

# Ways of Seeing Obesity: A Visual Content Analysis of British and German Online Newspapers, 2009-2011

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## Abstract

*Obesity prevalence rates, news coverage of obesity and academic research investigating how obesity has been covered in the news have all increased in the recent years. While growing in numbers, academic studies have been narrowly focused on news texts to the neglect of news photographs. In order to expand our understanding of how obesity is communicated in the news, this study content analysed 583 photographs from obesity-related news stories published in selected British and German online newspapers between 1 January 2009 and 31 December 2011. We assessed the potential of news photographs to frame how obesity should be seen as an issue by communicating definitions, causes and solutions and extending moral judgments. We found that: weight was significantly more often presented as a defining factor responsible for obesity-related health complications than fitness; food consumption was significantly more often presented as the cause of obesity than was physical inactivity; over half of the analysed obese people were depicted in stigmatising ways potentially cueing readers'/viewers' moral judgments, but also possibly sustaining public support for solutions which burden individuals. Few significant differences emerged between the analysed newspapers (British/German, liberal/conservative, broadsheet/tabloid) leading us to conclude that readers'/viewers of different news publications are exposed to similar messages about obesity. Such 'homogeneity' may contribute to a 'consensus' view on obesity that is not especially sympathetic of obese people and conducive to solving obesity.*

**Key Words:** Obesity, Framing, News photographs, Content analysis, Britain, Germany

Obesity has been declared a major health problem throughout many parts of the developed world (Organisation for Economic Co-operation and Development, 2012). In Europe, where the number of obese people has tripled since the 1980s and continues to rise (World Health Organization/Europe, 2013), Britain and Germany are believed to have among the highest obesity prevalence rates (Organisation for Economic Co-operation and Development, 2012). The rise in obesity prevalence rates has been paralleled by an increase in news coverage (Gearhart, Craig, & Steed, 2012) as well as academic research investigating how obesity has been covered in the news (Atanasova, Koteyko, & Gunter, 2012). Academic interest in obesity-related news is unsurprising given that the news has been described as a major source of information for the public regarding health and illness (Chapman & Lupton, 1994; Thorson, 2006).

Substantial academic interest has focused particularly on exploring how, by consistently framing it in one way rather than another, the news may influence the way in which we see obesity as an issue and believe that it should be addressed (Atanasova et

al., 2012). Framing as a theory posits that how an issue or event is reported in the news, specifically with respect to its definition, causes, solutions and moral judgments of its causal agents, may influence how it is understood by readers/viewers (Entman, 1993). Most existing research on obesity in the news informed by framing theory has concluded that obesity has been discussed primarily in terms of personal failure, leading researchers to warn that such an emphasis on individual responsibility may encourage people to favour policy solutions which aim to change or punish individual behaviours (Atanasova et al., 2012; Shugart, 2013).

Lawrence (2004), in particular, has contrasted this predominant individualising framing of obesity with an alternative view of social problems according to which the influence of factors that are part of people's social and physical environments, for example, poverty or the availability/affordability of healthy foods/drinks, deserve as much attention. Such factors place constraints on individual behaviour and choices regarding health and illness and challenge the notion that people can act in relative isolation from their social and physical environments, which informs the individualising framing of social problems. The merit of a view that recognises the impact of wider constraints on

individual behaviour is that it also favours solutions that require changes in business and government practices to support healthy individual behaviour and choices (Lawrence, 2004).

By revealing a predominant way of seeing obesity as an issue of individual responsibility to be addressed through personal efforts, existing research has made a valuable contribution to our understanding of the news coverage of obesity and its potential consequences for public support for solutions. This predominant way of seeing obesity has, however, emerged from news text analyses to the neglect of news photographs (Atanasova et al., 2012). Yet, as readers/viewers may be especially susceptible to framing effects in photographs due to their true-to-life appearance (Messaris & Abraham, 2003), there is a need for understanding their framing potential. Recent experimental research which has found that exposure to stigmatising photographs of obese people amplified negative attitudes towards them (McClure, Puhl & Heuer, 2011) makes the need for understanding the framing potential of news photographs even more pressing.

The current study aims to answer this need by analysing photographs from obesity-related news stories to understand what obesity definitions, causes and solutions they prioritize and whether they extend claims about the moral worth of obese people. The following sections 'Definitions of Obesity', 'Causes of Obesity', 'Moral Judgments about Obese People and Solutions to Obesity' review competing obesity definitions, causes and solutions and suggest how they may be communicated in news photographs.

#### **Definitions of Obesity**

When it comes to defining the key factor leading to obesity-associated health complications, competing views exist. The World Health Organization (2013) has defined obesity as the excessive accumulation of fat/weight that may impair health and researchers supporting this view have experimented with measures of waist circumference, waist-to-hip ratio and body mass index (Dobbelsteyn, Joffres, MacLean, & Flowerdew, 2001) to evaluate obesity-related health risks. This view could be said to identify weight as the key to obesity-related health complications. An alternative view has cited medical research showing that people who are fat can lower their risk of illness by being fit (Center for Consumer Freedom, 2013a) and researchers supporting this view have proposed measuring cardiorespiratory fitness to assess obesity-related health risks (Blair & Brodney, 1999). This view could be said to position fitness as responsible for obesity-associated health complications.

In the context of competing views as to whether it is weight or fitness that is responsible for obesity-associated health complications news photographs may, similarly to news texts, give one view more priority than the other. By featuring tools like tape measures and scales which are used to measure size/weight used for the calculation of waist

circumference, waist-to-hip ratio and body mass index (Seddon, Cote, Davis, & Rosner, 2003) or by depicting exercise equipment like treadmills used to assess cardio respiratory fitness (Wei et al., 1999) photographs may focus readers'/viewers' attention on weight or fitness, respectively. Findings that medical research which has studied the prevalence rates of people with a body mass index in the obese range has received more coverage than research which has studied the effects of cardiorespiratory fitness on mortality in obese people (Saguy & Almeling, 2008) have led us to hypothesise that:

H1: Photographs will more often define obesity as a problem of weight than fitness.

#### **Causes of Obesity**

Obesity is believed to be caused by an energy imbalance between calories consumed and calories expended (World Health Organization, 2013) or, in other words, the consumption of too much and/or the wrong kinds of foods/drinks and too little physical activity (Crossley, 2004). These two sides of the energy equation - food intake and (in)activity - have not received equal attention. There has been a longstanding focus on the food consumption side of the energy equation in medical research (Crossley, 2004), but this focus on food intake as the primary cause of obesity has been lately criticised by researchers who have presented evidence showing that levels of caloric intake have not changed significantly over the recent past pointing to physical inactivity as the major public health challenge (Centre for Consumer Freedom, 2013).

In the context of this disagreement about whether the fundamental cause of obesity is food intake or inactivity, by depicting foods/drinks news photographs may draw readers'/viewers' attention to the input side of the energy ratio or by featuring TV viewing or gaming equipment associated with obesity via inactivity (Robinson, 2001; Vandewater, Shim, & Caplovitz, 2004) they may direct readers'/viewers' attention to physical activity. Findings that the input side of the energy ratio related to food intake has received more medical research attention (Crossley, 2004) and that issues around food intake have been more frequently mentioned in obesity-related news from the United States than issues relating to inactivity (Hawkins & Linvill, 2010) informed our second hypothesis that:

H2: Photographs will more often present obesity as caused by food intake than inactivity.

#### **Moral Judgments about Obese People and Solutions to Obesity**

Heuer, McClure, & Puhl (2011) and Puhl, Peterson, DePierre, & Luedicke (2013) have recently reported that obese people are vastly stigmatised in photographs and videos from American news websites. Puhl et al. (2013) have remarked that stigmatising depictions may sustain or encourage beliefs about the moral worth of obese people, particularly, that obese people are lazy and lack self-discipline. One reason why the incidence of stigmatising depictions of obese people is relevant to study is due to the health consequences of stigmatisation. Contrary to beliefs that stigma may motivate obese people to adopt healthier behaviours it may actually

lead them to develop eating disorders and/or be even less physically active for fear of being the subject of negative comments while engaging in physical activity (Puhl & Heuer, 2010).

Yet another reason why the incidence of stigmatising news photographs is relevant to study is that exposure to stigmatising news photographs may influence readers'/viewers' preferred solutions to obesity. Stigmatising news photographs may reinforce notions that obesity is a problem caused by the affected individuals themselves (Heuer et al., 2011; Puhl et al., 2013). As Lawrence (2004) has noted, such a view of obesity which overlooks the role of social and environmental factors also favours solutions that burden individuals. This together with findings from studies that have content analysed the texts of obesity-related news and which indicate that individual responsibility has received disproportionate attention compared to solutions seeking to change broader environments (Atanasova et al., 2012; Shugart, 2013) has led us to inquire about the extent to which news photographs depict obese people in stigmatising ways. Formulated as a research question:

RQ1: To what extent do photographs depict obese people in stigmatising ways?

Finally, the incidence of stigmatising news photographs, exposure to which may influence support for solutions, and the prevalence of competing obesity definitions and causes may vary between media outlets. Variation is plausible to expect because axiomatic characteristics of media outlets such as the country/national context within which the media outlet operates, its political leaning - conservative or liberal and style - broadsheet or tabloid, pose unique restrictions on journalists/editors and create unique expectations about how events/issues should be covered. These restrictions and expectations cannot be overcome or challenged by an individual journalist/editor. The following section discusses such axiomatic characteristics in the context of communicating obesity.

#### **Axiomatic Characteristics of Media Outlets and Ways of Seeing Obesity**

Regarding significant differences between media outlets and their country of origin, Saguy, Gruys, & Gong (2010) have found American newspapers to be significantly more likely to discuss individual-level solutions to obesity than French ones, possibly due to the value of individualism in the United States and of social equality in France. Further, the fact that obesity has been discussed as an issue of individual lifestyle choices, but lifestyle originates as a rightist preference for less government (Howell & Ingham, 2001), may mean that journalists/editors from conservative media outlets find it more appropriate to create news invoking individual lifestyle factors and less appropriate to create news citing social and environmental causes that require government action. Finally, since tabloids tend to cover issues from a personalized angle (Uribe

& Gunter, 2004), journalists/editors at tabloid media outlets may find it more appropriate to invoke individual rather than environmental causes of and solutions to obesity. We, therefore, ask:

RQ2.1: Are there significant differences in obesity representation based on media outlets' country of origin?

RQ2.2: Are there significant differences in obesity representation based on media outlets' political leaning?

RQ2.3: Are there significant differences in obesity representation based on media outlets' styles of news presentation?

#### **Method**

##### *Sample*

With Europeans increasingly reading news online (Interactive Advertising Bureau Europe, 2012) *Bild.de*, *Guardian.co.uk*, *dailymail.co.uk*, *sueddeutsche.de*, *thetimes.co.uk* and *welt.de* were selected for analysis to reflect this reality. Internet users have consistently ranked *Bild.de*, *Guardian.co.uk*, *dailymail.co.uk*, *sueddeutsche.de* and *welt.de* (comScore, 2009; comScore, 2012) and *thetimes.co.uk*, prior to the introduction of a pay wall (Hopkins, 2007), among the most popular online newspapers. *Guardian.co.uk* and *sueddeutsche.de* were selected to represent the liberal and *Bild.de*, *dailymail.co.uk*, *thetimes.co.uk* and *welt.de* the conservative end of the political spectrum (Brown & Ferree, 2005; Carvalho, 2007; Gilbert & Schantz, 2008; Wandrei, 2010). *Bild.de* and *dailymail.co.uk* were selected to represent tabloid and *Guardian.co.uk*, *sueddeutsche.de*, *thetimes.co.uk* and *welt.de* broadsheet style (Brown & Ferree, 2005; Stelzer, 2005).

This study covers the period between 1 January 2009 and 31 December 2011 which was marked by several key developments for obesity in Europe: a 2009 proposal for holding a European Obesity Day (EOD) to raise awareness about obesity threatening to 'create an epidemic of diabetes and heart disease' (Moss, 2009), the 2010 launch of the EOD (Cambre, 2012) and calls by EOD's president to recognise obesity as a chronic disease in Europe in 2011 (EurActiv, 2011). Characterized by these concerted efforts to position obesity as a European issue, this period was selected to ensure there would be sufficient coverage for analysis.

We keyword-searched the newspapers with: 'adiposity', 'adipose', 'corpulence', 'corpulent', 'fatness', 'fat', 'obesity', 'obese' and 'overweight' in English-language newspapers and 'Adipositas', 'Dickleibigkeit', 'dick', 'Fettleibigkeit', 'fett', 'fettleibig', 'Fettsucht', 'Korpulenz', 'korpulent', 'Übergewicht', 'übergewichtig' and 'obesity' in German-language ones. We arrived at these keywords after identifying the most commonly used ones in past research and comparing this list with results for obesity synonyms from the Deutscher Wortschatz (Deutscher Wortschatz, 2013) and Visuwords (Visuwords, 2013) dictionaries/language resources.

Each keyword search returned thousands of articles, but an article was only considered relevant if it had passed the following screening stages: the keyword was mentioned in either the headline or lead paragraph, a standard practice for limiting search results to the most

relevant (De Brún et al., 2011; Saguy et al., 2010); the keyword was used to convey a relevant to obesity meaning, for example, 'fat' as in 'being fat', not the ingredient; obesity was discussed throughout the article, for example, articles whose headlines compared the consequences of obesity to those of smoking and the article body discussed smoking were not included; the article had to be about human obesity; finally, duplicates - articles returned multiple times with multiple keywords were removed.

A total of 768 articles satisfied these criteria from which 1,062 still visuals were retrieved. The decision was taken, due to practical and theoretical concerns, to analyse one still visual per article. In practical terms, analysing only one still visual per article meant that the size of the sample would be more manageable. In theoretical terms, analysing only one still visual per article meant that in those articles where more than one still visual was featured it would be possible to analyse the most salient one, thus accounting for Entman's (1993) definition of framing as a matter of 'selection and salience' (pp. 53) or, in other words, a process in which it is not only important what information is included when reporting an event/issue, but also that it is prominently presented.

Following this decision, in articles which featured several still visuals only one prominent image was selected for analysis. We defined a prominent still visual as appearing before all others. This means that, in order to be selected as the one still visual to be analysed for the respective news story, the visual had to appear before all other still visuals featured in that news story either in terms of being closer to the headline relative to the rest or in terms of being the top one in a slide-show like presentation format. In the few cases where no still visual was presented before all others in the above-described terms, one was picked at random for analysis.

Following these procedures, we arrived at a sample of 608 still visuals of which 583 were photographs (302 *dailymail.co.uk*, 88 *Guardian.co.uk*, 69 *welt.de*, 59 *sueddeutsche.de*, 45 *Bild.de*, 20 *thetimes.co.uk*), which formed the final sample.

#### *Measurement*

Based on knowledge of the obesity literature as reviewed above and screening all 583 photographs, the first author developed a list of variables, which were refined in practice coding, resulting in the following final set.

To measure whether obesity was more often defined as a problem of weight than fitness (H1), photographs were coded for whether they depicted 'tools measuring size or weight' such as tape measures, scales or 'exercise equipment' such as treadmills, exercise bikes, weights. To determine whether obesity was more often framed as a problem caused by food intake than inactivity (H2), photographs were coded for whether they depicted 'foods/drinks' defined as any foods or drinks or

'evidence for watching TV or gaming' defined as remote controls, TV sets, video game consoles.

To assess the extent to which obese people were depicted in stigmatising ways (RQ1), photographs were first coded for whether they featured an 'obese person' defined as someone big and flabby. For the same practical and theoretical reasons as with still visuals, the decision was taken to analyse only one obese person per photograph. If a photograph featured several obese people, only one prominently featured obese person was analysed for that photograph. In order to be considered prominently featured, an obese person had to be depicted closest to the reader/viewer relative to the rest. In those few cases where several obese people appeared equally distanced, only one was selected at random for analysis.

To determine the presence of an 'obese person', all 583 photographs were independently coded by the first author and a second coder, a phonetics graduate student. Percent agreement was 95% and Cohen's kappa 0.90 and disagreement was resolved by excluding the cases of disagreement from the final analysis resulting in 290 obese individuals.

All 290 obese individuals were then coded for whether they were depicted in at least one of several stigmatising ways. Variables to measure stigmatisation were developed based on Heuer et al.'s (2011) definition of stigmatising portrayals and screening all 290 depicted obese individuals. Heuer et al. (2011) proposed that a portrayal is stigmatising if it depicts an obese person from a rear angle, emphasises their abdomen, presents them in inappropriately fitting clothes, isolates a body part, presents an obese person mostly unclothed or with their head cropped out. These were captured with the variables 'from behind' (rear angle); 'bare abdomen' (emphasis on abdomens); 'shirt with frontal gaps' (inappropriately fitting clothes); 'isolated body part' (isolating a body part); 'in swimsuit'/in underwear' (mostly unclothed); and 'headless' (head cropped out).

To find out if significant differences existed based on the media outlets' country of origin (RQ2.1), political leaning (RQ2.2) or style (RQ2.3), photographs were coded for 'media outlet's country of origin', 'media outlet's political leaning' and 'media outlet's style'.

All variables except 'media outlet's country of origin', 'media outlet's political leaning' and 'media outlet's style' were coded as present/absent or yes/no questions.

#### *Inter-coder Reliability*

For each variable we calculated percent agreement, a liberal but intuitive measure of agreement widely used in communication research (Lombard, Snyder-Duch, & Bracken, 2002) and Cohen's kappa, a measure correcting for chance agreement reported in similar studies (Gollust, Eboh, & Barry, 2012; Heuer et al., 2011).

To assess inter-coder reliability for all variables, two coders comprising the first author and a second coder, a phonetics graduate student, independently analysed approximately 10% of all still visuals in the sample (n=60) randomly selected using the Research Randomizer (Urbaniak & Plous, 2011). Percent agreement and Cohen's kappa were 100% and 1.0 for all variables except 'isolated body part' (89%/0.62). Disagreement was resolved by

discussing those cases and reaching a coding decision which was included in the final analysis.

The reported percent agreement and kappa coefficients indicate acceptable agreement given that 80% or more is 'usually acceptable' (Lombard et al., 2002, p. 593; Neuendorf, 2002, p. 145) and kappa values of 0.40-0.75 indicate fair-good and 0.75 or higher excellent agreement beyond chance (Banerjee, Capozzoli, McSweeney, & Sinha, 1999).

**Results**

We hypothesised that photographs will more often define obesity as a problem of weight than of fitness (H1) and that they will more often present obesity as a problem caused by food intake than inactivity (H2). Both of these hypotheses were

supported. In response to our first hypothesis, we found that 'tools measuring size/weight' appeared far

more often (68 photographs out of a total of 583 photographs analysed, 12%) than did 'exercise equipment' (11 photographs out of a total of 583 photographs analysed, 2%). This difference was statistically significant (McNemar's  $\chi^2=41.127$ ,  $df=1$ ,  $p<.001$ ). In response to our second hypothesis, we discovered that 'foods/drinks' appeared far more often (149 photographs out of a total of 583 photographs analysed, 26%) than did 'evidence for watching TV or gaming' (15 photographs out of a total of 583 photographs analysed, 3%). This difference was also statistically significant (McNemar's  $\chi^2=122.986$ ,  $df=1$ ,  $p<.001$ ).

**Table 1 Number of Photographs in Each Media Outlet and in Total Displaying Content Features of Interest**

	<i>Bild</i> N=45	<i>Guardian</i> N=88	<i>Mail</i> N=302	<i>SZ</i> N=59	<i>Times</i> N=20	<i>Welt</i> N=33	<i>Total</i> N=583
Tools Measuring Size/Weight	1	9	38	6	1	13	68
Exercise Equipment	1	2	6	0	1	1	11
Foods/Drinks	16	24	69	20	5	15	149
TV/Gaming	3	0	8	1	2	1	15
Obese Person	20	41	163	23	7	36	290

We then inquired about the extent to which obese people were stigmatised (RQ1). Of the total of 290 obese people analysed, 199 (69%) were depicted in at least one stigmatising way. In terms of specific stigmatising depictions, 145 obese people (50%) were

depicted 'headless'; 77 (27%) 'from behind'; 45 (16%) with a 'bare abdomen'; 19 (7%) 'in underwear'; 17 (6%) 'in swimsuit'; 16 (6%) as an 'isolated body part' (abdomen, buttocks); and five (2%) wearing a 'shirt with frontal gaps'.

**Table 2 Number of Obese People in Each Media Outlet and in Total Portrayed in Stigmatising Ways**

	<i>Bild</i> N=20	<i>Guardian</i> N=41	<i>Mail</i> N=162	<i>SZ</i> N=23	<i>Times</i> N=7	<i>Welt</i> N=37	<i>Total</i> N=290
From Behind	2	9	47	9	3	7	77
Bare Abdomen	7	5	16	4	0	13	45
Shirt with Frontal Gaps	0	0	5	0	0	0	5
Isolated Body Part	0	2	7	4	0	3	16
In Swimsuit	2	2	4	4	1	4	17
In Underwear	0	3	10	2	0	4	19
Headless	10	26	69	12	3	25	145
Stigmatised	12	29	103	20	5	30	199

Next we inquired about significant differences by country of origin (RQ2.1). We discovered that news photographs from German media outlets were slightly more likely than those from British ones to depict obese people in stigmatising ways, odds ratio 1.8,  $\chi^2(1, N=290)=4.045$ ,  $p<.05$ . Sixty-two of the 80 obese people (78%) who appeared in German media outlets and 137 of the 210 obese people (65%) who appeared in British ones were stigmatised. 'Tools measuring size/weight' were depicted in 48 photographs in the British sample (12%), 20 (12%) in the German; 'exercise equipment' featured in nine photographs in the British sample (2%), two (1%) in the German; 'foods/drinks' were depicted in 98 photographs in the British sample (24%), 51 (29%) in the German; 'evidence for TV viewing or gaming' featured in 10 photographs in the British sample (2%), five (3%) in the German and none of these differences were statistically significant.

With regard to the political-leanings of the analysed media outlets we found no statistically significant differences (RQ2.2). Fifty-three photographs (12%) from conservative media outlets featured 'tools measuring size/weight', 15 (10%) from liberal ones. 'Exercise equipment' featured in nine photographs from conservative media outlets (2%), two (1%) from liberal ones. 'Foods/drinks' featured in 105 photographs from conservative media outlets (24%), 44 (30%) from liberal ones. 'Evidence for TV viewing or gaming' featured in 14 photographs from conservative media outlets (3%), one (<1%) from liberal ones. Of the 226 obese people who appeared in conservative media outlets 150 were stigmatised (66%) and of the 64 who appeared in liberal ones 49 were stigmatised (77%).

Regarding the style of the analysed media outlets (RQ2.3) we found that broadsheets were twice as likely to depict obese people in stigmatising ways as were tabloids,  $\chi^2(1, N=290)=6.701$ ,  $p<.01$ . Of the 108 obese people who appeared in broadsheets 84 were stigmatised (78%), of the

182 who appeared in tabloids 115 were stigmatised (63%). 'Tools measuring size/weight' featured in 39 photographs from tabloids (11%), 29 (12%) from broadsheets; 'exercise equipment' featured in seven photographs from tabloids (2%), four (2%) from broadsheets; 'foods/drinks' featured in 85 photographs from tabloids (24%), 64 (27%) from broadsheets; 'evidence for TV viewing or gaming' featured in 11 photographs from tabloids (3%), four (2%) from broadsheets and none of these differences were statistically significant.

### Discussion

This study examined the visual representation of obesity in selected British and German online newspapers. We found that, as predicted, obesity was more often presented as a problem of weight than of fitness and as being caused more often by food intake than by inactivity. Mounting evidence that weight may not be the primary risk factor for health complications and that people may be better off if they focused on improving their fitness regardless of their weight (Campos, Saguy, Ernsberger, Oliver, & Gaesser 2006; Health at Every Size, 2013) suggests that a focus on weight may be damaging for personal health. Persistent messaging that food intake is primarily responsible for obesity may also have negative health consequences by causing people to be overly conscious of their food intake, thus making them vulnerable to disordered eating.

Our finding that over half of the analysed obese people were depicted in stigmatising ways resonates with findings by Heuer et al. (2011) and Puhl et al. (2013), who have also warned that such stigmatising depictions may cue readers'/viewers' moral judgements about obese people. Specifically, exposure to stigmatising news photographs may encourage readers'/viewers to see obese people as lazy and lacking self-control (Puhl et al., 2013), which view may give license to ridicule and discrimination (Puhl & Heuer, 2010). Weight stigma, rather than motivating obese people to live more healthily, may additionally result in making them more prone to eating disorders and less likely to be physically active for fear of being ridiculed (Puhl & Heuer, 2010).

With regard to solutions, the stigmatising depiction of over half of the analysed obese people may also have the effect of reinforcing readers'/viewers' support for solutions that burden individuals. Individualising solutions may not, however, be the most optimal for addressing obesity as evidence shows that factors beyond individual control like the availability/affordability of foods/drinks, portion size, the absence of mandatory physical education at schools contribute to obesity (Hill & Peters, 1998). The involvement of such wider factors as contributors implies that government/industry action will be necessary to help engineer environments conducive to healthy individual behaviour if the obesity problem is to be solved.

In the light of our finding that over half of the analysed news photographs which depicted obese people were stigmatising with potentially damaging consequences for personal health and potentially encouraging public support for individual-level solutions which may not be especially conducive to solving obesity, the question becomes - what can be done?

Puhl & Heuer (2010) have suggested that explaining how obesity is a complex problem caused by a mix of biological, genetic and environmental factors can improve attitudes towards obese people and raise awareness that obesity is not solely a matter of individual responsibility. It may, however, be difficult to present obesity as a complex issue in a photograph. How could a photograph communicate that the availability/affordability of healthy foods/drinks causes obesity? Yet, a good place to start may be terminating the use of stigmatising photographs. When unsure as to whether a photograph of an obese person is stigmatising or not, journalists/editors may consult or use free resources like Yale Rudd Center's media gallery (Yale Rudd Center, 2013) or Stocky Bodies' image library (Stocky Bodies, 2013). Both offer photographs representing obese people in non-stigmatising ways.

With respect to significant differences between media outlets, we found that only in two instances did significant differences emerge. News photographs from German media outlets were slightly more likely than the ones from British media outlets to stigmatise obese people and broadsheets were twice as likely to depict obese people in stigmatising ways as tabloids. While we do not have a clear explanation as to why German media outlets were slightly more likely to use stigmatising photographs, our finding that broadsheets were twice as likely to use stigmatising photographs as tabloids could be tentatively related to the existence of different views among journalists/editors and obese people as to what constitutes stigmatising portrayal.

We propose that 'headless' and 'from behind' depictions, which emerged as the most prominent stigmatising depictions of obese people may hold an explanation for this outcome. Journalists/editors at broadsheet media outlets, who strongly believe that it is ethical to conceal a person's identity in the context of sensitive subjects (Buttry, 2010), may see 'headless' and 'from behind' depictions as being a way to protect the identity of the person whose photograph had been taken. Journalists/editors may, therefore, benefit from being provided with guidelines for using photographs in obesity-related news stories and made aware of the meaning that obese people attach to 'headless' and 'from behind' depictions.

What possibly deserves most attention is our finding that the analysed news photographs from British/German, liberal/conservative, broadsheet/tabloid media outlets presented obesity in similar ways. This 'uniformity' may mean that whether readers'/viewers receive obesity-related news from British/German, liberal/conservative, broadsheet/tabloid media outlets, they will encounter similar messages about obesity, thus possibly forming similar understandings of what kind of problem obesity is and how it should be solved. This

analysis suggests that this 'consensus' view of obesity is one of individual responsibility, which way of seeing obesity may not, as we mentioned, be especially conducive to solving it.

In sum, this study showed how photographs, a neglected component of obesity-related news, may communicate obesity definitions, causes and solutions. The literature on framing posits that consistent representation of obesity as an issue defined in one way rather than another, caused by one set of factors rather than another, to be addressed with one set of solutions rather than another may influence people's understanding of the issue and support for solutions. We expect that readers'/viewers' who were exposed to the analysed content will define obesity as a problem of weight, caused by food intake, to be solved by individual effort. The similar visual representation of obesity across the analysed media outlets may encourage a 'consensus' view of obesity that is neither sympathetic

to obese people nor conducive to solving obesity. A first step towards alleviating this situation may be to use non-stigmatising photographs.

Finally, we wish to highlight two key limitations of this study, both of which suggest areas for future research. First, the news photographs that we analysed did not appear on their own. It could, therefore, be argued that our study is as incomplete as the extant research on obesity in the news that is based on the analysis of news texts only. Analysing both news components at the same time may be more appropriate for fully understanding how obesity is communicated in the news. Secondly, we proposed explanations for the preference for 'headless' and 'from behind' depictions by journalists/editors at broadsheet media outlets. There may, however, be other factors at play here including specific news values that determine which images are deemed most newsworthy for which additional evidence is needed from news professionals.

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