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Responsibility, Paternalism and Alcohol Interlocks

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Abstract: Drink driving causes great suffering and material destruction. The alcohol interlock promises to eradicate this problem by technological design. Traditional counter-measures to drink driving such as policing and punishment and information campaigns have proven insufficient. Extensive policing is expensive and intrusive. Severe punishment is disproportionate to the risks created in most single cases. If the interlock becomes inexpensive and convenient enough, and if there are no convincing moral objections to the device, it may prove the only feasible as well as the only justifiable solution to the problem of drink driving. A policy of universal alcohol interlocks, in all cars, has been proposed by several political parties in Sweden and is supported by the National Road Administration and the 2006 Alcohol Interlock Commission. This article assesses two possible moral objections to a policy of universal interlocks: 1) That it displaces the responsibility of individual drivers, and 2) that it constitutes a paternalistic interference with drivers. The first objection is found unconvincing, while the second has only limited bite and may be neutralized if paternalism is accepted for the sake of greater net liberty. Given the expected technological development, the proposed policy seems a commendable health promotion measure for the near future.

Keywords: Alcohol Ignition Interlocks, Drink Driving, Drunk Driving, Paternalism, Responsibility

Introduction

Drink driving is a grave public health problem, a top contributing factor behind the almost 1.3 million annual deaths in traffic worldwide, as well as the many more severe injuries (WHO 2004; 2009, p 11). The alcohol interlock is a novel technology that promises to eradicate this problem. Interlocks have been used extensively in the US and Canada as a requirement for people convicted of repeated drink driving offences. Voluntary programs for offenders have been carried out or instigated in Sweden, France, Belgium, Finland and Australia (Svensson Smith, Nilsson, Schönning & Sjöström, 2006, pp. 84-85). Such requirements and programs are slowly becoming more widespread and calls are sometimes heard for a more general use of interlocks. The US National Highway Traffic Safety Agency joined forces with the car industry in 2008 to fund a five-year \$10 million research project to develop more reliable, less intrusive and less expensive interlocks (dadss.org).

In 2005, the (social democratic) former Swedish government announced that alcohol interlocks would be part of the standard equipment in all new cars registered in Sweden by 2012. A report on the technical, economical, and legal aspects of universal interlocks was

presented by a special commission in the summer of 2006 (Svensson Smith, Nilsson & Schönning, 2006). The (right-wing) coalition government that came to power later that year soon withdrew their initial commitment to universal interlocks, though there is some disagreement amongst the coalition partners and individual members of parliament have motioned to re-commit (with a later start date). The public and political debate is ongoing. In the meantime, interlocks are becoming more and more common in government and commercial vehicles, and are increasingly offered as an alternative to revoked driving license for offenders. The car manufacturer Volvo offers integrated interlocks as an optional feature for some of their sedan models since 2008 (internationally since 2009). While the future of a general requirement is uncertain, interlocks are unquestionably becoming an integral part of traffic safety policy and practice in Sweden as well as in other countries.

The main focus of this article is on two possible objections to universal interlocks – that such a policy inappropriately places the responsibility for sober driving with system designers rather than with drivers, and that the policy is a paternalistic interference with voluntary risk-taking. We take these to be the most complex and difficult moral issues faced by proponents of universal interlocks. The two objections are closely related and so benefit from shared treatment. In order to evaluate the objections, we investigate the concepts of responsibility and paternalism as they apply to the case at hand. In the main, we find the objections unconvincing and so tentatively commend the policy. As we shall see, the technical solution offered by the interlock may be the only justifiable as well as the only feasible way to seriously diminish drink driving.

Since drink driving is a controversial issue and since alcohol interlocks are a novel technology, we will discuss both the problem and its possible solution in some detail before moving on to the core matters of responsibility and paternalism. The second section of this article briefly describes the extent of the problem and considers the efficiency and moral status of traditional responses – mainly policing and punishment. The third section is devoted to describing the interlock, its potential to stop drink driving and the more tangible costs involved. In the fourth section, we discuss social and individual responsibility and whether and how they can co-exist in the case of universal interlocks. In the fifth section we discuss whether and how liberty-limiting policies involve paternalism and how rejecting or accepting paternalism affects the moral status of universal interlocks.

Drink driving

Estimating the impact of alcohol on traffic accidents is a complex problem, due in part to great variations in police practice and to the susceptibility of autopsy studies to error due to lower blood alcohol concentration (BAC) at the time of death than at the time of accident. As a general indication, autopsy studies in some European countries show that between 20 and 50 percent of drivers killed in accidents are intoxicated (Austrian Road Safety Board, 2003, pp. 14-20). The Swedish Commission on Alcohol Interlocks (henceforth the ‘Interlock Commission’) estimates that in 2004 about 108 people were killed and 1450 severely injured in Sweden in accidents caused by drink drivers (being a large fraction of alcohol-related accidents more generally). This corresponds to 22.5% of all people killed in traffic accidents. The material cost of accidents caused by drink drivers (BAC above .2 g/l)¹ in 2004 is

estimated to about 1.5 billion Swedish krona (~€170 million) (Svensson Smith et. al., 2006, pp. 73-75). This cost includes net loss of productive contribution (estimated at 800.000 Swedish krona/death) but not the cost of law enforcement, nor costs arising in the justice and penal system. Arguably, the human cost is much higher.

The Swedish numbers are low by international comparison. In the US, for one important example, the National Highway Traffic Safety Administration estimates that approximately 13.000 were killed yearly from 1994 to 2007 in alcohol-related accidents (where at least one driver had a BAC above .8 g/l), with numbers decreasing to 12.000 in 2008 and 11.000 in 2009, following a general trend of fewer traffic accidents. This amounts to 30% of the total number of people killed in traffic (National Highway Traffic Safety Administration, 2009, p. 32). The total material cost (here including legal costs) of traffic accidents involving at least one driver with a BAC level above 1 g/l is estimated to 38 billion dollars (~€28 billion) for the year 2000 (Blincoe, Seay, Zaloshnja, Miller, Romano, Luchter & Spicer, 2000, p. 40).

In Sweden, drink driving a serious crime both legally speaking and in the public opinion. Driving with a BAC above 1 g/l is normally considered an aggravated drink driving offense and if so carries a maximum of two years in prison (eight years if someone is killed) in addition to revoked licence with no right to apply for a new licence for up to 36 months . Driving with a BAC below 1 g/l but above .2 g/l cannot be aggravated and very rarely lead to prison sentences, but normally carry fines and suspended licence for up to 12 months. Though about half of the aggravated cases either do not lead to prison sentences, or are suspended or transformed to community service, half do lead to prison times of on average 2 months, which is a rather severe punishment in light of Sweden's comparatively mild treatment of offenders generally (BRÅ, 2008). Even so, 90% of the population are of the opinion that punishments should be harsher and calls for harsher treatment are often heard in the public debate. A small majority of the population is also of the opinion that the legally accepted BAC should be lowered from the already very low .2 g/l to zero (Swedish National Road Administration, June 2006, pp. 4-14). This in spite of the fact that the lowering of the concentration from .5 g/l to .2 g/l has had no measurable effect on behaviour (Austrian Road Safety Board, 2003, p. 83).

In contrast, philosopher Douglas Husak (1994) has argued against regarding drink driving a serious offence. Husak points out that most cases of drink driving are not mere foolishness with no social utility. Rather, people drive intoxicated for much the same reasons they drive sober – mainly to get places. There is neither malicious intent nor extreme recklessness (Ibid., pp. 58-60). Husak argues that, risk-wise, drink driving is not all that different from other kinds of driving. Though intoxication makes driving more dangerous, so does sleepiness, stress and distracting activities such as talking on the phone, eating, shaving, reading or applying make-up. None of these other risk-enhancing factors are punishable as such, but only if they result in risky driving, which is and should be a crime in itself. This discrepancy would perhaps be motivated if intoxication was much more likely to cause accidents than was other factors. However, Husak cites studies showing that a typical driver with a BAC of 1 g/l is between three and seven times more likely to cause an accident than the typical sober driver (Ibid., p. 64). That magnitude is not enough, Husak argues, for

distinguishing a quite accepted activity such as sober driving from an activity punishable by imprisonment. Husak's numbers are in tune with the classical Borkenstein study of actual crash frequencies at various BACs (Borkenstein, Crowther, Shumate, Ziel & Zylman, 1964, p. 165) as well as the similar but more recent study by Blomberg, Peck, Moskowitz, Burns & Fiorentino (2005, p. xviii), which both assign a multiple of six to seven for the increased probability of causing an accident at BAC 1 g/l. Husak argues further that since the probability of being killed on a five mile drive is only one in ten million, even a tenfold increase of this probability must be negligible.

Husak's main argument hinges on two comparisons. First, there is the comparison between drink driving and sober, non-impaired driving. This comparison does not necessarily support the argument. If the risks of sober driving are on a par with those of drink driving, that may be an argument against the acceptability of sober driving rather than for the acceptability of drink driving. Compared to other modes of transportation, the risks of sober driving are substantial. Indeed: 'The difference in risk between driving while intoxicated and driving while sober is less than the difference in risk between driving while sober and taking public transportation.' (Husak, 1994, p. 63) It may be argued that sober driving is legal, in spite of the risks involved, only because it is socially accepted. In fact, Husak himself explores this side of the issue in another article (2004). Furthermore, a sixfold or tenfold increase of a small probability of grave negative consequences may well be unacceptable and punishable. That I may keep a tree in my yard despite the small risk that it may fall on the neighbour's house in a 100-year storm does not entail that I may keep another tree that is as likely to fall in a 10-year storm.

Husak's second argument is the comparison between drink driving and impaired driving of other kinds. This comparison does support Husak's argument. Speeding is a contributing factor in a comparable number of lethal accidents (about 10.600 or 31% in the US in 2009, National Highway Traffic Safety Administration, 2009, p. 175). However, while it is prohibited, and punished on occasion, neither the social stigma nor the legal consequences are nearly as harsh as for drink driving. It may of course be argued that rather than relaxing our stance on drink driving, we should start punishing other kinds of impaired driving (more harshly). As long as such measures are not taken, however, punishing moderate drink driving much more harshly than other kinds of risky driving is at least morally problematic. Even extreme drink driving, where the risks are much higher than for non-impaired driving, may have equivalents in other kinds of behaviour (such as extreme speeding). At high BACs there is also the additional difficulty that drink drivers are to a disproportional extent alcoholics and so possibly less responsible for their actions than for example speeding offenders.

In sum, we find that Husak's argument shows that punishing drink drivers with imprisonment or severe fines is at least morally problematic. Independently of this moral problem, there is also a practical problem. Policing and punishment simply have not solved the problem, as shown by the numbers surveyed above. The deterrence effect of legal prohibition is most tangibly determined by two factors - the *severity* of punishment and the *probability* of punishment. In the case of drink driving, it seems uncertain whether the severity of punishment has any impact, possibly because the probability of detection is too

low for potential convicts to consider punishment a real possibility (for a discussion of other possible explanations, see Houston & Richardson, 2004). Though even this is disputed, it does seem likely that a higher probability of punishment would contribute to the deterrence effect (Benson, Mast & Rasmussen, 1999; Austrian Road Safety Board, 2003, p. 81-84). Increasing the likelihood of punishment would of course require increased policing, which is expensive. More convictions would also entail higher costs for administration and prisons. (Given the empirical findings, it would seem rational to decrease punishments and legal administration and use the savings to increase policing.)

The deterrence effect of prohibition is also to a large extent dependent on social norms which help shape the subjective probability of detection and punishment. Norms also have a direct influence on behaviour independently of prohibition. Apart from policing and punishing, the main strategy for reducing drink driving has, quite properly, been information campaigns of different kinds. While such campaigns seem to have an effect, especially when used in combination with other measures such as increased policing (Elder, Ruth, Shults, Sleet, Nichols, Thomson & Rajab, W., 2004), they have proved insufficient in solving the problem. In part, this shortcoming is due to the fact that those most likely to drive with high blood alcohol concentrations are relatively unaffected by measures based on deterrence and persuasion (Beirness DJ., Simpson, Mayhew & Wilson, 1994; Coben & Larkin, 1998).

There are of course other possible responses to drink driving beyond affecting norms and policing and punishment. Alcoholism and the consumption of alcohol may be targeted generally. Bar and restaurant personnel may be trained not to serve people that are likely to drive and are approaching a certain degree of intoxication. To reduce recidivism specifically, licenses may be revoked, though many who have their licences revoked as a result of drink driving keep driving, without a license (Austrian Road Safety Board, 2003, pp. 87-88). Furthermore, convicted drink drivers may be offered treatment for alcoholism, though this is expensive. Cars may also be impounded or licence plates confiscated, though these measures may affect others than the driver. More proactively, doctors may be required to report alcoholics and driver's licences may be revoked preventively, though doctors are reluctant to do so since it undermines trust and is considered a breach of confidence (Bjerre, Heed & Kers, 2004).

Some of these measures can be fine-tuned. The availability of treatment programs for alcoholics involving alcohol interlocks rather than revoked licences would most likely increase doctors' inclination to report alcoholics (in Sweden around 70 times according to Bjerre et al., 2004, p. 1818). Recidivism is rather efficiently prevented by requiring alcohol interlocks for convicted offenders. However, several studies have shown that once the interlock is removed, drivers tend to resume their old patterns of drinking and driving (for a systematic review, see Elder et. al. 2011), even if this tendency can probably be weakened with more comprehensive and more exclusive programs, which include regular medical check-ups and which expel participants that don't meet the requirements (Bjerre, 2005). In sum, reducing recidivism as well as proactive prevention is most efficient when interlocks are used.

The interlock

If, for safety reasons, a machine should not be used in a certain way, it is wise to incorporate some feature preventing such use into the design of the machine. If cars should not be driven by people over a certain BAC, it would be wise to simply prevent such use by technical design. The alcohol interlock promises to provide such a safety feature. This device measures the driver's BAC before the car starts, for example through an exhalation sample. The interlock is connected to the car's ignition and if the measured concentration is above the maximum set, the car won't start. With this device installed in all cars, drink driving could be virtually eradicated.

The interlock is presently in a phase of rapid technological development. As the development progresses, detection becomes more and more accurate, and circumvention becomes harder. Breathalyzers are already quite reliable and the few substances that may interfere with correct measurement are either toxic or very short-term and obvious (like some medicines and hygiene products) (Harding 2010). The US Driver Alcohol Detection System for Safety recently announced that drivable test vehicles are expected in two years, some based on breath sampling and some on infrared spectroscopy of the skin, requiring only a brief touch of the finger (dads, 2011). There will always be ways for the smart and skilled to circumvent safety features, but as long as the misuse is not widespread, this is not a serious problem. It is becoming increasingly difficult to by-pass an interlock breathalyzer by having anything other than a human blow air into it. Preventing sober persons from blowing or touching for an intoxicated driver is harder. One standard feature is additional tests at certain intervals, with drivers stopping to take those test within a certain required time frame. With touch-based interlocks, repeated tests during driving would be more feasible. A failed test may either lead to gradual shut down of the vehicle, or may be registered, reported and later prosecuted (safety would probably be optimized by gradual shut down at high BACs and reporting at lower concentrations). Given a system of reporting, interlocks could come with an override feature to be used in emergencies, without encouraging misuse of that feature.

Electronic driving licenses would ease the prevention of circumvention. With such licences, it could be registered who started a car at any given moment. Technically, the licence could be required to stay in the car during driving, making starting a car with a borrowed licence more difficult. If only certain persons are required to use interlocks, this information could be stored in the licence and accessed by the car. If certain persons should be exempt from a general requirement (because of respiratory disease for example), this information can likewise be stored and accessed (Austrian Road Safety Board, 2003, pp. 95-96).

While a policy of universal interlocks would be expensive, there are a number of reasons to believe that it could be worthwhile in the long run. The technological development of interlocks means that the cost of production is steadily decreasing. The higher volumes that would be needed with a universal requirement would likely lead to economics of scale that would further reduce costs. The Interlock Commission estimates that based on the available technology the future cost of having interlocks integrated into the basic design of all cars would be on average SEK 3.000 (~€330) per car yearly (p. 128). About a third of this cost is due to the inconvenience of use (the interlock has to warm up which may sometimes take a

full minute or more). The total cost for universal interlocks in Sweden would amount to SEK 14 billion (~€1.6 billion) yearly (Svensson Smith et. al., 2006, pp. 91-92). The Swedish National Road Administration (NRA) in an official statement (2006:22883, p. 9) regards these estimates as too conservative given the expected technological development. Still, as noted above, the annual material cost of accidents caused by drink drivers is only SEK 1.5 billion (~€170 million). On the other hand, the human cost should certainly be given some weight, whether it be higher, lower or equal to the Interlock Commission's estimate of SEK 5.5 billion (~€600 million). Human costs should include anxiety and distress caused by the risk of accident as well as by actual accidents. In addition, the commission proposes that interlocks will have positive effects on population health more generally, mainly from earlier detection of alcoholics and lowered consumption of alcohol (Svensson Smith et. al., 2006, p. 92). These effects depend very much on behaviour patterns. The commission believes that with universal alcohol interlocks, people will drink less in order to keep driving. However, as the commission also notes, another possibility is that people drink as much and venture into traffic in other ways than in cars (on bikes or mopeds), with very different effects on population health (p 79). A third possibility is that people drink more closer to home, with no effects on alcohol-related health issues but with possible economic and health benefits from less traffic, or costs from increased social isolation. The dynamic effects are obviously hard to predict and will depend on the details of implementation and on possible complementary policies such as increased or more accessible public transportation.

If a general requirement of interlocks in all cars should be deemed too costly, there are various options for making interlocks mandatory only for certain groups of drivers or cars. Convicted drink driving offenders is one obvious category. Young people is another possibility. Focusing on cars, possible categories include government vehicles, commercial vehicles, taxis, buses, and trucks. While we focus on "universal" interlocks, our discussion would be as relevant for a more limited policy as long as some drivers may be treated paternalistically and may not be held appropriately responsible.

The costs of either a general or a more limited requirement will depend on technological developments and other factors that are hard to predict. It is quite possible that in the not so distant future we will have interlocks requiring less or no air, less warming time and less service, decreasing costs dramatically. Wider use of mandatory interlocks is very much a practical possibility. While we will have reason to return to the cost aspect, most of the moral arguments below are made against the background assumption that mandatory interlocks, for some or all cars, is cost-efficient in the wide sense that we consider the death and suffering prevented worth the net material cost. In this context, it should be noted that the costs will mainly be borne by car buyers while the benefits are shared by all road users. The interlock is a safety feature of the car, preventing dangerous use that exposes non-consenting others to risk of harm. It may be reasonable to require buyers of potentially dangerous products to pay for safety features even if, in the aggregate, the costs of safety are larger than the benefits.

Interlocks may or may not include a logging function, registering failed tests. As interlocks have historically often been used in experimental programs, collection of data has been crucial. It may be thought, however, that such registration threatens privacy. Why should

the government or anyone else know how many times I have tried to start my car after drinking if this is not in itself a crime? This may be a valid concern and it should be noted that logging and collection of data is not a necessary feature of universal interlocks. Interlocks may be designed not to store information of failed attempts. As noted above, failed attempts *during driving* may have to be reported in order to deter circumvention. Such reports, however, concern the criminal offence of drink driving, as well as circumvention. Respect for privacy can hardly require that these crimes not be reported. *If* information about failed attempts is stored it could be used by employers as well as by health care providers to identify people in early stages of alcoholism. Even without logging, however, people who repeatedly fail to start their cars due to high BAC may themselves realize that their alcohol habits are not healthy.

Responsibility

According to the current Scandinavian traffic safety paradigm, the ambitious goal is that no one be killed or seriously injured in road traffic (Swedish Government, 1996/97). An important means to this end is placing responsibility for preventing traffic accidents partly on system designers. “If road users fail to abide by the rules – for example due to lack of knowledge, acceptance or ability – or if personal injuries occur, the system designers must take additional measures to prevent people from dying or being seriously injured.” (our translation, Traffic Responsibility Commission, 2000, p. 69) System designers include public and private organizations involved in the design and maintenance of roads, vehicles and transportation services, as well as those involved in the design and implementation of rules and regulations, education, surveillance, rescue work, care and rehabilitation (Swedish Government, 1996/97, p. 17). This paradigm has been criticised for eroding individual responsibility (Ekelund, 1999). The possible erosion or displacement of responsibility is the first moral objection to universal interlocks that we will scrutinize.

Discussions about the balance between individual and societal responsibility wage back and forth in several areas, including unhealthy diets and drug use more generally (when not driving). It is important to realize that responsibility for a given event or problem is not a zero-sum game. Making the police responsible for fighting crime does not mean that people become less responsible for the crimes they commit. In certain cases, however, shared responsibility could mean less responsibility for each party. To evaluate the claim or worry that interlocks erode individual responsibility, therefore, we need to thoroughly analyze the case at hand.

Historically, responsibility for traffic accidents has been ascribed to the driver or drivers involved. The typical response to an accident is to investigate who among those involved is to blame. Interestingly, the narrow focus on individual responsibility can be contrasted with the current trend in ‘human factor’ research, which primarily investigates aviation. The same focus on individual responsibility used to be prevalent in aviation, i.e. blaming individual pilots for accidents. Some years ago, however, there was a shift in research interests towards the context in which decisions are made and actions carried out (Decker, 2002). This is appropriate – both aviation and road traffic take place in complex

systems and consequently accidents in these systems tend to have complex and multiple causes.

When system designers step in to take responsibility for the context in which decisions are made, they may be filling an empty space rather than usurping individual responsibility. The responsibility ascribed to system designers is of the forward-looking kind, aimed at preventing future accidents rather than distributing blame for past accidents. Forward-looking responsibility does include an element of potential blame for future accidents, if efforts at prevention turn out to be insufficient. However, it is essentially a responsibility to get certain things done, rather than to take blame. This should be distinguished from backward-looking responsibility, which is essentially focused on distinguishing the immediate causes of an accident and on the blameworthiness of those immediately involved (Nihlén Fahlquist, 2006; Dworkin, 1981). In the public debate, both kinds of responsibility ascriptions are common, though not well distinguished from each other. Importantly, the two kinds of responsibility can co-exist without the one diminishing the other. Indeed, the same kind of responsibility can be ascribed to more than one agent without necessarily diminishing responsibility. Under the Scandinavian paradigm, drivers are still expected to do their part in preventing accidents by driving responsibly and following traffic rules. This is a forward-looking responsibility, since failure to drive safely can incur blame even when no accident occurs.

A public policy focusing on assigning backward-looking responsibility to individual road users could, for instance, emphasise incarceration. The main question from that perspective is who is to blame for any given accident. If, on the other hand, focus is on forward-looking responsibility, alcohol interlocks could be a natural way of managing the problem of drink driving – system designers take responsibility by putting an effective systemic solution in place and individual drivers take responsibility by adjusting to that system and not circumventing the safety feature.

Are there reasons to believe that ascribing forward-looking responsibility for accident prevention to system designers will in fact make drivers feel less responsible for their driving and so less cautious? Technical systems that are very sophisticated and where almost all safety hazards are guarded by automatic systems can erode the operator's feeling of responsibility. This has been observed in airplanes, where familiarity with safety devices has led to inattention and complacency (Perrow, 1999, pp. 152-54). However, these effects result from safety devices that take over a certain task from the pilot or driver and that work continuously through the whole journey, such as a collision avoidance system. The interlock, on the other hand, merely establishes whether the driver is sober before she can start the engine. This test has no direct effect on the driving experience. It does not at all guarantee that the driver is a good one or that the safety of the driver and of other road users is automatically protected. There are many other safety features and conveniences in cars that do make drivers more passive, such as automatic transmission, cruise control and automatic braking systems. The interlock, on the other hand, only prevents people above a certain degree of intoxication from driving and is itself passive during the journey.

Could it be that despite these considerations, people will come to think of the interlock as a general test for being fit to drive, such that they will discount the risks of driving tired, stressed or under the influence of other drugs than alcohol? This may of course be possible,

all sorts of misconceptions can spread, but there seems to be no direct reason to expect such a development. It is explicit and obvious that the alcohol interlock measures BAC and nothing else. Could people come to think that activities that are not protected by interlocks are safe to perform after drinking? Again, this seems farfetched. It is obvious that many activities are risky to perform after drinking and it is common knowledge that drink driving is a serious problem. Attending to this problem should not induce people to lose their everyday experience and knowledge of the impairment that comes with intoxication. In sum, the case for claiming that interlocks erode individual responsibility seems very weak.

Drink driving is a shared, social problem not only in light of its grave aggregate consequences, but also in the sense that social norms sometimes indirectly encourage drink driving. Alcohol is a natural ingredient in social life for many people. In most European and in many other cities, public transportation is extensive and runs at day and night. It is then possible for most people to engage in social life, drink alcohol, and avoid driving. However, in rural areas as well as many cities in the US and elsewhere, there is no convenient and affordable alternative to driving, especially at night. Social norms then require one to show up at a bar or restaurant or friend's place, to drink alcohol, and then to get home in some fashion. Responsible people try to assign a designated driver or otherwise plan their getting home without driving after drinking, but this is cumbersome and it is not surprising in the circumstances that people often drive intoxicated. Especially so since every single instance of drink driving with a moderate BAC is not that dangerous, despite the severe aggregate outcome. Individuals make their own choices about how to spend their nights, but these are made against the background of social expectations, city planning, nightlife culture, laws and regulations, and technology. Should universal interlocks become a fact, social life would simply have to adjust to the technical circumstances. It seems likely that this would encourage ways of socializing without alcohol, socializing more locally, and more extensive public transportation.

The problem of drink driving, and of impaired driving more generally, is a problem where many individuals fail to be responsible enough, with grave aggregate consequences, but where punishment of these individuals is very costly and possibly morally unjustified. The best way to solve such a problem is to change the background circumstances. Directly influencing social norms and increasing the (subjective) probability of detection are two ways to combat the problem, but they are insufficient. Drivers will continue to make mistakes and break the rules. Profound change will only come by conscious design of the system within which individual decisions and mistakes are made. Today, the technological design of cars provides drivers with opportunities which are illegal and dangerous, such as driving very fast and driving after drinking. The danger is not only to the driver, but to other road users as well. While driving after drinking is not to be dismissed as totally lacking utility, the right to drive after drinking is arguably rather trivial and defeated by other road users' rights to safety. The government should strive to eliminate opportunities that are harmful, dangerous, and relatively unimportant. Eliminating the opportunity to drive after drinking by making interlocks universal, if worth the material costs, seems a perfect example of sound health promotion policy.

Paternalism

The Interlock Commission explicitly states that the purpose of the interlock is ‘mainly’ to protect other road-users from harm (Svensson Smith et. al., 2006, p. 2). The Swedish National Road Administration takes the same position (Swedish NRA, 2006:22883, p. 4). However, death and injury to drink drivers themselves forms a large portion of the total cost of drink driving. Both government entities base their recommendations to implement universal interlocks on total cost estimates. In an important sense, therefore, the avoidance of self-inflicted harm comprises a large part of the rationale for the policy. This raises the spectre of paternalism – limiting the liberty of drink drivers for their own good. The charge of paternalism is the second moral objection to universal interlocks that we will scrutinize. The Interlock Commission and the Swedish NRA understandably attempt to avoid a complex moral problem by referring to harms to others as the main rationale. However, this moral problem should not be avoided, but rather recognized and analyzed.²

Universally required interlocks are potentially paternalistic because they limit liberty.³ People would unquestionably be freer if they did not have to succumb to a BAC test before driving. However, liberty-limiting policies are not necessarily paternalistic. All criminal laws are liberty-limiting in that people would be freer if they did not have to avoid the prohibited activity, be it murder, theft or forgery. Policies are only paternalistic in so far as they are supported by certain reasons. There are in principle three kinds of reasons that may potentially justify universal interlocks – direct protection of others from harm, avoidance of indirect costs to others, and direct protection of drivers themselves. We will, in turn, discuss these kinds of reasons and whether or not invoking them for limiting liberty is paternalistic.⁴

The Interlock Commission and the Swedish NRA state that the main reason for universal interlocks is direct protection of others from harm. Limiting liberty for this reason is clearly non-paternalistic. A liberal justice system allows liberty to be exercised only within boundaries set by concern for others. Drink driving imposes significant risks on others for no comparable benefit and so the first rationale for universal interlocks should be morally relatively unproblematic.

Objections may possibly be raised concerning the distribution of costs. Proponents of universal alcohol interlocks tend to assume that the costs of universal interlocks, both in terms of the monetary cost of installation and service of the interlock and in terms of the inconvenience of testing, are to be shared by all (at least by all car buyers), regardless of whether or not they have or would have driven after drinking, and regardless of whether or not they would have been victims of drink driving. However, the point of universal interlocks is that they prevent all forms of drink driving, without discrimination. This is how safety measures typically work, they prevent everyone from unsafe behaviour regardless of whether or not they are prone to such behaviour, and even if this imposes some costs on all. Some drivers are very skilled and cautious and never cause an accident. Nonetheless, these drivers have to share the cost of roadside safety barriers and speed cameras. The same drivers could probably be allowed to drive through red lights when they deemed it safe to do so – still they are inconvenienced by traffic laws shaped to suit the general population. It is of course an open question in any one case whether the costs are worth the benefits. It is generally not

considered a form of paternalism, however, to force all to share the costs of protecting all or some from the mistakes or misbehaving of the few.

The second kind of reason for universal interlocks is that they prevent the incurring of costs on others, costs that are not in the form of direct harms. These indirect costs include the psychological cost of knowing that people kill themselves driving after drinking, and occasionally seeing it happen.⁵ However, the largest indirect cost is arguably the material cost to society from drink drivers causing death and injury to themselves, with subsequent need for medical attention and diminished productive contribution to society. As noted, these costs form a large portion of total costs (we are not aware of any estimates as to how large exactly). Is it paternalistic to count the avoidance of these costs as a reason for universal interlocks? If it is, and if paternalism is unacceptable, these costs should be disregarded when considering the costs and benefits of the policy, making it much less cost-efficient.

The indirect costs of a person contributing less because she is dead or disabled is most obviously a cost to others. It may be argued that society has no right to expect or demand a productive contribution from an individual, who may at any time chose to end her life, or to live in ways that provide no net contribution, if she can do so without infringing on the rights of others. However, this does not change the fact that the loss of her (voluntary) contribution is a real loss and that avoiding it would be of benefit to others. Invoking this reason for limiting her liberty is therefore not paternalistic. It should be acknowledged, however, that it may be illiberal on other grounds to limit some people's liberty in order to benefit others.

Regarding the psychological and economic costs of accidents and health care, there are good arguments on both sides. On the one hand, other people are as a matter of fact made to bear much of the material costs of drink drivers harming themselves. On the other hand, it may be argued (as by Dworkin 1983) that these costs are voluntarily assumed by society, which need not provide free health care to drink drivers and which may charge these drivers for other costs of the accident, such as the cost of clearing up the road and costs resulting from delays in traffic. If this individualistic argument is correct, the costs incurred by drink drivers are costs that they should themselves bear and so accepting the avoidance of these costs as a reason for limiting their liberty is indeed paternalistic. On this line of thinking, that compensation is not currently exacted from drink drivers, and perhaps more generally from drivers who cause accidents, means that costs are improperly imposed on the collective.

Against the individualistic argument it may be countered that most of us want to live in a humane society that provides (emergency) health care to all without stopping to check if they are able and prepared to pay for it, and that we are within our rights to create such a society. If so, the costs of accidents and care are quite properly costs to the collective. Yet again, the pain one feels when others bleed to death in the street is perhaps an other-regarding pain, caused by one's own sensitivity and so an improper ground for limiting liberty. Perhaps the same goes for living in a humane society more generally.

It seems that the final judgement as to whether or not invoking the avoidance of the costs of accidents and health care as a reason for universal interlocks is paternalistic depends on whether or not one favours a welfare state with free emergency health care and an ambition to avoid unnecessary suffering regardless of its cause. Similarly, whether invoking the avoidance of the loss of productive contribution is illiberal depends on whether or not we

have any right to expect others to contribute. These background assumptions should be recognized. If we reject paternalism and still accept that indirect costs provide grounds for universal interlocks we should admit that we take some sort of solidarity for granted, or provide some other explanation for why these costs are relevant.

The third kind of reason concerns the direct protection of drivers themselves. We may think that saving people from being killed or injured through their own drink driving is a good reason for universal interlocks, independently of the resulting cost to society. In terms of cost-benefit analysis, this attitude entails putting the ‘human cost’, the loss of quality of life, to drink drivers themselves on the scales. This clearly amounts to paternalism in the sense of limiting the liberty of drivers for their own good. However, at this point we should distinguish between ‘hard’ and ‘soft’ paternalism, where the former is the limiting of people’s voluntary choices, while the latter is the limiting of choices that are substantially involuntary, or not voluntary enough to be genuinely their own (see Feinberg, 1986, chapter 19).

Intoxication is a standard case of impairment not only in the context of driving a car, but also in the context of making rational decisions. The decision to drive after drinking is to some extent impaired and so less than perfectly voluntary. At some degree of intoxication, the decision is substantially involuntary – not voluntary enough that benevolent usurpation of that decision qualifies as hard paternalism. Moreover, drink drivers who are alcoholics may not only be acting involuntarily when they chose to drive, but also when they get themselves intoxicated in the first place. This point bears also on the indirect costs discussed above – even on an individualistic account it is not hard paternalism to avoid indirect costs by limiting liberty, if these costs are brought about involuntarily. Varying estimates indicate that about 50 per cent of drivers killed after drinking are alcoholics (Brinkmann, Beike, Köhler, Heinecke & Bajanowski, 2002; Swedish NRA, June 2002, p. 8). Still, not all drink drivers are alcoholics and not all alcoholics always act substantially involuntarily. Presumably, some drink drivers are making choices that are voluntary enough to be genuinely theirs. Unless hard paternalism is accepted, the costs incurred by these drivers should be disregarded, making a policy of universal interlocks less cost-efficient. Exactly which costs should be disregarded depends on where the line is drawn, in this particular context, between voluntary and not voluntary enough.

Importantly, the fact that there exists a paternalistic rationale for universal interlocks in no way affects the reasonableness of other rationales. A paternalistic rationale is not something that stains a policy so that its mere existence makes the policy less justified than it would otherwise have been. The moral status of paternalism determines whether or not the protection of the very people whose liberty is limited (and who act voluntarily enough) should be accepted as a contributory reason for a given policy (Grill 2007; Husak 2003). If it should not, other reasons for that policy remain in full force.

As already noted, the Interlock Commission and the Swedish NRA have no clear position on the issue of paternalism. They point out that they support universal interlocks ‘mainly’ for other reasons, while they include the costs of death and injury to drink drivers themselves in their calculations, without commenting on the possible inconsistency. This is perhaps the standard procedure in public policy matters – the least controversial reasons are the ones officially cited, while costs are taken into consideration regardless of whether or not

they are self-inflicted (and voluntary). Such a procedure implicitly entails comprehensive acceptance of paternalism – the avoidance of voluntary self-harm is assumed to be as valid an aim as the avoidance of involuntary self-harm or harm to others.

It is far from clear that paternalism as understood here should be rejected. It is common to hold that paternalism involves some sort of bad or wrong, but this may simply be because it entails a cost in terms of liberty or autonomy. The principled antipaternalism that holds that this cost cannot be outweighed by any benefit is uncommon and arguably unreasonable. Naturally, if paternalistic reasons are accepted as valid, they must still be balanced against other reasons, such as reasons provided by the value of liberty.

Barring a principled antipaternalism, the liberty cost of universal interlocks should most obviously be compared to the corresponding liberty gain. It is not obvious that interlocks entail a greater limitation or interference with liberty than do policing and punishment. On any one occasion, being forced by the police to undergo a random exhalation test is surely more inconvenient and intrusive than being forced by the technical design of the car to do the same thing. Random police tests are less intrusive only to the extent that they are less frequent. Of course, the less frequent they are, the less effective they are. If comprehensive, effective policing would be acceptable, so would interlocks. Would it? We propose that in the case of drink driving, as well as any other activity that should be prevented because of its potential destructiveness on any single occasion (and not just because of the accumulative effect of activities of that type), extensive policing is in principle acceptable, as long as it is not too costly or too inconveniencing. To the extent that interlocks can become cost-efficient and non-inconveniencing, they are acceptable, and less intrusive than policing. As for imprisonment, it is of course the most severe interference when it is actually carried out. Again, the small probability of actually being punished may make a policy of policing and punishment less interfering, but to that extent also less effective. In comparison with the loss of liberty incurred by imprisonment or even by heavy fines and/or revocation of one's driver's licence, the inconvenience of the interlock and the loss of the freedom to drive intoxicated seem rather trifling.

To sum up, it makes little sense to hold that a policy of universal interlocks would be paternalistic as such, since it is supported by strong non-paternalistic reasons. The fact that it may also be supported by paternalistic reasons does not change this fact. The question is, rather, whether paternalistic reasons should be allowed to bear on the issue. Such reasons are assumed to be valid in official investigations of the costs of drink driving. This seems to us very reasonable, as long as the costs of limiting liberty are not forgotten, but properly weighed against other, perhaps more tangible costs. A look at the liberty costs of policing and punishment indicates that these costs are comparable to the liberty costs of universal interlocks. If, contrary to our tentative position, paternalistic reasons should be disregarded when deciding whether or not to implement universal interlocks, the first step should be to look closer at which costs of drink driving are costs to drink drivers themselves. If soft paternalism should be acceptable, but not hard paternalism, a further important issue is to what extent drink drivers are acting voluntarily, especially in view of the fact that many, in particular at higher BACs, are alcoholics.

Conclusion

Drink driving is a societal problem of great proportions. Punishing drink drivers has proven an insufficient measure and it may be questioned if harsh punishment is morally justifiable. The interlock offers a technological solution to the problem. The costs are at present too high to make a policy of universal interlocks in all cars cost-efficient in the short run. However, technological development might change this estimate, especially if stimulated by large orders. Furthermore, aggregate cost-efficiency may not be required since the costs would be borne by buyers of otherwise dangerous products. Should a comprehensive program still be too expensive, various limited programs are possible.

We propose that the responsibility for dealing with drink driving is to a large extent the forward-looking responsibility of system designers, including politicians. Individuals should take responsibility for their choices, but choices are always made in a context and this context can be changed by system design. It is quite consistent to hold system designers responsible for the circumstances in which individual choice is made, while at the same time holding individuals responsible for the choices they make in these circumstances. Furthermore, there seems to be no cause for worrying that greater social responsibility for system design will erode the individual feeling of responsibility for driving in the case of universal interlocks. Unless such a cause can be identified, sound health promotion policy favours social responsibility in this case.

We propose that paternalistic reasons are acceptable as long as the cost in terms of limiting liberty is recognized and considered. Therefore, all costs of drink driving are relevant to determining the cost-efficiency of universal interlocks. Should paternalistic reasons nonetheless be rejected as invalid, and certain costs therefore excluded from the consideration of costs and benefits, great care should be taken to distinguish exactly what these costs are. In any case, there are strong reasons for society to combat drink driving, as it presents an obvious risk of harm to others. Given technological development, the interlock may soon be the only justifiable as well as the only feasible way to seriously diminish drink driving.

¹ Though in Sweden BAC levels are measured in mass per mass, we will stick with the internationally more common usage of mass per volume, ignoring the small difference (approx. 6%).

² Concerning the widespread repeal of motorcycle helmet regulation in the USA during the last decades, Marian Moser Jones and Ronald Bayer (2007, p. 216) have argued that "[t]he inability to successfully and consistently defend these measures for what they were — acts of public health paternalism — was an all but fatal limitation."

³ Joel Feinberg (1986, p. ix) explicitly defines paternalism in terms of 'limiting liberty'. Other definitions speak instead of "interference with liberty of action" (Mill, 1991 [1859], p. 14), "violation of autonomy" (Dworkin, 1983, p. 107), or use similar expressions referring to a diminishing or disrespect of some liberal value.

⁴ Most discussion of paternalism takes for granted that what is paternalistic is an action, law, institution or policy. Whether or not a policy is paternalistic then depends in part on what reasons motivates or justifies the policy. In opposition to this standard account, we assume here that what is paternalistic is the invocation of certain reasons for a policy. For a defence of this approach, see Grill (2007).

⁵ Feinberg (1986, pp. 134-141) considers the avoidance of such "psychic costs" a sufficient reason for motorcycle helmet requirements. Most other authors disagree and hold that such costs are generally not sufficient to warrant limitations of liberty.

References

- Austrian Road Safety Board. 2003. *Preventive measures to prevent driving while under the influence of alcohol/drugs – Literature study for the Swedish National Road Administration*. Vienna.
- Beirness D.J., Simpson H.M., Mayhew D.R., Wilson R.J. 1994. 'Trends in drinking driving fatalities in Canada'. *Canadian Journal of Public Health* 85: 19-22.
- Benson, B.L., Mast, B.D. & Rasmussen, D.W. 1999. 'Deterring drunk driving Fatalities: an economics of crime perspective'. *International Review of Law and Economics* 19: 205-225.
- Bjerre, B. 2005. 'Primary and secondary prevention of drunk driving by the use of alcoholock device and program: Swedish experiences'. *Accident Analysis and Prevention* 37: 1145-1152.
- Bjerre, B., Heed, B., & Kers, S. 2004. 'Bara 1 av 1000 alkoholberoende anmäls enligt Körkortslagen' (Only 1 out of 1000 alcohol dependants are reported in accordance with driving licence law). *Läkartidningen* 101: 1814-1819.
- Blincoe, L., Seay, A., Zaloshnja, E., Miller, T., Romano, E., Luchter, S., Spicer, R. 2000. *The economic impact of motor vehicle crashes 2000*. Washington D.C.: National Highway Traffic Safety Administration, U.S. Department of Transportation.
- Blomberg, R.D., Peck, R.C., Moskowitz, H., Burns, M. & Fiorentino, D. 2005. *Crash Risk of Alcohol Involved Driving: A Case-Control Study*. Stamford CT: Dunlap and Associates Inc.
- Borkenstein, R.F., Crowther, R.F., Shumate, R.P., Ziel, W.B. & Zylman, R. 1964. *The Role of the Drinking Driver in Traffic Accidents*. Indiana University.
- Brinkmann, B., Beike, J., Köhler, H., Heinecke, A., & Bajanowski, T. 2002. 'Incidence of alcohol dependence among drunken drivers'. *Drug and Alcohol Dependence* 66: 7-10.
- BRÅ. 2008. Rapport 2008:23. L. Ekström (ed.) *Brottsutvecklingen i Sverige fram till år 2007*. Stockholm.
- Coben, J.H. & Larkin, G.L. 1999. 'Effectiveness of ignition interlock devices in reducing drunk driving recidivism'. *American Journal of Preventive Medicine* 16: 81-87.
- Decker, S. 2002. *The field guide to human error investigations*. Aldershot: Ashgate.
- dadss.org. Driver Alcohol Detection System for Safety. Accessed Dec 20, 2011.

dadss (Driver Alcohol Detection System for Safety). 2011. Press release: 'Ambitious Drunk Driving Prevention Research Program Moves Forward'. Nov 1, 2011.

Dworkin, G. 1981. 'Voluntary health risks and public policy'. *The Hastings Center Report*, 11(October): 26-31.

Dworkin, G. 1983. 'Some second thoughts'. In *Paternalism*, ed. R. Sartorius, 105-111. Minneapolis: University of Minnesota Press.

Elder, R.W., Voas, R., Beirness, D., Shults, R.A., Sleet, D.A., Nichols, J.L., Compton, R., Task Force on Community Preventive Studies. 2011. 'Effectiveness of Ignition Interlocks for Preventing Alcohol-Impaired Driving and Alcohol-Related Crashes'. *American Journal of Preventive Medicine* 40(3): 362-376.

Elder, R.W., Shults, R.A., Sleet, D.A., Nichols, J.L., Thomson R.S., & Rajab, W. 2004. 'Effectiveness of mass media campaigns for reducing drinking and driving and alcohol-related crashes'. *American Journal of Preventive Medicine* 27: 57-65.

Ekelund, M. 1999. *Varning – Livet kan leda till döden! En kritik av nollvisioner* (Warning – Life can lead to death! A critique of Zero Visions) Stockholm: Timbro.

Feinberg, J. 1986. *Harm to Self*. Oxford: Oxford University Press.

Grill, K. 2007. 'The Normative Core of Paternalism'. *Res Publica* 13: 441-458.

Harding, P.M. 2010. *2010 Breath Alcohol Specificity Report*. Center for Studies of Law in Action. Indiana University.

Houston, D.J., & Richardson, L.E. Jr. 2004. 'Drinking-and-driving in America: A test of behavioural assumptions underlying public policy'. *Political Research Quarterly* 57: 53-64.

Husak, D. 1994. 'Is drunk driving a serious offence?' *Philosophy and Public Affairs* 23: 52-73.

Husak, D. 2003. 'Legal Paternalism'. *The Oxford Handbook of Practical Ethics*. Oxford: Oxford University Press.

Husak, D. 2004. 'Vehicles and crashes. Why is this moral issue overlooked?' *Social Theory and Practice* 30: 351-370.

Jones, M.M. and Bayer, R. 2007. 'Paternalism and Its Discontents: Motorcycle Helmet Laws, Libertarian Values, and Public Health'. *American Journal of Public Health* 97: 208-217.

Mill, J.S. 1991 (1859). *On Liberty*. In *On liberty and other essays*. Oxford: Oxford University Press.

National Highway Traffic Safety Administration. 2009. *Traffic Safety Facts 2009 – A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System*. Washington D.C.: U.S. Department of Transportation.

Nihlén Fahlquist, J. 2006. 'Responsibility ascriptions and Vision Zero'. *Accident Analysis and Prevention* 38: 1113-1118.

Perrow, C. 1999. *Normal accidents*. Princeton: Princeton University Press.

Svensson Smith, K., Nilsson, M., & Schönning, O. 2006. *Öppna möjligheter med alkoholås – Slutbetänkande av Alkoholåsutredningen* (Open possibilities with alcohol interlocks – Final report of the Commission on Alcohol Interlocks). Stockholm: SOU 2006:72.

Svensson Smith, K., Nilsson, M., Schönning O., & Sjöström, L. 2005. *Alkoholås – Nyckeln till Nollvisionen – Delbetänkande av Alkoholåsutredningen* (Alcohol Interlocks – The key to Vision Zero – Partial report of the Commission on Alcohol Interlocks). Stockholm: SOU 2005:72.

Swedish government. 1996. Regeringsproposition 1996/97:137 (Governmental bill). Stockholm.

Swedish National Road Administration. June 2006. *Alkohol, droger och trafik* (Alcohol, drugs and traffic). Stockholm.

Swedish National Road Administration 2006, Ytrande TR65 A 2006:22883 (Statement). Stockholm.

Traffic Responsibility Commission. 2000. *Ett gemensamt ansvar för trafiksäkerheten – Betänkande av Trafikansvarsutredningen* (Collective responsibility for traffic safety – Report by the Traffic Responsibility Commission). Stockholm: SOU 2000:43.

World Health Organization. 2004. *World report on road traffic injury prevention*. Geneva.

World Health Organization. 2009. *Global status report on road safety: time for action*. Geneva.