Compendium of errors and omissions in Canadian research group's bicycle helmet publications

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In a series of related works [1, 2, 3, 4] Macpherson and co-workers ask whether Ontario child cyclist ridership has been reduced as a result of the province's bicycle helmet law. They answer that it has not, and go on to say their work suggests that "bicycling increases after a law, because of the positive publicity related to bicycling" [5].

These studies by Macpherson et al. are marked by at least the following: internally inconsistent reports of basic and derived data; tabulation errors; failure to address numerous major obvious confounding factors, including but not limited to a population boom, specifically relevant political change, and the research group's own systematic, large-scale interventions in the study area; insufficient power to detect effects of the size under consideration; and omission of critically relevant data that although collected by the group, have never been released.

The publication of this research, intertwined with the advocacy and activism of these authors and their institutions, bears much responsibility for the passage of numerous laws affecting millions of people, and that have an ongoing multi-hundred million plus direct dollar economic impact. A small selection of the errors and omissions in these works are therefore highlighted in this communication.

Contents

(b) Attempts to get the authors and journals to address the problems in their work

References

1. Errors and omissions in Macpherson et al. [1, 2, 3, 4]

(a) Contradictory reports of basic data

The basic data of the ridership studies of Macpherson et al. [1, 2, 3, 4] are counts of child cyclists as recorded at various times and locations in East York, Ontario, Canada. These basic data have been reported differently not just in different publications, but also within the same publication [3], with no explanation for the discrepancies (Table 1).

Table 1. Conflicting data reporting the same events, East York, Ontario, from various publications of the University of Toronto and Toronto Hospital for Sick Children- based helmet research and advocacy group.

Observed Numbers of Child Cyclists, East York, Ontario, 1990-1997, 1999, 2001

One study, same events, as differently reported by:

Year	Parkin et al. 1993, 1995	Parkin et al. 2003	Macpherson et al. 2001; Macpherson 2003 (Table 6)	Macpherson 2003 (Table 7)	Macpherson, correction to Robinson, 19 June 2003	Macpherson 2005	Khambalia et al. 2005
1990	1017	914					
1991	1885	1879					
1992	1861	1563					
1993		984	1597				
1994		1083	2355				
1995		1227	763	1126		1126	
1996		1202	1371	1217		1217	
1997		916	1375	918		918	
1999			747	1124	1128	1124	
2001				614		614	
All Years							At least one year's count is 550 and at least one year's count is 1795

References: Parkin et al. 1993 [11]; Parkin et al. 1995 [12]; Parkin et al. 2003 [13]; Macpherson et al. 2001 [1]; Macpherson 2003 [3]; Macpherson 2005 [4]; Khambalia et al 2005 [14]

(b) Contradictory reports of derived data

(i) Cyclist per hour rates

The cyclist per hour rates by year reported in [1, 2, 3, 4] are derived by dividing each year's total cyclist count by the corresponding total number of observation hours. These data have been reported differently not just in different publications, but also within the same publications [2, 3], again with no explanation for the discrepancies (Table 2).

Table 2. Conflicting reports of child cyclists per hour, East York, Ontario, 1993-1997, 1999, 2001, from various publications of the University of Toronto and Toronto Hospital for Sick Children- based helmet research and advocacy group.

	Reported Cyclists/hr					
	Version A		Version B			Version A
Year	Macpherson et al. 2001	Macpherson 2003: Table 6	Macpherson 2003: Table 7 and Figure 2	Macpherson 2005	Macpherson et al 2006: Figure 1*	Macpherson et al. 2006: text
1993	6.58	6.58	7.04	7.04		
1994	5.54	5.54	6.38	6.38		
1995	4.32	4.32	4.39	4.39	4.39	4.32
1996	6.84	6.84	6.45	6.45	6.45	6.84
1997	4.57	4.57	4.59	4.59	4.59	4.57
1999	10.07	10.07	10.07	10.07	10.07	10.07
2001					4.03	4.03

*Although it would have been easy for the authors and beneficial for the readers to have the full 1993-2001 series plotted in this figure, the two years having the easy to spot discrepancies with the earlier article in the same journal were omitted.

(ii) Helmet use rates

The reported overall helmet use rates by year are derived by dividing each year's count of helmeted cyclists by the corresponding total cyclist count. Values different beyond round-off error are reported in different publications (Table 3). Although with one or two exceptions and unlike the previous errors these discrepancies are small, they still occur without explanation. They also cause difficulty for anyone wishing to use these data in further research, who must select one or another specific value.

Table 3. Discrepancies in helmet use rates.

Reported Rate of Helmet Use (%)
(Years where at least one version differs from the others by an amount more than is attributable to round-off error are in bold)

	Version A		Version B		Version C	Version D
Year	Parkin et al. 1993	Parkin et al. 1995	Parkin et al 2003	Macpherson et al. 2003, 2005	Macpherson et al. 2006	1997 article in the Toronto Star reporting the results of the research group*
1990	**3.4**	**3.4**	**3.7**			
1991	16	16	16.1			
1992		**28**	**24.5**			
1993			44.5			
1994			42.5			
1995			**46.3**	**46.1**	**45**	
1996			68.1	68.0	68	
1997			**66.5**	**66.5**	**66**	**40**
1999				44.8	45	
2001				46.1	46	

*Toronto Star, Friday Oct 17 1997 Final Edition, page A3, in an article featuring extensive data supplied by the Toronto Hospital for Sick Children: "An ongoing study by Sick Kids researchers, observing bicycle riders in East York, has shown that about 40 per cent of youngsters on bicycles are wearing helmets, despite a provincial law making such protection mandatory."

(c) Calculation or other internal consistency errors

(i) Inconsistencies with respect to decomposition by survey sites
The ridership surveys were conducted within East York at survey sites of four basic types: schools, parks, residential streets, and major intersections. In [1] and [3] the cyclist counts and rates are broken down by these types. By the definition of the cyclist rate given by Macpherson et al., the corresponding number of survey hours for each site type can be found by dividing its cyclist count by its cyclist rate. Likewise the total number of survey hours can be found by dividing the total cyclist count by the overall cyclist rate.

According to the descriptions given by Macpherson et al., in order for the data to be internally consistent, the total number of survey hours as found by the latter calculation must be the same as the total obtained by adding together the numbers of survey hours for each component site type, as found by the former calculations. Likewise the overall cyclist rate as reported by Macpherson et al. must be the same as

that found by dividing the total of all component cyclist counts by the total of all component survey hours. Moreover, according to the survey protocol, the observations were always made over 1-hour periods, and therefore the number of survey hours of any component or the total must always be integral.

None of these consistency conditions are fulfilled and the discrepancies are not attributable to round-off error, as shown in Table 4 for two sample years, 1996 and 1997. All of the entries in Macpherson et al.'s [1, 3] complete table suffer from the same problems.

When Robinson informed Macpherson of problems with this study via personal communication (25 April 2003), Macpherson responded (19 June 2003) with internally consistent data for 1999 only (including, to within round-off error, integral numbers of survey hours), without addressing any of the errors in the other years. More than three years later, in 2006 *Injury Prevention* appended a notice of errata to [1], with a link supposedly leading to corrected data, although still only for 1999. Despite this and despite further requests for the corrected and omitted data, as of 29 Nov 2011, this link has never led to any actual data and no actual corrections have ever been published. During the year the errata-less notice of errata was published, the editor at the time, *Injury Prevention*'s founding editor, was a co-author with Macpherson (and Rivara and Hagel) on the same subject [15], and before that had been the supervisor of her master's thesis, and so should have been able to obtain the corrections without difficulty.

Table 4. Sample of further data inconsistencies in Macpherson et al. [1, 3], following Robinson (personal communication 18 December 2008). Similar inconsistencies hold for all the other years in the original published table.

Sample of Inconsistencies Between and Within Cyclist Rates and Survey Hours

NOTE: Values in bold are as calculated here, values in plain text are as published by Macpherson et al. [1]	1996			1997		
	Cyclist Count	Rate (cyclists per hour)	Survey Hours*	Cyclist Count	Rate (cyclists per hour)	Survey Hours
Schools	332	10.33	**32.14**	336	8.79	**38.23**
Parks	332	10.48	**31.68**	342	4.65	**73.55**
Residential streets	364	5.40	**67.41**	348	4.10	**84.88**
Major intersections	343	3.71	**92.46**	349	2.58	**135.27**
All sites, via components	**1371** (total of all compo-nent counts	**6.13** (total count ÷ total hours)	**223.68** (total of all component hours)	**1375**	**4.14**	**331.92**
All sites, via overall total	1371	6.84	**200.44** (published total ÷ published overall rate	1375	4.57	**300.88**
Discrepancy (all sites)		**-0.71**	**23.24**		**-0.43**	**31.05**

*According to the survey protocol, the numbers of hours must always be integral. Almost all of the deviations from this shown, as with all the other discrepancies noted here, are too large to be attributable to round-off error.

(ii) Inconsistency with respect to decomposition by income status

In Macpherson et al. 2006 [2], the overall yearly East York cyclist rates for 1995-1997, 1999 and 2001 are given, as well as the rates for mutually exclusive and exhaustive sub-regions characterised by income status. In order for the data to be internally consistent and valid representations of cycling activity in East York, the overall yearly cyclist rates as reported by Macpherson et al. must be the same as the yearly regional population or sampling activity weighted averages of the component regional rates. Macpherson et al.

do not report the populations or sampling activities of their component regions, but the number of elementary and middle schools in each region, published previously by the research group [11, 12], can be used to form proxy weights. The weighted averages calculated via the proxies are approximately consistent with Macpherson's reported overall values, with the singular exception of 1997. This suggests an internal consistency or validity error for the 1997 data (Table 5), as is also suggested in a different manner by Figure 3 of [2].

Table 5.

Consistency Check: Decomposition and Resynthesis of Cycling Rates by Income Status

Income Status	No. of Schools (Parkin et al. 1993, 1995)	1995	1996	1997	1999	2001
High	6*	5.25	6.77	12.23	10.78	4.25
Mid	4	4.24	4.75	3.60	9.07	3.39
Low	13	4.13	7.07	3.60	10.21	4.25
	Weighted Average (by number of schools)	4.43	6.60	**5.83**	10.18	4.04
	Macpherson et al., Version A	4.39	6.45	4.59	10.07	4.03
	Macpherson et al., Version B	4.32	6.84	4.57	10.07	

*Number of schools in high income areas is given instead as 5 in Parkin et al. 1993.
See Table 2 for versions A and B of Macpherson's ridership data.
Rates by income status from Fig. 3 of Macpherson et al. [2]. Highlighted entries indicate the only important discrepancy with data of either Macpherson[1, 3] or Macpherson et al. [2, 4].

(d) Crucial data omitted

(i) 1990-1992

Macpherson et al. [1, 2, 3, 4] report East York child cyclist ridership data for 1993 -1997, 1999 and 2001 (see Table 2). These results cover three consecutive years before the entry into effect of Ontario's helmet legislation and four years out of a six year period after, with the stated goal being to evaluate whether the legislation suppressed Ontario ridership, as it had done in Australia and New Zealand [16, 17, 18, 19, 20].

Yet the authors also state [2] that they performed the same survey in the same manner for the years 1990, 1991 and 1992. The cyclist counts for those years have already been published [11, 12] and in order to extend the ridership data series back to 1990 only the numbers of survey hours each year are further needed. By the design of the surveys these had to have been known. Despite their apparent claim to the contrary

[2], and despite multiple requests, cyclist rates for 1990, 1991 and 1992 have never been released.

These omitted ridership data are crucial because they would demonstrate whether or not the study group's own helmet promotion efforts in East York during those years— comprehensively covering East York children and parents alike with the message that helmets must be worn while riding, because bicycling is otherwise an unavoidably dangerous activity— had already scared down ridership by as much as helmet legislation would have been expected to suppress it.

The appendix gives a summary of what is known of the study group's pre-law helmet promotion activities in East York, and may give some idea of their comprehensiveness and impact.

(ii) Ridership by sex

The authors note that as part of the surveys, the sex of each rider was recorded. Yet the authors give no breakdown of any ridership results by sex, and only minimal ones for overall counts or helmet use [2, 11, 12, 13]. In particular, for 1990-1997 overall, 31.2% of the riders were girls and 68.8% boys, while the relative risk of helmet wearing was 1.43 times as much for girls as for boys; and for 1995-2001, the relative risk of helmet wearing was 1.7 times as much for girls as for boys. This wide variation in behaviour, particularly after the law, suggests the possibility of a correspondingly wide variation in ridership response to helmet legislation.

(e) Age range of surveyed riders

The claimed age range for the East York surveys is 5 to 14 years, with riders at the upper limit recorded if they appeared prepubertal. On the face of it this is unrealistic. In fact the demographically relevant median age of onset of puberty is in the vicinity of 10 years old for girls and 11-12 for boys, with substantial (4 to 5 yr) variation, all this holding true during the survey years [21, 22]. The authors tested the age assignments for inter-observer reliability, but contrary to Parkin et al.'s repeated claims of validity [13, 14], not for the actual correctness of the determinations.

In fact the work they cite as demonstrating the reliability of their methods is only an abstract. Thus although Macpherson et al. [5] discount government or university accident research centre statistical reports from Australia and New Zealand that show ridership declines, for not having appeared in the peer reviewed literature, the study Macpherson et al. cite for the reliability of their own methods has also never appeared in the peer reviewed literature. Moreover the cited journal's website, which lists all issues going back to the 1980s, has no entry for their citation. The corresponding author (Parkin) did not respond to my request (23 March 2009) for information on how to obtain a copy.

A contemporaneous major newspaper article [23] describing the East York study, with input from the study group, reported the 1990 helmet wearing rate of 3.4% to be for 5 to 12 year olds. This is the same figure given in the published study itself as being for 5 to 14 year olds [11]. A reason for the authors' change in description may be that Canadian census data for East York are readily available for 5 to 14 year olds, not 5 to 12 year olds.

(f) Failure to deal with major obvious confounding factors

(i) Population boom

Macpherson et al. [1] report their survey target population as "approximately 10,000", with this figure applied to the entire span of their study, 1993 to 1999. Parkin et al. [11, 12] had also reported that population as "approximately 10,000", with this figure applied to 1990, 1991 and 1992. Macpherson et al. [2] report the same population as 11,340, citing the 1996 census, with this time the figure being applied to the entire 1995 to 2001 span of that article— published in 2006, well after the 2001 census. Yet they made no correction to their ridership figures for any population change over the entire, almost decade-long, 1993-2001 period.

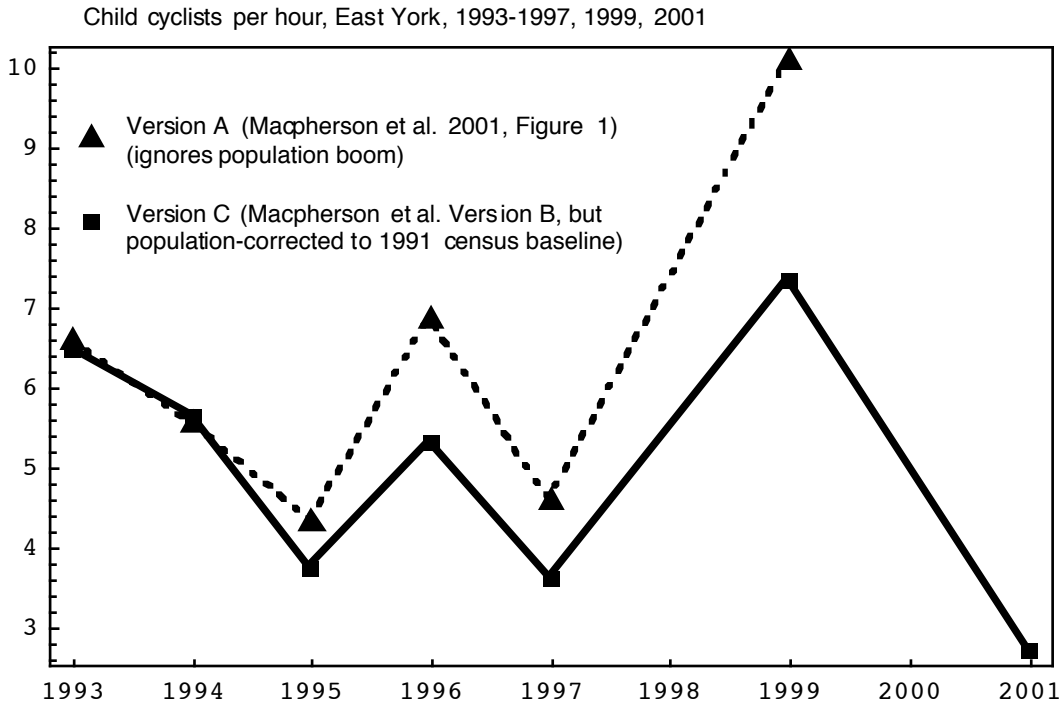
In fact the survey target population, East York children aged 5 to 14, increased 48.1% from 1991 to 2001. Table 6 shows the child cyclist rates as originally reported in the various publications, alongside rates corrected for population increases and optionally, the possible 1997 error. The resulting two time series (without the optional 1997 correction) are plotted in Figure 1.

Table 6. Rates of child cyclists per hour as variously reported by Macpherson et al., East York, 1993-1997, 1999, 2001, and rates standardised to 1991 ages 5 to 14 population level baseline. See Table 5 for correction of 1997 rate.

	Version A*	Version B (with and without 1997 correction)	Version C (Version D = with 1997 correction)	
Year	Reported Cyclists/hr	Reported Cyclists/hr	Population-Corrected Cyclists/hr (using Version B data)	Ages 5-14 Population†
1991				**9330**
1993	6.58	7.04	6.48	10134
1994	5.54	6.38	5.65	10536
1995	4.32	4.39	3.74	10938
1996	6.84	6.45	5.31	**11340**
1997	4.57	4.59 • 5.83‡	3.62 • 4.60‡	11836
1999	10.07	10.07	7.32	12828
2001	–	4.03	2.72	**13820**

*See Table 2 for the various versions.
†Values in bold are census data; intermediate values linearly interpolated.
‡First value of the two pairs is (respectively is based on) version B; second values are with the estimated corrections (see Table 5). Corrections are conservative because they increase the post-law rate.

Figure 1. Time series of child ridership as published in this journal by Macpherson et al. [1], versus time series as described elsewhere by Macpherson (see Table 2), but corrected for population growth (see Table 6).



(ii) Political change and the 1999 outlier

The ridership value presented by Macpherson et al. for 1999 is a clear outlier. The authors treat it as an ordinary datum and do not tell the reader of any outstanding factor relevant to that year's survey. Yet in 1998 (a non-survey year) the previously independent Borough of East York, along with three other municipalities, was incorporated into the megacity of Toronto. To go with that, in the same year a major (Can$211,000) campaign, the Cycling Ambassadors Programme, was launched to boost cycling, cycling awareness, and cycling safety in East York and two of the other newly incorporated regions [24]. The programme was expanded in 1999 and 2000 but then suffered substantial budget cutbacks. The programme had 14 staff members in 1998, 20 in 1999, but only 6 in 2001. 390 events were staged in Toronto in 1999, 140 in 2001. This would have given a positive boost to cycling in 1999. Additionally, it is possible that the 1999 survey actually recorded particular mass events. A similar problem occurred in the Melbourne survey of 1992 [16], when a bicycle rally passed through an observation area.

(iii) The weather

As was understood by Australian researchers [16, 17, 18], in order to make meaningful comparisons of ridership from survey to survey, the ambient weather during the respective observation sessions must likewise be comparable. An unpublished detail of Macpherson et al.'s survey protocol is that observations were not conducted in the rain,

because according to Macpherson "there are almost no children on bikes in the rain" (Macpherson, personal communication to Robinson, 19 June 2003).

A first problem is that by not mentioning this pivotal feature of their protocol, the result is that other researchers were not able to use Macpherson et al.'s exposure data to explain injury or mortality trends, trends which the latter attributed instead to helmet use [6, 7]. A second problem is that rain is hardly the only component of weather. In an exchange with Robinson [19], Macpherson et al. [5] asserted that the study observations were all recorded "at the same sites, at the same time of the year, and in similar weather conditions." Yet Canadian weather patterns are famously variable, with 1995, the last year of pre-law observations, being the year of a notorious large-scale heat wave that affected both East York in particular and much of North America more generally. It is estimated that 32 excess deaths due to heat stress (that is, in excess of the number normally due to heat stress) occurred in Toronto during the summer of 1995 [25]. Thus on the face of it, Macpherson et al.'s claim cannot be correct. Moreover Macpherson et al. contradict themselves in earlier, later, and concurrent publications, by proposing that the large swings in ridership are "more likely to be associated with other factors such as the weather or random variation in bicycling" [1, 2, 3]. If the weather really were similar from survey to survey, as Macpherson et al. [5] claimed, it could not help explain the wide variation, as Macpherson et al. [1, 2, 3] claimed.

(g) Insufficient power to detect an effect of the size of interest

The power of a study refers to how likely it is that a real effect of the size of interest will in fact be discovered. Macpherson et al. do not calculate the power of their ridership study, nor do they provide confidence intervals for their annual ridership estimates. Yet the survey to survey changes in those estimates [1], beginning with 1993 to 1994, are sequentially -16%, -22%, +58%, -33%, +120%, -60%. The magnitudes of these changes are at least similar to and often far greater than the suppressive effects of helmet legislation found in other studies [16, 17, 19, 18, 20]. This demonstrates the presence of confounding factors whose effects are greater than the effect that Macpherson et al. claim to be testing for. In other words, Macpherson et al.'s ridership study lacks the discriminatory power necessary to detect an effect of the size the authors claim does not exist.

2. Brief notes on the economic and political impact of helmet-ridership research

The study of bicycle ridership in response to helmet legislation is enormously consequential. While many authors take a safety improvement for granted, citing only favourable studies and of these only the most favourable [26], perhaps mentioning in passing freedom or police resources, at stake also are the fates of at least two industries worth at least hundreds of millions of direct dollars each.

In Ontario, the government openly salivated over the prospect that by passing helmet legislation, a helmet manufacturer would open a plant locally [27]. Corporate insiders leveraged a buyout of the world's largest manufacturer of bicycle helmets shortly after

the 1989 publication of favourable helmet research in the New England Journal of Medicine [28, 29], and the company's initial public offering of stock in April 1992 was made enticing by the first North American state helmet law, ready to come into effect three months later, and the prospect of many other state laws in the next years [29].

Another multi-hundred million-plus direct dollar industry which lives or dies by helmet legislation is the nascent bicycle sharing industry. Worldwide, in over 200 cities where their users are not required to wear helmets, bicycle sharing systems have high usage rates and are burgeoning. In Mexico City and in Israel, helmet legislation was repealed in order to allow the systems to work. On the other hand only five cities covered by helmet legislation have ventured an attempt thus far: in Auckland the system folded after two years, while in Melbourne and Brisbane the systems remain vastly underutilised [30, 31]. In the small municipality of Westmount, Canada, 2011 marks its first year of participation in Montreal's bicycle sharing system. While Westmount still has on the books an all-ages helmet law with provisions for fines of up to $2,000, the city long ago abandoned enforcement. Meanwhile the fifth city, Vancouver, has struggled to get a system off the ground [32]. Originally planned for 2009, then 2010, and now 2012— in order to avoid the embarrassment of not having any system in place while it hosts the major Velo-City Global 2012 conference— Vancouver still needs the bidders to come up with some way to cope with British Columbia's helmet law. The latest proposals are a parody of going green: shared helmets dispensed and returned with the bicycles, washed and sanitised after every little ride [33].

Appendix

(a) Summary of the study group's own interventions in East York during the pre-law period

Macpherson et al. [1] present their 1993-1997, 1999, 2001 ridership results as adequately covering the pre- and post-law periods, but fail to mention that their pre-law period was not a pre-helmet intervention period. In fact the study group itself had already targeted East York with a comprehensive and vigorous helmet promotion campaign aimed at alarming parents and children enough to buy bicycle helmets and never ride without them; or considering the same message a different way, to not ride. This intervention is briefly outlined as follows.

Parkin et al. [11, 12] described their 1990 survey results as representing a baseline, before any helmet promotion interventions, but later [38] said that, following their formation of a helmet advocacy coalition in 1989, they began in 1990 with a comprehensive helmet promotion campaign in metropolitan Toronto (which includes East York):

> We developed a school program described elsewhere called Be Bike Smart Week [held in April]. We ran this program in elementary schools throughout metropolitan Toronto from 1990 to 1994. We prepared a resource book and a poster featuring major league sports figures, which we circulated to schools and

libraries throughout the city. Finally, we held news conferences and other media events including an official "Children's Bike Helmet Day," which included a rally at City Hall.

In this publication [38] the authors stated that helmet use in East York was 0% at the start of their efforts. By 1990 it reached what they have reported as either 3.4 [11, 12] or 3.7% [13], for which they effectively took most or all of the credit, the contributions of other actors being attributed more to the middle 1990s and later.

The part of the 1991 campaign targeted at specific East York schools was described by the study authors as follows:

> The intervention focused on bicycle helmets only, rather than on the dual themes of helmets and bicycle safety.
>
> In April 1991 an educational week identified as "Be Bike Smart" was held in each intervention school... Resource packages were developed and made available to teachers for classroom-based activities. Students performed at school assemblies to deliver the helmet message to their peers; others produced posters promoting helmets. A former Canadian Olympic Cyclist addressed the students. Parents were sent two letters to heighten their awareness about bicycle-related head injuries and the effectiveness of helmets... Parent information nights featured a speaker from the Hospital for Sick Children/Kiwanis Injury Prevention and Research Program... Helmet sales and fittings were arranged at the school, and a 20% discount was offered (price range was $35 to $80). At the low-income intervention schools, the first 40 families to purchase helmets were given a $5 rebate on proof of helmet purchase. The annual bicycle rally conducted by community police, a long-standing tradition in all East York schools, incorporated the helmet message by encouraging helmet use, offering helmets as prizes, and supplying a pool of helmets for loan. [11]

The targeted part of the 1992 campaign was not described except to say it was modelled after that of 1991, and that helmets were sold at $10, subsidised from the regular price of $40. [12] Other efforts during these years not described by the authors included pro-helmet pieces in major media outlets, strongly warning of the dangers of cycling, such as a nearly 1200 word article in the 21 July 1991 Sunday edition of the Toronto Star [23]. This was at a time before widespread adoption of the internet, when major newspapers were dominant media outlets.

(b) Attempts to get the authors and journals to address the problems in their work

This communication arose only after repeated failures by myself and others to get the authors and the journals to address the numerous problems with these works. Some of these attempts are presented as follows.

Prof. M. Chipman of the University of Toronto kindly replied to my inquiry (8 December 2008) with some information and forwarded my correspondence to A. Macpherson for the rest. To this and to my own follow-up message to Macpherson (9 December 2008) I received no response. My subsequent inquiry to P. Parkin (23 March 2009) also produced no response.

One or more of the members of this group may be an author of Safe Kids Canada's unattributed position statement on bicycle helmets [34, 35]. This statement contains a report of British Columbia ridership in response to helmet legislation, cited as a personal communication from 2000. I received no response from Safe Kids Canada when I asked (23 March 2009) to whom this personal communication was

communicated. Nevertheless in the current version the specific detail I asked about has been altered. Formerly it read

> Dramatic variation in weather over the years in which cycling activity has been observed have [sic] hampered the analysis of this [sic] data, but to date there is no evidence to suggest that the helmet law has discouraged people from cycling. [34]

Now it says (citing the same personal communication from 2000):

> To date there is no evidence to suggest that the helmet law has discouraged people from cycling. [35]

I received no response from the cited source of the personal communication, D. Beirness, when I asked for clarification of this situation. I received no more than automated responses from the journal *Injury Prevention* after repeated requests using its contact form (29 November 2008 and 15 December 2008) to fix the link supposedly leading to corrected data for Table 1 of Macpherson et al. [1]. The current editor has now been informed of this problem and has stated that the journal will attempt to fix the link and supply the missing data, and in addition ask Macpherson et al. to respond to the concerns raised here.

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