Empirical article

#Disgusted: Identifying potential sub-factors of Moral Disgust through Reflexive Thematic Analysis of Tweets

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Social media provides an untapped resource for exploring Moral Disgust. We therefore drew on 'tweets' about Moral Disgust (k=526) to better conceptualise the situations, people, and concepts users found Disgusting. Our Reflexive Thematic Analysis identified two themes and accompanying subthemes: Hierarchical Disgust and Third-Party Disgust. Hierarchical Disgust was constructed from expressions of Disgust directed to power structures, abuses of power, and leaders, whereas Third-Party Disgust comprised expressions directed at negative outcomes for others, often in the form of discrimination or harm. Both themes served as a form of group protection through out-group distancing and normative in-group policing. Importantly, this research extends classic Disgust literature (e.g., Tybur et al., 2013), presenting a novel approach to naturalistic data collection and providing future researchers with an approach to study other emotions, beliefs, and subjects that are expressed online.

Keywords: *Thematic analysis, Disgust, Moral, Social media*

Introduction

Disgust is a broadly-reported and often-felt emotion. It responds to a variety of stimuli and elicits avoidance and protection behaviours (Tybur et al., 2013). Disgust is often physically portrayed through a tell-tale nose wrinkle and upper lip curl (Rozin et al., 1994) – facial markers representing the emotion's physiological root. However, understandings of Disgust have since broadened to explain a range of fitness-enhancing functions beyond pathogen avoidance (Chapman & Anderson, 2013; Crosby et al., 2020; Giner-Sorolla et al., 2018; Tybur et al., 2013); facial markers are no longer the only way to identify the emotion. Though already bolstered by psychometric assessment, an increased social media discourse and the growth of digital communities present an opportunity to utilise new methods and to improve our conceptualisation of Moral Disgust. Additionally, we gain the opportunity to examine the display of Moral Disgust in these relatively new social environments. We employ Reflexive Thematic Analysis (RTA) to identify the emotion's triggers, and its performance, among users of the social media platform Twitter (since rebranded as 'X'), providing a modern, naturalistic understanding of its operation in a diverse group of people.

Moral Disgust

Moral Disgust possesses its own elicitors and responses distinct from broader Disgust. The Three Domains of Disgust (TDDS) model (Tybur et al., 2009) presents the emotion as protective through three distinct domains: Pathogen, Sexual, and Moral Disgust. Moral Disgust functions to protect the individual by avoiding behaviours that may damage their social capital, whereas the other two domains protect the individual from disease and damage to reproductive fitness respectively. The emotion is thus influenced by social groups and so is the domain most abstracted from its facial markers. Extant Disgust literature focuses on pathogen-rejection but the distinct nature of Moral Disgust requires further exploration to understand its functional mechanisms. Domain-specific Disgust modelled by TDDS rests upon the premise that different domains of Disgust will have different elicitors and thus different responses. Under the conceptual umbrella of Disgust we are able to understand reacting to potentially harmful stimuli by creating distance, but by employing the distinct domains of Moral Disgust it is possible to disentangle feelings of queasiness when presented with rotten food (pathogen) from being more willing to distance oneself from someone known to commit fraud (moral). The distinct Disgust domains are triggered by different stimuli and produce appropriate responses.

Given the fundamentally social (*vs.* physiological or personal) basis of Moral Disgust, the emotion might be best understood by how people *say* they are Disgusted. If the role of Moral Disgust is to protect social capital, to enforce social norms, and to distance ourselves from those who would cause social harm (Simpson et al., 2017), expressions of Moral Disgust will be visible not only in the faces of social actors but in the way they tell others they are feeling (morally) disgusted. Whereas an individual can protect themselves from other Disgust-eliciting phenomena by physical distance, Moral Disgust elicitors must be distanced *socially*, a feat requiring the communication of Disgust. While Disgust, as a universal emotion, has cross-cultural similarities, it is key to remember that the domain-specific approach to emotions – specifically, the framing of emotions as superordinate programmes (Sznycer et al., 2017) – implies variation in Disgust elicitors and the mechanisms of response. Therefore, a naturalistic representation of Moral Disgust is an opportunity to understand how people talk about things they find Disgusting; to understand what Moral Disgust is and how it is used as a social tool.

Our research is thus driven by the sociolinguistic expression of Moral Disgust. Sankoff's (1982) classic text on sociolinguistics emphasises spontaneous and natural speech as the primary data for exploring communicative function and structure. For Moral Disgust, this means Moral Disgust should be defined – in part – by those who feel and express it. We thus move our exploration of Moral Disgust away from a deductive approach to emotions, relying instead on the truth constructed by participants in their expressions of Moral Disgust. Moral Disgust as examined in this present work will therefore represent the lived feelings and experiences of people communicating naturally and spontaneously – a position afforded by the nature of social media and digital communication.

Traditional examination of Moral Disgust has been psychometric, thereby leaving opportunities for exploration beyond traditional measures. In Tybur et al.'s (2009) TDDS,

Moral Disgust is measured with a subset of seven items in which respondents rate how Disgusting they find immoral scenarios. Whilst these items had excellent internal reliability (Tybur et al., 2009) and generated a model with good fit, they represent a small section of participant experiences but do not offer a rich understanding of the construction of Moral Disgust. Additionally, TDDS represents a narrow experience of the three domains of Disgust. As Tybur et al. (2009) themselves note, seven items capture a *generalised* representation of the domains but do not allow exploration of sub-factors. Crosby et al. (2020) explored the dimensionality of Sexual Disgust with a larger sample and thus included the perspectives of a wider range of individuals but still failed to move away from positivistic assumptions of a universal experience of Moral Disgust. We aim to explore Moral Disgust with novel and more naturalistically-driven methods.

The Present Study

We presently seek to identify Moral Disgust's underlying themes by inspecting the individual, naturalistic expressions of a broad, diverse pool of individuals. To this end, the social media platform Twitter was used to capture individual Disgust expressions in an environment where people might be less inhibited regarding the expression of Moral Disgust, thereby contextualising and further exploring the emotion. At the time of data collection (in 2019), Twitter had approximately 199 million daily users, equating to 199 million voices and 500 million tweets (Aslam, 2021) – far beyond the participant pool of the average university. The platform has a diverse user base, (McDonald, 2014; Reid, 2018) representing demographic distributions approximating their real-world counterparts on some important demographics, thus increasing sexual and racial groups' representation (cf. Cundiff, 2012; Greenglass & Stewart, 1973; Pew Research Center, 2019 (for wider discussion); Redding, 2001). Collecting data from Twitter allows for the type of 'live' sampling praised by Jones and Silver (2019) for its ecological validity and ability to circumvent some of the biases inherent in traditional data collection. Naturalistic data collection facilitated by Twitter also reduces demand characteristics and self-censorship, while preserving the broadcast communication and demands imposed by one's social groups.

Another issue addressed by using Twitter (*vs.* face-to-face interviews or focus groups) data is that of self-censorship. Focus group participants discussing sensitive or taboo topics may downplay radical opinions or viewpoints which they regard inappropriate for the setting (Bergen & Labonté, 2020). Whilst a skilled focus group leader can limit such effects, the broadcast nature of social media removes the research team and makes fellow users the audience. Though users may overstate, over-identify and exaggerate, the anonymity of the Internet is likely to be liberating, increasing the freedom with which people express their beliefs (Suler, 2004). We anticipate that the unfettered nature of the Internet will reveal the performative aspects of emotion as keenly as it does for behaviour (Crockett, 2017; Hofmann et al., 2014). In a broader interrogation of social media Twitter has previously been employed to track sentiment during stressful global events such as pandemics and missile alerts (Ahmed et al., 2019; Gaspar et al., 2016; Jones & Silver, 2019), to generate large collections of data

with higher-level assessments of mood. The work of Leung et al. (2021) continues in this trend but applies a framework of thematic analysis and thus gains a richer understanding of a phenomenon, while Turner et al. (2023) demonstrate the strength and flexibility of RTA. We suggest that employing RTA offers the opportunity to position the voice of those experiencing Moral Disgust as a phenomenon at the centre of understanding and investigation, providing a less-filtered rendering of how individuals express Moral Disgust.

The present research aimed to expand upon the foundations laid by Tybur et al. (2009) and Rozin et al. (2008). In utilising the open, performative aspects of Twitter and the example set by Cosby et al. (2020), we aimed to collect a broad range of tweets expressing Moral Disgust, and conducted RTA to identify themes and subthemes of Moral Disgust.

Methods

Expressions of Disgust were collected from Twitter and subsequently thematically analysed. The coding and analytic procedure combined the approaches laid out by Braun and Clarke (2006), and Bree and Gallagher (2016), and reflects modern thinking on RTA (see Braun & Clarke, 2019, 2021a).

The research presented here rests upon an intentional theory of representation, that is language is used to convey the experience of the individual and represents the reality that they experience (Hall, 1997). We take a critical realist perspective, both ontologically and epistemologically preferring to treat the two as intersectional in the case of critical realism. As such, themes were constructed with the understanding that tweets offered a view of Moral Disgust through the lens of individual experiences of the emotion. We also employ what Braun and Clarke (2021b) term "small(er)" theory to guide our interpretations. For the present work, we drew from Tybur et al.'s (2009) model of Disgust, with a focus on the adaptive and functional aspects of an emotion (Sznycer et al., 2017). Analysis was led by RS as the Principal Investigator though the research team is diverse in terms of gender, age, political identity and ideology, race, nationality, and religion/belief. The research team was also diverse in their use of *Twitter* and other social media.

Data

Data were retrieved from Twitter between May 28th and September 24th 2019, by searching for the 'Hashtags'[1]: #Disgust, #Disgusting, #Disgusted, #Moral, #Morally, and #Immoral. Turner et al. (2023) articulate 'Hashtags' as a tool for communication around a labelled concept; given that the epistemological stance of this research relies upon the intentional construction of phenomena, we felt that the 'Hashtag' served as a reasonable simulacrum of

[1] Hashtags (#) are used to tag content on a specific topic in online communication. They have become a punctuation mark for users to convey keywords relating to their tweet.

conversation around a topic, chiefly Moral Disgust. Thus the 'Hashtags' used to retrieve tweets were variations on the phrase "Moral Disgust" and the latent sentiment of immorality, serving as an initial form of categorisation. Tweets were drawn globally from Twitter but constrained to English due to resources within the research team. Tweet data were collected using IPython (Perez & Granger, 2007) using code adapted from Kharkar (2018).

Ethical Considerations

No account was required to access tweets, and those tweeting had no reasonable expectation of privacy; as such, data were treated as comments made in a public space. The location of the individual writing the tweet was not recorded, nor was any other identifying information. Data from social media sites exist in a difficult jurisdiction from the perspective of the research ethicist; tweets as they are constructed belong to the company that hosts them whilst simultaneously belonging to their author. Williams et al. (2017) explore the tension between social media terms of service and ethical data collection, analysis, and publication. In doing so they highlight that what is best for participants may not be the preferred approach of the social media company, a position that we similarly hold. The British Psychological Society (BPS) (Hewson & Buchanan, 2021) is supportive of assumed consent when researchers can be confident that online data were created in what participants believed to be a public forum. Given the Twitter terms of service at the time of data collection (Twitter.com, 2018) and the approval of our own Faculty Research Ethics and Integrity committee, we feel confident in making this claim. However, we also endorse the position held by the BPS; where possible participants should be protected from harm that may be a result of their identification.

To fully protect the participants from identification, Exemplar Tweets (ET) were constructed to demonstrate the themes that we construct. We find that examples from the data are powerful illustrative tools but accept that in social media data, this would make participants easier to identify through text searchers. Thus, we follow the suggestions of Markham (2012) and create representations of the tweets that best illustrate themes. ETs were created from the original tweets[2], with the latent meaning of tweets preserved. The preservation of meaning aligns with an intentional theory of representation (Hall, 1997) and thus the critical realist perspective taken in this paper. The present research uses ETs to demonstrate sentiment to the reader while preserving the anonymity of those providing their data. Given the topic of inquiry and the emotive nature of Disgust, ETs include profane, potentially offensive, and politically partisan views with which the authors do not necessarily agree.

Analytic Procedure

A total of 1451 tweets were collected. Tweets were sorted for duplications, advertisements, and content. RS and two research assistants marked tweets that did not express Disgust, leaving 526 tweets that were coded and analysed. The initial inspection of tweet data aimed to minimise the inclusion of other moral emotions. Data analysis followed the procedure

[2] Details of the transformation process and original tweets used are available upon request.

outlined by Braun and Clarke (2006, 2021b). Data were naively coded by the Principal Investigator (RS) – generating a list of 68 codes. Codes were generated to best represent the sentiment of tweets, identifying codes based on a theoretical understanding of latent tweet content. Where required, semantic and contextual understanding was sought to better understand the tweets' latent meaning. Additional coding was carried out by a research assistant – to offer perspectives on the wording of codes and potential misrepresentations. The aim was not saturation or confirmation, as would be better suited to analyses that utilise codebooks or frameworks, but to address potential oversight on the part of RS. Given that online expressions of a phenomenon may lack the context found in physical exchanges, we would argue that although confirmatory coding deviates from Braun and Clarke's (2021b) RTA, the handling of codes as analytic units remains with added confidence that said codes are constructed through contextualised understanding and not oversight.

Themes were generated in a process closely mirroring Bree and Gallagher (2016). Codes were first grouped for likeness, then condensed and revised, before being described and discussed as themes. For example, the code of "Politicians making money dishonestly" was grouped with a collection of similar codes referring to politics, before being condensed to a broader subtheme of *Power Dynamics*. The subtheme of *Power Dynamics* was a collection of similar concepts, collecting three concepts that display thematic nuance. Where it seemed that codes referred to more than one concept, the core, latent aspects of meaning were separated out. To follow the same example code: "Politicians making money dishonestly", the concept of leadership fits succinctly under the subtheme *Leadership*, itself possessing its own range of subthemes to provide nuance.

Where possible the generation of codes and the construction of themes were inductive. Primarily, codes and themes identified in the data were prioritised and represented using a bottom-up approach; this is especially true in the generation and grouping of codes. When there was ambiguity or space for interpretation, a top-down, theory-driven approach was taken, more frequently employed in the construction and description of codes and themes. The Three Domains of Disgust (Tybur et al., 2009) model and bodily moral vs socio-moral distinction (Giner-Sorolla et al., 2018) were particularly pertinent in these applications of theory.

As Braun and Clarke (2006) highlight in their seminal overview of thematic analysis, the researcher is unable to fully free themselves from theoretical influence. As such taking a completely atheoretical approach is inappropriate, thus researcher input was rooted in theory. Worth noting are the times when this is likely to have been overlooked and so, following the generation of themes, the authors engaged in discussion around the description and meaning of themes that necessitated theoretical defence and empirical support.

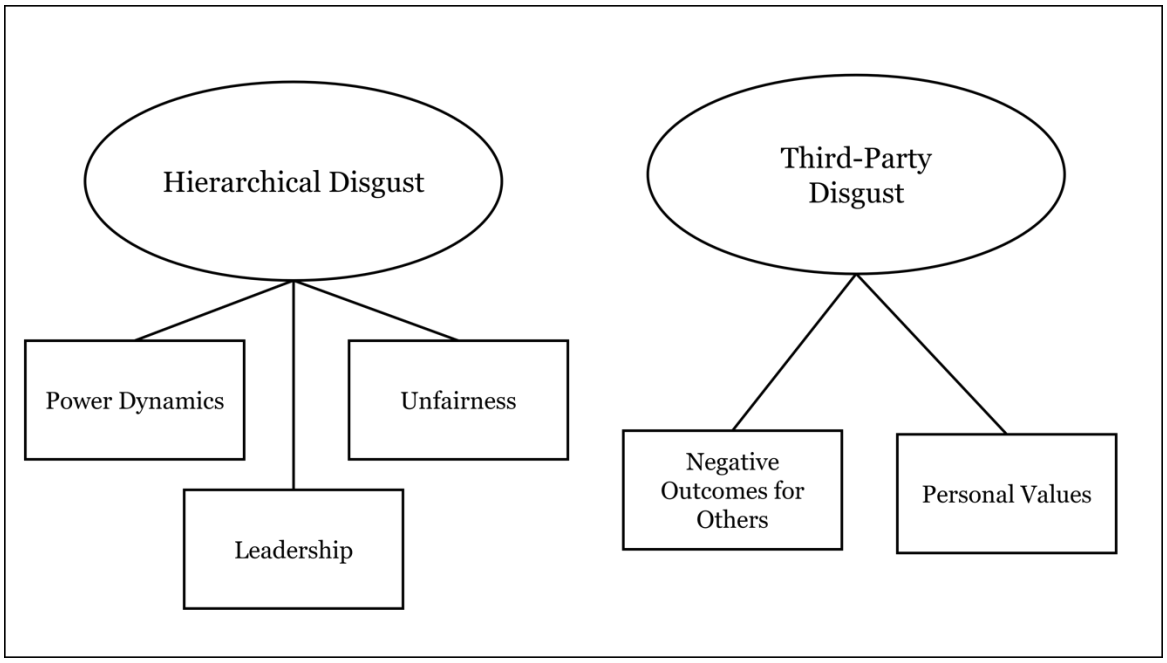
Data and Findings

75 codes were generated during the coding phase of the analysis. Initial coding led to the generation of 68 codes with the addition of a further seven that the research team better felt

described tweets and their latent meanings. From the 75 codes, representing 526 tweets, two themes were constructed and retained.

Both themes, in keeping with the area of study, are organised around experiences and the causes of Moral Disgust. The first theme – *Hierarchical Disgust* – is united around the experience of Disgust at a situation created by the structures of society and directed towards a broad group. The second theme – *Third-Party Disgust* – is unified by experiences of Disgust at a situation focused on individuals or small groups. To provide additional clarity and thus structure to the outlined themes, five subthemes were constructed. Three subthemes pertain to the theme *Hierarchical Disgust* while a further two are related to *Third-Party Disgust.* A more nuanced overview of the themes and subthemes is presented in Figure 1.

Figure 1. Thematic Map of the two identified themes of Moral Disgust with subthemes represented



Hierarchical Disgust

The first theme is concerned with expressions of Disgust towards the hierarchical mechanisms of society. The tweets and thus codes that were collected into this theme capture the times that people were disgusted by their leaders, by those who had power over others, or by acts of unfairness.

Power Dynamics

This first subtheme represents Disgust at those in a differential power position, most often those more powerful negatively impacting those less powerful. Such power included wealth, age, politics, and/or positions of group leadership. *Power Dynamics* represents the most prevalent subtheme, a merging of earlier themes that punctuate a large proportion of tweets; it is dominated by concepts of powerful people in the public eye doing wrong.

There were times when a tweeter was disgusted by those in a powerful position gaining something because of their power, often using age, politics, sex, or wealth as a tool to gain:

> *'To further their own agenda, the Democratic Party will exploit children and anyone else. They exploit mass shooting victims, illegal immigrants and now children with opinions about climate change.'* – ET1

Additionally, tweeters were concerned with group damage as it related to their leaders. This was sometimes in the allowing of damage, highlighted by an emotive display of Disgust at perceived failings of the justice system to punish:

> *'He has the audacity to accuse OTHER PEOPLE of treason and yet he sides with the murderer of #OttoWarmbier over a US patriot.'* – ET2

And the causing of damage:

> *'Currently taking place is the trial of a lawyer accused of possessing child pornography. It is disgusting to think that the people meant to be fighting for justice are committing awful crimes too.'* – ET3

Emphasised at the end of this tweet is the juxtaposition posed by responsibility and harming those who can be considered vulnerable.

Leadership

This next subtheme represents Disgust directed towards leaders or the actions of leaders. This subtheme can be seen as a parallel to *Power Dynamics*, with a focus on power, politicians, and political actors. Worthy of note here is the period of data collection; mid-to-late 2019 saw a series of political and legal scandals as geopolitical situations evolved (e.g., ongoing Brexit negotiations; the pending impeachment of President Trump; and the publication of the Mueller Report). As is the case across all themes and subthemes, those presented here are influenced by the contemporary geopolitical climate. The subtheme of *Leadership* represents the different facets and impacts of a group leader and their behaviour.

The distinction between the leader and the leader's behaviour or poor leadership is an important component of *Hierarchical Disgust*. The leader may be viewed as unfit to lead because of their character. The following tweet does not focus on an aspect that makes the tweeter perceive President Trump as poor *at* leading, it pertains to a perceived lack of fitness to lead due to personal immorality:

> *'(tweeting at Donald Trump) The office of the president has hit an all time low. Your willingness to express such damning remarks is a testament to your*

absent moral compass. You have no restraint when speaking ill of other patriotic Americans.' – ET4

Tweeters expressed Disgust when they found the behaviours of the leader to be broadly unpalatable, but additionally when they found that the leader did not listen. Not only were tweeters disgusted by leaders that they perceived to not listen generally but when the leader was perceived as not listening to the group:

'You being a congressperson is an embarrassment. It's only about your own self interests that you care, and couldn't care less about US citizens' well being.' – ET5

Linked to the feelings of Disgust around unhearing leaders were tweets that displayed Disgust at insensitive leaders. These leaders were perceived as either generally insensitive or presenting an insensitive side to those that they were meant to represent. The following tweet displays both of these qualities. There is a disconnect between those that the leader should represent as well as a wider sense of not listening, engaging, and being sensitive to issues:

'This is the embodiment of the (UK Conservative Party)'s disconnect from reality and sense of entitlement…' – ET6

In contrast, these examples of Disgust driven by the leaders themselves are examples of poor leadership. Expanding beyond elected and/or representative leadership, the subtheme also pulls sports managers and CEOs into focus:

'Talk about disgust, sexist, and extremely toxic. Putting out something that spreads toxic masculinity makes this company a disgrace.' – ET7

While the previous tweet captures a feeling of Disgust centred on the actions of the leader, Disgust at poor leadership can expand to cover the culture created by these actions:

'Take a look at the current (Professional Basketball team) and wider organisation for an understanding of what a horrible culture combined with bad chemistry, total mistrust, and no team mentality looks like.' – ET8

Or the times when an individual believes that a leader's personality or personal beliefs impact their perceived ability to lead:

'Fails to follow the teachings of Jesus or our (US) Constitution.' – ET9

At this juncture, it is important to differentiate this final aspect of poor leadership from leaders whom the tweeter is personally disgusted by. An initial read of the tweets presented may construe a representation of Disgust at the leader rather than their poor leadership. The differentiation here is that the lack of Christian and Constitutional values in ET9 are values that can be categorised as impactful on leadership – if the target of this tweet did 'follow Jesus' teachings', then the tweeter believes that they would be better at leading the group and not necessarily (but likely) a better person.

A final facet is something of an overlap between the concepts of moral objections to leaders and their behaviours. These tweets move beyond Disgust at a leader not listening or a leader having different beliefs, to the perception of a leader not displaying the true values of the group. The tweet ET10 demonstrates that group betrayal operates at both a small group level and a superordinate group level:

> *'It's a shame that Corbyn is antisemitic and accepts money from a regime hanging gay people from cranes.'* – ET10

Unfairness

The final subtheme of the broader *Hierarchical Disgust* builds upon the inequality hinted at by previous subthemes. *Unfairness* moves beyond politics, though it does not leave it behind. The subtheme of *Unfairness* is chiefly concerned with Disgust at situations and actions that the tweeter feels have advantaged one party over another. From this corpus of data, the emphasis has been placed on unfair advantage over others (the alternative of an individual suffering disadvantage is best captured in the later subtheme of *Negative Outcomes for Others* contained in the broader theme of *Third-Party Disgust*).

Unfairness as a subtheme can be considered as the times that people gain without contributing the resources or effort required to 'fairly' gain the advantage. This can manifest itself as a feeling of Disgust directed towards the system that has allowed perceived cheaters to succeed:

> *'She's a multimillionaire willing to commit FRAUD to get a college degree, for personal gain!!'* – ET11

Another form of 'success' perceived by tweeters was wrongdoers avoiding punishment. The subtheme captures the expressions of Moral Disgust that occur after a negative event has happened; the tweeter is not focused on the transgression, but that the bad actor is not being punished:

> *'To me, it feels like the judge is equally guilty. How can he sleep at night knowing that a kids sports career took precedence over a woman's life?'* – ET12

But as the following tweet demonstrates, Disgust of this kind is not limited to trials and high-profile crimes. Coming closer to the *Third-Party Disgust* presented later, Disgust at unfairness can be seen at the macro- and micro-level:

> *'It's disappointing when desperate and starving students cheat. But when students of privilege cheat? Reprehensible.'* – ET13

The tweeter above expresses Disgust at the inequality of punishment. The punishment here is not framed around criminality as the other examples have been but refers to punishment not only based on law but also societal punishment in the form of judgment and condemnation. As such it can be considered a dishonest act, which in this corpus is most often related to political dishonesty and corruption:

> *'I've never been an advocate of impeachment, but I am disgusted by the idea that this corrupt president (of the US) could be re-elected!'* – ET14

The Disgust here is not directed at the actions that the target is accused of obfuscating but rather at the act of obfuscation itself. When the target of a tweet is being accused of lying about an action that is for gain, the action and the lie can be lumped into a single focus of Disgust. Dishonesty, the process of being dishonest, and the reason for being dishonest are all factors in the elicitation of Moral Disgust.

Third-Party Disgust

Third-Party Disgust is a more diffuse exploration of the times that tweeters express feelings of Disgust when exposed to actions directed towards a single person (or small group of people). Focusing on the individual, it is more personal than the broad concept of *Hierarchical Disgust* and, as such, often shows stronger expressions and admonishments. Comprised of two subthemes but constructed from a broader range of codes, *Third-Party Disgust* represents the times when we perceive an injustice or malicious act with a clear, tangible victim.

Negative Outcomes for Others

The first subtheme captures expressions of Disgust directed at events or individuals that result in something negative happening to a third party. The third-party is rarely an abstract or multi-peopled collection, but a single person. The third-party almost always has a face or a name. In the most common expression captured, there are feelings of Moral Disgust when a person either witnesses or hears about another person being harmed. This can be seen most clearly in the commentary surrounding an alleged assault:

> *'I shouldn't have to keep telling you, I'm in charge! Now shut up! (link relating to images of MP attacking woman in a public setting)'* – ET15

The above tweet demonstrates the specificity of the third-party that has been harmed, but this subtheme does demonstrate a slightly broader Disgust response too. The third-party being harmed expands to include groups, with the caveat that they are a group that the tweeter identifies with. Tajfel (1974) gave compelling theory as to why this can be considered closer to the named third-party than the amorphous third parties seen in the *Hierarchical Disgust* cluster. The simple act of identifying with one individual above another is enough to create intragroup bonds that lead to a collective identity and preference for one's group. The following tweet demonstrates this notion, the shared identity being support of US Senator Bernie Sanders, and the feeling of Disgust at being mislabelled and then suffering a negative consequence:

> *'Just referring to supporters of Bernie Sanders as "Bernie Bros" erases the women of colour that also support him and his progressive policies.'* – ET16

Additionally, the subtheme *Negative Outcomes for Others* draws into particular focus two targets of harm; those unable to defend themselves and those from minority groups. Examples of this focus are typically characterised by a level of specificity that is often remarked upon by tweeters, tweeters either perceive a person being harmed as innocent or younger than the perpetrator:

> *'Verbally attacking a child makes you a piece of shit.'* – ET17

> *'If a gay lifestyle is so pure; how come grown men are parading naked around children?'* – ET18

Though Disgust in this subtheme is often related to young people, it is not an exclusive categorisation. For example, a collection of tweets express Disgust at harm to people younger than the perpetrator, but not specifically a young person, the Disgust expressed in the below tweet can apply to a person in their mid-thirties as it can to one in their mid-teens:

> *'An actual grown man was just staring at my chest.'* – ET19

Continuing the characteristic specificity but diverging slightly are the examples of harm befalling a minority group, often pertaining to a third-party that is larger than an individual. For example, the following tweet decries the singling out of a specific religion:

> *'On an exam paper, the question from the school was to outline three ways that Muslims can respond to terrorism. Sorry, shouldn't we all be responding to terrorism? Not just Muslims. Why single them out again?'* – ET20

This tweet highlights a trend that is seen more commonly across this subtheme; challenging behaviour that is perceived to be problematic. Similar to the tweeter in ET20 challenging the notion that terrorism is only perpetrated by Muslims, so too does ET21 challenge acts of implicit sexism, as ET22 challenges homophobic views:

> *'Excuse me!? Did I misread the fine print on my degree that said it was "training for marriage" rather than a subject specialism. Somebody better get me an engagement ring, quickly!'* – ET21

> *'I'd rather painful dental surgery with no anesthetic than be led by a HOMOPHOBIC AND UNCHRISTIAN HYPOCRITE like you'* – ET22

Personal Values

The subtheme of *Personal Values* describes those tweets that express Disgust at the values that someone does, or does not hold. Though these tweets can relate to actions that the target or elicitor of Disgust has carried out, they sometimes relate to the perceived motivation behind the action. *Personal Values* covers the sentiments of those who believe they know why a person has acted the way they have and are Disgusted by this drive. The tweets within this theme are the most likely to rely on assumptions and external factors.

The facets of Moral Disgust represented in *Personal Values* cover the kinds of personal values that most succinctly describe the perceived motivation. It is worth noting that the values most often captured here are religious and political ones. While all aspects of a person's values likely interact, due to the holistic nature of attitudinal belief (Schwartz, 1992), the most overlap can be seen in religion and politics. An explanation for the overlap between the two comes from the close relation between political (i.e., Right Wing; e.g., Altemeyer, 1988) ideology and a socially and culturally specific (cf. Burr, 2015) set of 'Christian' values. Specifically, the close relationship between *religious values* and *political values* might be skewed by the corpus of data being collected at a time of far-reaching American political commentary, during a time when religious and political values were both highly salient and heavily entwined (Haberman, 2018; Newport, 2020; Smith, 2020).

Views of religion most often pertain to a lack of *Christian* values, as defined by the tweeter. This can be seen most clearly in ET23. The tweeter here is not overly concerned as to whether the target of their disgust is religious, instead, the Disgust they express is directed by a lack of Christianity:

> *'You are an abomination in God's eyes. To ask for money even though you earn millions. You're taking money away from desperate families and their sick children. You might be religious, but you are not a Christian.'* – ET23

It is in tweets represented by the sentiment expressed above that we see the closest links to the subtheme of *Negative Outcomes for Others*, the tweeter not only identifies an individual

as not conforming to the tweeter's definition of Christian but also takes time to highlight the harm caused to those younger. The tweet can be interpreted as highlighting care for the innocent as an integral part of the tweeter's definition of Christian. Alternatively, or perhaps alongside this, it is important to note that with Disgust directed towards religious values, other Disgust themes emerge, suggesting that Disgust operates in contextual situations rather than a vacuum.

The relationship between religion and politics is demonstrated briefly in the following tweet. The tweeter here does not separate out the values presented by Christianity and those of the US Constitution but presents them both simultaneously. For the tweeter in ET24, presenting both simultaneously could be an indication of equal weighting. Similarly, ET25 links political leaders and what the tweeter views to be Christian values:

> *'Neither follows the teachings of Jesus nor the Constitution of the USA'* – ET24

> '*(tweeting at: Karen Pence, Donald Trump, and Mike Pence) I'd prefer a root canal without anaesthetic than follow a HYPOCRITICAL UNCHRISTIAN HOMOPHOBE like you (Karen Pence). You need to actually try and live by the messages of Jesus; LOVE not HATE.'* – ET25

The trend is continued in those tweeting just about their politics. More varied than examples of Christian values, this expands across political ideologies. The following pair of tweets demonstrate this. The sentiment captured in ET26 describes Disgust at a shift towards right-leaning ideologies while ET27 highlights a lack of right-leaning ideology:

> *'We're moving closer to Trumpism and the world that the GOP are imposing on America.'* – ET26

> *'(tweeting at Republican Congressperson) try being honest with your constituents… you're not a conservative and calling yourself one is a fraud. Maybe you should join the progressives in the Dem' party. Evidently that's all you are. You're a fraud and no patriot*.' – ET27

There, of course, exists disharmony between politics and religion. The below tweet is from a tweeter that demonstrates opposition to established right-leaning political leadership:

> *'And still you stand by (Donald Trump), locking up babies in horrible conditions while preaching the Bible every day…'* – ET28

As we, the researchers, cannot distil a tweeter's entire political ideology from a single expression, it is important to be realistic in our understanding of this tweet. While the tweet does seem to express Disgust at divergence from Christianity (or at least, symbolic use of a

religious text) and Conservative Trumpism, the tweeter here may represent an alternative conservative viewpoint. The key interpretation concerning Disgust is that both Religion and Politics serve to elicit a reaction that tweeters describe as Disgust. Disgust, in this context, can be elicited by a lack of shared politics, religion, or a conflation of the two.

Distanced from the matched pair of politics and religion, though not entirely removed, is Disgust at the concept or evidence of homosexuality (both displays of homosexual affection between two men, and aspects of gay culture). Disgust was not seen directed towards lesbian women in the same way, nor was there Disgust from the LGBTQ+ community directed towards heterosexual or cis targets. Though this was not a large section of tweets, it was a collection that saw strong emotions and represented a very 'vocal' group of tweeters. These expressions of Disgust can be seen as very person-centred:

> *'I was riding on the bus and two dudes started making out. I recognise they're people too (even though I don't agree with homosexuals) and are just living their lives – but there is a time and a place, what the fuck? People should not be tongue fuckin on PUBLIC TRANSPORT'* – ET29

Some tweeters took these to be more general, and spoke instead of their Disgust at organised events:

> *'Has anyone actually seen a Gay Pride parade that was truly wholesome?'* – ET30

Though both reactions represent Disgust at homosexuality, there is firstly Disgust at sexuality different to one's own in a hypothetical sense, as seen in ET30. Secondly, there is Disgust when confronted with a real demonstration of sexuality that a tweeter does not identify with. Though both elicit the same response here, it is important to note that they are referred to separately rather than holistically. It may be the case that those expressing Disgust at one do not express Disgust at the other.

Thus, we present the final facet of Moral Disgust captured here. Tweets here express Disgust at violations of the established rules of society. This kind of Disgust can be influenced by politics, religion, and group membership but holds its own place. For example, ET31 shows Disgust at disrespect for the dead, something that may be informed by religious values but is more largely dictated by societal ones. The tweet does not refer to a specific creed or religion as many others presented in this report have, instead, it takes aim at the wider world:

> *'What is going on in the world? 63 plaques stolen from a cemetery.'* – ET31

Societal values commonly decry hitting children, as seen in the following tweet:

'I've just visited your store in (city in the North of England) and overheard a staff member telling a woman that I'm guessing was her friend, that a child "was a little shit" that "just needs a good smack"' – ET32

Discussion

The present research explored naturalistic expressions of Moral Disgust among Twitter users. Data were 'scraped' from the platform, coded, and explored through RTA (see Braun & Clarke, 2021b).

The dimensionality of Moral Disgust has previously been unexplored, thus measurement tools have lacked context. The present study can therefore expand Tybur et al.'s (2009) TDDS with two broad subdomains of Moral Disgust. Constructed themes suggest a dichotomy in Moral Disgust expressions: *Hierarchical Disgust* towards power systems, and *Third-Party Disgust* when an individual is the target of negative outcomes. The role of power can therefore be seen as one way of distinguishing the themes. Where *Hierarchical Disgust* captures Disgust felt towards abuses of power in societal structures and systems, the theme *Third-Party Disgust* represents the emotion as it pertains to individuals. Such themes and expressions present a foundational map well-placed to support targeted and empirical reviews of clusters and themes of Moral Disgust, thereby improving our understanding of its dimensionality, and our ability to measure, target, and affect the emotion.

The present findings support and extend previous research. *Hierarchical Disgust* can be seen as an extension of the strategic endorsement of rules from the functional TDDS Model (Tybur et al., 2009) thus explaining the expression of Moral Disgust when institutions of power and hierarchy are abused and/or violated. As such *Hierarchical Disgust* may be an emotional tool for societal protection, likely a protective tool guarding against fallible institutions (Cohn et al., 2014) that otherwise ratify pro-social behaviour (Cronk, 2007; Gerkey, 2015; Stagnaro et al., 2017). This claim might be tested empirically by manipulating the perceived status of an actor carrying out social transgressions; those perceived as high-status should be judged more harshly than those of lower status. The expressions of Moral Disgust captured by *Hierarchical Disgust* offer further support for Moral Disgust's function as a tool for social cohesion without the need to learn vast collections of rules.

Our second theme, *Third-Party Disgust*, diverges from abuse of power. *Third-Party Disgust* represents expressions of Disgust with a clear victim and is expressed towards both act *and* perpetrator. A large but more diffuse domain of Disgust focuses around the individual and represents a method of protecting oneself and individual members of one's group, by highlighting acts and actors that could harm group members. Just as an upturned nose highlights and communicates physically dangerous foodstuffs, expressions of *Third-Party Disgust* communicate socially dangerous persons. We, therefore, expect that individuals would be more likely to remark upon harmful behaviours when there is a larger audience and when the audience is considered part of the ingroup.

Together, the two aspects of Moral Disgust outlined herein can be understood as socially protective devices. Stephan and Stephan (2000) highlight the roles of threat and

intergroup anxiety in the formation of prejudiced beliefs and behaviours, examples of *Personal Values* Disgust shown in tweets presented here represent examples of symbolic threat (i.e., intergroup threats to the ingroup's values and worldview), and the varied examples of Disgust at *Negative Outcomes for Others* are closely tied to both realistic threat (intergroup threats to resources, wellbeing, and power; the perception of the witness being key herein), and intergroup anxiety (negative intergroup affect). Possibly, the expressions of Disgust captured by the present research are naturalistic examples of the precipitators of prejudice predicted by the Integrated Threat Theory of Prejudice (Stephan & Stephan, 2000). If Moral Disgust is a precipitator of Integrated Threat, then a measure of Moral Disgust would provide not only a highly correlated predictor, with varied factor loadings based on sub-domain and area of integrated threat, but also the opportunity to interrupt the relationship between emotive Integrated Threat and Prejudice. Understanding the link between Moral Disgust and Prejudice could allow us to stop Disgust toward a group of people from becoming prejudicial behaviour towards a group of people.

Implications for Future Research

Though the present study makes use of a diverse data corpus in a novel method, there is a need to be mindful of the context in which data were collected. We note that the expressions of Disgust captured by the present study were tied to moments of political upheaval and uncertainty. A majority (though not substantial) of tweets refer to actions of political players within the United States Government – Donald Trump often being chief among these. The authors acknowledge that some of the expressions of Disgust *and* the emphasis placed upon them, both by those tweeting and the research team, will be coloured by world events at the time of data collection and analysis. As in all research, we accept that our own political beliefs and identities might have impacted analyses. However, where possible, efforts were taken to represent themes in their general sense rather than the specifics of the act or actor – it is hoped that the themes generated represent Moral Disgust in a way that moves beyond the political situation at the time of collection. Therefore, it is important to test the degree to which a model of Moral Disgust with the two sub-domains presented is generalisable beyond contemporary political change. Equally as important is the possibility of continued political change in which a non-generalisable model will still provide a useful theoretical tool.

Continuing the consideration of scope, it is important to consider that some tweets capture more than "pure" Moral Disgust, though efforts were taken to include only tweets that expressed the emotion. Moral Disgust is just one of the posited interconnection of Moral Emotions; for example, Gutierrez and Giner-Sorolla (2007) investigate the distinction between Moral Disgust and the associated preference for avoidance, and the more punitive Moral Anger. Both Moral Disgust and Anger, along with the third emotion of Moral Contempt, can be unified under the concept of "other condemning" emotions (Rozin et al., 1999). It is therefore important to note that though the work that we present here strives to represent expressions of Moral Disgust, other Moral Emotions may be captured, and so future work ought to determine the potential overlapping expressions of Moral Emotions.

Similarly to the political zeitgeist that provides a potentially limiting background to the themes generated, the subtheme of disgust at *Personal Values* was influenced by one religion above others. While Twitter does have a global user base, it is influenced by the majority-Christian United States more than any other country (Aslam, 2021) which may result in over-simplification from *Christian Values*. Future research must determine how well the Disgust captured in Twitter expressions of Moral Disgust generalises across not only the varied denominations of Christianity but other world religions *and* formalised non-religious belief systems (e.g., ethical veganism). Relatedly, we acknowledge that Twitter users are not necessarily representative of the United States *or* the global population in age, education, socio-economic status, and political ideology (see Pew, 2019, for a discussion). To the degree that Moral Disgust, like its pathogen-related counterpart, is a universal emotion, we would expect our underlying themes to be robust in the face of these deviations from representativeness, but future research will be needed to test their transferability, perhaps by sampling from different social media platforms, and indeed by sampling offline naturalistic language.

The subdomains of Moral Disgust may act separately to serve distinct functions. *Hierarchical Disgust* protects the structures of the group by keeping those that would damage them away from the group, and *Third-Party Disgust* protects individual members of the group by keeping those that do direct harm away. Further research is needed: to identify the psychometric distinctness of these two expressions of Disgust; to assess the efficacy of these subdomains in real-life, social settings, expanding to understand not just how Disgust is expressed via Twitter but also in the real world; and to explore other subdomains of Moral Disgust as relates to the outgroup, the ingroup, integrated threat, and therefore prejudice.

As well as the substantive contribution of this paper in exploring the content of Moral Disgust, its methodological contribution presents an opportunity to capitalise on a freely occurring, naturalistic data corpus (i.e., tweets) in a systematic and nuanced manner with varied applications. First is the capturing of naturalistic expressions, previously collected from in-person interactions that require a research team to be in the same space as those expressing. The novel method presented here allows for expressions towards any subject matter that can be captured with a string of keywords to be monitored, stored, sorted, and coded. The merits of analysing online discourse have been seen in other social media platforms (e.g., see Rubenking, 2019) and applications (e.g., see Fine & Hunt, 2023) but is done here for theory construction. Advancing upon previous utilisations of social media in examining Disgust we would suggest that social media provides an opportunity to both better understand and report experience but also to construct a theoretical model of underlying structure as informed by those experiencing it. Not only is online data collection less time- and resource-intensive than in-person observation, but the researcher no longer influences the expressions of individuals or limits themselves to one geographical area. Finally, those generating expressions are doing so in a way that communicates not only how they feel but also in a way that they feel communicates most effectively. The trifecta of ease, geographical freedom, and naturalistic expressions provide researchers with a more accurate

representation of how *real* people, and not just those that self-select into active research, express psychological phenomena. The present research makes use of this to explore expressions of Moral Disgust but this novel method would be equally applicable to the study of political sentiment, community anxiety, or collective responses to real-world events (in real-time) – if there exists an online public forum in which the phenomena at hand is seen, then there exists an opportunity to apply the method in a meaningful way. Online spaces are social spaces in their own right, additionally, they come with the inbuilt opportunity to collect data that physical spaces lack; this alone marks them as worthy of study. Finally, consider that online spaces are increasingly part of the *real* world, having large impacts on science, social discourse, and political decision-making.

Conclusion

A novel approach to mapping Moral Disgust means that researchers can build upon strong foundational work and develop a deeper understanding of Disgust. As well as facial markers, there is the opportunity to collect naturalist, linguistic expressions of Moral Disgust in a modern social environment that provides a more nuanced understanding of what Moral Disgust is and how Moral Disgust is expressed in the modern world.

Author Note

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