Weight stigma: towards a language-informed analytical framework

Content warning: This article includes examples of confronting language in relation to people living with obesity.

Introduction

> 'Today nearly 70% of Australians have overweight or obesity; and yet most of us will opt to remain silent on the topic and how it affects us, because of shame and embarrassment.' (Weight Issues Network 2020: 4)

The *Weight Issues Network* is a Health Promotion Charity – 'an emerging network of people whose lives are affected by overweight or obesity, our families, our friends, and people who care' (Weight Issues Network 2020: 4). Their recommendations on how to improve the lives of people with obesity are:
1. Weight stigma needs to stop;
2. Improve clarity and reduce barriers to better health;
3. More supportive environments in society.

Under point 1, they recommend: 'Portrayal of people with obesity in the media to be respectful', noting that 'Framing and images with stereotypes perpetuate and reinforce stigma' (Weight Issues Network 2020: 6).

Weight stigma refers to discriminatory actions founded on weight bias, and can include verbal taunts, microaggressions such as eye rolling and tutting, and physical acts of violence (Washington 2011; Coltman-Patel 2020). Weight is one of the most stigmatised characteristics within society and weight stigma is a manifestation of social inequalities. It can occur in almost every situation (including healthcare), and is particularly prolific in media coverage (Alberga et al. 2016). It can have devastating mental and physical effects, and lead to the internalisation of *weight bias* (Alberga et al. 2016; Bellew et al. 2020), i.e. individuals' negative attitudes to and beliefs about people of a high weight, resulting in them being assigned qualities such as laziness, unattractiveness, unintelligence, uncleanliness, greed and a lack of willpower. Stigmatising an individual's body weight is unlikely to lead to behaviour change (Faulconbridge and Bechtel 2014) and may reduce motivation to engage in weight-related health behaviours (Bellew et al. 2020).

Language is a common way in which stigma against weight is perpetuated. Therefore, a way in which linguists can contribute towards efforts to reduce weight stigma is to systematically analyse relevant language practices, identify stigmatising language use, and make recommendations for less stigmatising alternatives. This effort is underway, with several studies demonstrating the prolific use of stigmatising language to conceptualise individuals with obesity, particularly in UK media (e.g. Coltman-Patel 2020, Brookes and Baker 2021a). In addition, guidelines highlighting problematic language use and offering alternatives have been created by organisations such as The World Obesity Federation (2018). In this paper, we contribute towards this effort by reviewing these guidelines and relevant research, using these as basis for developing a novel framework for linguistic analysis. We then illustrate its application using a new corpus of Australian news media.

Media guidelines for obesity news coverage

In the past 15 years, English-language media guides for obesity coverage have been published by various organisations in Australia, the UK, and the US. These guidelines aim to raise awareness of journalistic practices which perpetuate weight stigma, and suggest alternatives, sometimes providing lists of practices to be avoided or adopted, and sometimes making recommendations targeting the organisational and editorial domains of journalistic practice. Here, we briefly review

such guidelines for practices most closely related to language use, i.e. themes and lexis (for a list of the reviewed guidelines and the full review, see Bray and Bednarek 2021).

The theme most commonly mentioned in the guidelines as problematic is personal blame and shame. Stories emphasising individual behaviours (e.g. eating, exercise) either as causes or solutions for obesity 'perpetuate the personal failure narrative' (Law and Pulker 2020: 4). Stereotypes which reproduce themes such as laziness and lack of productivity, intelligence, character, or capability are also seen as stigmatising and receive criticism in the guidelines (Bray and Bednarek 2021: 7). Instead, the reviewed guidelines recommend that the complexity of obesity be foregrounded and that a balanced range of causes and solutions be discussed, especially societal factors such as public policy, infrastructure, and industry responsibility. Moreover, several guidelines recommend prioritising themes such as science and public health, solutions and help-seeking, and social diversity.

At the level of lexis, support for person-first (people-first) language such as *people with obesity* is universal. Such language stands in contrast to condition-first (identity-first) language and occurs 'when a particular diagnosis (sometimes called a designation) follows the head noun in a prepositional phrase or a relative clause' (Price 2022: 159). All guides problematise condition-first terms such as *obese people* and some draw comparisons with equivalent references to other conditions – such as *cancerous people*, for example – which would be regarded as inappropriate (Obesity Australia 2015; Rudd Centre for Food Policy & Obesity et al. n.d.). The practice of using scientific descriptors such as BMI scores or obesity classes instead of pejorative adjectives such as *fat* and *obese* is also widely supported, although limitations of the BMI are also noted (Bonfiglioli 2007; Obesity Australia 2015). The negative adverbs *severely* and *morbidly* which denote outdated classification labels also receive criticism, as do nominal items such as *fatty* and *chubster*. Negative references to obesity itself are similarly discouraged, including negative verbs/nouns such as *suffer*, *epidemic*, or *strain*; combative metaphors such as *war on/fight obesity*; and prohibitive language regarding public health efforts such as *to police*, *banning*, or *nanny state*. Below, we will draw on these suggestions as a partial basis for proposing a new, systematic framework for linguistic analysis. Additionally, our framework is informed by the academic literature on weight stigma in English-language news media both internationally and within Australia, as briefly reviewed in the next section.

Obesity news coverage

We first consider research on international English-language news media outside Australia. Here, multiple studies have been carried out which indicate how weight stigma manifests in newspaper coverage of obesity, although most have tended to focus less on linguistic features and more on the sociological concept of *frames* (e.g. Goffman 1974). More recent studies in the UK have brought increased linguistic focus to analyses of obesity framings, identifying the specific lexical and grammatical structures which constitute these frames and the representations they provide – including corpus linguistic studies of British newspapers (e.g. Baker et al. 2020; Coltman-Patel 2020).

The economic cost of obesity has consistently been found to be foregrounded in news depictions from various countries, with people with obesity being described as a 'burden on the healthcare system' (Atanasova and Koteyko 2017: 659; see also Boero 2007; Coltman-Patel 2020). Obesity causes are often portrayed as multifaceted with behavioural, personal blame, biological, and environmental frames all identified (Lawrence 2004; Malterud and Ulriken 2010; Atanasova and Koteyko 2017; Brookes and Baker 2021a). Research has also found frames which foreground and advocate personal responsibility in the causes of and solutions to obesity to have increased in prominence in UK coverage over time, while those which focus on the role of more powerful institutions, such as the government and food marketers and manufacturers, have decreased (Baker et al. 2020; see also Brookes 2021 on how this intensified during covid-19). Moreover, Saguy and Almeling (2008) found that in US coverage of obesity, personal responsibility framings, selective

reporting and evocative metaphors were used to sensationalise the findings of scientific reports on which news reports were based. In addition to its causes, news media have focussed on the prevalence of obesity, often articulated through the metaphor of 'the obesity epidemic' (Boero 2007; Coltman-Patel 2020). Obesity is thus metaphorically portrayed as a chaotic phenomenon and as a widely spreading disease.

In the US, notions of fear are intertwined with messaging relating to obesity prevalence (Boero 2007: 46), while fear has also been found to be a frame in and of itself, specifically a 'fear of fat' (Boero 2007: 46; see also British studies including Atanasova and Koteyko 2017: 658; Brookes and Baker 2021b). This frame is sometimes operationalised via war metaphors (Atanasova and Koteyko 2017; Coltman-Patel 2020). Finally, unattractiveness is also a frame which has featured in the news. For instance, Brookes and Baker (2021a) demonstrate that the British tabloids are particularly likely to shame people with obesity. This is achieved, for example, through the use of animalistic metaphors which equate people with obesity and their consumption practices to animals that are perceived as greedy and undiscerning, through labels such as 'hog' and 'pig', as well as describing their eating practices as 'wolfing' and 'swilling'. Other forms of dehumanising language reduce people with obesity to a shape: 'blob', 'blimp', 'gutbucket'. Yet other labels describe larger bodies and body parts in unflattering terms, such as 'moobs', 'blubber', 'muffin-top', and 'bingo-wings'. Thinness, meanwhile, is projected as an attribute which is beautiful, honourable, and a result of self-control and discipline (Malterud and Ulriken 2010; Coltman-Patel 2020; Brookes and Baker 2021a). This difference in news representations of thinness and obesity thus ties into the prominent 'personal responsibility' frame mentioned earlier; indeed, personal blame has also been widely reported to permeate discussions of obesity and health, with individuals being blamed for their medical conditions and their 'lack of perseverance' blamed for their weight (Atanasova and Koteyko 2017; Coltman-Patel 2020; Brookes and Baker 2021a, b).

Having reviewed these international findings, we now consider the relevant Australian research. In contrast to the British context, there are no corpus linguistic studies of Australian newspaper coverage of obesity, meaning that a systematic linguistic analysis of stigmatising language use has yet to be conducted. Relevant non-linguistic studies on the Australian context identify stigmatising blame framing and detect a general paucity of media interest in discrimination and fat voices (e.g. Bonfiglioli 2020). In general, such research associates individual frames with blame (e.g. linking obesity to individual choice), while other frames (e.g. structural frames) focus on environmental drivers of weight gain. Such studies focus on the prevalence of particular frames, rather than language use per se. For example, Cain et al.'s (2017) study of Australian (and US) online news in 2013 and 2015 showed that blame was often focused on individual choice, but that the 'obesogenic environment', food industry, and medical conditions also featured, with some articles highlighting the need to reduce stigmatisation and containing direct criticism of fat shaming. Islam and Fitzgerald (2016) found that Australian obesity news mentioning Indigenous people was dominated by structural causes, while solutions were divided equally between individual and structural frames. Framing of childhood obesity was dominated by parental and individual responsibility, followed by government responsibility (Bastian 2011). Grant et al. (2022), who undertook computational (rather than corpus linguistic) analysis of Australian news, identified that biases relating to (female) gender, healthiness, socioeconomic status and stereotypes slightly decreased across the 30-year period they analysed.

Regarding the linguistic framing of obesity in the Australian press, this appears to be associated with the language of crisis/threat/danger or the use of 'epidemic' and 'battle' metaphors. Thus, obesity was problematised as a 'crisis' in Australian newspapers, with a peak in such coverage in 2006 (Bonfiglioli 2020). Australian (and US) online news in 2013 and 2015 warned against glossing over the 'dangers of obesity' and framed it as an epidemic (Cain et al. 2017). In newspaper coverage of a particular report, language highlighted the 'disgrace' of high prevalence of obesity and its 'threat' to the Australian nation (Holland et al. 2011). In coverage of childhood obesity and food advertising, language identified the risks of obesity as a 'death sentence' and discussed weight loss as a 'battle' against an 'epidemic' (Udell and Mehta 2008).

For blame frames, a variety of different targets and language practices occur as identified in several studies on childhood obesity in Australia (Udell and Mehta 2008, Bastian 2011, Warin et al. 2012). Obesity is constructed as parental responsibility (neglecting socioeconomic drivers), and parents are blamed for being too busy to cook or allowing children to eat poorly and move too little or are represented as fat, stupid, lazy, and bad parents. This includes derogatory remarks about lower class people's capacity to care for their children. Children in turn are presented as 'vulnerable', bewitched, innocents, and 'easy targets', but also blamed for being slothful, lazy, stuffing themselves with 'sludge', and chugging back sugary drinks. Health professionals were labelled 'food fascists' and 'fat police'. In addition to these blame targets, people with obesity were found to be the target of negative language (e.g. *fat-arsed*, *flabby flesh*) in a study by Holland et al. (2011) on Australian media coverage of a report on overweight and obesity. They suggested that such language use fuelled an 'us' and 'them' divide between people of size and others, and framed people with obesity as 'less intelligent' and a risk to others, including being competitors for hospital beds. The authors concluded that blaming fat people for health costs may create an 'obesophobic' environment, perpetuating stigma and discrimination.

In sum, both media guidelines and the academic literature suggest that weight stigma is perpetuated by problematic language practices, including those that negatively label, dehumanise, and blame the individual. In the next section, we introduce the linguistic framework that we have developed on the basis of these sources.

Towards a framework for linguistic analysis of weight stigma

Although a range of linguistic studies have been undertaken on obesity coverage, a systematic framework for linguistic analysis of weight stigma does not appear to exist. Tables 1 and 2 present our first step towards such a framework, with resources and categories developed and systematised on the basis of the materials and literature discussed above. We distinguish between *Stigmatising representations of **individuals** with obesity* (Table 1) and *Stigmatising representations of **obesity*** (Table 2). There are obvious connections between these tables – for example, by characterising weight loss as easy or simple (Table 2), it is possible to stigmatise people with obesity as unable to take control (Table 1). Nevertheless, making the distinction between the two categories is worthwhile in order to draw out different aspects of textual representation. The examples provided in both tables are authentic (taken from previous research) but are presented as a selection of possible language practices, rather than as an exhaustive list.

Table 1: Stigmatising representations of **individuals with obesity**

Stigmatising representations of **individuals with obesity**		
Constructing an obese 'Other' (who is distanced/different from others due to their weight)		
		Examples
Distancing people with obesity from author and audience	Making obesity central to a person's identity	*obese/fat/overweight* + [human noun] BE + *obese/fat/overweight* *the obese*
	Using pejorative weight-emphasising labels for people and their bodies (excluding 'reclaimed' usages)	*fatty, fatties, fatsos, fat, lardies, flab, bulk, blubber, flobber, flubber, fleshy, meaty, lardy, flabby*
	Euphemistic weight-emphasising labels for people and their bodies	*cuddly, curvy, roly-poly, big-boned, solid, full-figured, plus-sized, voluptuous, portly, tubby, chubby, chubster*
Focusing on people's (typically negatively evaluated) weight gain	Emphasising size or extent of overweight	*gargantuan, supersized, mammoth, expansive morbidly, severely*
	Focusing on reporting weight gain	*gain, become* [*obese* etc], *get, piling on, balloon, weigh*
Stereotyping and negative evaluation of individuals with obesity		
Ascribing people with obesity with negative or stereotypical characteristics and behaviours	**Characterising people with obesity as:**	**Examples**
	Unattractive or unkempt	*ugly, unattractive, frumpy, disgusting, slob*
	In poor health	*sick, ill, unfit, unhealthy, tired, unwell, bloated*
	Inactive, immobile or incapable	*lazy, sedentary, couch potato, unable, too heavy to X*
	Unintelligent or lower class	*stupid, thick, illiterate, peasantish, oafs, louts*
	Experiencing negative emotions (e.g. feeling bad, terrible, desperate, dreadful, ashamed, stressed)	*bad, sad, terrible, worse, unhappy, miserable, depressed, desperate, angry, awful, wretched, dreadful, hopeless, down, suicidal, deprived, helpless, uncomfortable* *ashamed, guilty, embarrassed, foolish* *anxious, nervous, stressed* *suffer*
	Over-eating or eating too fast	*guzzle, gorge, scoff, feast, devour, cram, shovel, shove, stuff, fill face, gobble, gulp, swig, bolt, diet*
	Unable to self-regulate or take control	*sloth, gluttony, greed, greedy* *personal responsibility, personal choice, will power, eat less, move more, exercise*
	Engaging in criminal, socially deviant, or unacceptable social behaviour	*TUBBY tyrant Kim Jong-un* *FAT ripper* *Forty-STONE fraudster* *The 23 stone fanatic* *Obese woman … caught stealing cakes*
	Constructing and comparing a past, 'bad', overweight identity with a present, 'good', thin identity	*'I've since lost more than 4st and for the first time I feel good about my body.'*
Dehumanising		
		Examples
Minimising the personhood of people with obesity	Comparison of people to animals; including animal metaphors for their behaviour	*whale; pigs, porkers, porky, porkies, hogs; wolf down, pig out*
	Labelling people by reference to a part of their body (e.g. using body part labels)	*lard-arse, gut-bucket*
	Comparison of people to inanimate objects or entities	*blob, blobby, lard-bucket*
Ridiculing		
		Examples
Positioning people with obesity as a	Noting awkward movement	*waddle, haul, heave, lumber, shift, wobble, jiggle*
	Commenting on effort	*sweat, wheeze, pant, puff*

source of amusement	Reference to not fitting into environment/space	*fit, squeeze, wedge, cram, cramp, clog*
	Blends	*moobs* [*man + boobs*], *cankles* [*calves + ankles*]
	Alliteration, rhyme	*beer belly, thunder thighs, bingo wings, ballooning bums*
Excluding Excluding or marginalising people with lived experience		**Examples**
	Over-reliance on or foregrounding of institutionalised or expert opinion or academic research, especially if reported in a reductive or overly simplistic way	'*CLOTHES for fat children should have health warnings urging them to lose weight, an obesity* **expert said** *yesterday.*' '*SEAWEED could hold the key to conquering obesity,* **experts believe**.'
	Not including or backgrounding the voices of people with lived experience	N/A [an absence of such voices in a relevant news item where they could appropriately be included]

Table 2: Stigmatising representations of **obesity**

Stigmatising representations of **obesity**	
Using problematic negative metaphors	**Examples**
War/conflict/combat	*battle, fight, fight back, wage battle/war [on obesity], combat, conquer, explode, sound the alarm, tackle, coerce, beat, enlist, force, grapple, kill, lose, loose off, target, win, surrender, battle of the bulge, destroy cellulite, timebomb, weapon, frontline*
Infectious disease	*epidemic, pandemic, plague, catching, contagious*
Physical exertion	*strain, burden, load*
Mysticism	*curse*
Natural disaster	*tsunami*
Characterising obesity as a problem	*crisis, problem, weight problem, lifestyle issue, risk*
Centring medical aspects of obesity – causal factors, comorbidities, and medical solutions	*diabetes, disease, cancer, illness, heart disease, arthritis*
Focusing only on related costs (including the cost associated with obesity and with people with obesity who engage in certain behaviour)	*cost, budget, $ [dollar amounts], economic burden, strain on the economy, the public purse, dock benefits, crushing the NHS [National Health Service]*
Characterising weight loss as easy or simple or made possible by simple fix, new or secret, miracle or controversial diet	*easy, simple, trick to losing weight, 'discover your weight loss type'; 'miracle diet', skinny pill, holy grail of weight loss, secret*
Emphasising the severity of obesity or constructing it as a problem that is getting worse	*morbid, severe; high; rapid, rapidly; rise, double, increase*

Both tables contain multiple sub-categories which are relatively self-explanatory, given our review in the previous section. However, some elements do require additional elaboration. Starting with the sub-category *Constructing an obese 'Other'* (Table 1), we define 'Othering' broadly, and include examples that distance or differentiate people from others due to their weight, such as reporting or emphasising the size and extent of weight gain. This arguably implies that people of size are different to 'us' or that they are outside the 'norm'. We have included euphemistic labels (e.g. *chubster*) in this category, even though they are not necessarily stigmatising and are certainly less Othering than overtly pejorative language. Such euphemisms are sometimes considered as reinforcing the taboo surrounding obesity, and Aubery Gordon, an activist who wrote Your Fat Friend (2020), even prefers *fat* to euphemisms such as *full-figured* or *curvy* although others may disagree, given that linguistic preferences differ considerably between people. Some of these labels (e.g. *curvy, voluptuous*) have sexual connotations and may be perceived as fetishising female bodies; others can be perceived as Othering because there are no equivalent terms for thinner people. Including such language in the framework enables useful comparative analyses of pejorative/euphemistic labels.

This category also comprises condition-first language (e.g. *obese people* rather than *people with obesity*). As noted, the media guides cite condition-first language as dispreferred. This is supported by the Weight Issues Network (2020: 24): 'If you are going to use the term obesity please use person first language'. It is sometimes noted that person-first language is standard or preferred for referring to people with physical/mental illnesses or conditions (Brown 2011; Botha et al. 2021; Price 2022: 63; Obesity Action Coalition n.d.). However, there is a diversity of views on this matter in relation to a range of conditions/identities (see variously, Bickford 2004, Botha et al. 2021, Brown 2011, Collier 2012, Dunn and Andrews 2015, Shakes and Cashin 2020). This is also the case with obesity (Weight Issues Network 2020).

In addition, labels such as *fat* (classified as pejorative in Table 1) can be reclaimed by people with obesity and used non-pejoratively (Wann 2009: xii; Lupton 2018: 81-103; Coltman-Patel 2020: 20-22; Your Fat Friend 2020) – a tradition that goes back to the late 1960s when the fat acceptance movement began (e.g. Sobal 1999). Such reclaimed usages would not be considered

stigmatising in our framework. Among the 'de-humanising' language practices, the subcategory *Labelling people by reference to a part of their body* refers to a 'form of objectivation in which social actors are represented by means of reference to a part of their body' (Brookes and Baker 2021a: 114), such as referring to a person as a *lard-arse* or *gut-bucket*. In contrast, other references to people's bodies or body parts (e.g. *lardy lags*, *flab*, *bulk*, *flabby*, *lardy*) are included in the sub-category of pejorative labels for people and their bodies.

In Table 2, the sub-category *Using problematic negative metaphors* includes war/conflict/combat metaphors (e.g. *wage battle/war on obesity*). In addition to being inherently negative, combat metaphors position people with obesity as adversaries of other groups, including businesses, the government, the medical sciences, and society in general (Coltman-Patel 2020: 160-164). More generally, Hendricks et al. (2018) show that using different metaphors (e.g. battle vs journey) has an effect on how people evaluate someone's health situation (e.g. cancer, depression). The list of other negative metaphors in Table 2 is not necessarily exhaustive, but based on what we have encountered in the existing literature. Another category in Table 2, *Centring medical aspects of obesity*, was included based on our review of the literature, but a counter-argument could be made that it is preferable to frame obesity as a health condition than as a lifestyle condition, and that related medical language is necessary to discuss it in these terms (Tiffany Petre, email communication). In general, we offer this framework as a first step for linguistic analysis and invite further discussion, debate, and development.

Both tables imply the possibility of double-classifications, as some language practices could be seen as falling into more than one sub-category. In such cases, the analyst can either choose to double-classify or to consistently prioritise one category over the other. Moreover, the practices in both tables can co-occur within the same text, paragraph, or even sentence, and can then work for reinforcement or intensification (e.g. adjectival chains such as *hopeless, defeated, ashamed and embarrassed*; see Coltman-Patel 2020: 235). Further, most of these practices can occur in content that is either based in the institutional voice of the newspaper or attributed to quoted voices via direct or indirect speech. In the case of internalised weight bias, problematic practices can even occur in personal accounts from people with obesity, which may reproduce and legitimise stigmatising ideas and narratives from an insider's perspective (Coltman-Patel 2020).

To illustrate the potential application of this framework in applied linguistics, we use corpus linguistics to analyse selected aspects. Analyses are based on the new corpus of Australian news media mentioned in the introduction and described in the next section.

Methodology

The Australian Obesity Corpus consists of newspaper articles which mention obesity, published by Australian national and metropolitan newspapers from 2008 to 2019 (Vanichkina and Bednarek 2022). The corpus was built according to the same criteria as a similar UK corpus (Brookes and Baker 2021a). Articles were downloaded from twelve Australian newspapers (see Table 3), using the *LexisNexis* online news repository.[1] For most newspapers, *LexisNexis* archives both online and print editions. Where available, the online and print editions were included, along with the 'sister'/Sunday editions. To be included in the corpus, articles had to contain at least one mention of *obese* or *obesity* anywhere in the text. We excluded newswires and grouped results by the 'high similarity' interface option. We excluded duplicate and near-duplicate articles from the same newspaper (see Vanichkina and Bednarek 2022). The corpus was analysed using CQPweb (Hardie 2012), which calculates a token count of 18,921,726. Note that the number of articles collected declines over time, with 2019 having the fewest articles (see https://sydney-informatics-

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[1] We could not include all newspapers because of LexisNexis availability issues. Further, *LexisNexis*'s coverage of *The Daily Telegraph* starts from 2010, while the coverage of *The Brisbane Times* starts from 2013 and is not complete from that point (details in Vanichkina & Bednarek 2022).

Table 3: The Australian Obesity Corpus

Publication	Constituent newspapers	Current Owner	Type	Orientation	Number of articles	Words
Sydney Morning Herald (Sydney)	*Sydney Morning Herald* *The Sun-Herald Online*	Nine	Broadsheet	Left-leaning	3,636	3,364,836
The Age (Melbourne)	*The Age* *The Age Online* *The Sunday Age*	Nine	Broadsheet	Left-leaning	2,826	2,778,984
Herald-Sun (Melbourne)	*Herald-Sun* *Sunday Herald Sun*	News Corp	Tabloid	Right-leaning	3,722	2,152,584
The Advertiser (Adelaide)	*The Advertiser* *The Advertiser Online* *Sunday Mail*	News Corp	Tabloid	Right-leaning	3,349	2,016,435
The Australian (National)	*The Australian*	News Corp	Broadsheet	Right-leaning	1,960	1,984,711
Courier Mail (Brisbane)	*Courier Mail* *The Sunday Mail*	News Corp	Tabloid	Right-leaning	3,131	1,929,131
Canberra Times (Canberra)	*Canberra Times* *Canberra Times Online*	Nine	Broadsheet	Left-leaning	2,044	1,643,855
The West Australian (Perth)	*The West Australian* *The Sunday Times*	Seven West	Tabloid	Right-leaning	1,891	1,009,770
The Mercury (Hobart)	*The Mercury* *The Sunday Tasmanian*	News Corp	Tabloid	Right-leaning	1,465	780,866
Daily Telegraph (Sydney)	*Daily Telegraph* *Sunday Telegraph*	News Corp	Tabloid	Right-leaning	1,089	672,887
Northern Territory News (Darwin)	*Northern Territory News* *Sunday Territorian*	News Corp	Tabloid	Right-leaning	822	345,914
Brisbane Times (Brisbane)	*Brisbane Times*	Nine	Broadsheet	Left-leaning	228	241,753

In our analysis, we focus on selected aspects of the framework introduced in Tables 1 and 2:

1. Making obesity central to a person's identity, namely using condition-first language (*the obese woman*, *obese Australians*)
2. Using pejorative weight-emphasising labels for people and their bodies (e.g. *fat*)
3. Characterising people with obesity negatively (e.g. as unattractive, in poor health, inactive, etc.)

These aspects were selected after consulting with our research partner, the Obesity Collective. They elicited feedback from the Weight Issues Network, which was presented with a simplified version of the framework in Tables 1 and 2 and asked which aspects of the framework they were most interested in. The Obesity Collective director Tiffany Petre also gave feedback. We then developed corpus linguistic methods to analyse those aspects that the majority of respondents were interested in (i.e. points 1-3 above). We introduce our methods alongside the results in the next section.

Analyses

Making obesity central to a person's identity

For the first issue, we compared condition-first language with person-first language. Table 1 includes condition-first language under 'making obesity central to a person's identity'. As mentioned above, relevant media guidelines recommend avoiding such language. When arguments are given to support this recommendation, the guidelines argue that condition-first language works to label individuals by their disease and dehumanises the individual (e.g. Rudd Centre for Food Policy & Obesity et al. n.d.: 4; Obesity Australia 2015: 17; World Obesity Federation 2018: 14). The same arguments are put forward by the Obesity Action Coalition (n.d.). Our research partner, the Obesity Collective (2022), also states that "person-first language should be used […] instead of "obese."'. Given these recommendations, a comparison of relevant structures is important. Unlike Brookes and Baker (2021a), we did not limit the search to the phrase *person/people with obesity*, as a previous study of Australian diabetes coverage (Bednarek and Carr 2021) had shown a range of possible human nouns in (dis)preferred structures. To identify a broad and relevant range of human nouns for our search syntax, we thus triangulated three techniques:

1. A collocation analysis of *obese* (right-hand collocates: R1-R5) and of *with obesity* (left-hand collocates L5-L1) to retrieve co-occurring human nouns (Log Ratio [filtered], minimum frequency 10 for both relevant settings), with follow-up concordance analysis (randomly 'thinned' to 100 instances where necessary) to exclude fully irrelevant human nouns (e.g. *researchers*).
2. A concordance analysis of *obese* (used as adjective, analysis of 500 random concordance lines) and *with obesity* (exact phrase), identifying additional relevant human nouns that occur at position R1 for *obese* and at position L1 for *with obesity*
3. A SketchEngine (Kilgarriff et al. 2004) Wordsketch of *obese* (used as adjective; 'nouns modified by' *obese*) and for *obesity* (used as noun; focussing on *with obesity*)

Results from this triangulation fed into our search syntax (available at https://osf.io/vcux7), where for each of the identified human nouns, both singular and plural word forms were typically included (except for *peoples*).[2] The forms *those* and *many* were only included in the search for *with obesity*. The search syntax retrieves alternative phrases such as *obese people*, *obese children*, etc. and *people with obesity*, *children with obesity*, etc. This search also retrieves cases where the relevant word form might be used as adjective, such as *obese **Australian** adults*. Other syntactic structures were

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[2] Not included: group-based nouns such as *personnel, population, nation, country, state, generation, group, troop* as well as *human*, *male*, *female*. More recently, different search techniques for retrieving person-/condition-first language were compared in Bednarek & Bray (2023).

not included. We used this search syntax rather than collocation analysis to maximise precision and recall (based on insights from the collocation analysis).

Table 4 demonstrates that dispreferred condition-first language vastly outnumbers person-first language (frequency normalised per million words using Python word counts rather than those generated by CQPweb, as the latter includes counts for punctuation, inflating the word count for longer texts; see https://sydney-informatics-hub.github.io/PIPE-3034-obesity2/100_data_cleaning_scripts_EDA/01_ExploreCQPwebData.html).

Table 4: Condition- vs. person-first language

Condition-first language (dispreferred)	Person-first language (preferred)
Raw frequency / normalized frequency	Raw frequency / normalized frequency
4,677 / 284.56	136 / 8.27

For the statistical analysis, we resampled the corpus without replacement, i.e. selecting 1000 articles in a batch 10000 times. We then determined the count of articles that used condition-first and person-first language (discussed below) and the frequency per million words of each of these two language types in these resampled datasets. The mean frequency of person-first language across the resampled datasets was 8.23 words per million, while the mean frequency of condition-first language was 284.74 words per million; this difference was statistically significant with a large effect size (Supplement 1).

This tendency also holds when the number of articles containing condition-first and person-first language are considered. In the full corpus, condition-first language is used in 9-14% of articles from all sources (7-14% of articles per year), while person-first language is used in less than 1% of articles (0.17-1.14% of articles per year). Furthermore, nearly half of the articles that use person-first language also use condition-first language (Figure 1). Looking at the resampled data, the mean number of articles using person-first language across all subcorpora is 4.03 articles (per 1000) compared to 122.54 for condition-first language – this difference is statistically significant with a large effect size (Supplement 2).

<Insert Figure 1 here>

Our analysis demonstrates that among articles that use either condition-first *or* person-first language (but not both), the number of articles with only condition-first language is higher in tabloid publications and in right-leaning publications; a similar difference is not observed for person-first language (Supplement 3). Looking at articles that use either condition-first, person-first language or both reveals that the mean frequency of condition-first language (4.34 words per 1000) is higher than the mean frequency of person-first language (2.67 words per 1000) (Supplement 4). Finally, we used linear modelling to consider whether there are differences in the frequency of condition-first language use across years and individual newspapers (Supplement 5). Modelling suggests a difference between newspapers in the frequency of condition-first language and supports the above observation of broadsheets having a lower frequency of use than tabloids; no effect across time is observed. This suggests that there has not been a clear decrease in dispreferred condition-first language over time.[3]

In sum, our analysis suggests a clear preference for condition-first language both regarding frequency of usage and number of articles. Relevant media guidelines and obesity organisations identify this type of language as stigmatising and recommend person-first language. As such, the observed trends are problematic. However, as mentioned above, there is considerable debate and diversity within different publics, individuals, and different health contexts regarding these naming practices. In other contexts (disability; mental illness), the linguistic underpinnings of such

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[3] A similar analysis is impossible for person-first language due to lack of data for some years/sources.

recommendations have been critiqued (e.g. Halmari 2011) and evidence has been supplied for arguing that condition-first language is not 'inherently' stigmatising (e.g. Price 2022: 172; 276). Corpus linguists working in these contexts have also argued for examining the types of nouns used in each nominal phrase structure as well as their wider co-text (e.g. Price 2022; Potts et al. 2023). For obesity, further discussion and analyses as well as comparison with a British corpus are included in Bednarek et al. (under review) and we also return briefly to the limitations of our analyses in the Conclusion below.

Using pejorative weight-emphasising labels for people and their bodies

Table 1 also includes the use of pejorative weight-emphasising labels (such as the adjective FAT) for people and their bodies as potentially stigmatising. To investigate this second issue of interest, we needed to identify important (i.e. frequent) weight-emphasising labels for people and their bodies. To do so, two of the authors independently surveyed a list of the most frequent adjective and noun lemmas (starting point: CQPweb's tagged lemma list) and retrieved any that they judged to be potentially pejorative weight-emphasising labels. The words retrieved in this step were OBESE, BIG, OVERWEIGHT, FAT, LARGE, HEAVY, FATTY, MASSIVE, ENORMOUS, GIANT. For each adjective, 100 random concordance lines were then analysed to test whether they do indeed function in the corpus as weight-emphasizing labels for people or their bodies. Table 5 shows that only OBESE and OVERWEIGHT are overwhelmingly used as such labels (over 90%). Your Fat Friend (2020) suggests that both words are dispreferred: 'Do not reach for the sharp cruelty of "obese" or "overweight," which many fat people find harmful, and some consider derogatory.' As mentioned above, FAT can be both dispreferred and preferred (in reclaimed usage). Overall, 41% of analysed instances of FAT were examples of use as weight-emphasising label, with much lower proportions for the remaining seven adjectives. Therefore, the concordance analysis led us to focus on OBESE, OVERWEIGHT and FAT. Note that the high total frequency of OBESE derives from the corpus design and adjectival frequencies should therefore not be compared.

Table 5: Adjective lemmas and their use as weight-emphasising label

Tagged lemma	Raw frequency	Use as weight-emphasising label (based on 100 analysed lines)
obese_ADJ	17735	94%
overweight_ADJ	13237	91%
fat_ADJ	9619	41%
large_ADJ	5871	10%
heavy_ADJ	2099	9%
big_ADJ	15350	7%
giant_ADJ	439	3%
massive_ADJ	1310	2%
enormous_ADJ	808	2%
fatty_ADJ	1588	0%

Given that OBESE and OVERWEIGHT are overwhelmingly used as weight-emphasising labels for people/their bodies, we searched for all instances of these two adjectives based on the search syntax *taglemma="obese_ADJ"* and *taglemma="overweight_ADJ"* – in other words, the analysis is form-based. For FAT, where 60% of instances may not be relevant (see Table 5), we cannot rely on such form-based comparison. Carly Bray therefore analysed all concordance lines (a total of 8369 instances, excluding *The Daily Telegraph* and the *Brisbane Times*, given their incomplete coverage). More specifically, CQPweb's 'Categorise' function was used to identify whether FAT was used as weight-emphasising adjectival label for a person (using a simple categorisation scheme:

yes, no, unclear – see https://osf.io/3wbx7). Of the 8369 total instances, 2894 were categorised as YES (34.6%), 4907 were categorised as NO (58.6%) and 568 were UNCLEAR (6.8%).

Irrelevant instances include numerous cases of incorrect tagging (i.e., use as noun) and of premodifications of non-human nouns. Interestingly, such non-human nouns sometimes do refer to fat positivity or stigma (e.g. *fat acceptance, fat power, fat shaming*) and a small number of instances (coded as UNCLEAR) are metalinguistic discussions of the word itself (e.g. 'it can be politically incorrect to label people as *fat*' [HS1401122831]; 'people prefer to be called "*fat*" than "obese" [AD101202817]; 'But *fat* still carries a stigma' [CM121106886]; 'Carl J. Lavie argues we need to rethink what we call "*fat*" [CM140407512]). Only instances categorised as YES were subsequently included in the statistical comparison of the three adjectival labels.

This statistical analysis showed that OBESE, OVERWEIGHT and FAT are all used more frequently in tabloids than in broadsheets (relative/normalised frequency), although the effect is partially attributable to the longer article length in broadsheets. Results for differences over time are reported in Supplement 7, but are either very subtle or inconclusive from a statistical point of view. Topic-based differences in the use of adjectives suggest the need for further research into article content and whether this affects the observed difference between tabloids and broadsheets.[4]

In sum, the concordance analysis was crucial in establishing that only about a third of all instances of fat_ADJ were clearly used as weight-emphasising adjectival labels in the corpus. While space precludes us from outlining the full range of instances categorised as NO or UNCLEAR, we point readers to the notes on our categorisation scheme (https://osf.io/3wbx7). While our approach meant that such usages were not included in the statistical analyses, it is nevertheless significant that such usages are proportionally so important in the Australian Obesity Corpus. This finding has implications for corpus analysis as well as corpus construction (in terms of the potential use of FAT as a seed term for corpus creation).

The statistical analysis in turn suggested that Australian tabloids use the weight-emphasising adjectival labels OBESE, OVERWEIGHT and FAT more frequently than the broadsheets. Although our findings cannot be directly compared to those of Brookes and Baker (2021a) due to differences in methodology, their analyses indicate that tabloids in Britain are also much more likely than broadsheets to employ adjectival *fat* to label a person (Brookes and Baker 2021a: 54). Several instances that these authors mention in their book also occur in our corpus (e.g. use of FAT in names of cultural products such as books or movies or the use of the term *fat acceptance*). While this suggests some similarities of language use across different national contexts, a systematic comparison of the Australian and British corpora is a matter for future research.

Characterising people with obesity negatively

The third issue of interest concerns negative characterisations of people with obesity, which is included in Table 1 under the general heading of 'Stereotyping and negative evaluation of individuals with obesity' and involves ascribing people with obesity with negative or stereotypical characteristics and behaviours (e.g., unattractive, in poor health, inactive, immobile, unintelligent, lower class, socially deviant). Such negative characterisations can be very hurtful, as the Weight Issues Network emphasises:

> It hurts that people think:
> • We are lazy and lack intelligence
> • We are made from a different moral fabric
> • We are weak, lack self-control or have 'let ourselves go'
> • We have taken the easy path in life
> • We lack determination, or are simply not trying hard enough in life

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[4] See https://github.com/Sydney-Informatics-Hub/obesitycorpus; https://sydney-informatics-hub.github.io/PIPE-3034-obesity2/400_analysis/02_obese.html; https://sydney-informatics-hub.github.io/PIPE-3034-obesity2/400_analysis/03_overweight.html

Our aim was thus to identify instances of potential negative evaluation of people with obesity. First, we undertook a collocation analysis of the right-hand collocates of the three adjectival labels identified above (OBESE, OVERWEIGHT, FAT tagged as adjectives; R1 to R5, observed collocate frequency at least 2) and identified whether any of the retrieved right-hand collocates are instances of negative nouns (e.g. *criminal*, *fraudster*…) or adjectives (e.g. *lazy*, *boring* – excluding negative emotions). We then analysed all relevant concordance lines to identify if the identified negative nouns/adjectives are indeed used to negatively characterise people with obesity (including Self- and Other-evaluation).

While this analysis suggests that negative collocates are rare (details available at https://osf.io/t9srv), negative words collocating with OBESE, OVERWEIGHT and FAT are regularly (at least 60% of analysed instances, as specified in brackets below, e.g. 11 of 18 instances for *smoker* as collocate of OBESE) used to characterise people with obesity negatively or, alternatively, to associate them with qualities that are negatively evaluated:

- in poor mental or physical health: *smoker* (collocate [c] of OBESE 11/18, 61%), *unfit* (c of OBESE 16/17, 94%; c of OVERWEIGHT 19/22, 86%),
- unintelligent or lower class: *illiterate* (c of OBESE 15/15, 100%)
- inactive, immobile or incapable: *inactive* (c of OBESE 13/21, 62%), *lazy* (c of OBESE, 14/16, 88%; c of OVERWEIGHT, 10/11, 91%; c of FAT 24/33, 73%)
- unattractive or unkempt: *disgusting* (c of FAT, 9/10, 90%)

These negative associations are partially reinforced through negative collocates that are only sometimes (fewer than 60% of analysed instances) used in this way, namely:

- in poor mental or physical health: *smokers* (c of OBESE 11/47, 23%); *depressed* (c of OBESE 10/19, 53%); *unfit* (c of FAT, 4/11, 36%)
- inactive, immobile or incapable: *inactive* (c of OVERWEIGHT, 15/30, 50%)

Interestingly, the word *disabled* is a collocate of OBESE, but only 6 of its 13 collocate occurrences refer to people with obesity who are also referred to as *disabled*.

Explicit and strong negative evaluation appears to be present in the collocates *bastard* and *pig: Bastard* as collocate of FAT is used as person reference in all 38 observed collocate occurrences, across 20 texts. *Pig* as collocate of FAT features 80% usage (12/15) as a person reference, across 15 texts. The relevant concordances (Figures 2-3) show how these are used: 12 instances of *fat bastard* are in fact reproductions of the same quote across different articles, and a further 9 instances are repeated occurrences of the title *Memoirs of a Fat Bastard*, which could be considered a 'reclaimed' usage. Other occurrences are also self-references (e.g. lines 19, 30, 37, 38). This leaves only few instances of negative Other-evaluation. Of the 12 instances of *fat pig*, the overwhelming majority occur in direct or indirect quotations by self (lines 1, 2) or other (lines 5-12), rather than the institutional voice of the newspaper, and again some repetition of quotes across articles is apparent.

<insert figures 2 and 3 here>

We also inspected the most frequent lemmas in the corpus for any negative characterisation. Specifically, two of the authors (Kelvin Lee and Carly Bray) independently surveyed a list of the most frequent adjective, verb, and noun lemmas (starting point: CQPweb's tagged lemma list) and retrieved any that they judged to be potentially negative in terms of the relevant categories from Table 1 (unattractive, in poor health, inactive, immobile, unintelligent, lower class, socially deviant). Kelvin Lee then undertook a qualitative analysis of the lemmas identified by both authors (26 adjectives, 19 nouns, 11 verbs) to check whether these lemmas do indeed function to characterise people with obesity negatively – using a random selection of 100 concordance lines where appropriate. The qualitative analysis indicated that negative characterisations using these

lemmas occur but are infrequent and often indirect. Excluding the weight labels OBESE, OVERWEIGHT, and FAT, only 8 of 26 adjectives (31%), 3 of 11 verbs (27%) and 4 of 19 nouns (21%) were annotated as indicating a weak or strong, direct or indirect, negative association in at least 5 of 100 random instances. Relevant lemmas are listed in Table 6, together with the number of occurrences identified as negative.

Table 6: Use of frequent lemmas in negative characterisations

Adjectives	CARDIOVASCULAR (9), FATTY (5), INACTIVE (8), LAZY (34), SICK (8), UGLY (13), UNHEALTHY (7), VIOLENT (7)
Verbs	CHEAT (7), MURDER (12), THREATEN (6)
Nouns	DIABETES (7), LIVER (12), MEDICATION (7), PATIENT (29)

The nouns in Table 6 mostly articulate a negative association between obesity and poor health (for instance, people with obesity being referenced as having diabetes or liver problems, taking medication, being patients), the verbs present individuals with obesity as the actors of negative social behaviour (for instance, various types of cheating, murdering someone, or making threats), while the adjectives cut across three different categories (poor health; inactive; negative social behaviour). To illustrate this, Figures 4-6 show the concordances for the adjective, verb, and noun with the highest number of instances analysed as negative: *lazy* (34), *murder* (12), and *patient* (29). There is again evidence of repetition across different articles as well as use in direct or indirect quoted speech. Regardless of these caveats, Table 6 suggests that the negative categories of poor health and being inactive occur across different contexts of use.

<Insert Figures 4-6 here>

In conclusion, negative collocates are rare and the extent to which these are used negatively in characterisations of people with obesity varies considerably. Selected analysis suggests that Self-representation and reclaimed usages are important trends in phraseologies that are both explicit and strongly negative (*fat bastard*; *fat pig*). The lemma analysis provided further evidence that negative characterisations are infrequent and often indirect and occur in quoted speech (including by people with obesity, who may or may not problematise such language use). In addition, results are affected by duplicated passages across newspapers rather than being widespread across different contexts of use. Unsurprisingly, many of the recurring negative associations have to do with poor health, although other categories occur across different contexts of use (e.g. inactivity). As mentioned above, it could be argued that the use of health-related or medical terms (such as PATIENT) is not necessarily always stigmatising. While these results thus appear to paint a fairly positive picture, it is important to highlight the selective nature of our method, which only captures a small amount of language use in the corpus.

Conclusion

Evidence that news media representations affect how people with obesity are viewed by members of the public, and indeed themselves, can be found in multiple studies (see Couch et al. 2015; Frederick et al. 2016; Kersbergen and Robinson 2019). When people with obesity are represented as burdensome, lazy, unintelligent, and unattractive, the evidence suggests that these negative evaluations can be internalised by those living with obesity (e.g. Robinson et al. 2020) and that these ideological standpoints can be adopted by members of the public (e.g. Kite et al. 2022). Therefore, while linguistic practices in news media will of course not be the only contributing factor to public perceptions of obesity and people with obesity, previous research suggests that they are influential. Stigmatising media representation affects public attitudes to and dislike of people of size, and makes people with overweight or obesity feel excluded and ridiculed (Kite et al. 2022). The result of such stigmatising portrayals is the propagation of weight bias. This in turn can

legitimise the types of stigmatising acts and social sanctioning that people with obesity are likely to experience (e.g. bullying, physical violence, jocular humiliation, and limited employment opportunities).

In this article, we have therefore proposed a new framework to aid the linguistic analysis of weight stigma in English-language news media and illustrated its partial application through corpus and statistical analysis of a new Australian corpus. Results showed that condition-first language by far outweighs person-first language with no clear decrease of the former over time. Importantly, we have not considered here whether condition-first language is inherently stigmatising and occurs exclusively in stretches of texts where people with obesity are represented negatively (see Price 2022 on mental health). Nor have we examined the potential reasons for its prevalence in news discourse (see e.g. Halmari 2011 on disability). Our analyses also suggest that tabloids make greater (relative) use of condition-first language and of the adjectives OBESE, OVERWEIGHT and FAT, although the effect is partially attributable to shorter article length. We also found some (infrequent) evidence of negative characterisation of people with obesity, mainly in relation to poor health but also in relation to other categories (e.g. inactivity, negative social behaviour). In addition, we noted the influence of duplicated content across newspapers. To enable comparison of different newspapers we retained such content. An alternative would be to construct a corpus that only includes unique content and to take a holistic rather than comparative approach. Monika Bednarek has recently collaborated with the Sydney Informatics Hub to create a Jupyter notebook for the Australian Text Analytics Platform, which allows users to deduplicate a corpus (Jufri & Sun 2022). To analyse unique discourses, future research could apply this new tool to the Australian Obesity Corpus.

As mentioned, the framework is based on insights from scholarly research as well as media guidelines. Of course, it is possible to object to such guidelines on the basis that they are prescriptive, linguistically naïve and often 'on linguistically shaky grounds' (Halmari 2011: 838). Clearly, an increase in preferred language may not automatically lead to less stigma. However, it is arguably a matter of linguistic respect (respecting others through language use) and of reducing potential linguistic harm (harm caused through language use) to refer to marginalised people in the way that they themselves prefer. In this regard, it is important to acknowledge the diversity of opinion around language use. As the report by the Weight Issues Network (2020: 9) points out, 'people have different preferences around terminology'. The degree of variation among people with obesity regarding how stigmatising they find the practices in our proposed analytical framework needs to be explored in future research, as does the general question of how linguists can best assist language recommendations.

Further extensions and refinements of the framework are welcome. Thus, it is possible that additional negative metaphors will be identified if further data are analysed, and other refinements are also expected once the framework is applied by different researchers. We thus offer it here as a first step towards a systematic linguistic framework for analysis of weight stigma. While we have illustrated a partial application of the framework through a corpus linguistic study, we hope it can be of general use in applied linguistics and discourse analysis, whether corpus linguistic techniques are used or not.

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