

# Science, media and the public: the framing of the bicycle helmet legislation debate in Australia: a newspaper content analysis.

## Abstract

Research challenging assumptions about the value of bicycle helmets and the laws which make them mandatory recently triggered a media debate about bicycle helmet laws and prompted discussion as to the extent to which health behaviours should be legislated. This increased media coverage provided an opportunity to examine how the media frames this issue. A much greater variety of frames opposing helmet laws were identified compared with frames supporting them. The outbreak of debate in the media, and wide range of conflicting perspectives, reveal public uncertainty about the legislation, and reinforce the complexity of this issue for public health policy.

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## Introduction: Background

The role of legislation in promoting public health has a long tradition. Within most liberal democracies, there are significant divergences over which activities are deemed a matter of public or private concern, which activities pose a risk to public health, and how regulations are applied or enforced. In some instances, there is a clear need for government action to protect public health and safety, e.g. where poor physical conditions might otherwise lead to inadequate sanitation. In other instances regulation may be required or applied where activities are undeniably hazardous to public health and/or safety, e.g. the use of tobacco products, purchase of firearms, or speeding in a motor vehicle.

There are also other activities known to negatively impact on public health where no legislation exists or there are very few restrictions. This may be because the problem only applies to a small number of people, the public does not support the legislation, or because evidence of the problem or the policy solution is not clear. In other circumstances, regulation of the activity may be difficult, or there may be significant vested interests resisting restriction. There are also some activities or behaviours that are healthy and desirable, but are regulated because of the potential risk of injury, e.g. children's playground equipment and protective equipment for a range of sports. The scope of public health regulations over a range of public and private activities is often contested within democratic societies.

Cycling is well known to be a healthy activity (Bauman et al. 2008). Bicycle helmet legislation is one public health issue which, even after 20 years since its implementation, is strongly contested. This is particularly so in Australia and New Zealand, which are unique in the world in having bicycle helmet legislation. The legislation was implemented in 1991 and 1994 respectively, although mandatory helmet legislation was subsequently amended in the Northern Territory (Northern Territory Traffic regulations). A consensus has not been reached about the benefits of helmet legislation; the literature is replete with claims and counter-claims of the evidence for and against helmet legislation (Macpherson et al. 2002; Povey, Frith & Graham, 1999; Robinson, 2000, 2002; Schuffman et al. 2000) and even for and against the efficacy of helmets themselves (Attewell, Glas & McFadden, 2001; Cummings et al. 2006; Curnow, 2003, 2005, 2006, 2007; Thompson, Rivara & Thompson, 1989). Injury prevention advocates champion the protection offered by helmets (Thompson, Rivara & Thompson, 1999), cycling advocates point out the drop in frequency and prevalence of cycling associated with mandatory helmet use (Robinson, 2006), civil libertarians emphasise the removal of choice from adults (Moore, 2010a), psychologists

infer that risk compensation effects may reduce safety (Adams & Hillman, 2001; Walker, 2007) and health economists focus on the cost to society of head injuries compared with the health gains from physical activity (De Jong, 2010).

A recent analysis examined the ways cycling is reported in newspapers within the cities of Sydney and Melbourne (Rissel et al. 2010). There has been an increase in reporting about cycling over the past decade in line with increases in cycling in Australia, with more positive coverage (47%) than negative (30%). Three-quarters of negative stories involved injury or death of a cyclist.

The issue of whether bicycle helmet use should be legislated has received much national media attention in recent times and has renewed public discussion on the positive and negative consequences of making bicycle helmets mandatory. From a research perspective, a consensus is yet to be reached on the efficacy of helmet legislation in reducing rates of head injuries (Robinson, 2006; Robinson, 2007). Considering there are competing public health interests in this public discussion (injury prevention vs. physical activity promotion), and news media coverage can influence public understandings and attitudes (Kitzinger, 2007; McCombs & Shaw, 1972), the aim of our study was to understand how the news media and participants in the public debate are framing this issue. This paper seeks to analyse the 2010 Australian public debate about bicycle helmet laws through content and frame analysis of news media coverage and associated letters to the editor (Entman, 1991, 1993; Kitzinger, 2007).

### Methods:

The 2010 Australian bicycle helmet legislation media debate was triggered by a research article (Voukelatos & Rissel, 2010). Subsequent errors detected in this paper (Moore, 2010c) did not affect the framing or public discussion of the issues when first reported. To identify how bicycle helmet laws and bicycle helmets were being framed, we selected the first two newspaper articles reporting on the research; these were published in *The Sydney Morning Herald (SMH)*, a major Australian broadsheet newspaper published by Fairfax Media (Moore, 2010a, 2010b).

Through content analysis of these two articles, coders identified the frames being used to portray bicycle helmets and helmet legislation. These frames provided an initial coding framework. Two coders then used this framework

to analyse 22 letters to the SMH editor which responded to the newspaper articles and were published between 17 August and 3 September 2010. Agreement on coding of frames utilising the initial coding framework was tested for inter-rater reliability (Cohen's kappa coefficient = 0.66).

Coding of the letters, using the initial coding framework, produced a number of additional perspectives on the helmet legislation debate. These frames had not previously emerged from the newspaper articles, were analysed for their core arguments and added to the coding framework. The final set of frames were categorised according to whether they advocated for or against bicycle helmet legislation; from this we found evidence of several frames which directly countered each other in their argument (frames and counter-frames are presented in Table 3).

### Results:

There were 14 frames identified through analysis of the two trigger Sydney Morning Herald newspaper articles (Table 1). Of these 14 frames, three frames were recognised to be advocating for bicycle helmet legislation [frames 1, 2 & 3], and 11 frames against the legislation [4 – 14]. Entman's four activities framework was used for analysis (in which frames define problems, identify causes, assign responsibility (blame) and promote solutions) (Entman, 1991, 1993). It was identified that those frames supportive of helmets [1] assume cycling is risky and that helmets reduce risk - thus cyclists who do not wear helmets are to blame if they are injured. The solution inferred by this framing is that cyclists should wear helmets; this effectively promotes the helmet laws.

Frames opposing helmets [5 & 6] also assume that cycling is risky, but position helmets as either ineffective or likely to increase the risk and/or severity of injury. This assigns some responsibility for risk to the helmet laws (which force cyclists to wear helmets) and promotes the solution that cyclists should not wear helmets - thus inferring opposition to helmet laws.

Frames supportive of helmet laws [2] assume cycling is risky and that helmet laws reduce the risks. This infers that failure to wear helmets increases the risk and/or severity of injury and blames individuals who do not wear helmets; this supports the solution that the laws should be maintained and enforced. It is also assumed [3] that arguments and evidence supporting repeal of the legislation are flawed or insufficient - thus inferring support for the helmet laws.

Frames opposing helmet laws [4-14] rarely assume cycling is risky [4]; they portray helmet laws as making cycling more risky [4; 12], infringing upon civil liberties [8; 13], making cycling less attractive [10], reducing the number of cyclists on the road [11; 12; 14], disadvantaging cyclists [9], and undermining the ability for cycling to contribute to population health through increased physical activity [14]. These frames blame helmet laws for making people wear helmets [4; 8], removing choice from bicycle users with regard to helmet use [13], and discouraging cycling [14]. Oppositional frames effectively blame policy makers/politicians for creating the law [4;8;9;10;11;12;13;14]. It is also assumed [7] that there is insufficient evidence of the effectiveness and benefit of helmet laws to justify their continuance. All oppositional frames infer the best solution is to repeal the helmet laws.

Except for frames 6 and 9, all frames identified within the articles were also identified within the letters to the editor. An example excerpt from both the trigger articles and letters to the editor relevant to each frame has been provided in Table 1.

Analysis of the letters to the editor saw an additional 15 frames emerge to those originally identified from the trigger newspaper articles (Table 2). Of these 15 frames, six were categorised as advocating for helmet legislation [15-20], and nine advocating against helmet legislation [21-29]. An example excerpt from the letters to the editor illustrating each frame has been provided in Table 2. Frames focussed on the consistency of legislating for health behaviours within Australia and internationally, the perceived risk (or lack thereof) involved in cycling, and the implications helmet legislation has on economic costs, transportation and the environment.

Frames supporting helmet legislation [15; 16; 17; 18; 19; 20] portray helmet laws as likely to save money [16], unlikely to discourage cycling [18], as having more benefits than disadvantages [18], and consistent with other health-promoting laws [15]. These frames suggest that cycling is risky [19] and that risky health behaviours require consistent laws [15], that too much personal choice undermines population benefits [17], that cycling risks have costs to families and society [18] which can be ameliorated by wearing helmets [18], and that campaigners have wrongly accused laws of being a barrier to cycling [20]. It is inferred that helmet legislation should remain in place to counter the actions of people who risk injury by not wearing helmet.

Frames opposing helmet legislation [21; 22; 23; 24; 25; 26; 27; 28; 29] portray helmet laws as a health hazard [22], and inconsistent compared with other health behaviours which are not legislated [29] and are not

substantiated internationally [21]. Helmet laws are considered to be a waste of public resources [23], putting an unfair onus on cyclists to avoid risk [24] and lulling cyclists into a false sense of security [25]. It is assumed that helmet laws prevent cycling from becoming a mainstream mode of transport which is damaging to our society and environment [28]; repealing helmet laws would promote the view that cycling is safe and normal [27]. These frames blame policy makers/politicians for making the law, discouraging the public from cycling and encouraging the view that cycling is risky and helmets are protective. Removing the law would thus be the solution to these problems.

Table 3 lists the total set of frames and categorises them to illustrate their pro or anti-helmet legislation stance. Counter arguments were identified in frames regarding: the efficacy of helmet and helmet legislation, the quality of arguments supporting the legislation and/or its repeal, the impact of helmet legislation on cycling participation, choice versus control of helmet usage, the perceived risk (or lack thereof) involved in cycling, and the financial implication of helmet legislation. Frames within rows a-h of Table 3 highlight examples where counter-arguments in the debate were identified. Of the final set of 29 frames, 9 frames supported bicycle helmet legislation (3 in the articles; 6 in the letters), and 20 opposed it (11 in the articles; 9 in the letters).

**Tables**

**Table 1 – Frames detected in the two trigger newspaper articles**

Frame number	Frame initially identified within the 2 trigger newspaper articles	Example of frame identified in trigger newspaper articles	Example of frame identified in letters to the editor
<b>'Pro' helmet/legislation frames</b>			
1	Wearing a helmet whilst cycling reduces the risk and/or severity of injury	<i>"...(bicycle) riders who have ridden and fallen would almost all support the fact the helmet may have saved them from more serious injuries..."</i>	<i>"...a head that hits the road without a helmet is likely to suffer greater injury than one wearing a helmet"</i>

2	Mandatory helmet legislation for cyclists reduces the risk and/or severity of injury	"...Professor Frank McDermott, who led the original campaign for (mandatory helmet legislation), said repealing (the laws) would be guaranteed to increase head injury rates..."	"...bicycle helmet (and seatbelt) laws are not just protecting people from themselves... They also protect others from... young children losing parents, a lifetime of disability and rehabilitation support, and so on."
3	The quality of the argument and/or evidence supporting the repeal of mandatory helmet legislation for cyclists is questionable	"The state's peak cycling body, Bike NSW, was briefed (on research supporting the repeal of helmet legislation) but was not persuaded by it."	"More than 20 years ago I was knocked off my bicycle... my helmet cracked, but I stood up and walked away injury-free. Such an incident would not have made it into the statistics compiled by the Sydney University researchers who are calling for the repeal of helmet laws."
			"(The author of another letter to the editor) demands that "a clear case must be made" that helmets improve public health. Yet is there a clear case that compulsory helmets means fewer people cycling?"
<b>'Anti' helmet/legislation frames</b>			
4	Mandatory helmet legislation for cyclists does not reduce the risk and/or severity of injury	"In several peer-reviewed publications (it has) been argued (that) there has been no reduction in brain injury levels due to helmet laws."	"Bicycle helmet legislation is... a... safety... disaster."  "Wherever bicycle helmet legislation has been tried, it has failed"

5	Wearing a helmet whilst cycling increases the risk and/or severity of head injuries	"Evidence... cited in a report from the National Health and Medical Research Council... warns 'the wearing of helmets may result in greater rotational forces and increased diffuse brain injury.'"  "Her objections (to wearing a helmet whilst cycling) are based on her belief that wearing a helmet increases the risk of brain damage..."	"Helmets lead to risk-compensating behaviour by cyclists and cars giving cyclists less room on the road..."
6	Wearing a helmet whilst cycling does not reduce the risk and/or severity of injury	"I frankly don't think there is anything advantageous, and there may well be disadvantage in situations to have a helmet..."	This frame was not identified within the letters to the editor.
7	The quality of the argument and/or evidence supporting mandatory helmet legislation for cyclists is questionable	"Without any compelling data on the number of extra cyclists that would result from scrapping the law there was no reason for the change."	"Bicycle NSW suggests the figures on cycling injuries omit those who fail to go to hospital because they were saved by their helmet. This is nonsense - the effect of helmets would be clearly visible from the reduction in head injuries presented to hospitals"  "(Another letter writer's) attempt to use his anecdotal story of a single bicycle accident to justify compulsory helmets is illogical"

8	Mandatory helmet legislation for cyclists is unnecessary	<i>"...two Sydney University researchers say the (mandatory bicycle helmet) law does not work..."</i>	<i>"There are necessary laws that protect citizens from what other people might do to them, and unnecessary laws that attempt to protect people from themselves. Laws that require bicycle helmets to be worn are of the second type."</i>
9	It would be advantageous to repeal mandatory helmet legislation for cyclists	<i>"...we would be better off without (compulsory helmet laws)."</i>  <i>"(Repeal of the helmet legislation) would improve health rates..."</i>	This frame was not identified within the letters to the editor.
10	Mandatory helmet legislation discourages cycling participation	<i>"Dr Rissel said that...helmets...discourage casual cycling, where people use a bike to get milk or visit a friend."</i>	<i>"...the current debate has arisen because forcing cyclists to use helmets has reduced the convenience of cycling and the number of cyclists."</i>
11	Revoking mandatory helmet legislation for cyclists would increase cycling participation	<i>"Scrapping compulsory helmet use... would (encourage casual cycling)..."</i>	<i>"If the cycle helmet laws were also relaxed, as Chris Rissel suggests, more might be encouraged to cycle..."</i>
12	The increased rates of cycling that would result from the repeal of mandatory helmet legislation for cyclists would lead to safety in	<i>"(revoking helmet laws)... would reduce injury rates because getting more cyclists on the roads would make motorists better at avoiding them."</i>	<i>"If the cycle helmet laws were also relaxed...more might be encouraged to cycle and all of us would be that much safer"</i>
			<i>"Helmet laws have been shown to lower the number of people cycling, while the safety</i>

	numbers		<i>of cyclists correlates closely with the number of cyclists."</i>
13	Mandatory helmet legislation for cyclists imposes on civil liberties	<i>"(Ms Sue Abbott, who was fined for riding her bicycle without her helmet, believes that) forcing her to wear (a helmet) is a breach of her civil liberties."</i>	<i>"(Authors of letters to the editor supporting helmet legislation)...should be entitled to wear (helmets). Similarly, other riders should be entitled not to wear them."</i>
		<i>"...it seems to me that (the use of bicycle helmets) is one of those areas where it ought to be a matter of choice."</i>	<i>"I resent the implication by bureaucrats and others that I do not have the ability to assess the risks and reason by myself."</i>
		<i>"I should be entitled to make this call about whether I can wear a helmet."</i>	
14	The repeal of mandatory helmet legislation for cyclists would increase levels of physical activity and therefore lead to better health	<i>"...Scrapping compulsory helmet use... would...(encourage casual cycling)... (and) improve health rates..."</i>	<i>"If the cycle helmet laws were also relaxed... more might be encouraged to cycle and all of us would be that much... healthier."</i>

**Table 2 – New frames detected in the letters**

Frame number	Frame identified through analysis of letters to the editor	Example of frame identified in letters to the editor
<b>'Pro' helmet/legislation frames</b>		
15	Compulsory helmet legislation is consistent with legislation for other health behaviours (e.g. seatbelts)	<i>“If cyclists should be allowed to choose not to wear helmets, motorists should be permitted not to wear seatbelts or take out compulsory third party insurance; window cleaners should have optional harnesses; and labourers’ optional health and safety training.”</i>
16	Helmet legislation reduces the cost of injury to society	<i>“(Helmet laws) also protect others from the enormous costs of accidents: medical emergency beds and staff... a lifetime of disability and rehabilitation support, and so on.”</i>
17	Society benefits from individuals not having a choice regarding helmet use	<i>“Embracing the ‘I should be free to do whatever I want’ code ignores the wider good.”</i>

		<i>“If cyclists should be allowed to choose not to wear helmets, motorists should be permitted not to wear seatbelts or take out compulsory third party insurance; window cleaners should have optional harnesses; and labourers optional health and safety training. Choice - what a wonderful thing.”</i>
18	The advantages of helmet legislation outweigh the disadvantages of wearing a helmet	<i>“The cost to an individual of wearing a helmet is minuscule compared with the cost to families and society of a bad accident.”</i>
19	Cycling is risky/dangerous	<i>“In October 2009, it took me two minutes of cycling to be on the ground, unconscious, blood pouring from a cut on my head, with two broken bones in my neck...”</i>
		<i>“Australian governments have allowed our roads to be overrun with overweight, bull-bar-equipped urban assault weapons, and then forced cyclists to arm themselves...”</i>
20	Mandatory helmet legislation does not discourage cycling participation	<i>“It takes two seconds to put a helmet on...”</i>
		<i>“Where are all these cyclists who buy a bike and then don't ride it because they would have to wear a helmet?”</i>
<b>'Anti' helmet/legislation frames</b>		

21	The benefits of helmet legislation are not substantiated internationally	<i>"Other countries use Australia and New Zealand as examples of what not to do."</i>
22	Helmet legislation has negative effects for health	<i>"Bicycle helmet legislation is...a health...disaster;"</i>
		<i>"Fewer cyclists on the roads also means ... more obesity, hypertension, diabetes and cardiovascular disease in the population."</i>
23	Helmet legislation has negative financial implications	<i>"Bicycle helmet legislation is...a...financial...disaster;"</i>
		<i>"Given all our serious problems - obesity, depression, violence, vandalism, disrespect, pollution, greenhouse gas emissions and environmental degradation, just to name a few - I'm not sure that sending the police to harass helmet-less cyclists is the most efficient use of resources."</i>
24	Mandatory helmet legislation puts an unfair onus of safety on the individual	<i>"The NSW helmet law insidiously transfers responsibility for road safety from the state to the individual..."</i>
25	Mandatory helmet legislation misleads cyclists to overestimate the protective benefits of helmets; resulting in moral hazard	<i>"(mandatory helmet use) lulls uninformed cyclists into a false sense of security"</i>
26	Cycling is not risky/dangerous	<i>"Cycling on the road remains a very low-risk activity, with roughly a 50 per cent risk of fatality for every 15,000 years of cycling life."</i>

27	Repeal of helmet legislation would help to promote cycling as a normal and safe activity	<i>"Helmet laws have been shown to lower the number of people cycling...Cycling on the road should not be (seen as) a hazardous activity to be undertaken only while wearing protective equipment, but a pleasant means of transport that can be enjoyed with the minimum of constraints"</i>
28	Helmet legislation prevents cycling from becoming a mainstream mode of transport; this negatively impacts the environment.	<i>"In the crazy, backward society we have created, driving a two-tonne, fossil-fuelled motor vehicle to commute less than a kilometre is not the rare, amusing anomaly it used to be, but "normal" behaviour. So is leaving the engine running while waiting, in case the interior temperature fluctuates a couple of degrees. Grocery shopping by bicycle, on the other hand, is considered eccentric... the former example is not just tolerated and accommodated, it is encouraged. Yet the police chase me down, stop and charge me for not wearing a helmet while I cycle."</i>
		<i>"...compulsory helmets mean substantially fewer cyclists on the road... Fewer cyclists on the roads also means more cars, more pollution..."</i>
		<i>"...forcing cyclists to use helmets has reduced the convenience of cycling and the number of cyclists... It should therefore be the prime goal of any government interested in the health of its citizens and the environmental impact of its transport systems to promote cycling as a cost effective means of improving both."</i>

29	There is a lack of consistency with legislating for health behaviours	<p><i>“I play golf, I don’t wear a helmet - I could, but I choose not to. I snow ski, I do wear a helmet - I don’t have to, but I do. I sail, I don’t wear a helmet, despite a swinging boom - I could, but I don’t; it’s my choice; I walk the dog, I don’t wear a helmet; I could, but again I choose not to. When does it stop?...;”</i></p>
		<p><i>“Can all those in favour of the bicycle helmet law please ask themselves: would you like to see a law that says you must wear sunscreen at the beach?”</i></p>

**Table 3 – frames and counter arguments**

<b>All frames categorised by pro or anti helmet legislation stance and positioned to demonstrate where counter-arguments have been identified</b>		
	‘Pro-helmet legislation’ frames	‘Anti-helmet legislation’ frames
a	Wearing a helmet whilst cycling reduces the risk and/or severity of injury*	Wearing a helmet whilst cycling does not reduce the risk and/or severity of injury***
b	Mandatory helmet legislation for cyclists reduces the risk and/or severity of injury*	Mandatory helmet legislation for cyclists does not reduce the risk and/or severity of injury*
c	The quality of the argument and/or evidence supporting the repeal of mandatory helmet legislation for cyclists is questionable*	The quality of the argument and/or evidence supporting mandatory helmet legislation for cyclists is questionable*
d	Mandatory helmet legislation does not discourage cycling participation**	Mandatory helmet legislation discourages cycling participation*
e	Society benefits from individuals not having a choice regarding helmet use**	Mandatory helmet legislation for cyclists imposes on civil liberties*
f	Compulsory helmet legislation is consistent with legislation for other health behaviours (e.g. seatbelts)**	There is a lack of consistency with legislating for health behaviours**
g	Cycling is risky/dangerous**	Cycling is not risky/dangerous**
h	Helmet legislation reduces the cost of injury to society**	Helmet legislation has negative financial implications**

i	The advantages of helmet legislation outweigh the disadvantages of wearing a helmet**	
j		Wearing a helmet whilst cycling increases the risk and/or severity of head injuries*
k		Mandatory helmet legislation for cyclists is unnecessary*
l		It would be advantageous to repeal mandatory helmet legislation for cyclist***
m		Revoking mandatory helmet legislation for cyclists would increase cycling participation*
n		The increased rates of cycling that would result from the repeal of mandatory helmet legislation for cyclists would lead to safety in numbers*
o		The repeal of mandatory helmet legislation for cyclists would increase levels of physical activity and therefore lead to better health*
p		Helmet legislation has negative effects for health**
r		Mandatory helmet legislation puts an unfair onus of safety on the individual**
s		Mandatory helmet legislation misleads cyclists to overestimate the protective benefits of helmets; resulting in moral hazard**

t		Repeal of helmet legislation would help to promote cycling as a normal and safe activity**
u		The benefits of helmet legislation are not substantiated internationally**
v		Helmet legislation prevents cycling from becoming a mainstream mode of transport; this negatively impacts the environment **

\* Frames initially identified through analysis of the two trigger newspaper articles

\*\* Frames which emerged from analysis of the letters to the editor

\*\*\* A frame initially identified through analysis of the newspaper articles, but not recognised in analysis of the letters to the editor

### Discussion:

Analysis of news media coverage of the bicycle helmet legislation debate and associated letters to the editor identified frames which supported a variety of perspectives of this issue. There was clear disagreement over the perceived efficacy of helmets, and the necessity, fairness, and effectiveness of bicycle helmet legislation. The wide range of frames identified in the letters and articles illustrate the multifaceted nature of this public health issue, reveal public uncertainty about the legislation, and reflect the lack of consensus from a research perspective as to the efficacy of helmets and effectiveness of legislation.

As presented in Table 1, 12 of the 14 frames initially produced from the two trigger articles were also identified within the letters to the editor. There were 15 additional frames that emerged from analysis of the letters. Allocation of each of the total 29 frames to either a 'pro-bicycle helmet legislation' or 'anti-helmet legislation' category identified that there were a much greater number of frames opposing helmet legislation compared with frames supporting the laws. That a greater number of anti-helmet legislation frames

were identified does not necessarily translate into a stronger argument or justification for the repeal of the legislation, but does demonstrate the wide range of discursive resources available to and deployed by people opposed to the helmet laws. A postscript note accompanying one page of letters to the editor on this issue reported that the SMH letters editor *'could have covered the page on several days with impassioned arguments and anecdotes (regarding bike helmets), with a more or less even split for and against the current law...'* (Letters Editor, Sydney morning Herald, 2010) However, the fact that there was a greater variety of oppositional frames than supportive frames may have contributed to the newsworthiness of the debate, particularly considering that many anti-helmet legislation arguments are contrary to current legislation and usual, enforceable, behaviour.

Frames identified in the two trigger newspaper articles and the letters to the editor focused strongly on the issue of safety, and how helmets may or may not impact on the severity of injury following a crash or fall. Perceptions of this issue identified within the letters to the editor were divided, and strong counter claims were made in regards to the perceived efficacy and necessity of bicycle helmet use.

Concurrently, a debate about the efficacy and justification of bicycle helmet legislation emerged. Some letters to the editor recognised that helmets might potentially reduce the severity of injury for individual riders, but questioned whether there was sufficient evidence of the legislation leading to a population level health benefit, to justify the laws. In response to this, it was questioned whether there was sufficient evidence that repeal of the helmet laws would result in increased cycling participation, to justify their abolishment.

The extent to which health behaviours are consistently regulated was a recurrent theme identified in the letters to the editor. Those supporting helmet legislation compared it with other legislation which they perceived to have had a positive impact on public health and safety, e.g. compulsory seatbelt use, anti-tobacco laws, and occupational health and safety regulations. A number of people who questioned bicycle helmet legislation noted inconsistencies in the application of legislation for other activities where wearing a helmet could potentially reduce the risk of serious injury, e.g. snow-skiing, sailing or driving a car. On this side of the debate, comparisons were also made with behaviours known to be damaging to health at a population level, but which are not criminalised in the way which riding a bike without a helmet is, e.g., not wearing sunscreen to the beach or the use of tobacco in many instances.

The concept of choice was fundamental to several framings. Some responses to the editor which advocated for helmet legislation suggested that mandatory helmet use has benefits which go beyond the safety of the individual rider, e.g. by providing positive role modeling to children and/or reducing the public health costs associated with accidents. Counter-arguments suggested that inconsistencies with legislation are unfair, undermine the ability of the individual to assess risk and intrude upon civil liberties.

Writers argued that penalising bike users who ride without a helmet encourages the perception that cycling is a high-risk activity for which one needs to wear protective gear; in turn this was perceived to normalise car use as a mode of transport - thus increasing the number of cars on the roads. One letter author noted that, *'Australian governments have allowed our roads to be overrun with overweight, bull-bar-equipped urban assault weapons, and then forced cyclists to arm themselves against possible injury'* (Lackey, 2010). Another letter suggests that this situation *'unfairly divert(s) the onus of responsibility for safety from the state to the individual rider'* (Eadie, 2010).

According to the cycling advocate and anti-helmet campaigner Mikael Colville-Andersen (2009), bicycle helmet laws unfairly deflect responsibility from the source of traffic dangers onto more vulnerable road users. Using the analogy of a bull in a china shop, Colville-Andersen (2009) writes: *'It seems quite ridiculous that nobody is talking about the bull. Instead there is constant talk of wrapping up all the pieces of porcelain in thin bubble wrap and tsk-tsking about how dangerous it is to even CONSIDER placing fine china on the shelves now that the bull is stampeding about.'* Public health professor and trauma surgeon Iain Roberts has also questioned the real value of many road safety strategies which: *'send the message that road space belongs to drivers and that pedestrians and cyclists must look out or die'* (Roberts, 2010; 83-84). Roberts argues that *'real road safety means reducing road danger, which implies far fewer motor vehicles travelling at much lower speeds'* (Roberts, 2010: 83-84). Hence the issue of mandatory helmet laws for bicycle riders could be regarded as a tacit acknowledgement of unwarranted traffic dangers, rather than a genuine attempt to reduce risks and improve safety for bicycle riders.

It is beyond the scope of this study to discuss any letters regarding bicycle helmet legislation that may have been sent to the editor, but were not published. While the SMH editor did comment that there were similar numbers of letters supporting each side of the debate, we are unable to verify this or know exactly what 'newsworthiness' criteria were used to select

letters, e.g. those which were more polarised. The limited media sources used and short period of coverage are also recognised as limitations of this media analysis.

As the public health and environmental benefits of cycling are increasingly acknowledged, it is crucial that the Australian environment is one which promotes, facilitates and encourages cycling as a safe and normal mode of transport and recreation. Discourses that emphasise the necessity of mandatory helmet laws need to be cognisant of some of the broader cultural and political frameworks in which cycling is socially constructed as a dangerous activity. According to the Dutch report *Cycling in the Netherlands* (Netherlands ministry of Transport, 2009): '*In some countries, bicycling is seen as causing danger, which sometimes ends up in an anti-cycling policy. The Dutch philosophy is: Cyclists are not dangerous; cars and car drivers are ...*' This analysis of the media coverage and debate about bicycle helmet legislation identified a high level of discord on this facet of the cycling debate.

The high degree of uncertainty as to the effectiveness of helmet legislation at a population level represents a key issue in both public and academic debates about bicycle helmet use. Concurrent debates within the media reporting and letters to the editor about the efficacy of helmets for the individual, as opposed to the effectiveness and fairness of helmet legislation at a population level, suggest some degree of confusion as to the goals of those advocating for the repeal of the legislation. From an advocacy perspective, those promoting the repeal of the legislation might best be cautious that advocacy for the repeal of *legislation* is not interpreted as advocacy for the banning of *helmets*. Framing the debate as being about the risks and benefits of helmets, and associated laws, may also reduce the media 'oxygen' available for debates about traffic calming, bike lanes and easing the continuing tensions between motorists and cyclists. The strong level of disagreement observed across so many aspects of this debate raises questions about the appropriateness of legislating to control this health behaviour, and the impact that delegating responsibility for safety to the cyclist has on encouraging (or discouraging) cycling participation and promoting it as a normal behaviour.

### Conclusion:

This paper documents a wide variety of frames used within the bicycle helmet legislation debate. This diversity of (often conflicting) frames reflects public uncertainty as to the value, efficacy and fairness of bicycle helmets and the laws which make them mandatory. Cycling is well documented as a

healthy activity with environmental and public health benefits. To increase cycling participation rates in the Australian setting, it is crucial that cycling is facilitated, encouraged, and promoted as a safe and normal mode of transport. Given the diversity of opposing views regarding this issue, it may need to be further explored.

### Competing interests:

The authors declare that they have no competing interests.

### Authors' contributions:

- All authors contributed equally to the conception and initial design of the study, and participated equally in its development. All authors contributed equally to developing the content analysis framework.
- TP & SW participated equally in the coding analysis of the original SMH articles, and letters to the editor.
- CB led analysis of the results using Entman's four activities framework.
- TP lead manuscript preparation.
- All authors contributed equally to the discussion and content of the final manuscript and read and approved the final manuscript.

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