Are there better ways to predict recidivism?

Louise Nadeau, PhD

Département de psychologie, Université de Montréal

Driving-under-the-influence (DUI) recidivists pose a unique problem in road safety because of their apparent inability to respond to the preventative measures that have been put in place to ensure road safety. This relatively small sub-group of drivers cause a disproportionately large number of victims. The majority of offenders are men - 95% in a Quebec study (Bergeron et al, in process). As a group, they have been punished, quite severely in many instances, and still use their car when drunk in spite of the understanding that a second or third offence involves more severe punishment than the previous one(s). Alcohol ignition interlock recorders have significantly reduced recidivism for the minority of offenders who have been willing to participate but outcome studies show that once the device is removed, the rate of DUI is comparable to those offenders who refused to participate (Voas et al, 1999, SAAQ, unpublished data). DUI can be put to a halt by environmental contingencies, but the intention to relapse appears to remain unaffected. In the language of motivation, motivation remains extrinsic (the behavior is performed because of external constraints), it never becomes intrinsic (an integral part of the person’s behavioural repertoire). This lack of conscience and ongoing disrespect of the social consensus constitute one of the most significant challenges in road safety today.

Because violations are repeated and cannot be accounted for as an isolated “accidental” event in the person’s life, recidivists have been perceived as having malevolent intentions, as being wicked, despicable, and loathsome. This emotional cry is understandable, particularly on the part of victims and their families, and indignation constitutes a powerful motivation for pressure groups, scientists, and politicians. From a health research perspective, recidivists’ behavior raises questions as to why they think and act differently than the majority of drivers for whom the idea of injuring someone and/or of being arrested even once sets limits to their drinking driving. This paper will attempt to frame recidivism within health research hypotheses using an interdisciplinary approach. It should be said on the onset that this endeavour does not preclude that punishment is ipso facto excluded. In his seminal work in the Disease Concept of Alcoholism (1960), Jellinek forcefully stated, specifically in reference to DUI, that if even if one conceives of alcoholism as a disease and not as moral fault, which is Jellinek’s legacy to our field, alcoholics who drink and drive should still be held responsible for their behavior. More than 40 years later that statement still remains true: understanding genetic, neuropsychological, behavioural, and cognitive limits of repeated offenders does not take away the drivers’ responsibility. Such understanding could nevertheless lead to more effective preventative measures.

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Characteristics of recidivists

Severe Alcohol Dependence

Several studies have shown that, when compared to clinical samples of patients admitted to treatment for alcohol disorder, recidivists are characterised by more severe alcohol dependence and by stronger antisocial traits (for reviews: Bergeron et al, 2000; Vingilis, 2001). In the literature on treatment effectiveness these two characteristics are associated to the least favourable prognosis (Lonbagaught et al, 1994; Rush et al, 2001; Sher et al, 1994; Verheul et al, 1998).

Edwards and Gross (1976) have described the alcohol dependence syndrome. As a rule, the more severe the dependence, the more severe is the craving for the substance, with symptoms such as anxiety, agitation, and psychological distress following sudden withdrawal, and a strong drive to reinstate homeostasis by further drinking. The subjective experience of the severe cases has been described: “It is the feeling of being in the grip of something foreign, irrational, and unwanted which for severely dependent patient seems to be the private experience which is so difficult to convey.” (Edwards & Gross, 1976, p. 1060). Variations in the manner in which alcohol and other psychoactive substances affect neurotransmission point out to discrepancies between individuals in the uneasiness experienced with withdrawal. For comparable difficult cases with an opiate addiction, methadone maintenance treatment or other pharmacological substitution therapies are available and administered, during lifetime in many cases (Richard et Senon, 1999). Molecules such as naltrexone and acamprosate have shown their effectiveness in reducing craving in alcoholics (Volpicelli et al, 1992), and pharmacotherapies for alcohol dependence are now proving to be effective (Miller & Wilbourne, 2002). Given the predictive role of recurring high BAL in DUI recidivism, agonistic therapies need to be considered as a viable choice for helping alcohol dependant DUI offenders.

Positive alcohol expectancies

The behavioural effects of alcohol do not stem only from its effects on neurotransmission but also from the expectations and social representations of drinkers. There is strong empirical support between alcohol expectancies and drinking (Jones et al, 2001; Stacy et al, 1990). The placebo design studies (Hull & Bond, 1986; Fillmore et al, 1998; Marlatt & Rohsenow, 1980; McKay & Schare, 1999; Wigmore & Hinson, 1991) have shown that the sole mental representations of alcohol, irrespective of the contents of the beverage consumed, can by and of themselves contribute to the expected effects of alcohol. The expectancies appear stronger – or more anchored - for problematic drinkers (Connors et al, 1990; see Jones et al, 2001) whom also experience more positive attitudes toward alcohol (Brown et al, 1985), such as physiological and social pleasure of drinking and relaxation (O'Hare, 1998, Wood, 1992), and expect a more global change with drinking (Brown, 1987) or an adjustment to negative emotional states (Cooper et al, 1988; Kivlahan et al, 1993; Lee & O'Neill, 2000). These data indicate that cognitive factors interact intimately with the physiological aspects of alcohol dependence to increase the probability of DUI relapse. Cognitive therapies can modify the erroneous expectations and social representations of drinkers.
Antisocial Traits

Many studies have identified antisocial traits - impulsivity, anger, hostility, and asocial tendencies – as part of the clinical features of recidivists (for a review, Bergeron et al, 2000; Vézina, 2001). These psychological dimensions are also those involved in at risk driving (Miller et al, 1990; Vézina, 2001). Antisocial personality disorder has received considerable attention because it presents the highest association with substance use disorders. Compared to the general population, the lifetime risk for developing alcohol dependence is 21 times more likely among individuals with antisocial personalities (Przybeck & Helzer, 1988). Alcohol abuse both precipitates and aggravates concurrent disorders, and that is particularly true for antisocial traits. Mueser et al (1998) and Mueser et al (2000) reviewed the various etiological and interaction models for concurrent severe and persistent disorders and found the highest level of research support for two hypotheses: 1) antisocial personality may be a common etiological factor for both substance abuse and severe mental illness (a common factor model) and 2) people with severe mental illness are more sensitive to the effects of alcohol and other drugs due to increased biological vulnerability and, therefore, experience more negative consequences from relatively small amounts of alcohol or other drugs (a super-sensitivity model). Excessive use of alcohol or drugs, particularly at an early age, can also contribute towards a diagnosis of antisocial personality disorder (Seivewright & Daly, 1997). Literature reviews have been published in the past few years on concurrent disorders (for a review, Rush et al, 2001). Suffice it to state in this paper that substance-related disorders and other concurrent disorders, such as antisocial personality disorder, should not be seen as syndromes that add up but as syndromes in a synergy that interact intimately: the total is larger than the sum of its parts, as if $1 + 1$ equaled 3 or 4, not 2. Assessment and treatment procedures need to consider alcohol disorder and other personality disorders as inseparable, as a unique clinical feature. Best practices with clients presenting concurrent antisocial personality disorders and alcohol disorder suggest to 1) first address the alcohol dependence and then 2) treat the antisocial traits (Rush et al, 2001). Verheul et al (1998) report good results with such clients if they engage in treatment. The present author is not aware of outcome studies specifically with DUI recidivists.

Sensation seeking

Thirty-six out of the 40 studies reviewed by Jonah (1997) found an association between some aspect of risky driving and sensation seeking. More recent work from this author has confirmed this link (Jonah et al, 2001). Sensation-seeking is linked to the need to obtain or to maintain a certain level of cerebral activity and is considered as having a genetic origin (Zuckerman, 1994). Differences between individuals are attributable to different threshold of activation, some people needing more stimulation than others. Some authors consider it would be more appropriate to speak of stimulation-seeking rather than of sensation-seeking (Valleur, 1999). Zuckerman (1988) has noted a strong resemblance between Cloninger’s (1987) Type II alcoholics and his high sensation-seeking subjects. Type II alcoholics are primarily men that are at risk of developing alcohol dependence: the onset of alcohol drinking is early, in the teens, and most individuals have had alcoholic parents. The two main predictors of this type of alcohol dependence are novelty seeking and the tendency not to avoid risk (Cloninger, 1994). This model however has not reached consensus in the literature. Sannibale and Hall (1998) could not replicate the model with Australian subjects with a lifetime diagnosis of alcoholism. Craig (1995) did not find different personality types determining the choice of substances. Vaillant’s
(1983) longitudinal study did not find that children’s personality was a predictor of future alcohol disorder.

The interaction between high sensation-seeking and alcohol appears to increase risk-taking behavior. Two explanations have been suggested: those who are in quest of sensations drink more alcohol and/or the dishinhibiting effect of alcohol serves as a catalyst for risk-taking behavior for those who are seeking sensations (Jonah, 1997; Marlatt et al, 1980). The pharmacological effects of alcohol and/or the social representations that one has of alcohol seem to be at play in this process. In a study with a driving simulator, high sensation seekers whom believed they have consumed alcohol droved more recklessly than those who believed they had not drunk alcohol (McMillen et al, 1989).

The combination of severe alcohol dependence, of positive expectancies regarding alcohol’s behavioural effects, of antisocial traits, and high sensation-seeking all concur to increase the probability of relapse among DUI first offenders. Valleur and Matysiak (2002) discuss the treatment of substance dependent patients with risk-taking behavior and put forward an integration of psychotherapeutic approaches and pharmaceutical treatments catalysed by strong therapeutic relationship. They disagree with the advertisement of pharmaceutical companies that state that psychoactive drugs or opiate antagonists “make the patient accessible to psychotherapy” (p. 241). Their view is quite the opposite: it is the quality of a therapeutic relationship that allows a series of complementary treatments, from drugs to cognitive-behavioral approaches and psychodynamic interpretations, that can ultimately make such clients amenable to change. The present author’s experience with the treatment of inmates whose offences were substance-related concurs with Valleur & Matysiak while other outcome studies show that engaging a client in a process of change is enhanced through a therapeutic alliance. The quality of the therapeutic relationship is key, a fortiori with antisocial clients who do not to trust others. The conditions for the establishment of such trusting relationships need to be researched. Nonetheless, one cannot discount the corpus of studies showing that even severely dependent individuals modify their behavior without treatment (see Sobell et al, 2001) and this self-change process with DUI recidivists also is a worthwhile research question.

Cognitive deficits

Cognitive deficits are prevalent among DUI recidivists (Glass et al, 2000; Parsons, 1998; Ryan et al, 1986). As such, the chronic use of alcohol can bring forth neurocognitive deficits that are similar to those observed in individuals with mild to moderate cerebral dysfunctions, i.e., decrease in attention span, reduction in anticipation and planning abilities, diminution in memory, visuoperceptual and visuomotor skills as well as impulse control. The IQ remains intact. These deficits can also be related to brain trauma resulting from previous alcohol-related accidents or falls (Mears et al, 1993). In most cases, abstinence brings forth partial or total recovery. When present, these deficits impact on the personality. Individuals with such deficits are described as impulsive, apathetic, without insight, and undergoing significant difficulty in learning from past experience (Duffy, 1995).

The preceding descriptions match the portrayal of an antisocial personality. As a result, what many self-report tests describe as asocial traits could be, for a certain proportion of DUI recidivists, undiagnosed neurocognitive deficits. In addition, many perceptual and cognitive
activities predict the performance during road tests (Sivak et al, 1981). If there is a link between cognitive deficits and antisocial personality, then an evaluation of cognitive deficits could identify, among the DUI first offenders, those for whom the difficulties are organic and who may be the most likely to engage in repeated DUI. Such testing can be done in about 60 minutes and its administration does not require high expertise. These results are key for therapists and policy makers to be able to discriminate between cognitive deficits and defence mechanisms, between intention and incapacity.

Abnormal activity in the frontal lobe
Recent studies have identified, among alcoholics, abnormalities in cerebral activities leading to the execution of certain cognitive tasks (Pfefferbaum et al, 2001). In their study with 134 recidivists, Glass et al (2000) have identified significant cognitive deficits in three categories of cognitive functions: memory, executive functions, and attention. Seventy-three percent showed at least one deficit that reached the clinical threshold. The frontal lobe plays a significant role in these three functions in addition to exercising control over impulses (Fuster, 1997; Stuss et al, 1986). In addition, studies show a hyperactivation of many cerebral structures associated to craving or to the persisting desire to drink (Gawin, 2001; Schneider et al, 2001). These studies, albeit exploratory, show an abnormal activity in the frontal lobe of alcoholic subjects. The use of magnetic resonance imaging cannot yet give definite answers to such findings but documenting brain dysfunctions will further our understanding.

Conclusion
The apparent lack of conscience and ongoing disrespect of DUI recidivists constitute one of the most significant challenges in road safety today. Complementary thinking and integrative approaches, that include several dimensions of health research, could increase the probability of reducing this grave social problem. Because these offenders are so different from most drivers, one should probably not fall into the trap of simplistic causal and linear thinking, directly associating genetics and complex human conduct. DUI recidivism should be understood by taking into account all aspects of risk taking.

References


