all, I did well, so of course, I deserve to be rewarded' (annoyed, unfairness). Is it fair though? Others had private tutors and music lessons and went to the Gaeltacht, all of which I and others did not have access too. (angry,beat)
73	I moved to Dublin from the countryside to study at Trinity. We didn't have much growing up, and I did everything I could to score good marks in the leaving cert to make it to university: I want to support my family (assertive, reflective). But the transition was intense, it was like people spoke a whole different language (tired, irritated). I got bullied because of my accent, and for not knowing some political concepts already, and felt damn well out of place. (hurt, rejected, isolated)
74	I grew up in a traditionally working-class neighbourhood, in a council estate. I really enjoyed it and we had a good community (content, glad, appreciative), but when I got to college, the way I viewed that changed. I remember one time in particular, I had invited my new friends to a party at my house, my parents were away – we had a great time, I thought (happy, doubting). But the Monday after, I overheard one of my classmates denying that he attended, saying 'I would never hang out in a social housing estate, what the heck?!' (hurt, excluded, sad)
76	I was going through the north of Dublin that day. It was lashing, a typical autumn day, you know. As always, we passed by some folks sleeping rough. (heavy hearted) Driving by, I saw a man sleeping in a half-ripped sleeping bag in front of a big company building. (sad) A drunk man in an expensive suit walked by and threw his beer bottle at him. (angry, disgusted, horrified)
78	I had walked to the supermarket next door to get some groceries. A homeless man – I had seen him around before sitting near the shop, writing and reading – (warm, sympathetic) was at the counter buying a lottery ticket. Another person in the shop looked at him with disgust and anger and in front of everyone began to mock him (taken aback, irritated), saying 'why would you waste the money you begged for on a lottery ticket? You clearly can't handle money, I'm sure this is what got you into this mess in the first place'. (outraged, hateful, appalled)
81	Yesterday, my best friend and I went out close to campus. When we were about to leave the place, a row broke out between 2 men. It was all very fast and violent (scared, turbulent), and I screamed and tried to grab my friend so we could get away (afraid, vulnerable)– they threw chairs and I saw a woman getting pushed to the floor (bewildered, panicked). I don't get why, we just wanted to have a good time and were left trembling.

82	I am a trans woman and the other night I went to a College society meeting in a pub. I was essentially forced by an awkward conversation with/interrogation by an acquaintance to admit my trans status (enraged, appalled), at which point she began to scream at me that I was 'a freak' (horrified, vulnerable, afraid). She forced me into a corner while threatening me with violence (scared). When I made a (feigned) motion to defend myself I was grabbed violently by a staff member of the pub and forced to leave. (repulsed, angry, contempt)
83	I am a young trans man and the other night, I was walking with 2 friends on a street that was quite empty when a man started asking if I was a guy or a girl (afraid, guarded). When I didn't answer and kept on walking, he started shouting louder threatening to hit me (terrified, helpless). He then decided I was a girl and started singing a song about how he was going to rape me (terrified). He followed us down the road singing this song, and it got really scary, you never know if they suddenly go from those words to attack. (shaken)
85	I'm lesbian and gender queer, and I am sick of the repeated harassment. (angry, indignant) Just as one example, last week while cycling just near to where I live, I passed 3 teenage boys, one of whom went 'lads, lads, oh my god, that THING is a woman'. (angry, appalled, contempt) I passed them, without saying anything (which made me feel even more like hell, for not standing up for myself, (ashamed, agitated) but since it was 3 against one, I didn't fancy my chances) and they threw stones after me (which, thankfully I dodged). (Rattled, frustrated)
87	I was visiting my aunt in Cavan last weekend. There are people living in her community now who have arrived from Ukraine fleeing the war over there (empathetic, concerned). We were walking along the street and saw a woman in a new car approaching and bothering one of the Ukrainian neighbours (angry, ashamed), saying: 'what are you doing here? Go back to your own country you freeloader! Ireland is full'. (frustrated, worried, nervous)
92	My partner and I went out to meet friends at a gay(queer) bar last Saturday night (joy) and were taking Dublin Bus back home early in the morning. On the bus, a group of young men started to mock my partner and me - trying to demean me and insult us in a very vile way. (fear, devastated, tense, panicked) We tried to ignore them hoping they would get tired and ignore us. One of the men came up to us and knocked my phone out of my hand and while I tried to retrieve it from the floor he hit the back of my head. (horrified, hurt, unsafe) His friends were laughing at us and we felt very alone – it seemed the entire bus was laughing at us. (betrayed, left alone, indignant, angry, despair, embarrassed)
100	I was sitting next to an Asian-looking guy on the Luas, all relaxed and easy Sunday afternoon like (content). A woman joined the 2*2 seating we were at and started to harass the man out of nowhere, he didn't seem to know her and looked very perplexed and intimidated (perplexed). The guy and I both got out at the next stop, but she followed him, and screamed and threatened him (angry, fearful), I tried to intervene, but the woman just became even more volatile after being confronted about her behaviour. (exhausted, angry)

104	Yesterday, I took the bus and sat down upstairs at one of the windows, it wasn't too crowded luckily. Driving through those known streets of Dublin, I stare out the window in thoughts - nothing particular, just daydreaming. Seeing all those brick houses and colourful storefronts, the new hotels..(a bit annoyed) that pushed away local favourites.. some cyclists try to make their way through the traffic. Sometimes, I can't wait to get off this island, but.. actually I love it here. (serene, happy, content)
107	I needed to get the bus down into Dublin, it was one of the last ones in the evening -so important to make it, because who can afford taxi fares?! (tense, nervous) In the queue, I realised that I left my leap card at home and also that I was one euro short of the ticket price. I got nervous, 'will the bus driver let me in?' ..when I arrived at the bus door, another passenger who saw me looking through my bag asked me how much I needed for the ticket (rushed, embarrassed), and then went 'here you go, it's just a euro, we've all been there before, better get home safely!' (empathetic, understanding) The relief..
108	I was cycling, on my way home, after a long day of studying..and just as I got onto the bike it started raining (frustrated), so I stopped under a well-lit bridge to see if it was just a short shower.. hoping to avoid getting fully drenched. A few people around did the same, we laughed a bit at that. (happy) After a couple of minutes, I noticed how the sky got brighter, the rain stopped and as I made my way out of the busy city centre, the sky turned into a pink and purple sunset. It actually can be so beautiful here. (joyful, in awe)
109	I walked home, I recently moved into a shared house, so it's all kinda new still (unsure/curious), and saw my flatmates sitting outside in the garden that we share with others in the house. Looked like a relaxed spontaneous gathering, some of their friends were there, so I asked if I could join them, someone brought a dog too -love that (excited, joyful). We got chatting right away about our days and the festival that happened last weekend. (free, happy) Really nice to get to know people up here, and enjoy some of the rare sunshine together.
110	I went back home last weekend down to Cork, to see my uncle for his birthday, a big family celebration. I'm one of the first in the family to study -and also chose a college in Dublin-, so it's been a whole journey, and it still is strange at times when my family asks me what I do.. or when I'll start making money. (tense, uneasy) This time, however, I overheard my dad and aunt talking about me – my dad said 'Great that he's marching to the beat of his own drum, he works hard and is doing well for himself, I can see that!' (proud, valued, accepted)
111	Yesterday, my friend asked me to join her to watch an unknown, independent movie she was really excited about. Usually, those aren't really my thing, I gotta admit, I'd only watch the big blockbusters in the cinema. (hesitant) Turns out, the movie was not in English, so I had to read subtitles, but it was also a documentary about Cyprus in the early 2000s. Heavy stuff, but it was important and relevant to her, so I was happy to join. (empathetic)
112	It' was my birthday last week.. and I didn't plan anything specific this year, birthdays have been loaded and strange after arriving here in Ireland.. most of my family is still back in our home country. (sad, nostalgic, isolated) So that day, I was just trying to get through the day.. go to uni, telling myself it's just a normal day. After class, I arrived back home in our small shared apartment, just to find all my best friends -they organised a surprise party! This is so beautiful. (emotional, valued, seen)

114	Its been a busy exam week for all of us and I planned to spend the evening with my partner, but..I'm behind on studying for that stats exam and came home late -way later than expected. (exhausted, a bit sad) When I walked into the living room, I saw her asleep on the couch -how cute she looks, all peaceful. (loving) I carefully tucked her in, and she woke up -not properly though, all sleepy- so I stroked her hair and kissed her on the forehead..(romantic) it's the best coming home with her here.(happy)
115	One of my best friends is queer and moved from Dublin to a smaller city recently, to start a job right after graduating (proud). He's been struggling to find people, and mentioned things like 'they all have their stable friend groups already.. they wouldn't get me anyways' (sad, isolated, lonely). The other day, I spontaneously decided to visit him -I have another friend who lives close by, so we all went out together, and he could meet others in the new place (exited, joyful)
117	I just started dating someone and I am in this.. all-jolly phase where you're getting to know each other. (happy) We met through an app but then met up soon after starting to chat. And the more we see each other and talk about interests, the more we're discovering how much we have in common (excited, cute) -turns out we even were at the same gig last year! It's all going really well, and I have a proper crush. (joyful)

Full List of Stimuli

Appendix No1. Stimulus list: (final, copyread and used for recordings)

Female only recorded: N=47

Both voices recorded: N=18

Male only recorded: N=47

No	Narrative	
2	I am a woman doing my PhD in Mathematics and participated in an event for researchers to present their work. I put together a poster with the results of my research and stood next to it at the event to answer questions and discuss with others. During the time I was standing there, I received multiple comments about my body and appearance (annoyed), and my own research was belittled by male professors and peers repeatedly (angry). How far from gender equality is that? (frustrated)	Female voice only
3	I am a woman doing my PhD in Nanotechnology, and we had a symposium. Basically, an event for researchers to present their work. This often involves a big, printed poster with images and graphs to help explain the research to others, which I love doing (excitement/joy). I was there for a couple of hours, and it was great (involved)– I met many of the symposium participants and had inspiring discussions about my research (encouraged). Many different people came over, from peers to senior professors – it really was quite a unique opportunity to meet others with the same interests.(moved, appreciative)	Female voice only
4	I went out with my friends in Dublin one night and then walked home. It isn't far and is well-lit and there are always plenty of people about at the time when the pubs close. That night though, I had a scary situation – 3 drunk men followed me down the road and started harassing me (alarmed). At first, I tried to ignore them, but one of them got angry and came closer (repulsed, scared). Before anything happened, one of his friends pulled him away (panicked, distressed). I was trembling when I got home shortly after (distressed, restless). The next day I told my colleague about it, hoping I'd get some support. But instead, he went all out blaming me for going home alone at night in the first place (bewildered, hurt, disheartened), and said 'if something had happened, it would have been your own fault, are you stupid?! You really are asking for it!'(telling this angrily, contempt)	Female voice only
5	I was at a concert with my friends in Dublin and walked home after. I live quite centrally and the way home is on a busy street with pubs and restaurants, so usually, I am surrounded by people on my way home (content). That night, I had a situation in which I felt unsafe though: I was followed by drunk men down the road and they started harassing me. At first, I just kept going and ignored them, but that seemed to agitate one of them (upset), and he approached me in an angry way. Before anything happened, one of his friends pulled him away (tense). Still, the situation made me uneasy. Hoping for support, I told my colleague about the situation the next day. He said that he was so sorry that I had to experience that (moved), this should not happen, and said 'it's unacceptable to be aggressive, and being drunk is no excuse.' (relieved)	Female voice only

6	I had been in a relationship with this guy for a couple of months and it started off great -we were in the honeymoon phase (warm). Then a nasty side to his personality crept in (distrustful). He'd laugh at my opinions, dismissing everything I said as though I was stupid (ashamed, beat, hurt). He put my job down (upset) – something that I had worked very hard to get and was proud to have managed to do so – saying that what I did was worthless (contempt, angry). He eventually convinced me to leave work and stay at home (guilty, hopeless). He became more moody and unpredictable, flying into rages without provocation. I finally left him with the help of my family (exhausted, relieved).	Female voice only
7	Back then, I had been with this guy for a while already, maybe a couple of months. At first, it was all beautiful and great, until… I got a promotion at work, one that I had worked a lot for (assured, proud), and I started to spend less time at home and more at work. He was very supportive of my job and my goals but he also wanted to spend more time together (awkwardness). He felt that my job was becoming more important than the relationship. It got too much and we decided to end our relationship (content).	Female voice only
8	We met when I was 17, and he 18 and ended up doing the same course in college. He was verbally abusive towards me, in person and in texts (resentful, disheartened, alienated). One day, in class, I had to stand up and give a presentation and was using my phone as a timer. As I was giving the presentation, I kept receiving text after text from him telling me I was stupid (depleted, outraged), and what I was saying didn't make sense, that I wasn't smart enough to be doing the course and that everyone in the class thought the same (appalled, ashamed, miserable). My confidence diminished with each new popup notification and I was completely exhausted and tense, even when the presentation was over – but at least I could sit down (vulnerable, beat, shaky).	Female voice only
9	He and I met in school and ended up doing the same course in college. We both found it hard to transition to college, but he was supportive even though he had his own difficulties (secure, trusting). In the second semester, we found ourselves in the same module and one day I had to give a presentation in front of everyone and was using my phone as a timer. During the talk, I kept receiving text after text from him (annoyed) telling me how well it was going. I found the text messages a bit disruptive because my attention was caught by the messages, which distracted me. After the presentation, I was a bit annoyed with him because of that, but sure look, he meant well. (warm, understanding)	Female voice only
11	On a night out, after waiting in the queue to get into a club to dance for a while, I witnessed a conversation between a woman and the bouncer. She said she was afraid to go in because she saw they had let in a man who was known to spike women's drinks – it was all over social media (alarmed). The bouncer was a bit taken aback at first, but then took her concerns seriously and asked questions about what had happened and who the person was. The woman showed him the social media post. I told the bouncer that he should throw out the person or call the Guards (impatient, afraid, assertive). A few minutes later I saw the bouncer talking to the man in question and leading him out of the club. (content)	Female voice only

12	In Cork, students have an annual pub crawl on a day in November that starts in the morning. It is a day we all glam up (amused) – a lot of spray tan! I am tall black Irish – so I stick out, not just because of my height. Unfortunately, it was lashing and my friends' spray tan was getting seriously messed up (humorous)! The publican saw me and she joked that I was the only one without a messed up tan. I smiled. (reserved, alienated).	Female voice only
13	I went to a trad session in one of my local pubs – I love that one, and I've always felt welcome and part of it there (safe, belonging). The tunes, with friends, just having a great time (joyful, amused). While I was dancing, a guy chatted me up, poking my arms and asking for my number. I ignored him, but he kept bothering me (tense, stressed, afraid) saying things like 'Are you into married people? you look cute, I'd love to take you home'. Clearly upset, I tried to get him off me (overwhelmed). Instead of helping, a waiter intervened telling me to 'calm down, you are drunk, just enjoy the attention!'. (unsettled, contempt) What the heck?!	Female voice only
14	I am Irish-Indian, I grew up in Rathmines, and am studying English and Politics at Trinity. Frequently when I meet new people, I am asked 'Where are you **really** from?' (frustrated, sad, annoyed) or 'Your English is great, don't sound Indian at all'. Why don't I get any other questions when I first meet other people? It's exhausting to be confronted with racism like that in everyday situations! (annoyed, angry, exhausted)	Female voice only
16	I am African Irish and black. Just going about my day studying at Trinity, I experience all kinds of things, I can't tell you how normalised those are, unfortunately (exhausted, sad). Someone touched my hair out of the blue – it's so intrusive! (angry, startled, enraged) I also get comments on my appearance, like 'it must be great to have such a lovely tan' (agitated, irony). Even if people think they mean well – it's 'Othering' and makes me feel out of place (enraged and assertive).	Female voice only
19	My parents are from South Africa and I was born and raised in Cork – we lived in a comfortable estate. Growing up was difficult as we were not included in the community, really. My siblings and I were the only ones who were not invited to children's birthday parties in the estate (sad, hurt, remorseful). And when my mom sent out invitations to my birthday party, only a few kids would come (rejected) – most parents would ignore the invitation – we were mostly excluded. I didn't get why back then (hesitant, frustrated). I later formed friendships with others I met at school.	Female voice only
26	I rented a room in a larger house. Our landlady rented out 3 rooms in the house to students. I was lucky to find that accommodation, honestly. She was reserved towards me and the other students in the beginning, but over time started to be more welcoming and supportive particularly to me since I was from Brazil (surprised, moved). I think she saw how difficult it was to move to a new country far away from home (trusting, grateful). She organised Sunday evening dinners where she would cook a meal for all of us and it felt like we had a home there and were not simply renters (safe).	Female voice only

27	I was a new arrival in Ireland and I took a taxi from the airport. I had 2 suitcases and they were heavy. It was all great, the cab driver asked me where I was from, I replied that I was from Denmark and I mentioned that I was about to start work here (content, trusting). When I gave him my address, he went on telling me that I would be living in an estate with many poor people and that I should be aware of people taking advantage of me (irritated, distancing), they would steal and harass me, and he started insulting and degrading the people living in the estate. (appalled, upset)	Female voice only
34	My partner and I were heading out for our anniversary and were walking down O'Connell Street on our way to a local club when a group of young girls walked past shouting slurs at him (shocked, afraid). One of them ran back and slapped my husband across the face and told him to 'go home' (scared, hurt). The girls only focused on my husband as I am white Irish. They were calling him a monkey and shouting other slurs. (angry, hateful)	Female voice only
35	My partner and I were one of the first couples married after the marriage equality referendum was passed, so on our anniversary, we were celebrating not only our marriage (proud, joy, assertive), but also equality and justice (motivated, contemplative). That day, we were walking down Capel Street to our favourite pub when a group of young men walked past shouting slurs at us (angry, scared). We thought that we had left them behind, but a couple of them ran back and started to shout at us… aggressively screaming that we only needed a good seeing to by a real man to come to our senses and that they could do us a favour (shocked, afraid, disgusted, contempt). We were very afraid and shaken by what happened.	Female voice only
37	I was heading home on the bus after doing some shopping and a woman came up to me, she seemed very annoyed, and she started to racially abuse me. I was stunned especially as someone else joined in and said that she was right to attack me because I should 'go back home to where I came from' (scared, hurt, angry). I replied that they was both racist and that their behaviour was a disgrace (enraged, appalled). I told the driver I wanted to report the behaviour and call the Gardai (assertive). The bus driver did not seem to care much but the woman's stop soon came and she got off followed by her friends. (betrayed, beat)	Female voice only
44	The tutor was introducing a new philosophical question that most of us in the class could not understand. Some of us kept asking questions and she tried to explain using different approaches. She became frustrated and said 'that the content was a key part of the previous module and she could not spend her time in remedial work' (annoyed, irritated, exposed). We were left baffled and did not interact with her for the rest of the class.	Female voice only
47	I was travelling with my family to the Lake District – we were planning on walking in this beautiful place. When I went over, I gave them my name at the usual check-in procedure. The person at the registration desk recognised my accent and said her family had come over from County Wicklow over 30 years ago. We were delighted that we knew some of the same people when we were	Female voice only

	teenagers and might even have met each other back then. (happy, connected, joyful)	
50	My sister is 13 and has a classmate who wears a hijab. I've heard from my sister that her friend gets picked on constantly – particularly also because of the hijab (alarmed, concerned). Often, she's left out of conversations and doesn't get invited to birthdays or events. Today again, a boy in their class tried to rip the hijab off of her (worried, sad, irritated). My sister told me the teacher doesn't usually intervene and the girl has to defend herself.(worried, irritated, angry)	Female voice only
54	I met a friend that I had not seen in a while at a local cafe – I noticed she was angry (concerned) – my friend grew up at Labre park halting site.. one of the worst, the conditions are really bad (worried, heavy-hearted). She was devastated and angry because a neighbour's child had recently died from a preventable disease (resentful, betrayed). Healthcare accessibility for members of the Travellers community surrounding birth and children is poor, children die very young and the conditions are miserable (appalled, repulsed). And this here in Ireland, it really is disgraceful.	Female voice only
56	I went to school a community school, and a handful of my schoolmates were from the travelling community, for some, I only learned about their identity later when I became friends with one girl from the group, who told us 'Teachers sit me all the way at the back of the class, they just assume I'd get married soon and drop out anyways. I want to learn though – this is so excluding' (betrayed, hurt, angry)	Female voice only
59	My partner and I, we are both women, went to a new friend's house party on Friday night. We were still getting to know our friend and our friend introduced us to some new people and we were having the craic (connected, engaged, empowered). A flatmate of my friend then started to sexualise my girlfriend and me – it was really disgusting (appalled, angry, agitated) That's so fucked up – and unfortunately so common when out in public still. (repulsed)	Female voice only
69	I joined a panel discussion about climate change recently, listening to mostly established, older politicians and professors talk with younger activists. (suspicious, guarded) The beginning of the conversation seemed well moderated and constructive, but then a politician and a professor buddied up in extremely paternalising behaviour (annoyed, angry, appalled), telling the activists to 'stop the nonsense, and start having some sense, the utopia you imagine does not exist, start growing up', with such a condescending tone in their voice. (enraged, tense)	Female voice only
70	I'm a woman in my mid 20s now and have started talking about contraception with my friends. When I was maybe 15, my GP just decided to prescribe the pill to me, and even though I asked for alternatives throughout the years, he just would not give me information about other options (indignant, annoyed) and said 'this is the best for you, love, you wouldn't want to throw your life away now, would you?~~,~~ Now off you go.' (appalled, disgusted, shocked)	Female voice only

72	My mom raised me alone as a single parent, and even though she worked really hard, it was always a struggle to make ends meet (appreciative, heavy hearted). I've now made it to college, but it was a long journey (proud, exhausted). Recently, I was talking to a course mate who said 'but the leaving cert is the same test for all, I did well, so of course, I deserve to be rewarded' (annoyed, unfairness). Is it fair though? Others had private tutors and music lessons and went to the Gaeltacht, all of which I and others did not have access too. (angry,beat)	Female voice only
77	I'm a mom of 2 and have been grappling with homelessness for a while. (sad, exhausted) I had to stay in a run-down hostel at that time, because there was just no other place to go. (appalled, depressed) I used to have loads of clothes and then photographs of the kids, and all that was thrown out (beat, hurt); and I had a little box where I had the first curls, their teeth, the clip from the umbilical cord; all that was in a little box and now it's all gone. (devastated, vulnerable)	Female voice only
82	I am a trans woman and the other night I went to a College society meeting in a pub. I was essentially forced by an awkward conversation with/interrogation by an acquaintance to admit my trans status (enraged, appalled), at which point she began to scream at me that I was 'a freak' (horrified, vulnerable, afraid). She forced me into a corner while threatening me with violence (scared). When I made a (feigned) motion to defend myself I was grabbed violently by a staff member of the pub and forced to leave. (repulsed, angry, contempt)	Female voice only
85	I'm lesbian and gender queer, and I am sick of the repeated harassment. (angry, indignant) Just as one example, last week while cycling just near to where I live, I passed 3 teenage boys, one of whom went 'lads, lads, oh my god, that THING is a woman'. (angry, appalled, contempt) I passed them, without saying anything (which made me feel even more like hell, for not standing up for myself, (ashamed, agitated) but since it was 3 against one, I didn't fancy my chances) and they threw stones after me (which, thankfully I dodged). (Rattled, frustrated)	Female voice only
89	A friend of mine and his family are Jewish, they go to one of the synagogues here in Dublin. He said that the other day when he arrived at the synagogue, someone had defaced the synagogue with a swastika, in big, red paint for everyone to see. (angry, contemptuous, appalled) He said 'you have no idea how aggressive and painful this is, the history of suffering is so close anyways, this is both a reminder and a threat' (hurt, repulsed, sad, angry)	Female voice only
95	I have been working 6 months at a multi-national and I have some workmates that I get along with, and we sometimes go out for a pint after work. (joy, content) We sometimes talk about dating here in Ireland– the good and the bad– It can be tough being a black woman. (frustrated, tired) Last week, a colleague, who I thought was a friend, suddenly started shaming me, saying 'you are just not marriage material, aren't you more into quick hookups anyways?' I mean, what the heck does she imply here? (angry, appalled, irritated)	Female voice only

97	Recently, a lot of people have arrived in Ireland fleeing war, some folks also came to Ballyfermot, where I grew up and still live with my parents. (engaged, compassionate) Yesterday, my brother and I went out to the family resource centre to check if we could help with anything language-wise, or connect people with additional information. (content, warm) A young girl, maybe like 16 or 17, told us about her experiences, and said 'you can't imagine how happy I am to be here now'. (relieved, safe)	Female voice only
101	Going out can be exhausting and draining as a woman, even more so if you're queer. Unwanted touching or grabbing, and people trying to chat you up, and staring, like -often it's just overwhelming. (angry, annoyed, frustrated) Recently, there has been a new party format for women* and non-binary folks with specific safe space guidelines and arrangements in place (engaged, curious), that I read about already in the event ad. So I went, and it felt so freeing. (excited) I chatted to someone waiting for the bathroom, who said: "Isn't it awesome, people dancing and expressing themselves in a safe environment, daring, I am so excited!" (free, happy, respected)	Female voice only
106	I went to get a coffee with my partner after work, and somehow he just kept telling lengthy stories about coworkers, and I don't think I ever knew their names.. or did I forget the names and relationships of the people he was talking about?..(confused, bored) I felt a bit guilty about that. But anyway, in the end, I kinda zoned out and just nodded and smiled. (withdrawn) I tried, but I can't keep up with all of that today, I'm sleepy and just feel a bit beside myself. (distant, content)	Female voice only
108	I was cycling, on my way home, after a long day of studying..and just as I got onto the bike it started raining (frustrated), so I stopped under a well-lit bridge to see if it was just a short shower.. hoping to avoid getting fully drenched. A few people around did the same, we laughed a bit at that. (happy) After a couple of minutes, I noticed how the sky got brighter, the rain stopped and as I made my way out of the busy city centre, the sky turned into a pink and purple sunset. It actually can be so beautiful here. (joyful, in awe)	Female voice only
109	I walked home, I recently moved into a shared house, so it's all kinda new still (unsure/curious), and saw my flatmates sitting outside in the garden that we share with others in the house. Looked like a relaxed spontaneous gathering, some of their friends were there, so I asked if I could join them, someone brought a dog too -love that (excited, joyful). We got chatting right away about our days and the festival that happened last weekend. (free, happy) Really nice to get to know people up here, and enjoy some of the rare sunshine together.	Female voice only

112	It' was my birthday last week.. and I didn't plan anything specific this year, birthdays have been loaded and strange after arriving here in Ireland.. most of my family is still back in our home country. (sad, nostalgic, isolated) So that day, I was just trying to get through the day.. go to uni, telling myself it's just a normal day. After class, I arrived back home in our small shared apartment, just to find all my best friends -they organised a surprise party! This is so beautiful. (emotional, valued, seen)	Female voice only
113	I moved to study in a new city and didn't get housing from the university, so it's been really tough commuting, sometimes sleeping on friends' couches..and looking for rooms. (exhausted, frustrated) It's just so difficult finding affordable housing -and.. while I do have a part-time job, it's not like my folks can financially support me. Just there, I finally received a call-back from one of the flats where I had a viewing, and they offered me the room! I am so relieved. (relieved, happy, anticipating)	Female voice only
115	One of my best friends is queer and moved from Dublin to a smaller city recently, to start a job right after graduating (proud). He's been struggling to find people, and mentioned things like 'they all have their stable friend groups already.. they wouldn't get me anyways' (sad, isolated, lonely). The other day, I spontaneously decided to visit him -I have another friend who lives close by, so we all went out together, and he could meet others in the new place (exited, joyful)	Female voice only
117	I just started dating someone and I am in this.. all-jolly phase where you're getting to know each other. (happy) We met through an app but then met up soon after starting to chat. And the more we see each other and talk about interests, the more we're discovering how much we have in common (excited, cute) -turns out we even were at the same gig last year! It's all going really well, and I have a proper crush. (joyful)	Female voice only
24	I was invited to speak as an expert on diversity and inclusion matters at an organisation in Dublin. The event was at an expensive luxury hotel. I was not sure if I wanted to go (doubting, guarded) but it was paid well and these are always a good opportunity for networking. To be honest: I did had reservations, but I actually got the space to share my experiences and felt listened to. The conversations I had with the other panelists were well-informed and it felt like the event increased awareness about the issues that are all to present in the Irish context. (content, glad)	Female voice only
40	I was confronted repeatedly with racist remarks in class by a few of my classmates and I finally found the courage to report it to my instructor (content, tense). The instructor was clearly uncomfortable with what I said (disappointed), and she started to blame me (angry, hurt). The class found out that I had reported the situation and I was bullied for the rest of the module. (appalled, lonely, insecure) Even though I was just trying to assert my rights, I felt left alone and ashamed instead. (sad, alarmed)	Female voice only

66	I remember when I was pregnant, the doctors and nurses spoke a lot to my husband when he was with me instead of to me directly (hurt, angry, indignant). There was very little effort to inform me that I was losing my baby at the time (lost, confused, angry). I was in a limbo for a while… it was very stressful. Eventually, I had a procedure in the University Hospital, but it was a very hard time in my life and I was not taken seriously. I needed help, but no information or support for my bereavement was provided. (devastated)	Female voice only
81	Yesterday, my best friend and I went to a pub close to campus. We were chatting away (jolly), having a great time, when a row broke out between 2 men. It was all very fast and violent and so close, it was really scary (scared, turbulent). In panic I just tried to grab my friend so we could get away (afraid, vulnerable)– they threw chairs and I saw a woman getting pushed to the floor (bewildered, panicked). I don't get it, we just wanted to have a fun evening and were left trembling.	Female voice only
103	I had to go to the city council for some bureaucracy the other day. Forms and important paperwork makes me nervous, I always think something is going to go wrong.. and have serious consequences (anxious, tense) I live here for years now.. but somehow with these things I am still uneasy. I sat down in the waiting room..and realised my phone battery died. well.. no distraction for me either. (annoyed) I looked at the person sitting across from me..they were slowly dozing off -must be a long wait for them too. (acknowledging, empathetic)	Female voice only
10	Last Saturday night I was standing in the queue at a nightclub hoping to finally get in after waiting for a while (impatient). As I got to the head of the queue, I saw a woman talking to the bouncer. I overheard her pointing out a known criminal, who had been exposed for previously spiking women's drinks, she had a name and photo (distressed, startled). The bouncer first tried to ignore and appease her, and then played down the matter and acted in a paternalistic manner (enraged, contempt) – something I had experienced often before – 'negligence' that too often leads to dangerous situations (weary, afraid, angry). I joined their conversation to ask the bouncer why he was not doing anything (angry) and told him he should throw the man out. (tense)	Both voices recorded
17	I went home to visit my parents and started to talk to our neighbours who are from Poland. Honestly though, they have lived here for so long already, that of course Ireland is as much their home as it's mine! (assured, confident) Recently, they got letters in the post, with xenophobic insults, labelling them as parasites of the welfare system (anger, contempt), and telling them to get out while it's still safe, …real threats like (shock). They have little kids, and as parents, they fear for their children's wellbeing (and their own..) (passionate, furious), but were afraid to report it for fear of retaliation, which others had experienced before.. (contempt, frightened, appalled)	Both voices recorded
20	My parents are from Poland and I was born and raised in Dublin – we lived in a quiet estate, close to the Phoenix Park. I had a lot of friends and it seemed that every weekend there was a different get-together or party to attend (joyful). My home was always filled with friends coming by (nostalgic, lively) and it seemed that we were the centre of the community – it was a lot of craic to be growing up there (thankful, touched).	Both voices recorded

23	I was invited to speak as an expert on diversity and inclusion matters at a large organisation in Dublin. Very high-class, people who golf and drive fancy cars (suspicious, guarded). Even though it was being paid, I hesitated to go. The event was at a fancy hotel and when I saw my name on the programme, I felt like I had been invited, so they could tick a box, and outwardly show that 'they do their work'. Unsurprisingly, people, were distant and mispronounced or skipped my name (annoyed, angry). I also overheard heated comments questioning how I had been invited to the event (angry, contempt). It's the same over and over again, and I am angry and tired.	Both voices recorded
29	I was excited about coming to live and work in Dublin, as my mother's family was from Ireland. As someone with mixed ancestry from Ireland and Kenya, the excitement was not only about my new job, but I was also looking forward to the opportunities the country offered (engaged, curious). I mentioned to the taxi driver that I was coming from Manchester, and he jokingly said that he should force me out as he was a lifelong Liverpool fan (tense/amused). He said he was happy to see people come to Ireland to live and work – he remembers the 80s when the country was on its back and the only future people had was to emigrate. (relived, content)	Both voices recorded
30	I was going home after a night out with friends, and I walked to Connolly station to get a taxi. There were a few taxis there and I took the first one. As we got on the road, the taxi driver, who was black, said that the woman who was waiting by the taxi sign was glad I had come by. I inquired why (curious) and he replied that she did not want to take a taxi driven by a black man (ashamed). He added that taxi apps were great because people would take the taxi that came and would not be racist if the driver was black (tense, understanding). He said that then he would be treated like everyone else.(warm)	Both voices recorded
33	I was at a company party and my colleagues joked that I was 'really' from Africa rather than Ireland (hurt, bewildered). I have known them for a couple of years and I was shocked by their behaviour. They had had a few pints and somehow that's apparently an acceptable excuse to be discriminatory or racist in the work environment (angry, contempt). In our company, there are no reliable complaint procedures, so I had to continue working with them, because raising the matter could have harmed my career. (repulsed, hopeless)	Both voices recorded
41	I was confronted at the sports club with racist remarks by another member. I reported it to the chairperson of the club. The club responded by asking the member to change her behaviour and warned her that sanctions would be considered if it continued. (content, heard) Other members of the club found out about it, and even though not everyone agreed with what had been done (distant, tense), I felt supported by the club and people around (trusting, warm).	Both voices recorded
43	In my anatomy class, the tutor was explaining a new concept that I did not understand.(nervous) I kept asking questions and she tried to explain using the whiteboard. She proceeded to demonstrate the concept with a sample muscle tissue that she had brought to class. (appreciative) I understood the new concept and I am sure most of the class probably appreciated the demonstration even if they had already understood it. (content, glad)	Both voices recorded

52	I am the first in my family to get a university degree (content, proud)- it can be challenging with the barriers that exist because I am Roma (beat). My family and friends from the community where I grew up were so proud of what I had accomplished (inspired, fulfilled)– they all waited outside when I came out of the graduation ceremony earlier in the day and then we decided to go to a pub (joy, proud). We got to the door and security at the pub refused to let us in (hurt, frustrated). They said that it was full even though we could see that there were only a few people in the pub (betrayed, irritated, angry). It happens so often I am not surprised by it anymore. (exhausted)	Both voices recorded
60	The younger brother of my friend is transitioning/transgender~~,~~ and is currently still in high school. The experiences that my friend talks about are insane – while outwardly the school is aiming at supporting the child, some teachers have a very skewed view of how that would be achieved. He was verbally and physically attacked by classmates the other day (angry, outraged) and the teacher told him to 'ignore them, and finally toughen up' instead of dealing with the bullies. (betrayed, repulsed) The teachers also repeatedly uses his birth name instead of his chosen name. (angry, worried)	Both voices recorded
62	We had a guest speaker come to our school to talk about bullying and what we could do to prevent it. A couple of friends and I decided we wanted to put up posters for an anti-bullying week that's very much geared towards LGBT at school (content, engaged). The school administration just turned us down, by saying things like, 'no, you can't put that up. […] It'll litter the hallways.' (disturbed, surprised) This might sound minor, but it really isn't. It showed that we were not seen. (hurt, frustrated, rejected)	Both voices recorded
68	I met my cousin for coffee and we got started talking about my mam. My mam is very active on Instagram, and she is encouraging people to remain active in their older age (warm, awkward, proud). She has many stories about exercise, they are fun (of course a bit embarrassing for me sometimes, but I support her). Below one of her posts, you see lots of hateful content directed at her, saying she should 'act her age' and 'this is disgusting' (saddened, hurt, irritated). Breaks my heart to see her put down like that.	Both voices recorded
74	I grew up in a traditionally working-class neighbourhood, in a council estate. I really enjoyed it and we had a good community (content, glad, appreciative), but when I got to college, the way I viewed that changed. I remember one time in particular, I had invited my new friends to a party at my house, my parents were away – we had a great time, I thought (happy, doubting). But the Monday after, I overheard one of my classmates denying that he attended, saying 'I would never hang out in a social housing estate, what the heck?!' (hurt, excluded, sad)	Both voices recorded
86	I went to primary school in Killarney, it was all very small, really, and we didn't have many new people coming in back then. I remember it well. There was an English boy in my class, his family had moved, I even think his mom was Irish. Anyhow, he was badly bullied, people heard his English accent, and he was immediately hassled, and it went on for a long time. (ambivalent, ashamed) Its unfair, we were just 7 years old, he could not help that he sounded different. (ashamed, worried,sad)	Both voices recorded

88	I am Jewish and part of the community centre in Portobello. Since Brexit, we have had more and more issues with getting Kosher food into Ireland and it has really been a hassle to get our needs met. (frustrated, annoyed) This hasn't really received much attention or concern from the people we talk to (left alone with concerns) – I know our community is small and not very visible. (assertive, exhausted) Often, it's forgotten about, but the synagogue and the Jewish community have been here for a long time already. (sad, not included, unfairly treated)	Both voices recorded
105	I am black, Irish and queer and I recently joined a book club to meet like-minded folks. (excited, eager) I had no hopes of finding the book that we were about to read for the upcoming meet in a shop though (withdrawn). I passed the bookshop near college, the little independent one, and thought I might as well give it a try. (hesitant) I went in and asked the woman at the counter about it. She was super helpful, we chatted for a bit and I got more comfortable with the situation (calmer) and, actually: turned out that they did have the book, what a nice surprise. (joyful)	Both voices recorded
116	I am Muslim and am fasting during the holy month of Ramadan, which I do happily, but I won't lie, it's challenging at times. The last day is coming up, and fasting with that will also come to an end -and then there always is a feast with family and friends (anticipated, excited) -everyone who's around AND all the delicious food! I am so excited for that to happen tomorrow, really cannot wait to celebrate. (joyful)	Both voices recorded
76	I was going through the north of Dublin that day. It was lashing, a typical autumn day, you know. As always, we passed by some folks sleeping rough. (heavy hearted) Driving by, I saw a man sleeping in a half-ripped sleeping bag in front of a big company building. (sad) A drunk man in an expensive suit walked by and threw his beer bottle at him. (angry, disgusted, horrified)	Male voice only
118	I am trans and the process of transitioning hasn't been and is not easy. This year at Pride, I went out in the clothes that I feel good in for the first time -and while I didn't fully I felt safe with everything going on, I felt safe enough to be on the street, being myself because I was surrounded by a whole group of very close friends of mine, many queer, some allies (courageous, trusting). I am very proud I did it, that was a big step for me. (proud)	Male voice only
15	I grew up in the 'Kingdom' and am Irish-Indian. I made it into Trinity where I study Political Sciences and Philosophy now (content, proud). Kerry was always a very supportive place (warm) – although at times people who didn't know me	Male voice only

	thought I was a tourist (beat). I am very involved with the Student Union now and I get asked many times if I want to be Taoiseach. With Varadkar, now everyone assumes every Irish-Indian in politics wants to be Taoiseach…(annoyed, withdrawn, displeased)	
18	I went back home to my parents' village in County Monaghan. In our neighbourhood, there are people who came to Ireland maybe ~10 years ago. They have been here a long time and Ireland is their home (warm, empathetic). It hurts me to hear that recently, they were threatened with letters full of derogatory labels and accusations that are not true (repulsed, disheartened, angry). The neighbours and the wider community in the village have rallied around them and have been very vocal in providing support to the family (touched). Even though they are still worried they also feel supported and welcomed by the solidarity.	Male voice only
21	I lived in an estate where my family and I weren't welcomed by most of our neighbours and we had to endure everyday verbal harassment and intermittent pelting of our home with eggs, stones, empty cans and glass bottles (depleted, sad). We contacted the Guards and nothing happened – they didn't seem to care, because it was social housing. One day we had a confrontation in front of the house and someone threw a stone at my brother, it was so bad his head was bleeding (angry). It was only then that the Guards took it seriously, this could have been prevented. (betrayed, hateful)	Male voice only
22	I am a proud Traveller and I was invited to speak as an expert on diversity and inclusion matters at an organisation in Galway (content, engaged). The organisation has been supportive of the Traveller community, and I was excited to speak at their event. The audience turned out to be almost exclusively upper class and the matters I was going to raise did not seem like something that they would think much about (suspicious, annoyed). To my initial surprise, I experienced the setting as welcoming and the questions of the audience showed interest and a level of empathy, which is not often the case. (surprised, open)	Male voice only
25	I lived with a live-in landlady because that's all I could find, honestly (stressed out). She treated me all right, but the longer I lived there, the more she started complaining and insulting 'the bloody foreigners', talking about how they should go back to where they come from (bewildered, annoyed), and how they smell disgusting and do not comply with the way things work around here (repulsed, appalled by that).	Male voice only
28	So when I moved, I took a taxi from the house I was moving from to the new place, I had packed carefully, but still had a couple of boxes. I am from the US myself. When I told the cab driver I was moving to be closer to my workplace and he found out I worked at a multinational company, he started to complain	Male voice only

	about the foreigners that are coming to Ireland (perplexed, tense) and started using racist slurs and insulting people. (uncomfortable, avoidant, afraid)	
32	A friend and I applied for a fellowship to go to the Sorbonne to study for a year. We both got called for interviews and we were very excited (joy, proud, happy). My friend was from a Turkish background, and he was afraid that he would not be given the same opportunity as others because this had happened before (frustrated, worried). Our interviews went really well and my friend was reminded to come back to Ireland once the fellowship ended (relieved) – he and people like him were needed in the country. (touched, grateful, empowered)	Male voice only
36	We were heading out for our anniversary and also to mark having arrived in Ireland 4 years ago from Nigeria. We were walking down to a local pub where we are semi-regulars on Friday nights (pleased, joyful). On our way there we ran across a group of girls in very high spirits, and they started to ask us where we were going. We were a bit anxious and when we told them of the special occasion (suspicious, guarded), one of them gave me a flower she had. I teased my partner that I had gotten flowers from a stranger and not from her. (amused, relieved)	Male voice only
38	I took the bus from the shopping centre close by minding my own business, when one woman came up to me -unprompted- from the back of the bus, and started to insult me with slurs and said 'Ireland is for the Irish' (scared, hurt, angry). I tried to get away, but she followed me down to the lower part of the bus (scared, appalled). I made it to the driver, and explained what happened and that I wanted to report it (assertive). The bus driver stopped the bus and told the woman to get off – the women complained loudly but finally got off the bus. (relieved, thankful, frustrated, shook)	Male voice only
39	As a student, I gave a 20-min. presentation in a seminar. I was nervous because English is my second language and in the practice rounds on the previous days, I ended up talking much too long. (vulnerable) I was really anxious when I realised that I had to skip some content. While we had agreed that questions would usually be done at the end of the presentation, one of my classmates interrupted my talk commenting on my accent (confused, self-conscious, tense). It took me a bit of time to regroup and get back to the argument I was making.	Male voice only
42	I am Black and Irish, and in my economics class the other day, a lecturer was explaining a new concept that I did not understand. I kept asking questions and I am guessing the lecturer did not like it. He proceeded to explain the concept by using bananas and coconuts as examples (baffled at blatant racism, angry), which caused the other students in the class to laugh their heads off. (betrayed, tense, angry)	Male voice only
45	I am from Dublin and went over to London to do my masters. I am Irish-Nigerian and I was looking forward to living in a more diverse city (expectant, hopeful). I found it easy to make friends from all over the world. One day, at a house party	Male voice only

	an English guy joined our group and we started chatting. When he heard my accent and where I'm from, he immediately started to make potato jokes. It was not the first time it had happened to me. (angry, annoyed)	
46	I was travelling, visiting friends over in the UK, and booked a hotel online. When I went over, I gave them my name at the usual check-in procedure. Instead of being treated decently, I was told by one of the employees there that my Irish language name was 'gibberish' and 'makes no sense' (stunned, angry) and that I should have that addressed. Out of all places this happened in England, the rudeness… and ignorance of that is insane. (annoyed, appalled)	Male voice only
48	I am of Egyptian descent, and I was travelling back home to Dublin. At the airport check-in desk. I gave my passport for the usual check-in procedure. As I was standing there, a person walked up to me and said 'You are not going to blow up the airplane, are you?' (shocked, weary, scared) I was stunned at this and just like that, the person walked away. (angry) The person at the check-in was just as surprised.(relieved)	Male voice only
49	I was travelling, visiting friends over in London, and booked a hotel online. During check-in, because of my Irish name, the employee started to ask about the name, how to pronounce it and what it meant (open, calm). I was not surprised by the curiosity, and I explained a bit about the cultural context of the name (interested, proud). We had an interesting conversation during the check-in process.(content)	Male voice only
51	It can be difficult to be accepted as a Traveller (frustrated). I wanted to buy a necklace for my mother's birthday and went to the jewellery shop in town. There is a security person at the shop entrance and the person started to ask me why I wanted to come in (irritated, annoyed, tense). I explained what I wanted to buy and the security person started to insult me and accuse me of lying (hurt, contempt, angry). I left angry, it happens so often.	Male voice only
53	My wife and I are proud to be Travellers and we were heading out to celebrate her birthday (joy). We have had a difficult time the last few years and we were looking forward to a nice evening (a bit tense, but excited). I booked a table at a restaurant in a nearby village and when we arrived, we were seated at a private table (pleased). The food and service were excellent and we had a great evening. (happy, appreciative)	Male voice only
55	I am applying to the Access Programme -a scholarship program for people from underrepresented backgrounds. I hope I'll get better chances in the job market then (exhausted, rejected) – I am a member of the Travelling community and have experienced a lot of discrimination when applying for different jobs because… my last name is enough for many, a sign of identity (beat, sad, angry). And my address as well, with the halting sites and all. I just don't get callbacks. (contempt, depleted)	Male voice only

58	I went to my regular meet-up to go sea swimming with friends at Seapoint. I feel really alive after a swim and so do my friends. (renewed, joyous) Most of us in the group are gay and it also provides an opportunity to talk about our day-to-day life (secure, connected). One of my friends was a bit frustrated, he said that 'The other day, at my work, there was a disagreement, and one of my colleagues discarded my view and resorted to insulting me based on my sexual orientation. (indignant, frustrated, afraid, insecure) That is why I am wary of how people perceive me, somehow I don't get to just be me'.	Male voice only
63	I saw a friend arrive late to class – the lecturer reminded him to come on time (annoyed, tense) – my friend seemed tired at the time – he uses a wheelchair and it can be time-consuming to manage to move around buildings. After the class, I asked him what was wrong, and he said 'When I made it to the Luas stop that I usually use, I saw an announcement that the lift is and will be out of order for the next 2 months… the next stop is far, and when I arrived at college, I was exhausted and late for the lecture.' (hurt, sad, angry, indignant)	Male voice only
64	I was diagnosed with ADHD at age 8, and it was hard, and still is. (vulnerable, tired) 'My parents would say, "You need to toughen up, don't be so sensitive"' (hurt). My teachers would put me under constant pressure telling me to 'just concentrate, can't be that difficult, shut up and stop disturbing, you can't be that dumb.' (indignant, sad, helpless) It was a lot also because many did not want to understand that ADHD IS a real condition. (frustrated, assertive) My brain works differently, I can't just 'try harder' and hearing that makes me angry.	Male voice only
65	About a year ago, I was really struggling with my mental health, and I hadn't been well for a while. I also didn't know how to talk about it (insecure, stressed, longing), but one day, I opened up to one of my best friends (tense, proud)– we know each other since our school days and I trusted her. I hoped to be understood (insecure, vulnerable), I just couldn't pretend and pretend anymore (beat), I felt really low. Her reply, though, was 'you just need to snap out of it, stop being lazy and whiny – other people have it way worse' (betrayed, hurt, rejected)	Male voice only
67	I've got a new colleague at work. He's doing a great job, and only just starting off too. He is a bit older and really kind – we had a coffee together in the break room earlier (warm, comfortable). After I got back to my office, my colleague – just out of college like me – came over to me and said 'why would they hire such an old man, what can he contribute, sure there must be enough younger, better, more productive people around'. (surprised, annoyed, tense)	Male voice only
71	So, during the pandemic, I had to restrict myself a lot, more than my friends and classmates, because I lived with my mam, who is immunocompromised. I had to wait a long time for the vaccine because of course others were first in line – to protect them, which I understood (warm, empathetic). But when I then heard that they had distributed vaccines to young healthy students in a private	Male voice only

	College, I just got really angry (outraged, unjustly treated, enraged, appalled). It wasn't their turn yet – what kind of justice is that?	
73	I moved to Dublin from the countryside to study at Trinity. We didn't have much growing up, and I did everything I could to score good marks in the leaving cert to make it to university: I want to support my family (assertive, reflective). But the transition was intense, it was like people spoke a whole different language (tired, irritated). I got bullied because of my accent, and for not knowing some political concepts already, and felt damn well out of place. (hurt, rejected, isolated)	Male voice only
75	That summer, I was fundraising on Grafton Street for an NGO that's working to reduce poverty and homelessness here in Ireland. It was a -quiet enough day, but I interacted with some folks who donated what they could. (content, engaged, inspired) Then, a man coming out of a luxury brand store walked towards me and started being aggressive when I engaged with him (taken aback, tense, scared). He said 'people who are exploiting our state don't deserve help, you are enabling them to clog up the streets with trash and tents, disgusting.' (angry, appalled, contempt)	Male voice only
78	I had walked to the supermarket next door to get some groceries. A homeless man – I had seen him around before sitting near the shop, writing and reading – (warm, sympathetic) was at the counter buying a lottery ticket. Another person in the shop looked at him with disgust and anger and in front of everyone began to mock him (taken aback, irritated), saying 'why would you waste the money you begged for on a lottery ticket? You clearly can't handle money, I'm sure this is what got you into this mess in the first place'. (outraged, hateful, appalled)	Male voice only
79	I work as a nurse in a very busy hospital in the Dublin area and I am a man. It's an exhausting job and very demanding, but I love helping people. (content, proud, stressed) I take pride in what I do. The other day, again – a busy morning shift with many patients waiting, – I entered the room of a patient and she went 'oh a male nurse, how cute.' In such a tone. (agitated, irritated, hurt) No nurse or care worker should be told they are 'cute' for doing this job, but then they particularly say this to me because I'm a man – this happens SO often. (frustrated, resentful)	Male voice only
80	The other day, I was walking down a big road near St Stephens Green. At a red light, I saw a guy in a car arguing and screaming at a cyclist – (irritated, confused) looked like it was just because the car wasn't able to go down the road fast enough because the cyclist was on the road too. When the argument ended, the car driver started the car at high speed, but only narrowly missed a pedestrian who was crossing the street and had jumped out of the way (scared, angry, appalled)– the lights had turned red again already.	Male voice only

83	I am a young trans man and the other night, I was walking with 2 friends on a street that was quite empty when a man started asking if I was a guy or a girl (afraid, guarded). When I didn't answer and kept on walking, he started shouting louder threatening to hit me (terrified, helpless). He then decided I was a girl and started singing a song about how he was going to rape me (terrified). He followed us down the road singing this song, and it got really scary, you never know if they suddenly go from those words to attack. (shaken)	Male voice only
84	My girlfriend and I were together for 6 years at that time already, we knew each other, but it took a while before I realised things were not normal. (tense, vulnerable, confused) It's not normal to have your money controlled – it's not normal to have things thrown at you, to be slapped and punched, hit. (assertive, saddened) That were moments of rage. It didn't physically hurt me, I think it was rage. It got worse and worse, though and it took time and help to get out of that situation. (heavy hearted, exhausted, alarmed) People don't realise that men also face domestic abuse.	Male voice only
87	I was visiting my aunt in Cavan last weekend. There are people living in her community now who have arrived from Ukraine fleeing the war over there (empathetic, concerned). We were walking along the street and saw a woman in a new car approaching and bothering one of the Ukrainian neighbours (angry, ashamed), saying: 'what are you doing here? Go back to your own country you freeloader! Ireland is full'. (frustrated, worried, nervous)	Male voice only
90	My great-grandfather narrowly survived the Holocaust and settled in Ireland. The current online movements concern me (tense, worried), and yes, they are fringe, but lately they are getting support from a handful of celebrities (irritated, wary). In college, I heard a friend of mine repeat things like 'I just don't believe the Holocaust was that terrible' (shocked, agitated, angry, appalled) – I feel threatened and so uncomfortable and am staying away from him now.(betrayed, concerned)	Male voice only
91	My friend is Roma and we got talking recently. Someone had taken a photo of a family in the city centre and was spreading it on a social network with hate messages below. (concerned, angry) Claiming the people were 'freeloaders' and other still all too frequent degrading language. (appalled, angry, frustrated) She said 'This is hurtful and dangerous. It gave me a bit of hope that there were also people who commented that the person should stop taking pics of innocent families and their children and that this was not ok at all.' (tense, engaged, heavy hearted)	Male voice only
92	My partner and I went out to meet friends at a gay bar last Saturday night (joy) and were taking Dublin Bus back home early in the morning. On the bus, a group of young men started to mock my partner and me - trying to demean me and insult us in a very vile way. (fear, devastated, tense, panicked) We tried to ignore them hoping they would get tired and ignore us. One of the men came up to us and knocked my phone out of my hand and while I tried to retrieve it	Male voice only

	from the floor he hit the back of my head. (horrified, hurt, unsafe) His friends were laughing at us and we felt very alone – it seemed the entire bus was laughing at us. (betrayed, left alone, indignant, angry, despair, embarrassed)	
96	What I saw on the news recently about the far right is way worse than it has ever been before: they don't see people as human beings at all. (worried) Close to Dublin, in Ashtown, some refugees were sleeping outside in tents, forming a bit of a community trying to survive and protect themselves from the harsh weather conditions. (empathetic) Yesterday, masked and hooded men went to a small wood where people were camping and beat up refugees with metal sticks and destroyed the few things they had, they are devastated. (shocked, angry)	Male voice only
98	I live on the Northside, and am worried about the recent developments. Protests of the far right have increased lately, and I have seen videos that on social networks full of hostile comments relating to a hostel where asylum seekers are housed. (worried, afraid, embarrassed) Yesterday, the windows of that very hostel were done in with a hammer. (sad, angry, scared) This is horrible intimidation against people who need protection, as it goes in that poem 'You Don't Get To Be Racist And Irish' (heavy hearted, ashamed)	Male voice only
99	I went out with a group of friends, it was a great night (excited, jolly). Until one of our friends -he is a person of colour & grew up in Glasnevin - was suddenly taken out by security (shocked, worried). He had danced with us the whole time, but then two women came and accused him of having chatted up their sister (confused). He told the security person that he hadn't even talked to them, but did not resist when told he had to leave the club (beat, frustrated). We, of course, went out to find him. The two women had followed him, called my friend a 'black animal' and other slurs and then spit on him (saddened, disgusted, shocked). Finally, we got him out of the situation. (relief)	Male voice only
100	I was sitting next to an Asian-looking guy on the Luas, all relaxed and easy Sunday afternoon like (content). A woman joined the 2*2 seating we were at and started to harass the man out of nowhere, he didn't seem to know her and looked very perplexed and intimidated (perplexed). The guy and I both got out at the next stop, but she followed him, and screamed and threatened him (angry, fearful), I tried to intervene, but the woman just became even more volatile after being confronted about her behaviour. (exhausted, angry)	Male voice only
102	Work got me down that day - I work as a social worker in a north neighbourhood and that can be heavy (exhausted, beat), so I walked along the Liffey for a bit after and just stared at the water running down towards the sea. (Calmer) The sun stood low and was shining on the surface, highlighting the slow but steady movement of the river (more peaceful). I listened to the new album of my favourite band and the hectic of the people walking past faded away bit by bit as I got calmer. (Calm, content, relaxed)	Male voice only

104	Yesterday, I took the bus and sat down upstairs at one of the windows, it wasn't too crowded luckily. Driving through those known streets of Dublin, I stare out the window in thoughts -nothing particular, just daydreaming. Seeing all those brick houses and colourful storefronts, the new hotels..(a bit annoyed) that pushed away local favourites.. some cyclists try to make their way through the traffic. Sometimes, I can't wait to get off this island, but.. actually I love it here. (serene, happy, content)	Male voice only
107	I needed to get the bus down into Dublin, it was one of the last ones in the evening -so important to make it, because who can afford taxi fares?! (tense, nervous) In the queue, I realised that I left my leap card at home and also that I was one euro short of the ticket price. I got nervous, 'will the bus driver let me in?' ..when I arrived at the bus door, another passenger who saw me looking through my bag asked me how much I needed for the ticket (rushed, embarrassed), and then went 'here you go, it's just a euro, we've all been there before, better get home safely!' (empathetic, understanding) The relief..	Male voice only
110	I went back home last weekend down to Cork, to see my uncle for his birthday, a big family celebration. I'm one of the first in the family to study -and also chose a college in Dublin-, so it's been a whole journey, and it still is strange at times when my family asks me what I do.. or when I'll start making money. (tense, uneasy) This time, however, I overheard my dad and aunt talking about me – my dad said 'Great that he's marching to the beat of his own drum, he works hard and is doing well for himself, I can see that!' (proud, valued, accepted)	Male voice only
111	Yesterday, my friend asked me to join her to watch an unknown, independent movie she was really excited about. Usually, those aren't really my thing, I gotta admit, I'd only watch the big blockbusters in the cinema. (hesitant) Turns out, the movie was not in English, so I had to read subtitles, but it was also a documentary about Cyprus in the early 2000s. Heavy stuff, but it was important and relevant to her, so I was happy to join. (empathetic)	Male voice only
114	Its been a busy exam week for all of us and I planned to spend the evening with my partner, but..I'm behind on studying for that stats exam and came home late -way later than expected. (exhausted, a bit sad) When I walked into the living room, I saw her asleep on the couch –she looked gorgeous, all peaceful. (loving) I carefully tucked her in, and she woke up -not properly though, sleepily mumbling something. I stroked her hair and kissed her on the forehead..(romantic) it's the best coming home with her here.(happy)	Male voice only

Additional Analyses

Emotion understanding free text:

Hate