

Approaches to the risk of riding motorcycles: reflections on the problem of reconciling statistical risk assessment and motorcyclists' own reasons for riding

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Abstract

The manners in which motorcyclists and road safety experts assess motorcycling diverge widely. Experts view it as an extremely risky venture and imply that only the foolhardy would engage in it. Our own survey research appears to support this view. And yet, motorcyclists disagree with this assessment and construct their own theory of risk. One in which blame is laid at the door of the car culture and accidents something that can be overcome by road skills. The view of the experts concern with their risk taking becomes redefined as the attempted imposition of social regulation. We attempt to show how these different approaches to risk can be theoretically reconciled. We argue that motorcycling accidents need to be seen as real physical events, the understanding of which is socially contested.

This paper addresses a recurrent methodological problem in sociology through consideration of a single case. The problem arose in the course of analysing and writing up material from an empirical study, where it appeared in this form:

How can statistical assessments of the (high) risk of riding motorcycles be reconciled with riders' own reasons for using motorcycles?

On a substantive level, the paper addresses the familiar divergence between 'expert' assessment of risk and 'lay' reaction to it, recently the subject of an explosion of research.¹ The scientific literature often assumes that statistical assessments are rational and divergent lay perceptions of risk are irrational. Sociologists and anthropologists have insisted on the contrary that lay accounts make sense in their contexts (Douglas, 1970, 1986, 1992; Adams, 1995; Green, 1997). In due course we shall argue that risk is a contested moral category (Furedi, 1997). Moreover, there are actual winners and losers in how risk is accounted for.

The methodological problem we confront can be viewed from several quite different angles. Perhaps the one most often encountered in reports of

empirical research is 'how to relate quantitative and qualitative data', for which the term 'triangulation' is often used to imply that each offers a different view of the same picture. This practical approach skirts around a philosophical minefield. Maybe that is a judicious and defensible thing for a sociologist to do. On the other hand, if one merely tiptoes into that minefield, the problem may be interpreted as a confrontation between positivist and interpretive accounts. It could be argued that they are complementary and can be reconciled in a form of philosophical realism (Bhaskar, 1978; Elster, 1989; Layder, 1993, 1998). It is possible to walk straight into the minefield and argue that the two accounts are irreconcilable. There are two very different grounds for this view. The first is foundationalist: the statistical account aims at explanation by causes and the account in riders' terms at understanding by reasons (Hollis, 1994). The second suggests that a comparison of the statistical account with that of riders can only show that the risks of motorcycling are cultural constructs, each informed by a different set of values and beliefs.

We begin not with straw men but with serious attempts to analyse evidence of each kind: statistical regularities and actors' own reasons. We then proceed, in discussion, to various ways of relating the two. We conclude with recommendations as to how the general problem should be addressed, and may be resolved in the case at hand.

Statistical assessment of motorcycling risk

The discussion of statistical assessments of motorcycling risk comes from our own work. We were contracted by the Regional Health Authority to carry out a survey about health and life styles among a random sample of 691 young people aged 16 to 24 in Norfolk in the summer of 1990 (Bellaby and Blaxter, 1992). We prevailed upon the health authority to include questions concerning accidents, often excluded from these types of surveys. Our research reflects motorcycling behaviour at that time but most importantly the contrast between expert and participant. We, of course, are the 'experts' in question, at least from the point of view of the local agencies that commissioned and used our work. Once these agencies had the data they too were experts.

Official statistics on road traffic accident risks

Our reading of work carried out by the Department of Transport (1988) stimulated our interest in road traffic accidents. The study shows that motorcycling was more likely to lead to death and serious injury than other forms of transport.

The class of two wheel motor vehicles (TWMV) includes a range from mopeds and scooters to motorcycles of considerable power (though only motorcycles of 250 cc or more are permitted on motorways).

Table 1 Road casualty rate per 100 mn vehicle km: great Britain 1988

	Motorway	Built-up A-roads
TWMV	160	1,112
Car	17	77
Coach/Bus	31	369
LGVs	13	39
HGVs	8	17

Source: Department of Transport, *Road Accidents 1988*.

Legend: TWMV = two-wheeled motor vehicles; LGV = light goods vehicle; HGV = heavy goods vehicle

The users of TWMVs are much more likely to be involved in accidents causing serious injuries or death than any other type of vehicle. However, the risk their users carry increases sharply when they leave motorways for built-up A-roads, as indeed does that of every other vehicle user.

Accidents and casualty rates per 100 million km on TWMVs decline considerably with age, as may be seen from table 2. The conclusion is that accidents on TWMVs are a function of youth. The bottom two rows of the table also suggest, incidentally, that the different incidence of TWMV casualties between males and females is due more to the extent of their use of the machines, than to their proneness to accidents if they do use them.

Table 2 Road casualty rates for TWMV riders per 100 mn km: Great Britain 1987

Ages	Killed	Killed/Ser. Injd.	All Severities
0-16	12	630	2,300
17-18	17	450	1,500
19-20	15	320	1,000
21-24	10	190	570
25-28	10	200	660
29-39	5	120	380
40-49	4	90	320
50 & over	8	130	420
All Ages	9.4	210	680
Males	10.2	210	660
Females	3.1	200	830

Source: Department of Transport, *Road Accidents 1987*.

Our social survey data on motorcycling

Our survey has greater detail than the Department of Transport figures, and contains information on the following: first, minor accidents within a short reference period (one month prior to interview); second, road accidents causing serious injury by type of vehicle; third, serious accidents sustained in all circumstances in the respondent's life; and finally, a variety of other risk behaviours. Most motorcycle users were male and not even they used them as often as cars. Table 3 summarises key findings.

Motorcycles are almost four times more likely than cars to be involved in accidents incurred by the 16–24 year old sample. This is shown in column (1), which represents the percentage of those currently using a motorcycle and/or a car at least once a week reporting a *minor* accident occurring on a motorcycle or in a car that they were driving in the month preceding the interview.

Motorcycles are eight times more likely than cars to be involved in *serious injury* accidents. This disparity is, in turn, almost twice as great as the one involving minor accidents. This is demonstrated in column (2), which represents the percentage of those that had ridden a motorcycle in the 12 months preceding interview, who had ever had a serious injury as a result of a motorcycle accident. Column (3) gives the corresponding information for car drivers and car accidents. The crucial comparison to be made is between accidents on motorcycles involving motorcycle users in general (whether or not they also used cars) and accidents in cars among those who used only cars. The percentage of the former who had serious accidents was 12.0, and of the latter 1.5.

Table 3 Norfolk survey – minor and major accidents involving motor-cycles and cars, and proneness to serious injury of all types ever among young people

Vehicle(s) used	Current regular user		Any use of vehicle in last year			
			Major RTA % persons involving:		All Types of Serious Injury Ever per 1000	
	Minor RTA in 1 month % persons		MCyc	Car	Rate	(N)
(see text)		(1)	(2)	(3)	(4)	
MCyc only			11.8	N/A	441	34
	MCyc	19.6	46			
MCyc & Car			12.1	5.5	495	91
	Car	4.5	424			
Car only			N/A	1.5	242	396

Obviously, the survey is small and can give only an indication of the order of magnitude of the hazards motorcycles present to their users as compared with cars, but it is justified to conclude that motorcycles are more unstable and make their users more vulnerable than cars.

The third issue that the survey allows us to address is the extent to which motorcyclists as persons are more prone to serious injury in any context than those who drive cars. In short, the survey data point to the conclusion that those who elect motorcycles as their means of transport are more prone to serious accidents of all kinds than are those who elect cars. As table 3 shows, in the 12 months before the interview, 91 used both cars and motorcycles. The percentage of this group that had serious accidents in cars was 5.5, three times that of those using cars only. This is consistent with the findings in Column (4). Here we tabulate the number of serious accidents in their lifetimes reported by respondents, which did not involve driving either cars or motorcycles. The rate per 1,000 persons for those using motorcycles as well as cars was twice that of those using only cars.

Young women are much less likely to choose motorcycles than young men. Males are considerably more prone to accidents in youth and childhood than females. Table 4 shows our estimate² of the rates of car and motorcycle accidents for men and women respectively, and also of the extent to which each was prone to serious accidents that did not involve cars or motorcycles.

The table shows differences both between motorcyclists and car-drivers and between men and women. The crucial findings, however, are that both men and women are more likely to have serious accidents on motorcycles than in cars, and, that both men and women motorcyclists have a higher accident rate in contexts besides cars and motorcycles than do car drivers.

Gender does not confound the results to date. At the same time – in both the survey and the official statistics – we have seen that many more males elect motorcycles than females. Males and females appear to have been socialised differently and those who choose motorcycles appear to have been socialised in ways that lead to a history of accidents in a variety of circumstances.

Table 4 Serious injury rates involving car, motorcycle and other types of accidents: comparing young men and women

	Serious injuries per 1000					
	Motorcycle users			Car only users		
	MCyc	Other	(N)	Car	Other	(N)
Young men	143	417	175	19	314	108
Young women	77	423	52	16	91	186

Corroboration of this suggestion comes from responses to questions about drink driving. Among the 266 male car-drivers and motor-cycle riders, 27.2% said that they had drunk alcohol and driven in the last seven days, and 37.2% that they had ever driven over the blood/alcohol limit. By contrast, as many as two thirds of the men who had a serious accident on a motorcycle said they had ridden after drink in the last seven days, and more than half of them said they had ever ridden when over the limit.

If gender is one possible confounding factor, age is another. People can and do start riding motorcycles at 16, and can only graduate to cars at 17. That age is a major factor in serious accidents on motorcycles is abundantly clear from table 2 above, and from insurance premiums (personal communication from an underwriter at Norwich Union PLC). Inexperience clearly outweighs the effect of increasing exposure. However, there was little difference in the ages of car and motorcycle users in our sample: the average age of regular (once a week plus) riders was 19.9 and of drivers 20.8. Those relatively few who used only motorcycles were younger (18.7), but the difference of one year in the overall averages for cars and motorcycles is almost cancelled out by the fact that motorcyclists could have started a year earlier than car-drivers. As is the case nationally, accidents on motorcycles were most numerous at the age at which most riders were beginning (13 of the 33 for which an age was recorded happened at 17 years). However, car accidents were similarly concentrated by age. Taken together the findings for age suggest that experience on the road is a major factor in being prone to accidents.

Class is of course another possible confounding factor. We have used father's occupation as the basis for determining Registrar General's Social Class. This is because a substantial majority of the sample lived with parents, more than 1 in 6 were still in full time education, and few in employment were sufficiently advanced in their careers to be properly classified by their own occupation. Among those who were classifiable, there was a clear tendency for motorcyclists to be children of manual workers. Of young men, 64.5% (N = 93) who rode motorcycles in the preceding 12 months, either exclusively or also driving cars, were of Social Classes IIIM, IV or V. This compares with exactly 50% of the young men who only drove cars (N = 188). Young women motorcyclists also had a class bias, though less pronounced: 52.2% of female motorcyclists (N = 23) were daughters of manual workers, and only 46% of women who only drove cars.

However, class does not appear to have confounded the comparison between car and motorcycle accident rates. Among non-manual males who rode motorcycles, 52% had ever had a serious accident in all circumstances, as compared with 45% of manual male motorcyclists. Among their counterparts who drove only cars the corresponding percentages were 26% (non-manual) and 36% (manual). Incidentally, though outnumbered almost 2 to 1 by manual men, non-manual men on motorcycles had the same number of serious motorcycle accidents between them as did manual men on motorcycles.

Clearly class, like gender and age, serves to select people for motorcycling. It is likely that relatively low income accounts for the tendency of manual males and females to elect motorcycles, for they are cheaper to buy and to run than cars of comparable age – new or second hand. However, this, like the other explanations that infer social processes behind statistical findings, makes assumptions about the past history, current circumstances and motivations of the respondents that are only thinly substantiated in the survey. In an attempt to substantiate these assumptions we conducted a set of ethnographic interviews with motorcyclists. What we did not expect is that their interpretation of risk would be so at odds with our understanding and that of other local agencies.

Motorcyclists' reasons for riding

The ethnographic phase of our study extended over two months at the beginning of 1990. One of us spent several days at a bike dealers and repairers talking to staff and riders as they came in. It became clear that motorcycle dealers do not operate simply as shops but function as meeting places for motorcyclists. Using the dealers as a base exposed us to a disproportionate number of experienced and committed motorcyclists. In the interests of balance, we attended the Norfolk County Council's training scheme and made contact with a number of learners. We also met a number of motorcyclists through prior contacts. In total we carried out tape-recorded interviews with ten motorcyclists, but this represents only about 10% of the total number with whom we discussed motorcycling and risk.

The taped respondents are listed in table 5:

Table 5 Motorcycling respondents by gender, age, licence category and type of machine

Name	Gender	Age	Licence	Make	CCs
BB	M	42	Q	Honda	650
CG	M	24	L	Yamaha	100
SL	F	40s	Q	None	
JN	M	32	L	Honda	50
BS	M	16	L	Vespa	50
DS	M	23	Q	Custom	250
AG	M	30	Q	Triumph	750
PL	M	40s	Q	BMW	1000
CM	M	22	L	Yamaha	100
GG	M	68	Q	None	

Legend: Q = qualified; L = learner (provisional licence)

The ethnographic work was not intended to yield a representative sample of motorcyclists, but to give us insights into the social processes that underlay our statistics, in particular what we presumed to be ‘taking risks’.

What we discovered was that the motorcyclists we interviewed did not conform to our own and other local agencies’ interpretation of risk. From their own perspective, motorcyclists are neither ignorant of the risks that the statistics purport to represent, nor deliberate risk takers. Their perspective has a three-part structure:

- *Motorcycling is life enhancing* and not to engage in it is to risk wasting your life.
- *Motorcycling is not a risky activity per se*, the risks involved in motorcycling are in large part imposed from outside, for example, by car drivers and other road users.
- Those risks that are imposed on motorcyclists can be overcome by the development of *road craft*.

Motorcycling as life enhancing

That motorcycling is life enhancing is central to the perspective. Contrary to the conventional wisdom that motorcycling is for those who are careless of life, for many, not responding to the lure of motorcycling can mean a wasted life. The view that motorcycling is life enhancing has two aspects:

- It provides transport, which enhances lifestyle by increasing the range of available activities.
- It is an enjoyable experience, that can be engaged in for its own sake.

Motorcycling provides transport at low cost. SL gave the following reason why she and her husband (PL) took up motorcycling:

SL: It was financial for one thing, and the fact that neither of us had passed a car test. P bought the original bike solely because he wanted to get to work and there were no buses.

BS is currently at same the stage in his career as PL was and sees the motorcycle as necessary for getting a job:

BS: I’m hopefully going to start work – I’ve applied for jobs, but I don’t know. That’s another thing – I’d be paying for bus fares, and on the wage I’d be getting (because hopefully I’ll be going on a YT), the wage I’d be getting wouldn’t pay for bus fares.

The motorcycle is also important for domestic work:

SL: where I live, you need a vehicle to get to a doctor, dentist, vet, bank, accountant, butcher.

Transport is equally useful for the unemployed. For example, JN bought his bike for £30, rides it without tax and insurance and estimates he gets 150 miles to the gallon. When asked what he used it for, he replied:

JN: Everything, going into Sheringham, going into Norwich, everywhere, going to Dereham, a five minute walk ...

The advantages of motorcycling as a form of transport to work are not restricted to its being cheap, it is also more convenient than motor transport in terms of avoiding traffic jams and parking problems. Motorcycling also provides transport to leisure activities. BS, who had just acquired a motorcycle, saw it opening up a new range of activities:

BS: I can get out to go anywhere ... like going down the sports village for instance. I'm now going to start going down there in the gym on a weight training course with my mate. But there would have been no way we could have done that, you have to go three times a week, and I wouldn't even have thought about doing that if I didn't have the transport to go down there.

Motorcycling has the added advantage that it is enjoyable in itself. For example BB, who had returned to biking because car-parking problems made commuting very difficult, recalls how he realised its intrinsic merits:

BB: I was riding around on a 125 and suddenly realised that I thoroughly enjoyed it, wind or sun, that it was great to be independent.

Part of the attraction was the sensation of speed and acceleration, for example:

AG: For the price of a brand new mini you can go out and buy a bike that will blow a Porsche.

The ability to outpace a Porsche was also mentioned by BB. The most important attribute of motorcycling was independence and freedom. This freedom came from the feeling of mobility and independence:

AG: I just liked the sense of freedom it gave me ... I could get out and shoot round the country lanes ... whatever I wanted to do.

CG: The bike is mainly just for having a bit of fun, having your own vehicle, and having a bit of independence yourself.

BS thought that the reason young people took up motorcycling was:

BS: basically to get out, a bit more freedom, just to get around a bit more.

Motorcyclists ride because it increases their freedom. Motorcyclists are not attracted to risks. They are repelled that they may risk wasting their life. This can be summed up in the words of BB who returned to motorcycling after a break of about 20 years:

BB: I was only aware I missed it when I got back on to it. Then I thought, wow, I've wasted all these years.

Willis (1978: 55–62) appears to confirm this.

The source of risk

Respondents were aware of the fact that motorcyclists are killed and seriously injured. However, in their view, many of these accidents were imposed on motorcyclists by others and did not arise because motorcyclists are risk takers. The main problem is that car drivers do not notice motor bikes. AG was almost killed by one:

AG: I was going out of town, a straight bit of road, no trouble at all ... Buxton to Ashbourne. There was a long line of cars coming the other way, nothing on my side of the road, and I was doing about 100 mph ... and suddenly a car pulled right out to overtake these cars and I just couldn't believe what was happening ... and I went right up on the grass verge ... I don't even think she saw me then because she was just straight ahead. I looked at her and she didn't even look – just straight ahead the whole time.

This lack of awareness on the part of car drivers is shown by CG who drives a van for a living and had only had his bike two weeks:

CG: Not having ridden on the road before, you don't bother thinking about the motorcyclist, you don't see their point of view a lot of the time. Since I've had (my motorcycle), I've given wide berths and keep an eye out for motorcyclists ... You get that false sense of security in a car because you've got a box around you.

Risks are imposed not merely by car drivers but by the non-motorcycling public in general. Roads are not designed or maintained for motorcyclists. AG relates one of his accidents:

AG: I was approaching a roundabout in Buxton, and the next thing I knew, I was sliding down the road on my hip, and I could never work out why I

came off at all. So I got up and staggered to my feet and a few people helped me up, and I found out later that about four other bikers had come off on that roundabout, and it turned out that a wagon had spilt some diesel on that patch, and there was no warning about that at all.

It was generally felt that most of the roads in Norfolk, in the words of SL 'aren't really up to it', or AG, who came from upland Derbyshire, thought rural roads back home were not 'well maintained'. The care, maintenance and road system is based around cars and lorries and not motorcyclists.

It was also recognised that risks were being imposed upon motorcyclists by those with a concern for profit. For example, this was the respondents' view of the young men who deliver Pizzas:

BB: They're learners on 'crunchies' and that's crazy. That side of it really annoys me ... even in this city, there's a company called quick delivery ... and they've got young unqualified drivers, 'L' plates on 100 cc bikes, and that really is naughty.

Motorcyclists are being subject to increasing pressure from the non-motorcycling public. This restricts the freedom that motorcycling can bring. The non-motorcycling public is imposing the bodily risks upon motorcyclists. The major risk is from car drivers who think they own the road. It is enhanced by a public sector that thinks car drivers do own the road, a callous business sector, dominated by car drivers, which sends out motorcyclists on dodgy bikes without the proper training to face these car drivers and finally media which present motorcyclists as to blame.

Overcoming risks

There was a number of ways in which motorcyclists could overcome the risks imposed. These were generally known under the rubric 'road craft'. In AG's words this meant that you 'ride within your own limits'. This involves riding within the limits of your skill, the machine and the road. BB argued that modern bikes were much safer than the ones of his youth, and was asked if this meant more risks were taken:

BB: The word I'm not too O.K. with there is 'risk'. Yes, I go faster on a modern bike. In fact I always ride at the limit ... I never go 40 in a 60. Yes I would go faster because I would have complete faith in the bike, but I wouldn't do it if it were a risk.

For many, this development of road craft came from experience, for example, AG explained why he had not had an accident in ten years:

AG: I've got a bike, I've had it for ten years and I know exactly what I can do on it.

An integral part of road craft was to learn to anticipate the actions of others:

DS: You should really expect everybody to do stupid things. That's the only way to get through it without getting hurt.

Thus road craft is about the harmony of person and machine and an understanding of others' behaviour. Learning the skills of riding was supplemented by reading the motorcycle literature. This was seen as an important source of advice by AG, BB, PL and DS, who were all involved with other motorcyclists.

Motorcycling was seen to actually reduce risks on the road, because in CM's words 'bikers are better drivers'. SL quoted her driving instructor who argued that motorcyclists have 'the road sense and the slight fear, the caution'.

Discussion: relating the two accounts

We have reviewed two accounts of what appear to be the same risks, generated by different strategies of research. They can be related in several ways, not all mutually exclusive. However, we shall dismiss one at the outset. It is the idea of triangulation by making different types of observation of the same scene.

This implies that the accounts are to be understood as quantitative and qualitative respectively, no more, no less, and that reconciling them is a practical matter of how best to present numbers and illustrative quotations alongside each other. It is a practical matter, to be sure, but more besides. In the case at hand, the two types of account cannot be said to offer complementary views of the same scene, for, while there are some overlaps at the edges of the two accounts, they contradict each other and cannot both be true.

From our quite careful statistical risk assessment, motorcycling is relatively hazardous transport and those who engage in it take a considerable risk, wittingly or otherwise. Local agencies took this part of our work to imply that motorcyclists are inappropriately socialised and need educating and that motorcycling may need to be regulated. Our ethnographic work revealed that, in the view of the riders, motorcycling is safe for the experienced who need no regulation, and any hazard involved is attributable not to what riders do but to what motorists do. If anyone needs educating, it is beginners and, if anyone needs regulating, it is motorists, but the dominant view among motorcyclists is that the benefits of their transport outweigh the risks, and to believe in safety first is, as Furedi (1997) suggests more broadly, to be content with lowered expectations.³

Five methodological approaches that might help reconcile these largely contradictory interpretations are now considered, and we shall end with a sixth, more complex model that incorporates the most plausible and rejects the

least plausible in the others:

1. There can be no reconciliation, for one 'explains' the other 'understands'
2. They are complementary and compatible with sociological realism
3. Both are no more than constructs
4. The interpretations are related socially by the positions their producers – 'experts' and 'participants' – have in the wider social organisation
5. Both accounts are produced in the same relation of power

The sixth, the conclusion of our deliberations, is that motorcyclists encounter not notional but actual hazards, which arise in part from how each group's position in the relation of power – expert, participant, entrepreneur or member of the public – leads them to make sense of motorcycling.

(i) *There can be no reconciliation*

On this view, assessing statistical risk involves one epistemology, that of *explanation*, while interpreting why people participate in a risky activity involves another, that of *understanding* (Hollis, 1994). They are incommensurable, though each can be judged on its own criteria. The statistical assessment invites us to explain motorcycle accident rates by a probability, a pattern that is not directly observable, yet attached to aggregate observations made cumulatively to this point in time. The second, on the contrary, invites us to understand their reasons for motorcycling and the sense they make of what others view as risky transport, and projects risk as something encountered in the course of action to come and thus potentially modifiable. The first approach seeks out ever-higher levels of generalisation to which more particular statements can be subsumed. The second, on the contrary, ultimately privileges agency and experience, both individual and shared.

However, the accounts have more in common epistemologically than this perspective suggests. Each account refers to what it takes to be reality: what happens to real bodies-on-bikes when encountering real traffic-on-roads. To be sure, the accounts tend to involve different kinds of evidence: the first statistical, the second qualitative. But both types of evidence are generated by interviews and several motorcyclists we interviewed were aware of accident statistics and had their own interpretation, which differed from our view and that of other local agencies. Finally, both accounts are implicitly moral. Each apportions blame and makes the other not the self the target of what Douglas (1992) has called the 'arrow of blame'. Again, for motorcyclists the target is motorists. For road accident experts it is (by implication) the motorcyclists themselves, who have the choice to use or not to use a motorcycle, although, road safety products like the 'Think Bike' TV campaign, which is aimed at motorists, indicate that experts can take on board motorcyclists' accounts.

An arguable weakness of the 'two models' approach is that in practice social science almost invariably links the two. Many have sought to do so

theoretically (notably Weber). While, the many can, to be sure, be no less misguided than the few, the onus is on the epistemologist to show that the findings of social science are inadmissible. Riders' and experts' accounts of motorcycling suggest that there is a bridgeable gulf between explanation and understanding.

(ii) They are complementary

From a realist perspective, the two accounts may be reconciled, even though their contents appear to be contradictory, for the qualitative account enables one to build theory by analytic induction, while the quantitative account enables one to test theory by hypothetico-deductive method. Assessing statistical risk does not by itself allow risky behaviour to be explained, because it only predicts it, without reference to the *mechanisms* that are needed to explain it (Elster, 1999). On the other hand, motorcyclists' accounts propose several mechanisms that might explain the high risks of motorcycling, but, for lack of a statistical base, cannot be used to test the mechanisms proposed. According to this approach, then, the social can be explained by causes as well as understood by actors' reasons, and both are needed.

Our sympathy lies broadly with realism, but as so far formulated it has two weaknesses. First, it does not deal with how and why the two accounts diverge. They are not simply complementary aspects of one reality that investigation reveals behind appearance. They represent different discourses and a relation that puts them in competition with each other. In short, the accounts themselves need to be explained sociologically. A second weakness of this 'realism' is that it reflects a general neglect of the body and space in sociological theory and emphasises the pre-eminence of the social and cultural (Turner, 1984). If we want to account for the actual deaths and injuries that motorcyclists are prone to, we cannot ignore the body or space.

In what follows, we shall try to improve sociological realism by attending to the social production of accounts that are usually only plundered as resources for explanation and prediction, and to human embodiment and the physical environment.

(iii) Both are constructs

The approach we are leaning towards is a sociological form of *realism*. Constructionism opposes this as it does other forms of realism. At its hardest, the argument is that all is relative: there is no defensible 'meta-narrative' (Lyotard, 1984), and, as a result, none can be judged, certainly against others, and arguably even on its own criteria.

The hard constructionist argument denies both the experts' and the motorcyclists' claims to offer superior accounts. Yet, as both road transport researchers and motorcyclists would argue, deaths and injuries on the roads

are real, whatever construction is placed upon them: indeed, there is no contradiction in seeing injury as a fact, upon which certain constructions are placed – by medicine for one (cf. Hacking, 1999). Ironically, radical relativism invalidates its own claims too, for on its own criteria there is no warrant for saying that relativism is true.

Of more concern, for our purposes, is the way the epithets ‘social’ and ‘cultural’ are used in relation to ‘construction’. They are often used interchangeably, but to do this is to neglect social relations in favour of the subjective. The term ‘cultural’ itself assumes, without theorising the idea, that constructs may be shared or intersubjective. Our argument is that neither social relations nor nature can be *reduced* to subjective definitions and that the effects of both nature and social relations are at once mediated by shared meanings (culture) and *sui generis* (cf. Treichler, 1999).

(iv) *The accounts are related socially*

Soft constructionism is agnostic about the truth claims of competing accounts and seeks to understand each in its context: to see each as partial. Douglas’s grid-group analysis is ‘soft’ constructionism. It enables us to stop short of radical relativism by locating our two accounts in definite forms of *social organisation*. Douglas developed grid-group analysis to enable comparisons between societies, using universal characteristics. According to Douglas, the two most significant variables for comparison are the degree of collectivism and degree of internal difference. Both of these variables impact on a society’s perception of risk. The degree of collectivism in a society is measured by the variable ‘group’, either strong or weak, the degree of difference by ‘grid’, either strong or weak. This gives rise to a two by two matrix of four cells: strong group/strong grid; weak group/weak grid; strong group/weak grid; and weak group/strong grid, as Figure 1 suggests.

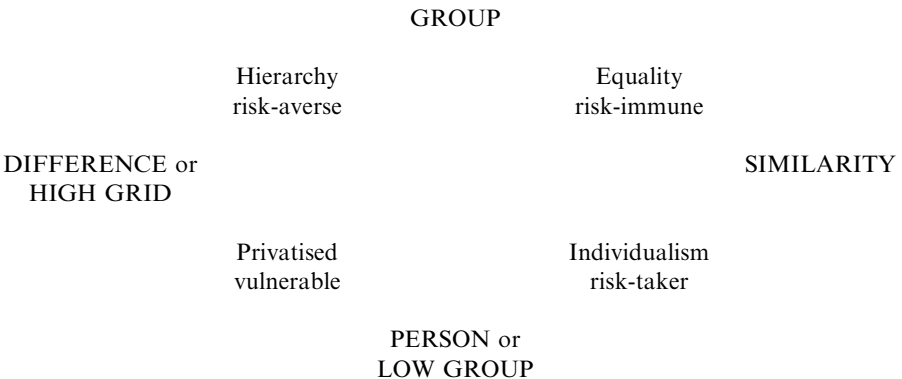


Figure 1 Adaptation of Douglas’s theory of culture and risk acceptability

The risk-averse standpoint of the expert falls within the high group/high grid cell. From this angle, anyone who engages in activities that put their lives at risk or might disable them seems either to take risks or be ill informed. This resembles the 'expert' view and the model suggests that the expert view is no less context-dependent than any other, not absolute.

Motorcyclists appear to fit into the high group/low grid cell, with their value of freedom and their sense of being a marginalised brotherhood of equals. Lack of opportunity to exercise their freedom looms greater than the risk they are told attaches to motorcycling. If they acknowledge the real risks, they insist that they arise from factors beyond their control, such as the unsympathetic design of roads or the way car-drivers behave. They believe that skill and experience of both machine and road can overcome these risks. Road craft renders them 'immune'. It is the untrained and inexperienced who are most at risk. Learners who go straight out onto the roads, and, having just passed their tests, try to handle machines that are too powerful for them, have major accidents. This is the culture of motorcycling, yet it has a material base. Working class upbringing and manual employment prepare males for the lifestyle (less so females), though most move out of it on raising a family.

While both accounts of risk are culturally embedded, they are not discrete and incommensurable constructs, but related *socially* by the position that each of their producers – 'expert observers' and 'participants' – has in the wider social organisation. Douglas's *grid/group analysis* not only enables this relation to be explored, it also suggests other accounts, similarly embedded and similarly derived from social position, which can be identified empirically. For instance, risk-taking corresponds to low grid and group, the competitive individualism typical of an enterprise culture. Entrepreneurial risk-taking is calculative. If the motorcyclists we talked to may be said to take risks, it is plainly not in the hope of material gain, and so their culture of risk has as little in common with that of the entrepreneur as it has with that of the expert. On other hand, motorcycle manufacturers do make calculated risks, developing and producing machines and accessories that they hope will sell to motorcyclists with varied interests and levels of experience and to those who are debarred from bikes of more than 125 cc.

In the high grid/low group cell, people feel vulnerable to threats from above or below. The threat that is most guarded against in contemporary Western societies concerns life expectancy and health. This 'risk society' of the 1980s/90s is fragmented (Beck, 1992). It belongs where there is a weak or non-existent sense of collective purposes, and where individuals seek to protect their families and their kind from the threats the carelessness or malevolence of others seem to pose. The 'privatised' fear interlopers such as the motorcyclist.⁴ This is a longstanding phenomenon. Pearson (1983) finds it in rural resistance to the incursion of pedal cyclists in the 1890s, and attributes it to the mobility the bicycle allowed to urban workers. This reappeared in the social reaction to Mods and Rockers in the 1960s. Cohen (1980) notes that it was use of motor scooters and motorcycles that hit the headlines and these were viewed by one of

the harshest magistrates as ‘almost in the nature of offensive weapons’ (p. 110). This was in spite of the fact that most Mods and Rockers travelled by train to the coastal resorts where they were alleged to be unruly.

As this analysis seems to show, Douglas’s approach has much strength. As we have seen it does not privilege any one account of risks. At the same time, it is not relativist, but explains multiple realities in terms of a realm of ‘social facts’ (of grid and group) which are not reducible to the particularities of culture but generalisable to some degree across societies.

In principle, such an approach allows power relations to be located in and limited to a finite range of forms, just as variations in social classification – purity and danger, natural symbols and cultures of risk – are so constrained in the model. In practice, Douglas makes little effort to address power. More generally, she confines her attention to structure and neglects agency. In similar vein, she does not attempt to investigate situated activity, as opposed to cultural and social properties that are reproduced in many situations of action. As a result, her model is static, and cannot explain how distinctive cultural and social forms are produced, reproduced and sometimes change. Finally, the approach sets aside any actual hazards that motorcyclists, for example, may encounter (for further discussion, see Bellaby, 1990).

(v) Both accounts are produced in the same relation of power

This, the fifth approach to be considered, adds to Douglas’s approach the important idea that accounts of risk are mutually *contested*, not simply coexistent. Each of the two offered for motorcycling can be construed as a different claim to truth, made by groups in stronger or weaker positions politically. The expert account purports to be impartial and has authenticity for the wider community which the motorcyclists’ account lacks. This is not because there is a general rule that participants’ accounts are tainted with their partiality. In some forms and for some purposes, for example private diaries and letters, they may have greater authenticity than a public record. In the final analysis, accusing another of partiality is a move in a language game, in which the prize is to have one’s view prevail over the other. Some players enter such games with the cards stacked in their favour – experts on road traffic accidents, while others – motorcyclists – have an uphill struggle to make their views heard, and a harder time still to have them prevail.

We share with Foucault (1977, 1980) the idea that power is often positive not negative. Thus the concept of risk implied in risk assessment and its application to motorcycling is essentially moral and influences choice of transport, just as the concept of what makes motorcycling risky that is current among motorcyclists is moral and empowers them to develop skills that make them relatively safe. The more traditional view of power as negative is also applicable to modernity – for instance regulation on protection and speed limits. We want to add to Foucault’s shadowy account of power the idea that relations involve dependency not just power. Dependency implies that no party

to a relation of power can easily afford to escape it, and that the actions of each affect the other(s). The dialectic of control we have in mind provides a context for agency that is ill developed in Foucault's work.

However, the approach developed so far focuses on 'language games' and 'relations of power' to the neglect of embodiment and space. It is to these omissions that we now turn.

(vi) Towards a complex model

The conclusion of our deliberations is that motorcyclists encounter actual hazards to their bodies in space, which arise from how each group's position in the relation of power – expert, participant or member of the public – leads them to make sense of motorcycling and act accordingly, with effects on themselves and others.

This approach is consistent with sociological realism, but removes two of its cardinal weaknesses. By locating each account in a relation of power, it addresses how and why the accounts that predict outcomes and the accounts that propose mechanisms to explain outcomes arise and become competitive truth claims. Moreover, rather than focus on culture alone, it addresses the way nature and culture interplay.

The body and space can be both real and culturally constructed, and cultural constructs can be real in their consequences. Thus statistical risk assessment contributes to the construction of roads in ways that neglect motorcycling safety. The culture of motorcycling attempts to deal with this lack of safety by sharing knowledge of machines and the road. But the celebration of motorcycling which is a core part of motorcycling culture encourages the use of a form of transport that, for whatever reasons, increases the likelihood of deaths and injuries to natural bodies riding motorcycles.

To overcome the limitations in Douglas's approach for present purposes, we have to think of risk cultures as having not only a real base but also real effects. The real effects can be conceived as feedback loops. At the start of the loop, late modern culture constitutes the subject as responsible agent. The experienced motorcyclists, whom we interviewed and observed, seek speed, feel immune to risks and are risk compensators, who ride to whatever limits their knowledge of the machine and their road craft make seem safe. Many motorists, however, are privatised within their subculture and have a sense of vulnerability to risk from which closure alone makes them safe, for example driving a car with side impact protection, a crumple zone, air bags and ABS braking. Within this 'cage', they attend to their own risks, but may neglect those of other road users.

Similarly, as we have seen, entrepreneurial manufacturers and retail distributors of motorcycles contribute positively or negatively to safety by the way they design and promote machines for different market niches. One example will suffice: because of the restriction of novices to machines with engines that are of 125 cc or less, the trade has developed relatively high

performance from even tiny engines, and presented it in 'racing style' motorcycle body shapes and liveries that put style before safety. This may be said to subvert the spirit of the regulations for commercial gain.

Another factor that shapes the process that leads to high road traffic accident (RTA) levels among motorcyclists may be expert assessments of RTA risks that are based on a universalistic framework in which all road users are seen as the same. Motorcyclists tend to be victims of road designs to enable traffic flows to merge without stopping, for they are not noticed by incoming drivers from the left, each protected by their own cage.⁵ Again, safety markings are often applied to roads in a way that can steer the front wheel of a bike. Also, the tendency of motorcyclists to congregate, when in numbers, at the front of queues at traffic lights is rarely catered for (Lee, 1986), an accident risk when following traffic seeks to turn as they move off.⁶ These material causes are not recorded in accident statistics and tend to reinforce the prevailing view that motorcycling accidents are caused by motorcycles. In the final analysis, motorcyclists may become frequent victims of RTAs because they are socially excluded and thus rendered invisible both to road and traffic planners and other road users.

Conclusion

We have presented an ostensive definition of the sixth and final approach to the understanding of how motorcyclists come to be exposed to hazards, but how might it be characterised in more general terms, so that apparently contradictory accounts based on statistics and ethnography can be reconciled in other cases?

Our findings are that statistical and ethnographic accounts are not two views of the same given world ('data'). Nor do they tell of parallel universes that are irreconcilable in principle ('explanation' *versus* 'understanding'). The realist approach suggests that, while statistics may predict, only an investigation of social processes can identify mechanisms to explain phenomena. Thus the two accounts are reconcilable, but not additive, because they need to 'multiply' to produce a full account. We agree with this, but wish to add to it significantly.

We do not share the *hard* constructionist view that these two accounts (like any others) produce their own discrete worlds. However, we do take the view that different positions in social relations tend to produce different constructs. They can be compared with each other, say as 'cultures of risk', and then explained by properties of social organisation, such as 'grid' and 'group'. This *soft* constructionism, as it appears in the work of Mary Douglas, cries out to be completed with attention to the *dynamics* of relations of power and contested truth claims.

Finally, just as it has to be acknowledged that cultures of risk have a material base, so must we pay attention to the physical constraints and effects of the body and the environment. Sociological accounts need to incorporate time and space: time, in the form of a process or causal chain; space, in the

form of the natural and built environments; and the conjunction of space and time, or 'place', where social interaction occurs, for example, motorcyclists and other road users merge (cf. Lefebvre, 1991). Causal chains should not be conceptualised in abstraction from time and space, as they tend to be in social surveys, so much as episode by episode as each unfolds. Generalisations can then be based on the similarity and difference in the forms that episodes take. Understanding participant's accounts is important but this understanding is not an end in itself, but is to be incorporated as one factor in the causal chain.

In the case we have studied, the end of the causal chain, the explanandum, is whether or not a road traffic accident occurred. The account we have developed in this paper includes the place in which action happens: that is, on roads, in traffic, where social processes that form 'motorcycling' and 'motoring' coincide and even collide on occasion to give rise to a RTA.

By following the 'complex model', the account of how motorcycling comes to be risky suggests a number of practical interventions. For instance, experienced may train inexperienced motorcyclists; experts may take cognisance of the idea that, even with headlights, motorcyclists are 'invisible' to motorists because of their social exclusion; and road surfaces, cambers and bends may be designed with two wheels in mind as well as four.

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Notes

- 1 The Social Science Citation Index lists 3.5 items on average, per annum in 1981–90, 39 per annum in 1991–5, and more than 60 per annum from 1996.
- 2 We have made an adjustment to the data summarised in table 4 so as to remove lapsed motorcyclists from car only users and add them to known motorcyclists. This was done to produce adequate numbers of female motorcycle users to compare with male users.
- 3 Experts may come to share some of the motorcyclists' convictions. The 'Think Bike' advertising campaign of a number of years ago appeared to take on board the motorcyclists' view that car drivers are implicated in motorcycle accidents. Indeed, our perspective changed following discussions with motorcyclists and this paper is such a recognition of a different perspective and attempt to deal with different risk perspectives on the same event so as to arrive at viable social scientific input into the policy process.

- 4 Beck's analysis of risk positions is not applicable to the case under discussion. The motorcyclist's relation with car drivers is hierarchical; cars hurt motorcyclists more than motorcyclists hurt drivers. There is no boomerang effect – car drivers will not eventually suffer a similar fate to motorcyclists. Also Beck's arguments stem from concern about the invisibility of risks eg: BSE. In the case of accidents, the on-the-road experience of accidents is known and seen, it is often the discussion that is absent.
- 5 A recent example would be the Conservative Party's proposal to enable motorists to turn left at red lights, a charter for motorcycle, cycle and pedestrian carnage.
- 6 There is of course a recent awareness that motorcyclists are road users too, in part stimulated by recent tendencies toward gridlock: for example, pilot schemes to enable motorcyclists to share cycle and bus lanes have emerged.

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