'We no longer recognized her as a human being': A Critical Discourse Analysis of AI-generated character descriptions of men and women with dementia

Abstract

Motivated by the gender inequalities observed in relation both to dementia and Artificial Intelligence (AI), this paper takes a Critical Discourse Analysis approach to explore how gender and dementia intersect in 52 AI-generated character descriptions of men and women with dementia. Using 'woman/man' as entry points through which to explore discursive constructions masculinities and femininities in the data, we find gendered distinctions in how characters' bodies are evaluated, social roles attributed, and violence presented. We also find that a deficit approach to dementia dominates, emphasising suffering, loss and hopelessness. Characters with dementia are stereotyped as older and frail, either near death or already dead in body and/or mind. Overall, the AI-generated texts recycle (and potentially amplify) pervasive discourses regarding both dementia and gender. Our findings therefore reinforce the need for further critical engagement with AI, from design to use, in order to interrogate and challenge its capacity to perpetuate inequalities.

Introduction

Dementia is an umbrella term for a set of symptoms caused by conditions (the most common of which is Alzheimer's disease) that can progressively impair memory, reasoning, perception and communication, and which are often accompanied by changes in mood and behaviour (World Health Organization 2023). Dementia can also be regarded in a more holistic sense as an 'entanglement' of molecular, social, political and environmental aspects (Lock 2013). Women are disproportionately affected by dementia; its prevalence is higher for women than men globally (further research is needed but this may in part be attributed to structural inequalities; Alzheimer Europe 2021), and approximately 70% of informal care is provided by women (World Health Organization 2021). In the UK, 65% of people with dementia are women, while approximately two thirds of unpaid carers are also women, who on average spend more hours in their caring role than men (Alzheimer's Research UK 2022). Clearly, gender is an important aspect of the lived experience of dementia, yet people living with dementia are often portrayed as gender neutral, since 'the label of dementia seems to subsume all aspects of people's identities such that the only aspect of identity that matters is the dementia label' (Wiersma, Harvey and Caffery 2023: 113).

By 'gender', we refer to a set of socially constructed expectations regarding what it means to be, for example, a man or a woman – these expectations form a cultural script that people can then conform to or resist when performing gender (Brookes and Chałupnik 2023: 2). Gender is widely constructed as a binary opposition between 'femininity' and 'masculinity'. While there are many forms of femininities and masculinities, some are culturally elevated, and in (Western) society, masculinity is typically associated with power (with traits such as emotional, financial and physical control) and femininity with subordination (with associations such as domesticity and caring for others) (Baker and Brookes, fc.). Recently, gender has been increasingly prioritised in dementia research, often by examining how men and women present their identities and experiences of dementia (e.g., Boyle 2017; Sandberg 2018; Tolhurst and Weicht 2017; Wiersma, Harvey and Caffery 2023). Studies that take an intersectional approach to dementia also highlight the importance of considering how gender interacts with other social identities, such as age, ethnicity and

socioeconomic status (Hulko 2009). Although some studies have begun to consider how gender and sexuality are represented in media depictions of dementia (see Grigorovich 2020; Kaplan and Chivers 2018; Sandberg 2021), most media-oriented dementia research still backgrounds or ignores gender and its intersections with other social identities. When responding to calls for a greater focus on gender and dementia, then, it is important to consider how popular media (including mass media, such as news, magazines and television, as well as emerging sources of text production, such as AI-assisted or AI-generated content) might (re)produce gendered experiences of dementia.

In this paper, we are particularly interested in Artificial Intelligence (AI) large language models (LLMs), which are increasingly infiltrating public life. Debates abound regarding the ethical, environmental and social implications of such technologies (Bender et al. 2021). This article is concerned with the significant power asymmetry between those who shape AI systems and those who are affected by them (Maas 2023), and particularly with the fact that LLMs have consistently been shown to amplify problematic ideologies, hegemonic perspectives and harmful stereotypes, including regarding gender and disability (Bender et al. 2021). This is important because AI-generated texts can be argued to exist in a "dialectical" (Fairclough 2015) relationship with society: as well as *reflecting* existing social discourses, once AI-generated texts enter society, they have the potential to *reinforce* and even *shape* those discourses and the ideologies they carry. By 'discourse', we refer here to a 'set of meanings, metaphors, representations, images, stories, statements and so on that in some way together produce a particular version of events' (Burr 2015: 32), and that can be both socially conditioned *and* socially constitutive (Fairclough, Mulderrig and Wodak 2011: 394). For instance, reproducing stereotypes about marginalised social groups can both reflect and uphold existing power inequalities in society, notably by justifying discrimination (Link and Phelan 2001).

Critical engagement with AI-generated outputs is vital, and Critical Discourse Analysis offers a useful theoretical lens for doing this (Palacios Barea, Boeren, and Ferreira Goncalves 2023). In response to concerns about gender inequalities and bias observed both in relation to the lived experience of dementia and AI-generated content, this study analyses 52 gendered character descriptions of people with dementia created by the AI writing tool, Sudowrite. In our analysis, we ask: to what extent do the AI-generated texts reproduce existing discourses regarding dementia and gender, and stereotype people with the syndrome? Within this, we aim to better understand how gendered identity labels and a dementia diagnosis intersect with each other. Being concerned with what discourses the AI-generated text might (re)produce, it is important to first outline key discourses that are liable to inform the models on which AI tools such as Sudowrite are trained, and thus likely to manifest in the (textual) content generated.

Dementia

Considering the complexity of dementia, there are many facets that could be discursively foregrounded. In (Western) popular culture, although a "living well" counter-discourse has recently emerged that focuses on supporting the strengths of an individual and recognising their enduring personhood (McParland, Kelly and Innes 2017), the dominant dementia discourse appears to remain a deficit-focused one of 'decline, loss and negativity' (Sandberg 2018: 26). Dementia is widely conflated with cultural fears of ageing, loss of self and death, which, as Castaño (2022: 2) argues, largely stems from long-standing interrelated ideologies such as the Cartesian body-mind dichotomy, in which the self/humanity is attributed to the mind, not the body; hypercognitivism, which elevates rational thought, memory and (economic) productivity to the detriment of other abilities (Post 2000); and notions of

'successful' ageing, which emphasise continuing independence, control, productivity and being physically and cognitively active (Latimer 2018). Against such a focus, dementia is often discursively constructed as the antithesis of social values: a condition of frailty, dependence, deterioration and (social and physical) death, rendering those diagnosed with it as 'the abject or the grotesque' (Stirling 1995: 150).

Such a cultural positioning means that, alongside living with a presently incurable condition, people diagnosed with dementia must also navigate the stigma surrounding the syndrome, which creates additional barriers to support and negatively impacts wellbeing and quality of life (Nguyen and Li 2020). Stigma can be broadly defined as a 'spoiled identity', wherein the stigmatised aspects of a person's identity are used to define and discredit them (Goffman 1963). There are many ways in which stigma might manifest linguistically, including through catastrophising dementia and using distancing and delegitimising strategies for people living with dementia, such as homogenisation, negative group labels, dehumanisation, infantilisation and passivisation (Putland and Brookes 2024). Moreover, dementia is often presented as a loss of not only abilities but as an 'unbecoming of self' (Fontana and Smith 1989), even as a 'living death' (Aquilina and Hughes 2006). Within this metaphor, people living with dementia may be likened to 'zombies', including through not recognising themselves or others, and the horror that other people express (Behuniak 2011). Through such representations, distance is established between an 'us' (people without dementia) and 'them' (people with dementia) (Low and Purwaningrum 2020).

Dementia and gender

In the representations outlined above, dementia dominates individuals' identities. Indeed, the de-gendering and de-sexualisation of people contributes to the overall discourse of loss of self with dementia (Sandberg 2018, 2021). Yet, dementia as a syndrome creates scenarios traditionally associated with *femininity*: that of caring for and needing care, with dementia being seen to make people 'dependent, weak, in need of caregiving, unable to fill social roles, unable to be leaders and to know their own bodies – [all of which is] inevitably gendered' (Wiersma, Harvey and Caffery 2023: 124). As such, dementia may pose a greater existential threat to (cisgender, heterosexual) men than to women and individuals not aligning with heterosexual cisgender norms (Coston and Kimmel 2013; Sandberg 2021). Gender also intersects with other aspects of a person's social location; for instance, age may help determine the particular gender norms that an individual ascribes to (Coston and Kimmel 2013), alongside the importance of gender to identity, with Silver (2003) suggesting that differentiating the "old" from the "young" becomes more important than gendered distinctions in later life.

Gender expressions are complex; someone may adhere to masculine and feminine norms in some ways and resist them in others (Boyle 2017; Wiersma, Harvey and Caffery 2023). Existing research (largely grounded in interviews, focus groups and participant observation) indicates some potential distinctions, though, in how men and women present their experiences of dementia. Men with dementia seem more likely to focus on fighting dementia, and to emphasise their independence and agency (Boyle 2017; Tolhurst and Weicht 2017). In contrast, women with dementia more often emphasise their relationships with others, including that of caring for others and trying to avoid burdening others with caring duties (Boyle 2017; Wiersma, Harvey and Caffery 2023). Relatedly, women are more likely to put others' needs above their own and struggle to express their wants or negative perspectives (Boyle 2017; Tolhurst, Weicht and Runacres 2023).

Research indicates that media representations of people with dementia largely reproduce gendered stereotypes. In film and TV, Kaplan and Chivers (2018: 12) observe that women with dementia tend to be shown as 'dependent and confined' to their homes, with a husband and children, whereas men with dementia may still (try to) work, use their existing skillset and travel beyond the home. Grigorovich's (2020) analysis of news sources finds that sexuality with dementia is clearly gendered, whereby men tend to be constructed as sexual predators, and women as asexual and often infantile victims, which works to justify regulating the sexual expression of people with dementia. In contrast, texts by people affected by dementia may disrupt dominant discourses of dementia, sexuality and gender (Sandberg 2021). Although people with dementia are frequently presented as gender neutral and asexual, then, research indicates that representations are simultaneously informed by (and often reinforce) gender stereotypes that differentiate between men as being more independent and agentive, and women as more caring and other-oriented.

AI text generation

AI large language models (LLMs) are trained on vast quantities of online data to generate human-like text in response to particular prompts, and they are increasingly contributing to media industries, such as news production and publishing (Baron 2023; Carlson 2015). In such models, the algorithm generates text that is statistically a good fit to a user's textual prompt according to the model's training data (Robinson 2023). It is important to stress that AI models are imbued with power imbalances and biases at every stage. Typically, AI models are monopolised by a few companies that are not transparent about their processes, nor participatory in their design, and that typically prioritise meeting market demands over robust ethical or sustainable decision-making (World Health Organization 2024). Various factors skew the training data towards overrepresenting hegemonic views and encoding potentially harmful biases, including monocultural workforces (predominantly young white men with a higher socio-economic status), unequal internet participation and filtering processes (e.g., data is overwhelmingly in English and favours certain websites and users above others), and through companies prioritising bigger over carefully curated data (for more comprehensive overviews of how bias is encoded, see Bender et al. 2021; Palacios Barea, Boeren, and Ferreira Goncalves 2023).

Here, we are concerned with these models' potential for 'representational harm', which entails unfairly representing certain social groups, including through negative stereotypes or exclusion (Blodgett et al. 2020). Of particular interest here are analyses of a prominent LLM, GPT-3, which find that AI-generated stories and responses tend to gender attributes (with emotionality and appearance being feminine-coded and physical strength masculine-coded), jobs (with women having low-skill jobs or being housewives and men being breadwinners, professionals and managers) and social roles (with women being associated with family and men with politics, sport, war and crime) (Lucy and Bamman 2021; Palacios Barea, Boeren, and Ferreira Goncalves 2023). Relative to gender bias in AI, ableism and ageism remain largely overlooked. This paper builds on our recent research, which found AI generated images for the text prompt 'dementia' to largely reproduce existing prominent visual discourses, such as loss and dementia as a "living death", and for particular semiotic choices to promote emotional distance between viewers and people with dementia (Putland, Chikodzore-Paterson, and Brookes 2023). People with dementia were consistently decontextualised in these images, leading us to question: what identities, histories and relations might be attributed to these individuals if we generated character descriptions dedicated to their perspectives and the perspectives of those around them?

Methodology

Data generation

Faced with difficulty finding user statistics for AI writing tools aimed at fiction writers rather than a more general audience, we chose Sudowrite for this analysis since it has received attention as a prominent AI writing tool in both the news media and research (e.g., Dzieza 2022; Gero, Long and Chilton 2023; Robinson 2023), was clearly focused on fiction writing and provided more information on its website than competitors at the time. It is marketed as 'the non-judgmental AI writing partner you always wanted' and promises to help authors with the entire writing process, including by rewriting or expanding on users' work, suggesting what can come next, and providing descriptions to 'help your readers connect to your characters and feel like they're really "there"' (Sudowrite 2024). Sudowrite claims to draw on 24 LLMs and to generate 'text by guessing what's most likely to come next, one word at a time' (Sudowrite 2024). As part of the model's training, GBT-3 was given examples of plot twists from short stories and synopses of novels, and Sudowrite's "describe" function, which is the one used by this paper (see Figure 1), was developed using sentences about smells, sounds, and other senses (Dzieza 2022). The difficulty in ascertaining more specific detail on how Sudowrite was trained and its similarity to competitors reflects a larger lack of transparency in AI models, and so this paper can only comment on the outputs of this particular model at the time of data collection.
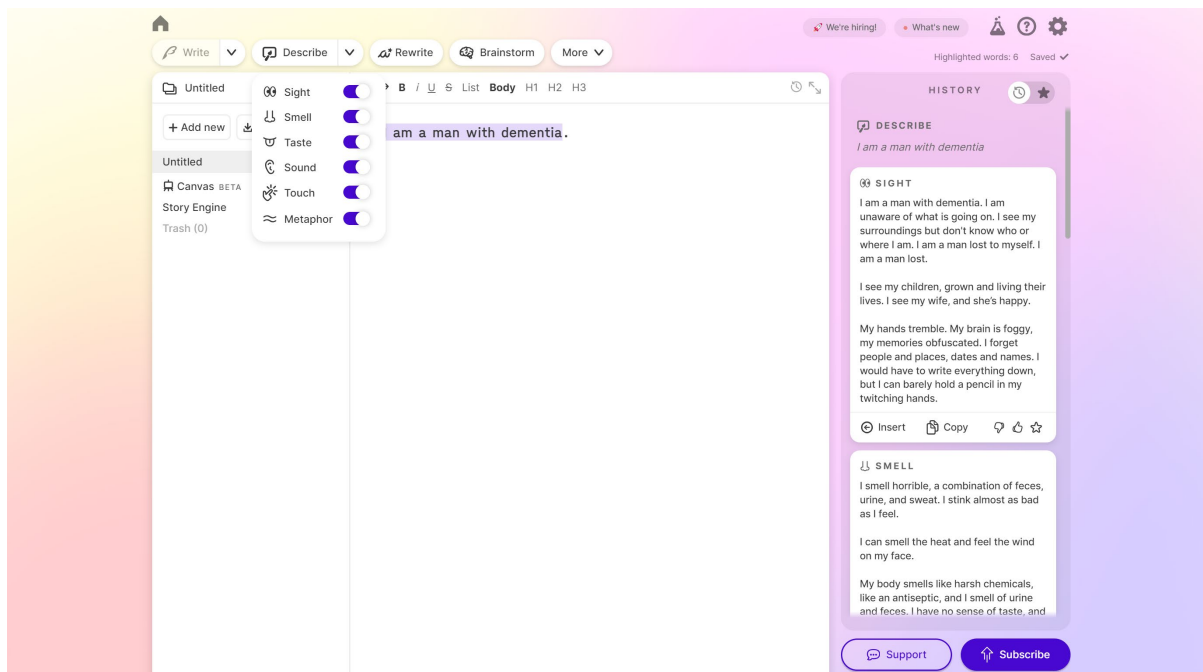

Figure 1. A screen capture of the Sudowrite interface in October 2023, with a particular focus on the 'describe' function.

In October 2023, we generated 52 texts using Sudowrite's 'describe' function. We generated 40 texts initially, and, after a preliminary analysis, a further 12 to assess data saturation. As Figure 1 shows, the 'describe' function categorises its output according to the five senses (sight, sound, touch, taste, smell) and metaphors. Four distinct textual prompts were used to generate this text:

'I am a man with dementia'
(generated 5,832 words; this prompt is henceforth referred to as 'IAM')

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'I am a woman with dementia'
(generated 5,896 words; henceforth 'IAW')

'I saw a man with dementia'
(generated 5,342 words; henceforth 'ISM')

'I saw a woman with dementia'
(generated 5,568 words; henceforth 'ISW')

In total, 22,638 words were generated from 13 'describe' texts per prompt. We chose the terms 'man' and 'woman' to examine how masculine and feminine ideologies might be infused into characters with dementia and those interacting with them. While we recognise the need to explore the diversity of what gender (and sexuality) can mean beyond this man/woman binary, for the purposes of this explorative study, these terms facilitate our aim of comparing AI outputs to existing research and statistics, since most orient around this man/woman binary. Alongside differentiating between a 'man' and 'woman' with dementia, we differentiated between the narrator being a non-specified 'I' figure who sees someone with dementia, and being the person with dementia themselves, as we were interested in both how a character with dementia might be represented by others and represent themselves. Although Sudowrite's preference for longer prompts is a potential limitation of our 6-word prompts, we prioritised concise prompts to avoid overly determining the generated text. For the same reason, we selected the term '(wo)man with dementia' as a more neutral term than alternatives such as 'living (well) with dementia' or 'suffering with dementia' (DEEP 2014).

Analytical approach

The analysis was conducted in multiple stages. The first author (EP) conducted a preliminary analysis of the first 40 generated texts via a manual inductive thematic analysis (Clarke and Braun 2017) using the programme ATLAS.ti 23. Then, EP analysed 12 newly generated texts and determined that data saturation had been reached, since no new themes emerged. The second author (CPC) separately analysed the 12 texts. CPC and EP then discussed their themes, focusing on areas of overlap/divergence and particular points of interest for subsequent analysis.

Following this, we took a Critical Discourse Analysis (CDA) approach to analysing Sudowrite's 52 texts. While CDA encapsulates a diverse, transdisciplinary approach, it is characterised by taking 'a systematic, text-based exploration of language to reveal its role in the workings of ideology and power in society' (Cap 2023: 155). CDA is particularly known for a focus on denaturalising potentially stigmatising discourses, with the overall aim of supporting social equality and justice. As such, CDA is well suited to our focus on whether/how AI generated texts reproduce existing discourses and stereotypes regarding dementia and gender. Broadly inspired by the work of van Leeuwen (2008) on the representation of social actors and actions, in the following analysis, we examine what attributes, actions and relationships are associated with characters with dementia, and explore the extent to which these converge or diverge according to the character's gender.

Analysing AI-generated texts posed some challenges, particularly regarding negotiating the line between the occasional nonsensical texts (an AI phenomenon called 'hallucinations') and text that could/should be subjected to analysis. Sometimes, texts obviously made no sense in the context of dementia (e.g., 'it was the leash in a comet's beard'; ISM). However, other examples could, in the right context, be meaningfully interpreted, as with 'I taste bile in the back of my throat. I taste like a rotten egg. I taste like a wicked witch' (IAM). While a 'wicked witch' comparison in a human-produced text could be

interpreted as potentially indicating the emasculation and demonisation of men with dementia, it would be misleading to make such a judgement here. We dismissed this and similar examples as being hallucinations, due to a lack of similar occurrences and the multiple nonsensical components (e.g., tasting like a rotten egg and witch). While decisions are inevitably subjective, we tried to mitigate the impact of these decisions by focusing on overall patterns in the dataset to avoid overanalysing singular textual examples. We acknowledge that our social positioning (including as UK-based researchers without a dementia diagnosis) and personal discourse repertoires influence our interpretations. As such, separate coding and discussion sessions helped to promote reflective discussion about our convergences/divergences.

Analysis

Our analysis finds that throughout the AI-generated character descriptions, dementia appears to be far more influential to characters' identities than gender and is overwhelmingly associated with a deficit approach. In the subsequent section, we outline how characters with dementia are represented, including as people who are suffering and experiencing great loss of not only memory, but self. Consistently, people with dementia are stereotyped as older and frail people who are either near death or already dead in body and/or mind. Following this, we examine the less prominent (but still noteworthy) gendered distinctions in how the characters with dementia are described, how caring and other social roles are allocated, and how friction or violence between characters is depicted.

Stereotyping people with dementia

Central to the characterisation of people with dementia are their symptoms, particularly memory loss, which explicitly features in 27 texts. Characters may be or act forgetful, with a range of consequences, from losing a purse (ISW) to forgetting 'where he was and where he was going […and…] how to remember to eat and drink' (ISM). Other losses with dementia are also reported across 16 texts, including losing taste, vision and 'the wherewithal to commune with old friends' (IAM), as well as occasional references to symptoms such as having 'problems with motor control' (IAW). When the perspective of characters with dementia is considered, it is overwhelmingly that of suffering. Characters may feel generic pain (e.g., 'When I wake up, every morning I feel the pain of the day before'; IAM), or specific (overwhelmingly negative) emotions, as with: 'She was angry, terrified, confused and ashamed all at once. She didn't know where she was, why she was there, and wanted the horrible ordeal to end' (ISW). Suffering may also be interpreted from the (presumably metaphorical) references to a foggy, dark or colourless worldview in 19 texts, since darkness is associated with negative affect across many cultures (Meier and Robinson 2005). Of course, for dementia specifically, impaired visual perception (see examples 3 and 4) may also represent impaired cognition, according to the metaphor that cognition is sight (Schweda 2019):

1) 'the tears of a man in the darkest place imaginable' (ISM)
2) 'The world is dark […] The sun is long gone' (IAW)
3) 'My eyes are dimmed with fog' (IAM)
4) 'She only saw in black and white and shades of grey' (ISW)

   Although characters sometimes show physical signs of mistreatment from others ('I saw him […] with all the problems that afflicted him, all the wounds or aches or sicknesses given to him by others or found in his wandering'; ISM), more often, dementia is positioned

as causing harm. Alongside the suffering caused through characters' symptoms, metaphors can also envision dementia itself as a threat that characters are either hurt by or must resist:

5) 'I saw a woman flailing on the edge of an abyss, as if the world as we know it were collapsing into the memory-hole of old age.' (ISW)
6) 'Through his fog, the man with dementia knew he had to keep his head above water but couldn't remember how to swim.' (IAM)

With the exception of example 6, where the man with dementia is given ownership of 'his fog', these metaphors tend to externalise dementia, separating the person from their symptoms (notably, memory loss) and foregrounding the challenges that living with dementia can entail. Occasionally, metaphorical threats may even personify dementia as a thief that 'steals the memory' and 'robs a person of their senses' (ISM). Allocating grammatical and semantic agency to dementia as an ill-intentioned social actor is a common strategy when representing dementia that, depending on the broader context, can be interpreted as removing individual responsibility by presenting dementia as altering people's lives 'indiscriminately, unexpectedly, and through no fault of their own' (Castaño 2022: 9), or as passivising and victimising people living with the syndrome (Brookes 2023).

Frequently, people's changed abilities (notably regarding memory loss) are explicitly tied to a loss of life and self for the person experiencing them:

7) 'I begin to forget what I did or where I was. My mind, unable to handle the day's events, fragments and shatters.' (IAW)
8) 'I feel my life slipping away, one memory at a time.' (IAM)
9) 'I am fragmented, as if […] a million glimmering shards of a smashed mirror.' (IAM)

Note that the last example does not show a process of fragmentation but the state of *being* fragmented, positioning brokenness as central to the person's identity. Indeed, characters frequently appear to interpret having dementia as losing their sense of self. They subsequently either position themselves, or are positioned by others, as having lost their lifeforce:

10) 'Her spirit was lost,' (ISW)
11) 'he is a shell of his former self.' (ISM)
12) 'I feel like a ghost' (IAW)

These examples reproduce the "living dead" trope for people with dementia by separating the mind/soul (as the locus of personhood) from the body (a passive casing for the mind/soul) (Aquilina and Hughes 2006; Behuniak 2011; Van Gorp and Vercruysse 2012). In such a way, a person's spirit can be lost, trapped or disembodied, even if their body remains. Drawing on the association of the eyes with the self (Starmans and Bloom 2012), this missing self is often represented through reference to a person's eyes being 'vacant' (IAM, ISM, ISW), a 'void' (IAW), 'black holes' (ISM) and 'empty windows, a blank gaze, like a doll's' (ISW). In such instances, the body remains but there is no "person" inside, as exemplified by the objectifying comparison to an inanimate doll or, elsewhere, 'a mannequin, […] a bad facsimile of a human' (IAM). Occasionally, the social component of this perceived inhumanity is made explicit, as with '*We* no longer *recognized* [the person with dementia] as a human being' (ISW; our emphasis).

Characters with dementia are presented as being 'near death' (IAM) not only mentally/spiritually but also physically, with 24 texts referencing decay and/or death compared to the 19 that indicate a loss of self. Characters' bodies are described as decaying

(e.g., 'my own body rotting from the inside out'; IAW), or even as already being dead, including through frequent descriptions of being 'without warmth, without life, as cold and dead as the grave' (IAM). People smell like 'a corpse' (ISW), 'rotting flesh' (IAM) and 'death and decay, like old manure and spoiled flesh' (ISM), with 'no fragrance of life, no essence of humanity' (ISW). Here, people with dementia 'are dehumanised in a very particular way: by being associated with waste and death' (Steele et al., 2021: 322). Such descriptions are arguably more extreme in their physical associations with zombies (with rotting flesh, cold skin etc.) than much of the human produced literature, which tends to focus on other aspects of the zombie metaphor and, if considering physical attributes, attends more to people's 'slow shuffle' and 'dishevelled appearance' (Behuniak 2011: 79).

Ageist, animalistic and ableist characterisations also serve to undermine people with dementia as grotesque. With some exceptions (e.g., 'I see myself as a young man, always young, never aging'; IAM), characters with dementia are overwhelmingly described as being extremely 'frail and old' (IAM); indeed, 32 texts explicitly reference frailty and/or age. Characters are depicted as having been eroded (e.g., 'withered', IAM; 'worn down by the passages of time'; IAW) and thus as now being 'weak', 'wasted' and 'fragile' (ISM), much like 'paper' or 'porcelain' (IAM). As such, characters with dementia are overwhelmingly depicted as stationary or with limited mobility, being positioned in bed or wheelchairs/chairs (e.g., 'she lay in bed'; ISW), restricted to a corner ('The man cowered in a corner'; ISM) or being shown struggling to walk ('My knees shake when I walk'; IAW). The stigmatisation of old age is indicated through descriptions of smell which position old age as a 'stench' (IAM), associate it with dust and bodily fluids (IAM, ISW) or even explicitly state that old age smells bad ('I smell like an old person. I smell like a woman with dementia. […] I don't smell good'; IAW). Animalistic and socially undesirable associations further this sense of stigmatisation, with the aged skin of characters with dementia being compared to that of a 'crone' (ISW), to 'scaly' (IAM) animals, such as lizards, snakes and a 'dead fish' (ISM, ISW) and with characters' hands being compared to 'dead spiders' (IAW).

Occasionally, specific ageist stereotypes are referenced, as with 'I'm considered an inept old man' (IAM) and 'I saw a dirty old man' (ISM). The main stereotype that manifests in this dataset, however, is that older people experience, to borrow from William Shakespeare (1623: Act 2 Scene 7) 'mere oblivion, sans teeth, sans eyes, sans taste, sans everything', perhaps best exemplified by the figure of an 'old man, balding, stooped over in a wheelchair, eyes unseeing, mind unspeaking, lips unmoving' (ISM). Accompanying this supposed obliviousness is a loss of bodily control (here concerning urine, faeces, vomit, drool and mucus), which is referenced across 23 texts for characters with dementia, often in combination with notions of decay and dirtiness:

13) 'She is old and shriveled [sic], […] her mouth is open with drool pooling on her chin and dripping onto her thin nightgown' (ISW).
14) 'I know the smell of dementia, the musk of decay and dirt, the scent of unwashed flesh, the sweet tang of urine and decaying teeth.' (IAM)
15) 'The man smells of decay and rot. His pants are stained with urine and faeces, his shirt covered in vomit.' (ISM)

The loss of bodily control associated with advanced dementia has come to 'signify the abject or the grotesque' in ageist/ableist societies (Sandberg 2018; Stirling 1995: 150). The social repulsiveness of characters' bodies is made explicit by observers, who find the smell of characters with dementia 'gag-inducing' (ISM), whose 'skin crawls' when watching the person with dementia (ISW) and who are 'afraid' and 'do not want to touch' them, even to 'hold' their hands (ISW, ISM). Foregrounding older age, extreme frailty and bodily

incontinence reflects the tendency of popular media more broadly to over-represent advanced stages of dementia in older age and to stigmatise people with the syndrome (Putland and Brookes 2024; Van Gorp and Vercruysse 2012).

Intersecting with the emphasis on older age are examples of another popular discourse (here, spanning 10 texts): that people with dementia are 'very old little children' (Laborde 2002: 142, in Van Gorp and Vercruysse 2012). Notably, the claim that 'She is a child stuck in a nameless woman's body' (ISW) replaces the emptiness and deathliness of previous 'living death' examples (where the person/soul is 'lost' but the body remains) with presenting the individual with dementia as very much alive, and as instead having internally returned to being a child. That the woman is 'nameless' here foregrounds the social isolation and depersonalisation of characters with dementia that is so frequent across the previous examples. Comparisons to children are used to emphasise vulnerability and fear, alongside other supposedly childish behaviours, appearances and movements in characters with dementia:

16) 'The man's bald head reminds me of a newborn, smooth and soft. […] He's so old, and frail.' (ISM)
17) 'He will not clean himself, he is a child in that respect.' (ISM)
18) 'Her eyes darted about like a lost child.' (ISW)
19) 'Her hands shake. She moves like an infant.' (ISW)

As Jongsma and Schweda (2018) acknowledge, while there are some superficial similarities between the appearances, behaviours and needs of frail people with advanced dementia and younger children, infantilising representations ignore that adults with dementia are at a very different life stage, having developed their own personal identity, values and preferences that are not only psychological but also embodied and socially situated. As such, infantilisation risks harming people with dementia's wellbeing, self-identity and relationships (Kitwood 1997; Sabat 2018).

Gendered characterisations

While both men and women with dementia are infantilised in our dataset, women are more so (with 7 instances for men, of which 4 detail baby-like skin (e.g., example 16), and 12 instances for women). Women's infantilisation occurs both through explicit childish comparisons (examples 18-21) and more subtle ones, as with having 'innocent' looking eyes (ISW). Notably, one AI-generated character description explores the internalisation of infantilising expectations by a woman with dementia, who is behaving in particular ways to be perceived as a 'good girl':

20) 'I sit in a chair, eating a plate of food like a good girl. It's the same every day.' (IAW)
21) 'I say "I think I might be okay," like a good girl.' (IAW)

Here, the infantilising expectation of striving to please (presumably other adults) through 'good' behaviour intersects with gendered expectations of what it means to be a 'good girl'. According to (Eckert 2004: 165), the 'quintessential "good woman"' is 'the "good girl" grown up', and she strives to be super-polite, 'mitigates her stances and exaggerates positive affect'. It is therefore interesting here that the woman with dementia eats her plate of food every day (a signal of politeness in many societies) and presents a positive persona by saying that she is 'okay' (even if, presumably, she is not) in order to present as 'a good girl'. Such behaviour seems to reflect the emotional policing of women living with dementia in real life, who are more likely to repress negative feelings or their own desires or needs for the sake of other people (Boyle 2017; Tolhurst, Weicht and Runacres 2023). While this only occurred in

one text, it is nonetheless interesting that we did not identify an equivalent "good boy" or "good person" in the dataset.

As the above example demonstrates, within the overarching stereotypes identified thus far, there are some clearly gendered components to how the bodies, social roles and relationships of characters with dementia are described. Within a discourse of degeneration and frailty, men and women alike are described as 'weak' (IAM, IAW, ISM) and 'frail' (IAM, IAW, ISM, ISW); however, such bodies are positioned as violating different gendered norms. Firstly, men with dementia disrupt 'Western cultural notions of maleness as representing power and strength' (Grogan 2016: 75). For instance:

22) 'I am a strong man defeated, the muscles of my arms and legs have lost tone and mass. I don't recognize them. My shoulders are hunched and I have aged before I should have' (IAM).

Here, a frailer body is negatively evaluated as a failure by showing signs of older age before it is considered appropriate to (as indicated by the high-judgement modal verb, 'should'). The battle metaphor underlying 'defeated' positions the man as struggling (and ultimately losing) against ageing, a metaphorical positioning that has elsewhere been linked to having a profoundly negative view of old age and thus the older self (van Wijngaarden et al. 2019). Conversely, not behaving in a way that aligns with the expectations of a larger body size also meets judgment, as with: 'It's weird to see a grown man cry, especially if he's a big guy, and I could tell he was a big guy by the wide trunk of his body' (ISM). A hierarchy of masculinities is established through the adverb 'especially', which positively correlates emotional toughness with body size. Here, a larger, muscular body is presented as a marker of traditional masculinity through its associations with strength (e.g., Connell and Messerschmidt 2005), whereas men with dementia are positioned as the antithesis of this notion of masculinity by being physically (and emotionally) vulnerable (Coston and Kimmel 2013).

In contrast, women's bodies are discussed in relation to the aesthetic and behavioural expectations of womanhood. Firstly, while there are discussions of being 'scrawny, weak' (IAW), there is more of a focus on the unattractiveness of such a body, as with: 'My body is old, there is *nothing pretty* about it anymore' (IAW) and 'Dementia *isn't a pretty sight* to behold. She is sallow and thin' (ISW) (our emphasis). Here, the body of an older woman with dementia is positioned as undesirable through its old age, unhealthy complexion and thinness. Elsewhere, women's breasts are described as having 'shrivelled to nothing' and as 'saggy' (IAW), while their bodies are 'ungainly' and their skin is as 'grey as whalebones' (ISW). Such features no longer signal good health, reproductivity or normative beauty standards, instead becoming 'a reminder of death to come' (Silver 2003: 386). Interestingly, while still rare, the nakedness of women is more frequently discussed than that of men, as is observing or needing to cover their bodies:

23) 'Her husband watched her get dressed each morning, and evening, her nude body grey as whalebones.' (ISW)
24) 'I'm wearing a ratty blue bathrobe over my nightgown because my husband doesn't like me walking around half-naked.' (IAW)

Observing and policing the bodies of women reflects the longstanding role of the "male gaze" in how women's bodies are positioned – note that in both examples here, it is the husband who watches or regulates his wife's body and attire. These examples raise another gendered aspect of the AI-generated texts: the social roles attributed to different characters and the relationships between them.

While we do not wish to overstate their prominence, there are certainly examples of gendered social roles and relationships in the dataset. Firstly, women who either have or care for someone with dementia are never discussed in relation to any professional identities, whether past, present or imagined, whereas a man may 'see myself in a suit and tie, driving a car, a successful business man with a lovely family' (IAM). Meanwhile, while both genders have families, women are identified far more frequently in relation to these familial roles, perhaps best exemplified by a woman with dementia 'tracing the memory of each form I've ever inhabited: the hands of a baby, the hands of a child, a young woman, a wife, and a mother' (IAW). Twice, father figures are said to have 'left' the character with dementia, while mothers 'spent so much time caring for us' (IAW). Such examples help to perpetuate the gendered binary that associates men with 'public professionalism' and women with 'private nurture' (Sandberg 2018: 29).

Moreover, while there are references to non-gendered social actors who provide care (e.g., 'the caregiver' and 'nurses'; IAW), when gender is made explicit, these caring roles are consistently feminised. Wives are described as fulfilling a caring role, particularly in relation to feeding and comforting their husband. For instance: 'My hand shakes uncontrollably every time I try to pick up a spoon to feed myself. […] My wife takes the spoon, and feeds me slowly, speaking to me in soft whispers.' (IAM). Here, the wife fulfils both the instrumental tasks (feeding) and the emotional aspects associated with caring (she feeds him 'slowly' and speaks in 'soft whispers', and elsewhere, she 'strokes my face and pats me on the arm'; IAM) (Coston and Kimmel 2013). When the woman has dementia, there are no examples of the husband fulfilling instrumental aspects of the caring role. In fact, in one instance, the husband is noticeably absent ('I ask for my husband, I am disappointed'; IAW) although in another, touching her husband's hands grounds the wife with dementia ('now they are the only connection I have to the real world'; IAW), which may be interpreted as a form of emotional care (however, without describing her husband's perspective or actions, the extent to which he consciously performs emotional care is uncertain). Instead, daughters (never sons) are positioned as performing the instrumental caring tasks:

25) 'I smell […] the perfumed scented lotion my daughter rubs on my crippled hands and arms to ease the pain.' (IAW)
26) 'I feel the numbing effect of the morphine, the sedating effects of the liquid sleeping pills my daughter feeds me quietly each night.' (IAW)

Overall, the division of care in this dataset perpetuates the association of caring with femininity, and the expectations of women to be caregivers throughout their lives, whether caring for children, spouses or parents (Coston and Kimmel 2013).

While there are some examples of warm interactions between characters with dementia and others (e.g., 'When she saw me, her eyes lit up with surprise and warmth. She reached out with her hand and gently shook mine'; ISW), it is in the relatively more frequent descriptions of friction between characters that gender divisions become clear. Every character is described as a victim of violence, either self-inflicted or inflicted by others (e.g., 'There is a bandage on my wrist and I don't know why. I am scared'; IAW; 'why is my daughter slapping my face?'; IAM). However, if the character with dementia is the perpetrator, men are represented as more violent and dangerous than women. Both men and women may act out against caregivers, either by yelling and spitting or by causing physical harm:

27) 'She needs help in the bathroom, so we are gently assisting her. She gropes at our hands, our arms, our faces. She scratches and pinches and it feels like the most profound violation imaginable.' (ISW)

28) 'I felt him pull me to the ground, my back slamming against the floor, his weight on top of me' (ISM)

However, there is an additional level of violence attributed to men, who are also depicted as wielding weapons (e.g., I feel the cool metal of a gun in my hand'; IAM), which arguably introduces an element of premeditation to the violence. This is most extreme in the following:

29) 'He was as tall as a tree, but his clothing was ripped, stained with blood and soot. He had a sword in hand and looked as if he needed it. The man approached; I could see the madness in his eyes. "I'm here to kill you," he whispered.' (ISM)

While these weapon-strewn encounters are likely attributable in part to 'hallucinations', that there are multiple examples of such violence and the extent to which they are gendered justifies their inclusion in our analysis. Whereas other men with dementia are emasculated through their emotional and physical vulnerability, this character is big ('as tall as a tree') and evidences many of the attributes of traditional masculinity, including aggressiveness, physicality and forcefulness (Coston and Kimmel 2013). He is instead undermined through his lack of rationality, as indicated by 'the madness in his eyes', shredded clothing and intent to kill. There are no such extreme examples for women, who are instead in one example positioned as a maternal protector: 'I remember watching over my children, protecting them with my life, fighting off the threats' (IAW). Whereas Grigorovich (2020) observed that news media position women as victims and men as perpetrators, specifically in a sexual context, in this dataset, while men and women can be both victims and perpetrators, the most extreme instances of violence are reserved for men.

Discussion and conclusions

The recurring stereotypes of people living with dementia identified across these AI-generated character descriptions are overwhelmingly stigmatising. Overall, the texts foreground lost abilities and suffering, which reflects the social dominance of a tragic, deficit-oriented discourse of dementia that ignores people's remaining strengths, opportunities and the possibility of enjoying life after a dementia diagnosis (McParland, Kelly and Innes 2017). This discourse has been observed across different forms of media (Low and Purwaningrum 2020; Putland and Brookes 2024), including in AI-generated images (Putland, Chikodzore-Paterson and Brookes 2023). While it is important to recognise suffering with dementia, this, we would argue, should not be at the expense of a more holistic portrayal of life after diagnosis.

More insidious in the AI-generated dataset is the recurring construction of characters with dementia as repulsive and as either near death or already dead in body and/or mind. This trope largely omits the inner world of people with dementia, focusing instead on describing the absence of self/spirit/life, which reiterates the 'living death' discourse that is recurringly identified as harmful for presenting people with dementia as subhuman and exacerbating stigma (Putland and Brookes 2024). Moreover, these AI-generated texts arguably *amplify* this pre-existing 'living dead' discourse by describing the bodies of people with dementia as physically corpse-like, including by focusing on rotting flesh and being 'as cold and dead as the grave' (IAM). Human-produced texts rarely make such a comparison, tending, instead, to focus on other facets of the undead metaphor, notably on the loss of the mind/person and dementia as an epidemic (Behuniak 2011; Van Gorp and Vercruysse 2012). An ageist and ableist positioning of frail and incontinent bodies as socially repulsive further undermines

people with dementia as being inhuman/animalistic and grotesque, which is sometimes made explicit by other characters narrating their fear of, and desire to avoid being in close proximity to, people with dementia. Combined, then, while the AI-generated texts sometimes sympathetically explore the inner world of characters with dementia who are suffering, oftentimes, distance is established between an 'us' (narrators without dementia and readers) and a socially repulsive 'them' (characters with dementia) (Low and Purwaningrum 2020).

Characters with dementia are also represented as violating the social order by failing to achieve traditional gendered expectations. In this dataset, the same 'weak' bodies were criticised for violating different ideals: for men, of strength and (emotional) control, and for women, of beauty. These 'perceived failures to normatively and intelligibly express gender' can in turn be linked to the cultural anxieties regarding loss of cognitive and bodily control that underlie the above dehumanising dementia discourses (Sandberg 2018: 27). Notably, though, whereas the physical identification of characters tends to violate gender norms, characters' social roles and relationships adhere to such norms (van Leeuwen 2008). Only men are associated with professional identities, while women are more frequently identified through their familial roles, reiterating the binary of a masculine breadwinner and feminine domesticity observed elsewhere in AI-generated texts (Palacios Barea, Boeren and Ferreira Goncalves 2023). Moreover, when gender is made explicit, caring roles are feminised, with wives and daughters (but not husbands and sons) fulfilling caring responsibilities. This unequal division of care perpetuates the pre-existing association of caring with femininity, which manifests both in social discourses and in dementia care statistics (Alzheimer's Research UK 2022; Coston and Kimmel 2013; World Health Organization 2023). Relatedly, whereas both genders can be infantilised and be victims and perpetrators of violence, women are more frequently infantilised and the most extreme instances of violence are attributed to men, mirroring Grigorovich's (2020) observations of news media more broadly. Restrictive gender norms can greatly impact gender health disparities, including through different exposure to risks, health-related behaviours and access to care; for instance, caring is associated with women in these texts, and being a caregiver tends to negatively affect the caregiver's own health, which is exacerbated in a dementia context (Heise et al. 2019: 2444).

Overall, our findings reinforce that there are significant issues with bias in AI-generated outputs, specifically regarding their tendency to recycle (and potentially amplify) pervasive discourses regarding both dementia and gender. Uniquely focusing on the intersections of gender with dementia here, we found having dementia to be more prominent than gender across the character descriptions of men and women with dementia, supporting the notion that the label of 'dementia' subsumes other facets of identity (Wiersma, Harvey and Caffery 2023). Having said this, being 'old' also emerged as an important classification for characters with dementia, reflecting the widespread conflation of the two in contemporary society (although approximately 9% of dementia cases occur before the age of 65; World Health Organization 2023). Being 'old' was consistently presented as a negative identity feature in our dataset, as was having dementia, reflecting that being an older person living with dementia is considered to be 'doubly stigmatizing' (Latimer 2018: 833).

Considering the increasing incorporation of AI-generated text into public discourse, it is vital that more critical attention is paid to the discursive biases that might inform and be reified by AI models' outputs. Notably, counter discourses (e.g., living well with dementia) to deficit-oriented and dehumanising dementia discourses are backgrounded or even excluded in these AI-generated texts, arguably reflecting the dominance of these types of discourses in human-produced media (Low and Purwaningrum 2020). AI does not offer an *exact* mirror to social discourses though (Ciston 2019), and part of this includes imbalanced and static

training data, meaning that AI-generated outputs risk reifying 'older, less-inclusive understandings' (Bender et al. 2021: 614). Being dialectical, the discourses generated by AI not only reflect but also have the potential to *shape* social norms. Therefore, as AI tools are increasingly taken up by public text producers – such as those working in news production, publishing and the creation of other forms of mass media – the discourses that are imbued in the models on which these tools are trained are only likely to be perpetuated ever more widely within society. This clearly risks already-dominant discourses becoming increasingly widespread and powerful, and concurrently, existing inequalities (from ageism to caring responsibilities) being upheld or even intensified further. Our concerns are set against broader fears of AI technologies' potential to exacerbate existing health inequalities, including through providing inaccurate and biased information (e.g., comparing people with dementia to rotting bodies and corpses exacerbates stigma and may impede on people seeking diagnosis or support; Nguyen and Li 2020). Typically, LLMs underrepresent particular populations relative to others, which has consequences for knowledge-sharing and representative fairness, and, when misused, the models additionally risk augmenting 'technology-facilitated gender-based violence' (this is particularly acute with non-consensual "deep fake" images) (World Health Organization 2024: 24).

Inevitably, this study is limited in the conclusions it can draw. For instance, the 52 texts are generated in the English language only, they draw on unusually short and non-descript user prompts, and they rely on the binary identity categories of 'woman' and 'man'. Further research would benefit from challenging and expanding the prompts used here, particularly by exploring more identities that disrupt notions of 'compulsory heterosexuality, gender conformity and ablebodiedness/ablemindedness' (Sandberg 2021: 10). Researching languages beyond English, using different AI models, and considering how readers might respond to AI-generated texts are also recommended as future avenues for research. More broadly, we would like to add our voices to the calls for more critical engagement with bias at all stages of AI, including, vitally, in establishing training datasets that are more diverse in terms of the people and perspectives they represent, including at the intersections between multiple identity categories (Ciston 2019). In the context of dementia, some notable absences include younger people with dementia, people with earlier stages of dementia, and LGBTQ+ individuals, whose underrepresentation is certainly not constrained to our dataset (Alzheimer Europe 2021). Equally, while we call for stakeholders to address AI bias, within this it is vital to interrogate exactly *how* bias could/should be evaluated and addressed when developing generative AI. As Bender et al. (2021: 615) note, any choices made are 'necessarily political (whether or not developers choose the path of maintaining the *status quo ante*)'. The political and social justice underpinnings of Critical Discourse Analysis therefore make it a powerful tool for engaging with the sociopolitical implications of generative AI, both in its present and future forms.

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