

“Binge-drinking behind  
the headlines...”

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## UNDER THE INFLUENCE

Jamie Bartlett  
Matt Grist  
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Finally, we stress that, although all those listed contributed significantly to our thinking, this does not mean they necessarily endorse the views contained in this paper. The subject of alcohol consumption is an extremely contentious one – and we look

## Acknowledgements

forward to challenges and debates that will inevitably ensue. All editorial decisions rested with us. With that in mind, all errors or omissions are ours alone.

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# Executive summary

## Abstract

*In a free and liberal society, people will sometimes drink too much. There is considerable disagreement about why some young adults consume excessive amounts of alcohol, how serious a problem this is, and what should be done about it. In this paper, we test how far parenting style – how one brings up one’s children – affects those children’s drinking behaviour in later life. We followed several thousand children in two separate data sets and compared how their parents raised them against the child’s drinking habits when they become an adolescent (age 16) and an adult (age 34). The results show that, even when accounting for income, education, ethnicity, gender, parents’ drinking and more, parenting style is enormously important. Overall, if a set of parents spends a lot of time with the child, while also enforcing rules and discipline, the child is less likely to drink excessively as an adolescent and as an adult, compared with children whose parents did not. This combination of discipline and affection, sometimes called ‘tough love’, is known to be related to several positive outcomes for children – and responsible drinking is one of them. Our recommendations are simple. We avoid lecturing parents and do not propose more large-scale government investment in parenting classes. Instead, we modestly offer some basic suggestions that can inform parents when they make (sometimes very tricky) decisions about alcohol. We also recommend that the Government considers this research in the forthcoming alcohol strategy, and helps parents where possible, such as by enforcing existing under-age drinking laws. Overall, the findings presented are positive for parents: the setting and enforcing of clear boundaries, mixed with high levels of attachment, can and do make a major difference.*

## Overview

Excessive alcohol consumption and its effects generate significant and sometimes emotive debate. Over the last decade this debate has become amplified by fears about ‘binge-drinking’ among young adults.

In strictly medical terms, binge-drinking in the UK – as measured as more than twice the recommended daily allowance of alcohol consumed in a single episode – has been falling for at least five years in a row, and is not significantly higher than in other European countries. However, the last decade has seen changes to the way people drink. A small, but possibly growing, number of young adults in the UK is drinking to extreme excess, often in an intentionally reckless and very public way, putting themselves and others at risk of harm – and causing considerable social and financial cost.

Responding to this challenge is extremely difficult. Drinking is a social activity, and the way people behave when intoxicated is the result of a complex set of individual, environmental and cultural influences. Indeed, some of the things that are likely to have contributed to the changing norms surrounding drinking – such as reality television that glamourises hedonistic behaviour – are beyond the control of alcohol-specific policy. As some researchers have pointed out, drinking norms have changed historically over time, often irrespective of government policies. Moreover, we live in a liberal and open society where individual freedom is valued. Many people in the UK and beyond enjoy drinking alcohol.

That being the case, we believe the task at hand, and the proportionate and liberal response to binge-drinking, is to help create an environment in which people are free to drink alcohol – but behave in a responsible manner when they do.

This is where parents might be able to play a significant role. There is a growing body of evidence which shows that the way a child is brought up has an enormous influence on his or her life chances and wellbeing. There is also very strong evidence that particular ‘parenting styles’ are associated with a range of beneficial outcomes in young people, such as improved educational attainment, greater autonomy and social respons-

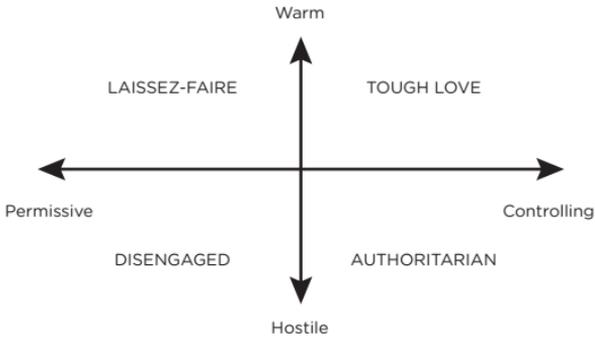
ibility. These are the sorts of outcomes that are also likely to militate against irresponsible drinking behaviour.

Against this background, we have undertaken an empirical examination of how general parenting styles affect how a child will drink in adolescence and adulthood. It is the first attempt to unpick the specific relationship between general parenting style and alcohol consumption in the UK.

To do this, we analysed two sets of longitudinal data – the Avon Longitudinal Study of Parents and Children (ALSPAC) and the Birth Cohort Study (BCS). The ALSPAC contains data on 14,062 babies born in Avon, England between April 1991 and December 1992 (although with attrition rates and missing data, we used around 4,000 children). The BCS began in 1970 when data were collected for 17,694 babies born one week of the year from all across the UK. Since 1970, seven waves of follow-up data have been collected, though this study needs only to use information obtained from wave 3 (cohort member aged 10, in 1980), wave 4 (cohort member aged 16, in 1986) and wave 7 (cohort member aged 34, in 2004/05). This study maintained high response rates over the 30+ years of following the cohort members, as 86.5 (n=15,305) per cent of original participants were surveyed in wave 3, then 70.1 (n=12,402) per cent in wave 4, and 58.3 (n=10,316) per cent by wave 7.

By creating a framework of parenting style across two axes – measuring the level of parental warmth to the child, and the level of discipline applied with the child – we were able to categorise each set of parents of the children in each data set into one of four parental styles according to their responses to the questions from which we derived each of our two axes. This quadrant is commonly used in research related to parenting, and provides four different styles (although ‘tough love’ parenting is often called ‘authoritative’ parenting in the literature). A full methodology is available in the annex, and includes all the measures we used to derive the four styles, and the strengths and limitations of this approach. Authoritarian parenting involves high levels of controlling, punitive discipline; disengaged parenting is when parents provide little structure and varying

Figure 1 **The two axes of parenting style**



levels of hostility; laissez-faire parenting is when parents show emotional warmth alongside a lack of structure and boundaries; and tough love parenting is when parents show a high level of warmth alongside forms of consistent discipline (figure 1).

We then ran logistical regressions, to determine whether the parenting style affected the future drinking patterns of that child, in five domains:

- Does parenting style in the early years (age 21 months to 5 years) affect the offspring's drinking behaviour when they reach 16?
- Does parenting style at age 10 affect the offspring's drinking behaviour when they reach 16?
- Does parenting style at age 10 affect the offspring's drinking behaviour when they reach adulthood (age 34)?
- Does parenting style at age 16 affect the offspring's drinking behaviour when at the age of 16?
- Does parenting style at age 16 affect the offspring's drinking behaviour when they reach adulthood (age 34)?

We selected the age categories 21 months to 5 years, and 16 because the parenting literature suggests these are crucial ages for parental impact. We selected age 10 as an age category to

ensure the research assessed parenting at broadly consistent intervals.

As a result of the availability of the data in these sets, we have used two measures of ‘drinking behaviour’. In the ALSPAC (question 1), we created a behavioural measure which combines units consumed with various behavioural traits associated with binge-drinking. In the BCS (questions 2–5), we have used a simple weekly-based unit definition of whether someone drinks over the Department of Health’s recommended weekly allowance of 21 units per week (for a man) or 14 units (for a woman).<sup>1</sup> These are admittedly imperfect definitions, but provide useful general measures. This is what we refer to when discussing ‘excessive alcohol consumption’.

Of course, there are several other factors that might account for *both* parenting style *and* the child’s drinking behaviour. These are known as ‘confounding variables’, and could include how much the father drinks, the parents’ education level and so on. Because the data sets we used were large and comprehensive, we were able to control for many of these potentially confounding variables, including the gender of both children and of their parents, ethnicity, income, education level, marital status, family income, parents’ drinking habits, and parents’ education level. This has allowed us greater confidence in our identification of the true influence of parenting on alcohol consumption.

## Results

After taking into account these key background demographics and family characteristics of both children and their parents, our research results show that parenting style is one of the most important and statistically reliable influences on whether a child will drink responsibly in adolescence and in adulthood:

- *High levels of parental warmth when the child is under 5 significantly reduce the chances the child will drink excessively at 16.* In the early years (21 months to 5 years), the ‘tough love’ parenting technique does not appear to result in reduction in excessive alcohol consumption at age 16. However, the model suggests

that strong parental warmth to the child yields a large, significant reduction in the likelihood of the child drinking excessively at 16. Discipline does not appear to have an effect.

- *Disengaged parenting at age 10 makes the child twice as likely to drink excessively at age 34.* A child whose parents are ‘disengaged’ at age 10 is over twice as likely to binge-drink at age 34, compared with a child who has ‘tough love’ parents. At this age, the likelihood of the child becoming an excessive drinker at 34 increases by 30 per cent for every decrease in parental style within the typologies. Interestingly, the model shows that parenting at age 10 makes little difference to whether or not the child will drink excessively at age 16: the effect appears to be deferred until they reach adulthood.
- *Disengaged parenting at age 16 makes the child over eight times more likely to drink excessively at that age.* At age 16, parenting style is both the strongest and the only statistically significant predictor of whether the child will drink excessively at 16 in our models. The risk of drinking excessively at age 16 is 836 per cent higher if a child’s parents are ‘disengaged’, compared with showing ‘tough love’, at that age.
- *Disengaged parenting at age 16 makes the child over twice as likely to drink excessively at 34.* Parenting style at age 16 also matters into adulthood. The risk of drinking excessively at 34 increases by 240 per cent if the child has ‘disengaged’ parents rather than ‘tough love’ parents at age 16.<sup>2</sup> This is even when controlling for drinking levels at 16, and parental style at age 10.
- *High levels of warmth until the age of 10 and strict discipline (of either the authoritarian or tough love kind) at the age of 16 are the best parenting approaches to reduce the likelihood a child will drink excessively in adolescence and adulthood.* Interestingly, the research shows that different aspects of parenting style are important at different stages of the child’s life. At ages 21 months to 5 years, and age 10, parenting warmth is a strong and significant safeguard against excessive drinking at age 34, but discipline is not. However, by the age of 16, it is discipline not warmth that is having the strongest effect on whether the child will drink excessively at age 16 and at age 34.

The research also revealed a number of other interesting (and sometimes unexpected) factors that influence the likelihood that someone will drink excessively in adolescence and adulthood:

- Children with parents who are separated or divorced at age 21 months to 5 years are more likely to have problematic drinking behaviours when they reach 16 than children with both parents married or cohabiting.
- Males are more likely to have concerning alcohol-related *behaviours*, such as being sick or extremely drunk, at age 16 than females, but not necessarily higher overall levels of consumption.
- Females were found to have a 70 per cent less risk of drinking excessively at age 34 than males.
- Having children at the age of 34 reduces the risk of drinking excessively by 22 per cent.

### Implications

Exactly why parenting appears to be significant for excessive alcohol consumption is unclear. However, we do know that parenting that combines discipline and warmth fosters self-control, autonomy, self-confidence and social responsibility in children. These qualities are associated with many positive outcomes, including responsible drinking. Moreover, the fact that parenting style at age 10 does not affect drinking at 16 but does at 34 implies that good parenting, among other things, builds durable personal qualities that take time to be realised.

Our findings also fit broader theories from neuroscience. There are two important periods of vulnerability and rapid change in brain development – the early years (0–5) and the teenage years. During both these periods good parenting is crucial to optimal development. In the early years strong warmth is important for cognitive and emotional functions; whereas in the teenage years young people’s brains have been shown to be far less mature than was once thought, with deficiencies in how risk is assessed and long-term consequences considered. Our findings fit this picture – with warmth and attachment important in the early years and supportive discipline in the teenage years.

Importantly, our research closely supports other recent research about how parents should introduce alcohol to children, and alcohol-specific rules. A 2011 survey by the Joseph Rowntree Foundation and Ipsos-Mori found that parents who set firm rules about alcohol, but spend a lot of time with their children, provide the best environment for children to develop responsible drinking attitudes and behaviours.<sup>3</sup> These findings also support the idea that ‘tough love’ works.

### Policy recommendations

Our research shows that parents play a central role in shaping the way their children drink, and that parenting style is an important influence on the habits and expectations that underpin the social norm of drinking excessively.

However, we do not wish to lecture parents, nor provide a set of overbearing rules to follow in respect of alcohol. In fact, this research offers a largely positive story for parents: that their efforts do make a long-term, significant difference to the relationship their children will have with alcohol – especially in adolescence when peer pressure is often at its most acute. Indeed, serious excessive alcohol consumption in the UK is still the preserve of the few not the many, which illustrates how well parents are already doing. Nor do we propose that the government should invest large additional resources into parenting programmes on the basis of this research. There is other, more compelling, evidence about the importance of parenting for children’s and societal outcomes, and major behaviour change interventions can often be costly failures. More modestly, we suggest that alcohol policy makers ensure parents are involved in their interventions where possible, and that other agencies – particularly law enforcement – help parents do their job. The forthcoming alcohol strategy will be more effective if parents are involved.

### Advice for parents

There is a lot of (sometimes contradictory) advice available for parents about how to approach the issue of alcohol with their

children. This includes how to talk about alcohol with children, whether to drink in front of them, and whether (and when) to let them drink alcohol first in the home. It can be a confusing situation.

Our research reveals a simpler, and encouraging, picture: that lots of warmth but clear boundaries that are enforced has a significant effect on children's drinking habits, even much into later life. This simple rule of thumb is a useful framework for thinking about some of these alcohol-specific decisions. After all, there is probably little point in carefully introducing a child to alcohol in a supervised setting at 16, if the parent then never sets any rules or spends any time with the child. On that basis, we offer a few, simple suggestions with which parents inform their own decisions:

- *Warmth during the early years (0–5) and up to the age of 10.* Most parents will develop a warm and loving relationship in the early years of their children's lives. Here we simply reiterate the importance of such a relationship for developing a number of extremely important life skills, including responsible drinking in later life (even if it does not always appear to make a difference in adolescence).
- *Discipline and supervision at age of initiation (15–16).* Strict discipline and supervision are extremely important at this age for teaching children personal responsibility over the long term, as well as protecting them from alcohol use and misuse in the short term. This holds true for both general parenting and alcohol-specific techniques. The evidence suggests that parents should not take a relaxed attitude to under-age consumption; should discuss alcohol with their children within the context of setting firm boundaries; should avoid being drunk around their children; and should actively ensure that their children develop sensible and responsible expectations of alcohol consumption.
- *Careful monitoring of alcohol access.* Easy access to alcohol in the home is one of the key predictors of alcohol consumption and drunkenness among teenagers.<sup>4</sup> Ensuring that alcohol in the home is monitored and teenagers do not have access to it is an important element of a 'tough love' approach.

### Advice for government

This research adds to the evidence base about how good investment in parenting can lead to long-term social benefits across a wide range of policy areas. We limit government recommendations to those specific to alcohol policy, in so far as they relate to parenting and the family.

- *Enforcement of under-age drinking law.* Discipline at 16 is an important mitigating factor against excessive alcohol consumption, even if it is not parent-led. By taking a strong line on enforcing the law of sales and proxy sales of alcohol to under-age drinkers, the government can help parents enforce alcohol boundaries by making it much harder for children to obtain alcohol. Such enforcement also helps strengthen the social norm that under-age drinking is not acceptable. Research shows that young people who buy their own alcohol are especially at risk of becoming problem drinkers.
- *Local partnerships to target trouble areas.* Enforcement schemes can be effective if they are part of a broad local partnership of police, the local authority and retailers. Community alcohol partnerships, business improvement districts and Pub Watch are all examples of multi-component responses, where police, local retailers, local authorities and others work together to solve specific local alcohol-related problems such as under-age drinking or anti-social behaviour. The forthcoming alcohol strategy must contain a commitment to help these schemes.
- *Investment in alcohol-related school programmes that involve parents.* Contrary to popular belief, evidence shows that teaching children specifically about alcohol and its dangers in school is not particularly effective at moderating their drinking behaviour. However, if the parents are involved, and the intervention deals with general life skills such as sociability, autonomy, application and so on, school-based programmes can be effective. The forthcoming alcohol strategy should ensure resources for school-based activities are targeted on these types of programmes. Where spending on alcohol reduction strategies does not clearly display effectiveness, it might be better to scrap symptom-focused interventions and spend the money instead on evidence-based parenting programmes that are proven to work.

We further recommend that other interested parties – retailers, supermarkets, trade bodies, public health experts and non-governmental organisations campaigning on alcohol issues – consider how our research findings can be usefully applied in their own work on the subject.

It is important to be realistic about alcohol policy. Behaviours and social norms do not emerge overnight, and they do not change overnight either. No single policy intervention is likely to resolve the problem of binge drinking. However, an emphasis on encouraging responsible, sociable behaviour among young adults is likely to have a range of positive effects – including a reduction in excessive alcohol consumption. Though this might not resolve the problem in its entirety, it will certainly set us up for a greater chance of success.



# 1 What affects alcohol consumption?

Excessive alcohol consumption, especially for young people aged 16–24, has become a major policy preoccupation. Understanding the extent of this phenomenon and what is causing it remains extremely contested. Heavy drinking has been endemic in British society over many centuries and is a central part of many social and work practices. Yet today there is a new panic about the extent and consequences of alcohol misuse. The shorthand for these concerns – which are varied – is ‘drink excessively’, and those who indulge in this pastime are believed to be young adults.

## What is binge-drinking?

Although now part of our daily lexicon, the term binge-drinking is confusing. Originally, ‘to binge’ meant an extended period of drinking, rather like a ‘bender’ today. In recent years, however, a new idea has been added: acute intoxication, usually displayed as extreme drunkenness.<sup>5</sup>

In January 2005, the *Daily Mail* declared war on binge-drinking Britain, in response to a perceived explosion in its prevalence. This was the start of increased media interest in binge-drinking, which has continued to grow. Since 1997, successive governments – including the Coalition – have pledged to crack down on binge-drinking.

But assessing the scale of binge-drinking in the UK is in reality very difficult, partly because what it actually means is unclear. It is usually measured through what are known as ‘unit-based’ surveys. According to these surveys, binge-drinking consists in the consumption of more than eight units of alcohol for a man and six for a woman in a single episode, which is twice the recommended daily intake.<sup>6</sup>

From around the mid-1980s overall alcohol consumption in the UK, and binge-drinking in particular, increased steadily.<sup>7</sup> Despite this growth, UK per capita alcohol consumption is unremarkable by comparison with other countries of a comparable size and income level, and well below historic levels in the eighteenth or very early twentieth century.<sup>8</sup> Moreover, the majority of the population either do not drink, or do it within the government's lower risk limit.<sup>9</sup> In 2009, men drank, on average, 15.6 units of alcohol a week; women drank 9.5 units a week – both averages falling easily within the NHS guidelines.<sup>10</sup>

But these statistics obscure a surprising trend: excessive alcohol consumption (of twice the recommended daily allowance in a single episode) in the UK has been decreasing since 2005 – perhaps since as early as 2000 – and more quickly among 16–24-year-olds, falling from 39 per cent in 1998 to 30 per cent in 2008, and by a similar amount among under-age drinkers.<sup>11</sup>

Of course, all statistics about drinking behaviour need to be treated with caution. People have a tendency to underestimate the amount they consume in survey responses, while some research has noted a growth in abstinence levels, which could affect some of these figures (making it seem as if everyone is reducing consumption on average, where in fact it may be that some are not drinking at all, while those who do are doing so more excessively).

Nevertheless, it appears that according to unit-based measurements, levels of binge-drinking are falling. However, media and public concern about the issue is increasing. One analysis of content showed a surge in reporting on binge-drinking in *The Times* from 2004,<sup>12</sup> and a search for 'binge-drinking' on the *Daily Mail* website yields 1,705 reports since August 2008 – almost two a day. Headlines are typically alarmist.<sup>13</sup>

This apparent divergence between reality and perception has occurred because in strictly medical terms 'binge-drinking' refers to drinking over twice the recommended daily allowance of alcohol; but for the public, government and media 'binge-drinking' describes something else: the small but noisy problem of young adults who drink to extreme excess, often in an

intentionally reckless and very public way, putting themselves and others at risk of harm. It is this type of drinking behaviour that is contributing to a number of social, criminal and health costs as well as causing societal concerns.

Indeed, there is evidence to suggest that a small (but possibly) growing minority of young adults do drink to extreme excess, as well as behave in irresponsible and reckless ways. Small scale, localised research shows a steady growth in young people drinking with the express purpose of getting extremely drunk – what some academics call ‘extreme’ drinking.<sup>14</sup> For example, a 2007 study of nightlife users in a city in the North West found the mean consumption for men was 23.7 units for men and 16.3 for women – and similarly high levels were reported in other cities.<sup>15</sup> In Camden, London, a nightlife survey found that 12 per cent of individuals drank more than 22 units.<sup>16</sup>

Such excessive levels of consumption are related to new ways of drinking, such as ‘pre-loading’ (drinking before going out), which over half of 18–34-year-olds do. Although UK drinkers do not binge-drink significantly more often than other countries, the *amount* consumed when they do binge is higher than most other countries. The UK consumption average for a single drinking episode is the highest in Europe, and the drinkers in the UK have the fourth highest average number of drinks per day overall.<sup>17</sup>

There is research which suggests that some people consider occasionally drinking over recommended levels of alcohol to be an ‘enjoyable activity in terms of relaxing, stress reduction, bonding, a short period of “controlled loss of control” and hedonism’ and that only one in four binge-drinkers say they want to reduce their consumption.<sup>18</sup>

Pre-loading in particular appears to reflect a change in attitudes towards binge-drinking. Over half of 18–34-year-olds in one large survey claimed to pre-load.<sup>19</sup> People may pre-load largely for economic reasons but there is research suggesting that some young people consider excessive binge-drinking to be an ‘enjoyable activity’ leading to social bonding, a short period of ‘controlled loss of control’ and hedonism.<sup>20</sup> Therefore it seems that pre-loading plays an important role in the ‘rituals’ of binge-

drinking among young people and is of particular concern, because those who do it are considerably more likely to end up being involved in an alcohol-related incident.<sup>21</sup> Research also shows that there has been a large increase in consumption of wine and spirits relative to beer in the last decade. The former drinks are much stronger than beer and more likely to be purchased off-licence and pre-loaded.

Binge-drinking of the reckless and excessive type is causing a number of harmful effects for individuals, as well as creating costs for society. There has been a steady increase in reported alcohol-related hospital admissions over the last decade. In 2009/10 there were 1.1 million admissions related to alcohol, which was an increase of 12 per cent on the previous year and around double the number in 2002/03, when there were 510,200 admissions. However, it is to be noted that the majority of alcohol-related admissions were older people, likely to be suffering from long-term alcohol misuse.

These figures have to be put in the context of falling overall levels of excessive alcohol consumption, and falling levels of alcohol-related deaths.<sup>22</sup> As is frequently reported, many of these admissions occur on Friday and Saturday nights, being the result of binge-drinking, and place an enormous burden on emergency and ambulance services. Unfortunately, there has been a marked increase in the number of people who are unconcerned by the long-term health effects of their behaviour – and even their immediate personal safety.<sup>23</sup>

In a similar way, alcohol-related violence, criminality, and drunk and disorderly offences have also been rising for the last decade, particularly among women – although these too appear to have fallen back slightly over the last two or three years.<sup>24</sup>

But perhaps the most powerful force in generating the sense that binge-drinking is out of control in the UK is the way it is reported in the media: as a sign of moral decadence and decline; an integral part of ‘lad’ and ‘ladette’ culture. Such reporting has been accompanied by a slew of television programmes including *Boozed up Brits Abroad: The truth about binge-drinking* and *Booze Britain: Binge nation*. Some academics have observed that the visible increase in the number of women

binge-drinkers is a common feature in media comment on drinking practices, and that changes in female behaviour are often a marker of moral panic.<sup>25</sup>

### What is causing this change?

Trying to pin down how and why people behave in the way they do is fraught with difficulty. It is probably impossible to prove definitive *causes* of binge-drinking, but there are a large number of contributing or influencing factors that reinforce one another.

#### Individual choice, capabilities and attitudes

There is a significant body of research concerned with the capabilities and attitudes that underpin moderate drinking choices, and how these capabilities and attitudes are formed.<sup>26</sup> The personal capabilities that are important for binge-drinking are self-efficacy (underwriting the ability to refuse a drink and resist peer pressure) and the ability to defer gratification and think of long-term consequences (or conversely, the ability to be non-impulsive).<sup>27</sup> Capabilities like this are quite general and result largely from parenting that combines clear boundaries with affection and warmth (see the next chapter for more on this topic).<sup>28</sup> Although peer influence is important, parents and trusted adults can still have significant influence on the capabilities and attitudes of teenagers.<sup>29</sup> Britain has a particularly high level of adult disengagement from teenagers and this may be a significant factor in the UK's high levels of risky behaviour among this latter group.<sup>30</sup>

The main component of attitudes that is important for binge-drinking is called 'alcohol expectancy' – what a person expects to happen when he or she gets drunk.<sup>31</sup> There is some evidence that witnessing moderate drinking by parents shapes in children and young people expectations of moderate drinking behaviour.<sup>32</sup> In other words, although information and guidance do affect attitudes, this research suggests it is the 'lived experience' of other people's drinking behaviour that matters most.

One influence on individual choice beyond capabilities and attitudes is price, since it affects the cost–benefit analyses people make. Large scale studies show varied evidence on how much price affects levels of alcohol consumed.

A recent meta-review of minimum pricing by the University of Sheffield argued that control of price is a possible way to limit harmful drinking.<sup>33</sup> The report – and an evidence review conducted by the Home Office – suggest that a floor price on alcohol units (set at 50 pence per unit) would reduce overall population levels of drinking and could reduce the alcohol consumption of young and harmful drinkers, who, the reports argue, are both price sensitive and tend to buy the cheapest available alcohol.<sup>34</sup>

However, these assertions are based on economic modelling and assumption about price sensitivity rather than empirical evidence, so it is unclear how much of an impact minimum pricing would actually have on harmful drinking. One study by the Centre for Economics and Business Research (CEBR) found that heavy drinkers are in fact likely to be the least responsive to changes in price, meaning a minimum unit price of 50 pence per unit would reduce alcohol consumption by harmful drinkers by a very small amount: around two pints of beer per week.<sup>35</sup> Other work has pointed out that many under-age drinkers get a lot of their alcohol from home, making minimum pricing less likely to have an effect on them.<sup>36</sup> Moreover, according to a recent study by the Joseph Rowntree Foundation, there may be other side-effects of minimum pricing, such as people shifting to stronger, cheaper alternatives such as drugs.<sup>37</sup> More problematic is that there appears to be little relationship between affordability of alcohol and alcohol-related harm.<sup>38</sup> In other words, even if alcohol were made less affordable, the behaviours associated with binge-drinking would not necessarily change, because they are a complex mix of cultural and social forces.<sup>39</sup>

The effect a minimum price would have on population level consumption is also unclear. A study by the Institute of Alcohol Studies showed that variation in affordability of alcohol accounts for only 22 per cent of changes in consumption levels

across Europe, and the UK already has the third least affordable alcohol in Europe.<sup>40</sup>

Minimum pricing will also have distributional costs. Minimum pricing research is mainly based on non-UK sources and economic modelling, the latter relying on a number of assumptions. Varying assumptions can significantly change net benefits and costs. The distributional impacts of minimum pricing are heavily contested, and have been questioned by a recent report by the CEBR, which argues that minimum pricing is a regressive measure because people on lower incomes typically pay more as a proportion of their income on alcohol, and will therefore be the most affected.<sup>41</sup>

### Drinking environment

Another influence on drinking choices is the environment within which drinking takes place. The environment acts on people in a largely non-conscious way: behaviours suggest themselves simply because they are available and therefore salient.

The availability of certain drinks is an important facet of the drinking environment. For example, the introduction of alcopops and the promotion of drinks in bars does seem to influence people to drink more than might have otherwise been the case.<sup>42</sup> In addition, several other waves of drinking trends since the 1980s have made reckless binge-drinking more likely, such as high-strength wines, alcopops, shots and, crucially, larger measures (doubles and large glasses of wine).<sup>43</sup>

Some of these new types of drinks were probably a response to the broader growth in determined drunkenness in the wake of the collapse of the ecstasy/dance culture of the 1980s and 1990s.<sup>44</sup> Other research has suggested that the decline of the traditional pub – as a space for regulated drinking – may be a contributing factor to the rise in binge-drinking.<sup>45</sup>

The way that bar staff interact with customers and operate ‘host responsibility’ policies is another aspect of the drinking environment that can influence drinking behaviour.<sup>46</sup> Environmental design issues are also important in shaping the behaviour of people once heavily intoxicated. Outlet density,

such as several bars grouped together in the same street, can also make violence more likely to occur. This increased likelihood is at least partly due to large numbers of people simply being in the same place at the same time, especially if there are scarce valuable resources such as good transport facilities. One study found serious violence in Cardiff's entertainment thoroughfare was directly proportional to the capacities of licensed premises in that street.<sup>47</sup>

### Culture and social norms

The role of alcohol – its cultural place – in society is an important determinant of why and how people drink. Studies repeatedly show that different cultural groups not only drink in different ways (for example 'dry' versus 'wet' habits), but also *behave* in different ways when intoxicated.<sup>48</sup> This is because the way we drink is a 'learned behaviour', which is formed as we grow up. Such behaviour is often learned from non-conscious social cues, as is the case when drinking plays a 'lubricating' role in social interactions and activities; when it is associated with eating; when it is associated with escaping difficulties; and when inappropriate behaviour by people who are drunk is considered normal. It has long been recognised that in the USA, for example, public displays of drunkenness are considered far more of a social taboo than they are in the UK.

Of course, cultures are not static. Indeed, it is increasingly agreed that 'normal' drinking behaviour has changed in the UK over the last decade, towards more reckless binge-drinking. However, as argued above, this is still confined to a minority of people. This is because social norms that govern national and regional drinking cultures also operate at the level of smaller social networks, and we know that the behaviour of one's immediate peer group is extremely important in determining behaviour – both drinking patterns and the behaviour that goes with it.<sup>49</sup> Studies in the USA have shown that the drinking behaviour of students is shaped by the social norms of quite small groups and that these norms can vary widely across the university population.<sup>50</sup> Joseph Rowntree Foundation research

in the UK confirms the existence of many different binge-drinking sub-cultures on this side of the Atlantic.<sup>51</sup> This research also shows that drinking culture has changed over the last 5–10 years, even as binge-drinking levels fall: the culture of binge-drinking has become more extreme, with visible displays of drunkenness viewed as normal and as forming personal narratives and myths.<sup>52</sup> Many young drinkers, although they do not take into account the health hazards of binge-drinking, do consider there to be a ‘normative pathway’ to binge-drinking – it being something you do when you are young but give up when you are more mature (into your late 20s).<sup>53</sup>

The prevalence of local drinking cultures means binge-drinking behaviour is affected by a host of specific factors such as socio-economic class, ethnicity, and random local and transient social norms. Indeed, binge-drinking can be viewed as normal within some sub-cultures.<sup>54</sup>

## Options for responding

Drinking is a social activity, and the way people behave when intoxicated is the result of a complex and often mutually reinforcing set of individual, environmental, and cultural influences. Tackling binge-drinking is therefore an enormous challenge and there are no simple solutions. This is why programmes that aim to tackle binge-drinking show mixed results.

In a review paper that accompanies this report, we undertook a rapid review of evidence from interventions that aim to tackle binge-drinking over the past ten years.<sup>55</sup> We reviewed 36 studies, made up of qualitative and quantitative studies, and a small number of meta-reviews (seven in total).

### Individuals-level interventions

The evidence on how minimum pricing would affect binge-drinking is not conclusive. Countries where excise tax on alcohol is very high also have very high levels of consumption.<sup>56</sup> A recent meta-review of minimum pricing by the University of Sheffield argued that control of price is the most effective way to limit

harmful drinking, and supports the assumption that a floor price on alcohol would affect the heaviest drinkers and under-age drinkers, who are price sensitive.<sup>57</sup> However, it is not clear how this would affect binge-drinkers: one European-level review found no relationship between the affordability of alcohol and alcohol-related costs to society.<sup>58</sup> Moreover, with entrenched drinking behaviours, demand does not respond perfectly to price changes: 62 per cent of young people said even a 25 per cent increase in price would not reduce their purchase of alcohol.<sup>59</sup> According to a recent study by the Joseph Rowntree Foundation, there may be other side-effects of minimum pricing, such as people shifting to stronger, cheaper alternatives such as drugs.<sup>60</sup> Finally, the distributional impacts of minimum pricing are heavily contested.<sup>61</sup>

Educating current binge-drinkers about the amount they drink seems an obvious way to teach people to be more responsible with alcohol, but the record of effectiveness is mixed and appears to depend on the timing and design of the intervention.<sup>62</sup> Non-preachy campaigns that offer advice about minimising harm rather than stopping drunkenness altogether appear to be effective, according to a recent evaluation of Drinkaware's campaign *Why Let the Good Times Go Bad?*<sup>63</sup> Evaluations of educational interventions about alcohol misuse all stress the importance of focusing on harm minimisation rather than abstinence, and above all, involving parents.<sup>64</sup> Other evaluations also point out that it is parental drinking practice that is crucial – that is, parents must lead by example.<sup>65</sup>

Brief interventions – often a short conversation a doctor has with a patient about their alcohol consumption and how to reduce it – have been effectively piloted, and meta-reviews suggest that they could save the NHS as much as £124 million over a number of years if introduced widely.<sup>66</sup>

Developing the capabilities to make responsible drinking choices might be the most significant way in which behaviour can be affected. One programme delayed but did not necessarily reduce the growth in binge-drinking.<sup>67</sup> However, delaying alcohol consumption in adolescence by six months reduces the rate of adult alcohol dependency by 10 per cent.<sup>68</sup>

### Changing the environment

‘Promotion control’ and ‘outlet density’ (such as limiting special offers) have not been reviewed in any detail in the UK, so it is difficult to make assertions as to their likely effectiveness, although there does appear to be potential.<sup>69</sup>

The Licensing Act 2003 – and indeed other new powers of regulation since 1997 – have given more powers to statutory authorities to manage and control alcohol sales and consumption, including Anti-Social Behaviour Orders (ASBOs), Drinking Banning Orders, 24-hour licensing, and Penalty Notices for Disorder.<sup>70</sup> There have been numerous evaluations of the effectiveness of the 2003 act in reducing crime and disorder, with mixed results. According to the Department for Culture, Media and Sport, one of the reasons the Licensing Act had mixed results was because local authorities and the police do not use the powers of enforcement available to them.<sup>71</sup> Indeed, enforcement of the laws for public drunkenness does appear to have declined in recent years.<sup>72</sup> In 1989 42,900 people were found guilty of drunkenness, and 49,900 were cautioned for drunkenness in England and Wales; in 2008 18,888 people were found guilty of drunkenness and 7,961 were cautioned for drunkenness.

There is some evidence that targeted enforcement schemes such as the community alcohol partnership (CAP) in St Neots can lead to significant decreases in anti-social behaviour and under-age drinking, and evaluations of other CAPs and similar locally led partnerships such as business improvement districts have found similar results.<sup>73</sup>

Local, multi-component responses to alcohol management are more effective than any single component intervention, especially if they include police targeting of ‘hot-spot’ areas, environmental design, limited outlet density, good transportation infrastructure, media engagement and bar-staff training. CAPs, business improvement districts and Pub Watch are all examples of these multi-component responses, where police, local retailers, local authorities and others work together to solve specific local alcohol-related problems.<sup>74</sup>

### **Culture and social norms**

School-based interventions can be effective, if they take place before the onset of drinking, and are based on general life skills approach, rather than alcohol-specific interventions.<sup>75</sup>

Research has shown that people routinely overestimate how much their peers drink – and feel obliged to ‘keep up’. In the USA there have been efforts to correct false perceptions on university campuses with some effect, although evaluations show that long-term results are mixed.<sup>76</sup>

## 2 The role of parenting

A significant body of research shows that parenting that combines warm sensitivity and consistent and reasonable rule enforcement fosters personal qualities that are important for various emotional and cognitive developmental outcomes, as well as life chances more generally. In particular, the early years (0–5 years old) and teenage years are key windows where parenting is crucial.<sup>77</sup> In this chapter we summarise this research and relate it to alcohol consumption specifically.

### Attachment theory and parental styles

The most well-known research into parenting style is known as ‘attachment theory’, which is based on observing the behaviour of human infants (there is also a substantial amount of research in this area based on observing animal infants, mainly non-human primates). A significant amount of research has shown that infants’ attachment to their mothers predicts developmental outcomes for children and life chances in adult life. Secure attachment in the early years (where the child bonds well with his or her mother and is neither overly distressed nor ambivalent when she is absent) strongly predicts self-confidence, social skills and educational achievement in later life.<sup>78</sup> The famous ‘Minnesota’ longitudinal studies show that securely attached children in the early years remain secure throughout childhood as long as parenting is consistently warm and supportive. Changes of circumstance such as parental divorce can change a child’s attachment status, yet early experiences of warm and loving parenting will usually result in the development of healthy internal working models of the self and other people.<sup>79</sup>

Diana Baumrind’s research into parenting styles was similar to the work of attachment theorists but took into account a

broader set of influences transmitting from parents to children. Baumrind's term 'parenting styles' refer to parents' general approach to child-rearing and the range of styles are detailed in the figure used in the executive summary (figure 1).

### Authoritarian parents

Parents who employ this style tend to control and evaluate their children's behaviour by setting standards that are severe and absolute. Authoritarian parents value hard work and a respect for authority and can be overly critical and given to excessively punitive discipline. Obedience and very structured environments are valued over freedom and exploration.

### Tough love or authoritative parents

Parents falling into this category tend to expect that their children will conform to household rules and boundaries but that these will be set and negotiated within a context that encourages autonomy in the children's decision-making. Such parents have high standards but support their children warmly in adhering to them; in their enforcement of rules such parents are assertive without being aggressive.

### Laissez-faire or permissive parents

Laissez-faire parents are responsive and emotionally engaged with their children but tend to abrogate responsibility for setting rules and boundaries, and in turn do not expect children to take on much responsibility either. Parents conforming to this style allow children to structure their own activities and impose few standards for behaviour.

### Disengaged parents

Like laissez-faire parents, disengaged parents are uninvolved with their children, and do not structure their activities or set standards for their behaviour. But such parents are also

uninvolved with their children emotionally. At the extreme, disengaged parents may be unpredictable, abusive and neglectful.

There is a significant literature on the effects of different parenting styles on a number of outcomes. The overwhelming consensus is that tough love (which is often referred to as ‘authoritative’ parenting in academic literature) leads to the best outcomes for children and young people, while all the other styles lead to fewer good outcomes and expose children to various risks. Positive outcomes as well as risks resulting from parenting styles are usefully summarised by Asmussen:<sup>80</sup>

- *A secure identity.* Parents who are warm, accepting and create an atmosphere within which children feel comfortable expressing their feelings are more likely to have children with strong ego identities, and who are able to flexibly solve problems, as well as be empathic to others.<sup>81</sup>
- *Higher self-esteem.* Young people who are able to contribute to family decisions and who feel valued in doing so are more likely to rate their self-esteem as high. Adolescents with authoritarian parents consistently rate their self-esteem as lower than others.<sup>82</sup>
- *Greater autonomy.* Authoritative parenting, especially in shared decision making, has been linked in numerous studies to higher levels of autonomy (the ability to decide one’s own views and express them).<sup>83</sup>
- *Higher levels of morality, social responsibility and pro-social behaviour.* Teenagers whose parents communicate high standards for behaviour and whose parents make their expectations clear within the context of a warm and loving relationship are more likely to have teenagers who maintain pro-social values and engage in higher levels of moral reasoning.<sup>84</sup>
- *Higher achievement and school competence.* Authoritative parents are more likely to be involved in their children’s education in the form of supervision, ‘autonomy granting’ and high levels of acceptance; this involvement leads to higher levels of school involvement and school engagement.<sup>85</sup>
- *Greater resistance to peer pressure.* Authoritative parenting seems to create better child–parent relationships, which in turn act as a mitigating factor against peer pressure to take part in risky or

negative behaviour.<sup>86</sup> On the other hand, authoritarian parenting increases the likelihood that children rely on their peers for advice and support.

- *Reduced risk of mental health problems.* Perceived parental warmth among offspring significantly reduces reported emotional distress, leads to fewer suicidal thoughts and less interest in violence.<sup>87</sup> On the other hand, poor relations with parents have been consistently linked with higher levels of adolescent psychopathology and suicide.<sup>88</sup>
- *Later onset of sexual behaviour.* Strong parental disapproval of sexual activity, communicated within the context of a warm and supportive relationship, significantly postpones teenage girls' sexual debut.<sup>89</sup> The opposite is the case for teenagers who feel less connected to their mothers, regardless of the mother's approval.<sup>90</sup>
- *Resistance to substance use and abuse.* Teenagers whose parents set out clear expectations over drug and alcohol use, within the context of an authoritative relationship, are significantly more likely to comply with their parents' wishes and refrain from indulgence, as well as demonstrate greater overall self-control.<sup>91</sup>

Previous Demos research in *Building Character* showed that 'tough love' or authoritative parenting styles lead to improved outcomes for 'character capabilities'. These capabilities – such as the ability to regulate one's emotions and to apply oneself to tasks – are similar to some of the positive outcomes associated with authoritative parenting listed above. Importantly, *Building Character* found that such capabilities are not strongly tied to socio-economic backgrounds but rather to parenting styles.<sup>92</sup> There is a growing body of evidence that reinforces this finding, showing that authoritative parenting practices produce better child outcomes regardless of culture, class, wealth and parental education.<sup>93</sup>

## Brain development and parenting<sup>94</sup>

Very recent neuroscientific research appears to support much of this psychology research, and points to the importance of warm

and structured parenting throughout a child's life, with two crucial 'windows' in the early years and the teenage years.

It is now well established that the period between gestation and around 5 years old is crucial for neurological development. During this period there is an overproduction of connections between brain cells (these are called 'synaptic connections'). By the age of 2, an infant has twice as many synaptic connections as an adult. Somewhat counter-intuitively, young children at this age learn more slowly than adults not because they have too few connections between neurons, but too many. To counteract this overproduction a synaptic pruning process starts around the age of 3 and continues through childhood and adolescence until adulthood. As a result of this process the adult brain has far fewer but more efficient connections, which is why it works so well.

Parents do many things to ensure optimal development in their offspring, primarily through the provision of a diet that supports brain development. But parents also play a massive role in supporting brain development through supplying appropriate stimulation, and reinforcing positive arousal states that teach children how to regulate their emotions.<sup>95</sup>

Optimal levels of infant arousal, through warm and engaged parenting in the early years, are linked to improved cognitive and emotional development.<sup>96</sup> Children raised in conditions of extreme neglect, where there is minimal exposure to language, touch and social interaction, exhibit significantly less grey and white matter in their brains.<sup>97</sup> The findings of this research with neglected children have been reconfirmed by research into children suffering from post-traumatic stress disorder.<sup>98</sup> Brain abnormalities from sustained neglect and stress often lead to a wide variety of psychiatric disorders in children and adults, including schizophrenia, bi-polar disorder and clinical depression. They have also been shown to impair cognitive functioning and emotional development.<sup>99</sup>

It is clear that deficiencies in appropriate stimulation and high and sustained levels of stress and neglect can lead to very serious and lasting deficits in brain functioning. However, the extent to which such damage is irreversible remains unclear.

Some research shows that warm and loving homes can overcome at least some of the damage done by earlier neglect.<sup>100</sup>

Interestingly, there is also a second period of over-production of synaptic connections in the teenage years (as well as increased hormonal production) which explains why teenagers are sometimes clumsy and irritable. Perhaps most important with regard to binge-drinking, the synaptic pruning that takes place from the teenage years onwards (often into the late 20s) is crucial for the ability to assess risk and take account of long-term consequences.

### Parents, families and drinking behaviour

There is already an existing body of research on the links between parenting and various kinds of alcohol consumption, as well as other forms of substance use and abuse. This literature falls into three main categories: social learning theory, socialisation theory and general upbringing and personality. The research in this area broadly supports what we already know about parenting more generally.

#### Family socialisation

Family socialisation is the way parents teach their children about alcohol. Parents' efforts to control or regulate their adolescent children's drinking can include both general monitoring of adolescents' behaviour outside home and school and the establishment of alcohol-specific policies or norms.

General family management practices have been found to moderate adolescent drinking. Twenty years ago, one research study found low levels of family support and parental control led to increased drinking. The review also suggested that extremely high levels of support and control can be dysfunctional for adequate socialisation into normal drinking behaviour.<sup>101</sup>

Alcohol initiation – the age when someone first drinks alcohol – is also important. One study showed that regardless of

the initiation context, youths who drank at an early age were more likely to become problem drinkers than youths who were initiated later. Feeling drunk at initiation was also found to be associated with problematic drinking in later life.<sup>102</sup>

Some recent research for the Joseph Rowntree Foundation has shown strong associations between aspects of parental supervision and alcohol consumption, with more supervision correlating to less consumption. Researchers found a significant correlation between knowing where a son or daughter was on a Saturday night, supervising the sorts of films they watched, and various aspects of drinking behaviour among teenagers. Researchers also found strong associations between the amount of time teenagers spent with their peers and drinking behaviour, with less time with peers and more time under parental supervision correlating significantly with lower and later alcohol consumption.<sup>103</sup> This research for the Joseph Rowntree Foundation suggests that parental engagement with, and supervision of, teenagers lowers levels of alcohol consumption and the likelihood of binge-drinking. Some of this effect is probably the result of teenagers who are supervised spending less time with their peers and so being less exposed to their influence, as well as simply having less time in which to indulge in illicit alcohol consumption. But the fact that different kinds of parental supervision – supervising film watching and knowing where a child is on Saturday night – are strongly associated with reducing early onset of excessive alcohol consumption suggests that they play an independent causal role.

Other research supports this position. It appears from the literature that just talking about alcohol with offspring is not enough: the communication should be about rules and regulations. Just talking about alcohol might actually increase the likelihood that adolescents drink.<sup>104</sup> One recent paper based on US and Australian research argues that allowing adolescents to drink under adult supervision may lead to more drinking than a zero-tolerance approach. It examined both approaches, and found that zero-tolerance approaches were more effective in limiting consumption and alcohol-related harms for seventh to ninth graders.<sup>105</sup> However, the Joseph Rowntree Foundation

research slightly contradicts this finding as it shows that supervised drinking can be negatively associated with drunkenness and heavy drinking among adolescents.<sup>106</sup>

### ‘Social learning’ theory

Social learning theory is learning by observing how behaviours are rewarded, both by actively interpreting others’ behaviour and unconsciously absorbing behavioural cues. Social learning is relevant to behaviour around alcohol because of what was termed earlier ‘alcohol expectancy’: people who believe alcohol to have positive effects will end up drinking more.<sup>107</sup>

It is likely that parents’ alcohol consumption may provide a model of behaviour for adolescents and children. In one study, parent alcohol use at an initial wave predicted adolescent alcohol use a year later, controlling for initial adolescent use.<sup>108</sup> Indeed, children from heavy-drinking households are more likely to use alcohol themselves. One Department of Health report concluded that in general, but with some exceptions, children tend to become the sort of drinkers their parents are or were. Research for the Joseph Rowntree Foundation found a significant correlation between excessive drinking among teenagers and witnessing parents drunk.<sup>109</sup> Other research indicates that maternal alcohol problems are significant indicators of children’s later alcohol problems.<sup>110</sup>

Interestingly, drinking motives may also be important in how and to what extent social learning occurs. According to some studies, mainly US based, positive expectations play a significant role in predicting drinking behaviour, especially in younger people.<sup>111</sup> One recent study based on a 1,834 sample in Switzerland found that the drinking motives of adults – not just the consumption of alcohol – were significant influences on the drinking behaviour adopted by children. For example, where parents drank as a coping mechanism or alternatively to enhance their happiness, this was reflected in the behaviour of the children.<sup>112</sup> The picture is ambiguous, however. One study suggests parental alcohol intake is only significant for certain groups.<sup>113</sup>

Social learning has other effects too. One study in the Netherlands found that among 12–15-year-olds, the only parenting factor related to adolescent drinking was the amount of alcohol available in the home – the amount of alcohol parents themselves drank was not a factor. Indeed, access to alcohol is one of the key bi-variables with alcohol consumption shown in the recent Joseph Rowntree study mentioned above.<sup>114</sup>

### General upbringing

Concurring with research cited earlier, good family bonds may protect against substance misuse. Adolescents with stronger family bonds are less likely to have close friends who are involved with drugs.<sup>115</sup> Moreover, the quality of child–parent relationships is possibly significant in influencing substance misuse among young people. Those with high-quality relationships appear to start drinking later.<sup>116</sup> One study involving Greek adolescents used the Parental Bonding Instrument and surveys on drug use. We correlated parental bonding that was high in maternal and paternal care and protection with the lowest level of drug use for both sexes.<sup>117</sup>

### Conclusion

It appears that although not the only determinant of drinking behaviour among young people, parenting can and does have a dramatic effect on it. Good parenting has positive effects on young people’s drinking behaviour and there is indirect evidence that it builds the kinds of personal qualities and relationships that guard against risky behaviour in general. If there is an optimal parenting style for reducing the risks of early and excessive binge-drinking, it is the tough love, authoritative style cited above.

While the whole of childhood is important, it seems that warm attachment in the early years is particularly important to ensuring the kinds of positive personal qualities and relationships that mitigate against risky behaviour, including binge-drinking. However, because of the synaptic pruning that

goes on right through the teenage years, this period is also important for parental support, guidance and supervision. If there is less parental engagement at this age, important processes of development and maturation may be retarded – processes that underpin learning to control one's emotions, assess long-term consequences, account for risk and develop the ability to be autonomous.

Thus the teenage years seem to form a second 'crucial window' of opportunity with regard to nurturing the cognitive and emotional development of young people. And as some of the evidence cited above shows, these years are also important for drinking behaviour in particular.

## 3 Findings

This investigation aimed to understand the type and extent of influence parenting on their child's drinking behaviour, when the children grew up. To do this, we used two separate longitudinal data sets, and examined how the way their parents' parental style at various points in their lives affected how they drank as adults, when controlling for many other influential personal and family factors.

To do this, we asked five specific questions:

- Does parenting style in the early years (age 21 months to 5 years) affect the offspring's drinking behaviour when they reach 16?
- Does parenting style at age 10 affect the offspring's drinking behaviour when they reach 16?
- Does parenting style at age 10 affect the offspring's drinking behaviour when they reach adulthood (age 34)?
- Does parenting style at age 16 affect the offspring's drinking behaviour when at the age of 16?
- Does parenting style at age 16 affect the offspring's drinking behaviour when they reach adulthood (age 34)?

The first question was answered using the ALSPAC study. The remaining questions were answered using the BCS study.

We selected the age categories 21 months to 5 years, and 16 because the parenting literature suggests these are crucial ages in respect of parental impact. We also selected age 10 as an age category to ensure the research assessed parenting at broadly consistent intervals. Due to the availability of the data in these sets, we have used two measures of 'drinking behaviour'. In the ALSPAC (question 1), we created a behavioural measure that combines units consumed with various behaviour traits associated with drinking excessively. In the BCS (questions 2–5),

we have used a simple weekly-based unit definition of whether someone drinks over the Department of Health's recommended weekly allowance of 21 units per week (for a man) or 14 units (for a woman).<sup>118</sup> These are admittedly imperfect definitions, but provide useful general measures.

A full technical appendix is available at the end of this paper; below is an overview of the methodology we applied, and the results we found.

One of the most robust ways to measure parenting influence on child outcomes is to assess variation in parenting style, and then analyse how far those different styles affect any given outcome. In the 1960s, Diana Baumrind created a framework based on two axes of parenting, which remains influential today. On one axis is warmth/responsiveness, which is the ability of the parent to cultivate in their child a sense of individuality, an ability to assert themselves and the capacity to regulate their emotions and reactions. On the other axis is control/demandingness, which is the parents' ability to supervise and confront their child when they are disobedient, and ability to bring their children successfully into the world beyond their own wants and needs.

A wealth of other evidence has shown that these two axes – of warmth and of control – are important elements of parental style, and related to many positive outcomes for the child as they grow up.<sup>119</sup> Following previous Demos research on the subject, we have chosen to use a well-established framework of categorising parenting techniques according to attachment and discipline axes, and testing the effect these differences have on excessive drinking behaviour in the child.

### Data used

Data used in this study come from two sources: the 1970 British Cohort Study (BCS) and the Avon Longitudinal Study of Parents and Children (ALSPAC). As both datasets are large, well-respected longitudinal studies of children and their parents in Great Britain, it is possible to use unique attributes from both to answer the questions posed by this research. The total number of children studied varies according to each question.

## Variables

In both data sets we collected data for parenting style based on the two axes, by selecting all relevant questions that asked about areas relating to either warmth or discipline. All measures used as index items and covariates in this research were dependent on the data available in the BCS and ALSPAC datasets. While both studies had a sufficient array of measures to conduct the current study, there are of course certain ‘ideal’ measures which we did not include. Indeed, parenting researchers prefer to use a particular set of measures, which, based on other literature on the subject, is a more accurate way to describe warmth and discipline. Even so, every effort has been made to ensure the theoretical and logical soundness of the indices and covariates used in the models, but the limitation of data availability must still be noted. Some of the questions used in the warmth measure include: ‘if the mother really loves the child’, ‘how much time they spent together’ and ‘how often the parents ask to hear the child’s ideas’. Example questions about discipline include: ‘if she [the mother] believes the best discipline is a smack’, ‘do the parents ask where they are going out’ and ‘if the child has their own door key to come and go as they please’. A full list of all the variables used is available in the technical appendix.

Using the indices of parental warmth and discipline based on questions contained in the data sets, we were able to derive parenting style ‘typologies’, which separate the full range of parenting styles into four categories, or ‘quadrants’, based on the scores of the warmth and rules indices at a given time frame. The four quadrants (figure 1) are made up of parents who are ‘above average’ or ‘below average’ in various combinations of the parenting style measures (see previous chapter for definitions of parenting styles, and technical appendix for the indices of parental warmth used).

The ‘dependent’ or ‘outcome variables’ refers to the resultant drinking behaviours of the children in the two longitudinal studies. With the BCS we used a simple dichotomous indicator of whether the child drank over the Department of Health’s excessive drinking definition (21 units or above per week for a man; 14 units or above for a women). With the ALSPAC, we were able to use a behavioural definition, which

allowed for a robust assessment of the (dysfunction) caused by the child's drinking, based on their responses to an index of items, which include the quantity and frequency of alcohol consumption, gravity of consequences, and level of concern expressed by others as a result of their drinking.

We included control variables in each regression we ran. These are the variables that could also have an impact on the outcome variable, so by including the controls we are closer to assessing accurately the independent effect of the regressor(s) on the outcome variable. By controlling for these potential influence factors, we reduce the possibility that any results in the outcome variable (excessive drinking) are the result of factors other than our main regressor: parenting. Therefore, we coded all available measures regarding the child's background, their family's background, and their adult life status for inclusion when applicable, and available. This included, *inter alia*, the child's gender, ethnicity, religious practice, attitude on morality issues, birth weight, income level, education level, number of children, and marital status. We also controlled for parental and family background factors that may feasibly account for some variance in the drinking behaviours of their children, including ethnicity, mother's age at child's birth, parents' marital status, home ownership status, income, education level, parents' drinking habits, employment and social class. All the specific measures used, along with the rationale, coding and regression results, are covered in the technical appendix.

## Results

### The effect of parenting style in the early years (21 months to 5 years) on their alcohol consumption when they reach 16

As noted in chapter 2, early years parenting is considered especially vital for the development of a range of positive character traits in children, such as empathy, self-control, and self-efficacy. To answer how far this was the case for drinking behaviour, we used the ALSPAC data. The ALSPAC data set is based on 14,062 babies born between April 1991 and December 1992. However, when we removed missing data (where under

70 per cent of our questions had been answered), this left a sample of 4,026. We regressed the parental techniques when the child was age 21 months to 5 years against that child's drinking behaviour when they reached 16, with all relevant controls applied.

In the first model we used, we used the parenting typology measure from age 5 as the main predictor variable, and added all additional controls into the model. However, this model did not attain statistical significance, and it is therefore not possible to draw any conclusions from the results.

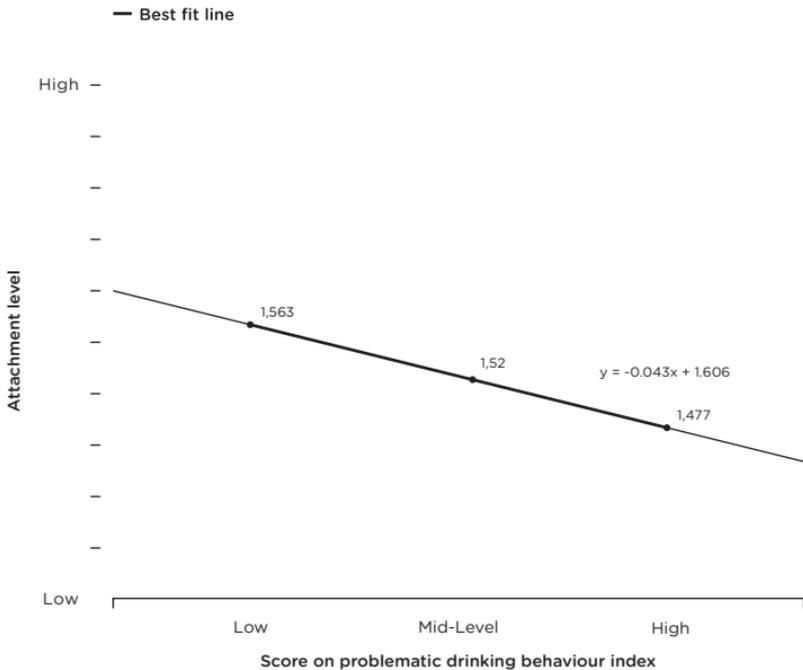
In a second model, we removed the parenting typology variable from the model, and entered the individual parental warmth and rules indices used to derive the parenting typologies as separate predictors. In other words, we asked if discipline alone or warmth alone make a difference to the outcome. This time, the measures were a good fit in predicting excessive drinking behaviours at age 16, and the overall model of warmth was highly significant.<sup>120</sup>

As figure 2 shows, as the level of parental warmth to the child at age 21 months to 5 years increases, the amount of excessive drinking behaviours at age 16 decreases.<sup>121</sup> Interestingly, the parental rules index at age 5 *was not statistically significant* for predicting drinking behaviour at age 16: in early years, it is warmth, not rules, that is causing the effect.

The analysis of these data also revealed a number of other factors that were significant predictors of excessive drinking behaviour at age 16:

- Males are more likely to have concerning consumption behaviours at age 16 than females.<sup>122</sup>
- Babies weighing more at birth have a higher likelihood of drinking more than those weighing less.<sup>123</sup>
- Children with parents who are separated or divorced at age 21 months to 5 years have more problematic drinking behaviours than children with both parents together.<sup>124</sup>

Figure 2 **Drinking behaviour at age 16 by attachment level at toddler age**



### The effect of parenting style on children aged 10 on their alcohol consumption when they reach 16

To answer this question, we used the BCS data waves 3 and 4. We regressed the parental techniques when the child was age 10 against that child's drinking behaviour when they reached 16, with all relevant individual and family status controls applied.

The model examining the effect of parenting style at age 10 on excessive drinking was not statistically significant.<sup>125</sup> In fact, no model could be constructed, even when we separated and tested the warmth and rules indices individually (as in the previous model), which gave significant results. As a result, no reliable conclusions can be drawn regarding influence on drinking habits at age 16 from parental style at age 10.

### The effect of parenting style on children aged 10 on their alcohol consumption when they reach 34

To answer this question, we used the BCS waves 3 and 7 data. We regressed the parental techniques when the child was age 10 against that child's drinking behaviour when they reached 34, with all relevant controls applied.

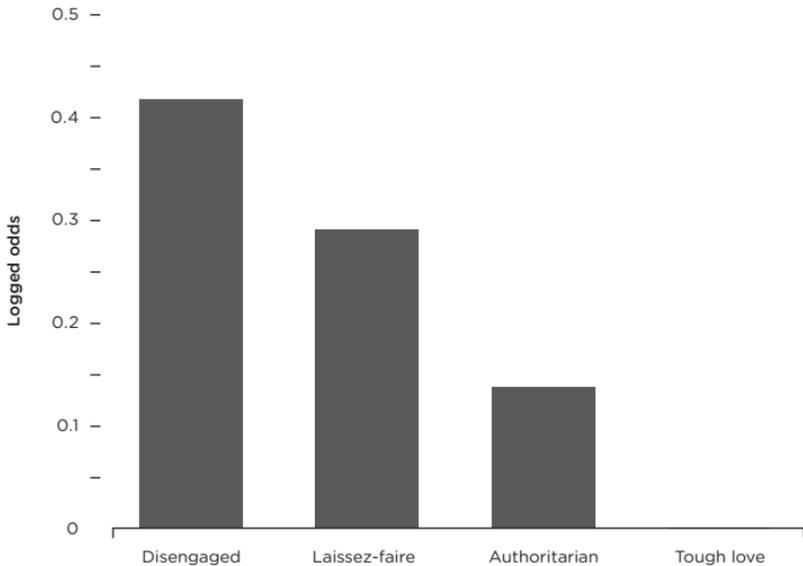
The results show that parental typology was significant and that the likelihood of excessive drinking increased by 30 per cent for every decrease in parental typology.<sup>126</sup> Put another way, a child who has 'disengaged' parents at age 10 is 2.14 times more likely to drink excessively at age 34 than those who have 'tough love' parents.

As figure 3 shows, another way of looking at this is to assess how far specific parenting styles reduce the likelihood of excessive drinking at age 34, compared with a base mid-point (the parenting style that neither increases nor reduces the risk).

To create the graph shown in figure 3 (and subsequent graphs in this chapter), the coefficient for each parenting type was turned into an odds ratio, which is the likelihood of getting a certain outcome, in this case excessive drinking, for each level of the parenting variable. For this table, the odds ratio for parenting style was 1:40. This means that from the reference group (in this case, 'tough love', considered the 'best' parenting style), the risk of the outcome (excessive drinking) goes up by 1.4 times for each parenting type 'lower' than this one. This is possible as the parenting types are just names assigned to certain values on an index, which are logically and numerically ordered, and evenly spaced. These are not like race, gender or other nominal categorical variables, which cannot be ordered and do not refer to numerical values. Instead, the parenting categories used in this study are like age brackets, with the names 'young, middle-aged and elderly' assigned to them. In that case, each name has logically defined and ordered numerical values assigned to each group, and if the same distance is included in each group (for instance, 20 years), then they are evenly spaced as well.

As tough love is the reference group in this study, the subsequent styles' odds ratios are determined by the relative distance from this reference group. In this instance, the odds

Figure 3 Odds of excessive drinking at age 34 by parenting style when child was age 10



ratio for tough love style = 0, authoritarian style = 1.4, laissez-faire style = 1.96 and disengaged style is 2.74.

The model also found some other significant predictors of whether or not an individual drinks excessively at age 34:

- Being a female reduces the risk by 70 per cent.
- Higher family income at age 10 *increases* the risk of excessive drinking by 32 per cent for each increase in income category.<sup>127</sup>

It is of particular interest that parental typologies at age 10 were significant at age 34, even though precisely the same typologies were *not* significant when the same child was 16. This suggests that the long-term impact of parenting is important, possibly because of the development of certain character traits

such as empathy and ability to defer gratification, which have been shown to have a major impact throughout a person's life.

### The effect of parenting style on children aged 16 on their alcohol consumption when they reach 16

The age at which many young people are first initiated to alcohol is 15–16. Consequently, there is a large literature – and debate – about how parents ought to approach the subject of alcohol to their children at this age. Over the last two years, a number of research papers have shown that, on the whole, it is better that parents do not introduce their children to alcohol at this age (even if supervised), and are not tolerant of alcohol consumption for minors.<sup>128</sup> However, to date, this research has not considered parental techniques generally, focusing specifically on the relationship with alcohol.

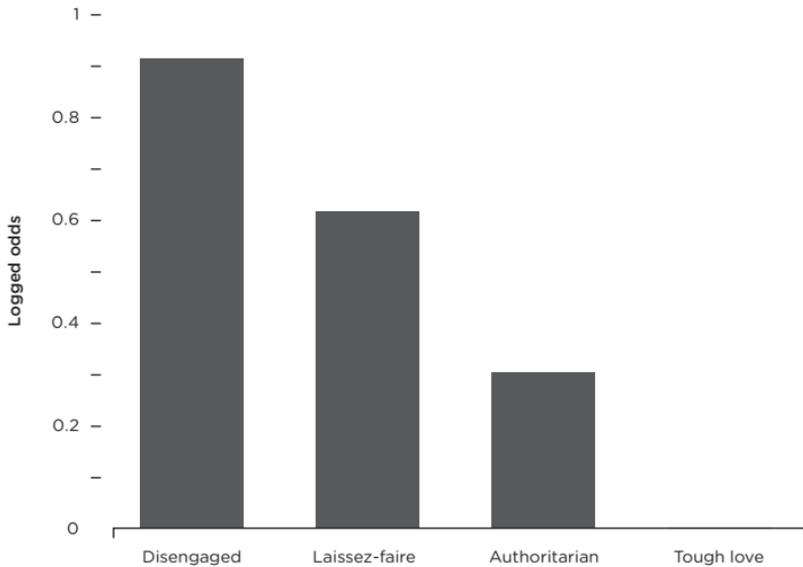
To answer this question, we used the BCS 1970 wave 4 data. We regressed the parental techniques when the child was age 16 against that child's drinking behaviour when they were 16 (the same data wave), with all relevant controls applied.

Our research shows that of all the questions asked this is the age at which parenting technique has the greatest effect on excessive drinking. The risk of excessive drinking at age 16 is 8.36 (836 per cent) times higher if a child's parent has a 'disengaged' parenting style rather than one of 'tough love'.

There are also major increases across all the parenting types: the likelihood of excessive drinking at age 16 increases by 2.03 times between each parenting type. In fact, the parenting measure was both the strongest and *only* significant predictor of excessive drinking at age 16, when controlling for all other measures. It is important to note that at this age, even gender was not a significant predictor of excessive drinking, despite its strength in the models from other ages.

Figure 4 illustrates how a 'tough love' approach at age 16 reduces the odds of excessive drinking at age 16 by around four times (compared with the base mid-point), while a 'disengaged' approach increases the risk of excessive drinking by around four times, compared with the mid-point. As figure 5 illustrates,

Figure 4 Odds of excessive drinking at age 16 by parenting style when child was age 16



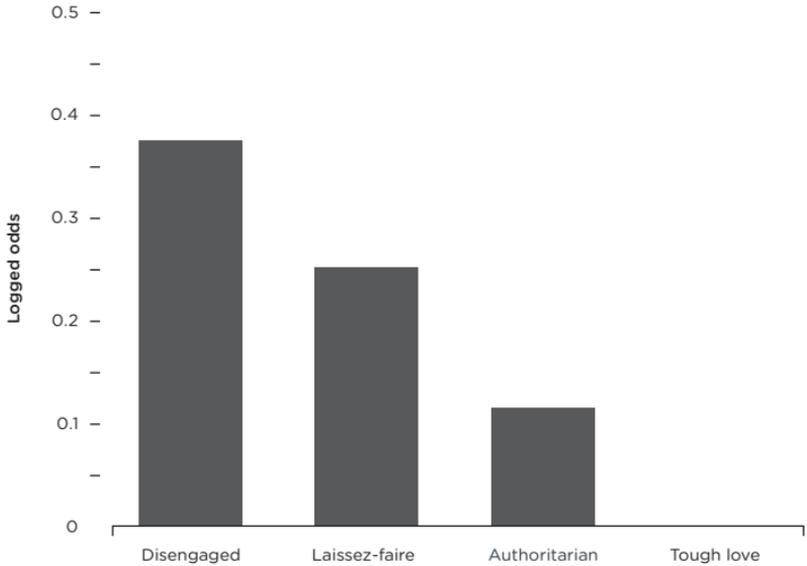
unlike other models, a laissez-faire parenting style is not a particularly important protective or risk factor for excessive drinking: the real increase in risk comes from moving from being a 'laissez-faire' to being a 'disengaged' parent.

### The effect of parenting style on children at the age of initiation on their alcohol consumption when they reach adulthood (age 34)

To answer this question, we used the BCS 1970 waves 4 and 7 data. We regressed the parental techniques when the child was age 16 against that child's drinking behaviour when they were 34, with all relevant controls applied.

The results showed that the risk of excessive drinking increases by around 1.34 times for each change in parenting type. The risk of excessive drinking increases by 2.4 times if the child

Figure 5 Odds of excessive drinking at age 34 by parenting style when child was age 16



has ‘disengaged’ parents rather than ones demonstrating ‘tough love’<sup>129</sup> (figure 5).

Although not as large an effect at age 34 as for age 16, parenting type as 16 still exhibits a powerful predictive power into adulthood. As seen in figure 5, a tough love parenting style can be considered to ‘reduce’ the risk of excessive drinking by 1.5 times (150 per cent) compared with the average, while a ‘disengaged’ parenting style would increase it by just under 100 per cent.

The model also revealed a number of other influential factors that are predictive of excessive drinking at age 34, attaining statistical significance:

- Being female at age 34 reduces the risk of excessive drinking by around 60 per cent.

- Having children at the age of 34 reduces the risk of excessive drinking by 22 per cent.<sup>130</sup>

### Summary

The research revealed a number of interesting (and sometimes unexpected) factors that influence the likelihood that someone will become a binge-drinker in adolescence and adulthood, including gender, birth weight and whether parents are separated or together.

However, even when taking these factors into account, and after taking into account key background demographics and family characteristics of children and their parents, parenting technique still remains an important influence on the risk of whether a child will drink excessively in adolescence and adulthood.

Interestingly, the research also shows that, although parenting is significant at all ages, different types of parenting matter at different points in the child's life, moving from strong warmth in the early years, towards more strict discipline in adolescence.<sup>131</sup>

# Technical appendix

This research paper aimed to understand the type and extent of influence parenting has on children's drinking behaviour, when the children grew up. To do this, we asked three specific questions (with sub questions):

- Question 1: What effect does early year parenting (21 months to 5 years old) have on a child's later drinking levels and attitude to alcohol, aged 16?
- Question 2: What effect does parenting during middle childhood (aged 10) have on a child's later drinking levels, aged 16 and aged 34?
- Question 3: What effect does parenting at the typical 'age of initiation' (when the child tends to first encounter alcohol, aged 16) have on the child's drinking levels, aged 16 and aged 34?

Taken together, we believe this allows us to present a 'typology' of parenting, which sets out what type of parenting, and at what point in a person's life, has an effect on their drinking behaviour.

## Data

Data used in this study come from two sources: the 1970 British Cohort Study (BCS) and the Avon Longitudinal Study of Parents and Children (ALSPAC). As both datasets are large, well-respected longitudinal studies of children and their parents in Great Britain, it is possible to use unique attributes from both to answer the questions posed by this research.

### British Cohort Study

The BCS began in 1970 when data were collected for 17,694 babies born one week of the year from all across the UK.<sup>132</sup> The study asked questions relating to the health, education, social and economic circumstances of each child, or cohort member. It also obtained information on the parents, including parenting strategies and lifestyle choices. Since 1970, seven waves of follow-up data have been collected, though this study needs only to use information obtained from wave 3 (cohort member aged 10, in 1980), wave 4 (cohort member aged 16, in 1986) and wave 7 (cohort member aged 34, in 2004/05). This study maintained high response rates<sup>133</sup> over the 30+ years of following the cohort members, as 86.5 per cent of original participants were surveyed in wave 3, then 70.1 per cent in wave 4, and 58.3 per cent by wave 7. We used these data to answer questions 2 and 3.

### Avon Longitudinal Study of Parents and Children

The ALSPAC, conducted by the University of Bristol, contains data on 14,062 babies born in Avon, England, between April 1991 and December 1992. The ALSPAC study comprises questionnaires answered by the children and mothers up to several times per year, ranging from when the child was 4 months old to the latest data collection at age 16. The response rate across all of these years averages 70 per cent, including all cohort members and other study participants. We used this to answer question 1.<sup>134</sup>

ALSPAC recruited 14,541 pregnant women resident in Avon, UK with expected dates of delivery 1st April 1991 to 31st December 1992. 14,541 is the number of pregnancies for which the mother enrolled in the ALSPAC study and had either returned at least one questionnaire or attended a 'Children in Focus' clinic by 19/07/99. Out of the initial 14,541 pregnancies, all but 69 had known birth outcome. Of these 14,472 pregnancies, 195 were twin, three were triplet and one was a quadruplet pregnancy meaning that there are 14,676 fetuses in the initial ALSPAC sample. Note that of these 14,676 fetuses, 14,062 were live births and 13,988 were alive at 1 year.

When the oldest children were approximately 7 years of age, an attempt was made to bolster the initial sample with eligible cases that failed to join the study originally. As a result, when considering variables collected from the age of seven onwards (and potentially abstracted from obstetric notes) there are data available for more than the 14,541 pregnancies mentioned above. The number of new pregnancies not in the initial sample that are currently represented on the built files is 542. Of these 542 additional pregnancies 6 were twin, meaning that the number of additional children that need to be considered is 548. The total sample size for analyses using child based questionnaire data collected after age seven is therefore 15,224.

Note that of the total sample of 15,224 fetuses 14,610 were live births and 14,535 were alive at 1 year. A 10 per cent sample of the ALSPAC cohort, known as the Children in Focus (CiF) group, attended clinics at the University of Bristol at various time intervals between 4 to 61 months of age. The CiF group were chosen at random from the last 6 months of ALSPAC births (1432 families attended at least one clinic). Excluded were those mothers who had moved out of the area or were lost to follow-up, and those partaking in another study of infant development in Avon.

## Variables

Like most research of this nature, we required three types of variables to conduct the analyses:

- *Dependent or outcome variables.* These are the resultant drinking behaviours of the children in the two longitudinal studies, as these are the outcomes this research seeks to understand.
- *Independent variables or regressors.* These include other aspects of the children's lives that are thought to have an effect on the outcome variable. In this case, the main regressors are the parenting styles used to raise the child at different ages, as the parents' membership in a certain style of parenting behaviour is believed to influence the child in very different yet significant

ways (see below for how we constructed the parenting typologies).

- *Control variable or covariates.* These are used to account for all other things that may have an impact on the outcome variable, so the effect of the regressor(s) may be as close to independently assessed as possible. In this research, the covariates include the socio-economic circumstances of the children and the parents during childhood and at adulthood, when the outcome variable is measured.

The specific measures, rationale and coding used for these variables are covered in the sections below.

## Dependent or outcome variables

### Excessive drinking at age 34

We used data from the BCS wave 7 study as the outcome variable when determining the probability that a person will binge-drink at age 34. Specifically, we used the cohort members' self-reported number of units of alcohol drunk in the previous week as a direct measure for determining excessive drinking. In line with the governmental definition, we considered a man to drink excessively if he drank over 21 units of alcohol in one week, and a woman to drink excessively if she drank over 14 units of alcohol per week. This outcome variable was naturally dichotomised, as we put respondents into two groups, 'binge-drinkers' and 'non-binge-drinkers', depending on whether the units of alcohol consumed in the previous week were above or below the government's definition of excessive drinking for men and women.

### Excessive drinking at age 16

We also applied the same governmental definition of excessive drinking used at age 34 to the self-reported units of alcohol consumed by cohort members in the BCS wave 4 dataset, when the cohort members were 16 years old. We used this binary coding scheme for assessing whether cohort members were or were not binge-drinkers at age 16.

In the ALSPAC dataset we examined excessive drinking from a more behavioural context, with an index of ‘problematic’ drinking behaviours created to assess the level of excessive drinking by each cohort member. This allowed for a robust assessment of the (dys)function caused by the cohort members’ drinking, based on their responses to the quantity and frequency of alcohol consumption, gravity of consequences, and level of concern expressed by others as a result of their drinking. Specifically, the questions used in the index include how often the teen needed a drink in the morning to get out of bed, how often the teen felt guilty or remorseful after drinking, how often the teen was unable to remember the night before after drinking, how often a relative, friend, doctor or health worker had been concerned by the cohort member’s drinking, and more. The possible responses were on a scale of 1 to 3 (never, rarely, often), and we created the index by averaging these scores by the nine items included in the measure.<sup>135</sup> This resulted in an index that also ranged on a scale of 1 to 3, representing the average level of problematic drinking the cohort members engaged in at age 16. This behavioural measure was not used in relation to the BCS, because appropriate data were not collected in the survey.

### Independent variables or regressors

Internal validity is greatly improved when an index of several variables aiming to measure the same concept is developed, so we created an index for parental warmth and the setting of and adherence to rules using questions asked of parents when their children were aged 21 months to 5 years, 10–11 years and 15–16 years old.<sup>136</sup> We summed and averaged the measures within the warmth and rules indices, and created a resultant index for parental warmth and rules. While the response rate was generally high for the BCS and ALSPAC studies, we took additional measures to ensure that cases with systematic missing answers were removed from the index creation analysis, as they may skew the results in a negative way. Therefore we excluded any cases with less than 85 per cent of the questions answered in the index, and included the remaining cases to create the scale. The specific

make-up of questions used to create the ‘warmth’ and ‘rules’ indices at each age group is discussed in the sections below.

### Parenting styles at toddler age (21 months through 5 years)

We took the information used to determine parenting style when the children were toddler aged from the ALSPAC dataset, as the measures available in the study tap directly into the concepts of parental warmth and rules required by this research. It should be noted that we asked the mothers of the children all parenting questions in the ALSPAC study, as we determined that at the young ages, such as when children are 21 months to 5 years old, it is often the mothers who are the primary caregivers and have the most contact with the child at that time.

As the concept of maternal warmth includes the care, or lack thereof, the mother exhibits towards the child, we used questions relating to the closeness within the mother–child relationship for the warmth index when the child was a toddler. The responses range from 1 to 4 (never feel, feel sometimes, feel often, feel exactly), and examples of questions used to create the index include whether the mother really loves her toddler; if the child never gets on her nerves; if the best way to calm the child is to cuddle; if the mother thinks toddlers are fun; if she gets anxious about whether the child is eating the right food and eating enough; and if the child gives her great joy. There were 20 questions (ten for both axes).

We coded questions relating to how rules were enforced by the mothers when their children were aged 21 months to 5 years in the same manner as those above, and the questions in the index include whether the mother is fine with messes surrounding the child; if she believes the best discipline is a smack; if whining makes her want to hit the child; and if she feels desperate when the child is difficult.

### Parenting styles at age 10

To assess the impact of parenting at age 10, we used several questions asked of the child’s parents in the BCS wave 3 study to

create indices of warmth and rules, based again on the concepts of closeness to the child and how rules were created and enforced. The set responses to these questions varied, but we recoded them to mirror the response values for ALSPAC questions at age 5. In this case, low values represent less warmth and/or rules enforced by parents, while high values again represent more warmth and/or stricter rules set and enforced by the parents for the children.

Examples of the measures included in the warmth index for age 10 include how often the family goes on walks and has meals together; how much time the child spends talking to parents; how comfortable the child feels talking to his/her parents; how often the parents ask to hear the child's ideas; and the main caregiver's (often the mother's) general attitude towards the child.

To create a rules index at age 10, we coded several questions relating to boundaries set and enforced by parents for the child for inclusion. These include measures such as how often the 10-year-old is allowed to play in the streets and ride city buses alone; how often the child is asked where they are going; whether anyone is home when the child gets home from school; and if the 10-year-old has their own door key to come and go as they please.

### Parenting styles at age 16

We again used the BCS dataset used to assess the style of parenting, this time answered by the teen about the parents when they were aged 16 years. We determined the level of warmth between the teen and parents through an index of measures, again coded with low value responses indicating a lack of warmth, and high values representing more closeness and warmth between the teen and parents. Questions in the warmth index include how often the teen ate a meal at home with their parents; whether they felt their parents were loving and caring; if they felt they could talk to their parents; how often they did fun things with their parents; and the teens' feelings about living with their parents.

We also created the index of rules using measures answered by the teen about their parents, and included questions about how strict are the parents with them; whether the parents ask

who the teen is going out with; whether the parents ask where they are going; how would the parent feel if they saw the teen smoke; and if the parents would be upset if the teen was caught shoplifting an item worth less than £10.

### Parenting typologies

Using the indices of parental warmth and rules created for the three age groups of the children, we derived parenting style ‘typologies’. These separate the full range of parenting styles into four categories, or ‘quadrants’, based on the scores of the warmth and rules indices at a given time. The four quadrants are made up of parents who are ‘above average’ or ‘below average’ in various combinations of the parenting style measures. The four categories are:

- tough love – high rule enforcement, high warmth
- authoritarian – high rule enforcement, low warmth
- laissez-faire – low rule enforcement, high warmth
- disengaged – low rule enforcement, low warmth

Table 1 shows the indices we used to identify parental warmth and rule-setting.

Although these categories are given titles instead of maintaining their true numerical values, thereby appearing to be nominal or ‘categorical’ variables much like race or gender, they are not. In actuality, these are numerically ordinal variables, much like ages grouped into categories, or income put into brackets. We created the parenting typologies using numerical scores on indices, and therefore the units they comprise are numerical and have specific values. Moreover, as we defined each typology using the ‘top’ or ‘bottom’ quadrant of the two indices from which they are derived, they are all evenly sized and spaced. Analogously, income is an obvious numerical value, and levels may be grouped to appear as categories. The categories may be defined with even sizes, such as the top and bottom 33rd percentiles. Even if different numbers of people fall into each category, they are evenly sized by definition, and spaced equally

Table 1

## Warmth and rules indices used to identify parental warmth and rule setting

Aged 2–5 years  
Warmth indices<sup>137</sup>  
Items<sup>138</sup>

- 1 The best way to calm a child is to cuddle
  - Feel never, feel sometimes, feel exactly
- 2 I think toddlers are fun
  - Feel never, feel sometimes, feel exactly
- 3 I really love my toddler
  - Feel never, feel sometimes, feel exactly
- 4 My child gives me great joy
  - Feel never, feel sometimes, feel exactly
- 5 I am glad I had my child when I did
  - Feel never, feel sometimes, feel exactly
- 6 It is unbearable when my child cries
  - Feel exactly, feel sometimes, feel never
- 7 It is a pleasure watching my child grow
  - Feel never, feel sometimes, feel exactly
- 8 I feel anxious if someone else looks after my child
  - Feel never, feel sometimes, feel exactly
- 9 I am worried whether my child eats enough
  - Feel never, feel sometimes, feel exactly

Rules indices<sup>139</sup>  
Items

- 1 My child should eat whenever s/he asks
  - Feel exactly, feel sometimes, feel never
- 2 I feel exasperated when I cannot calm my child
  - Feel never, feel sometimes, feel exactly
- 3 I am fine with a mess surrounding my child
  - Feel never, feel sometimes, feel exactly
- 4 Whining makes me want to hit my child
  - Feel exactly, feel sometimes, feel never
- 5 The best discipline is a smack
  - Feel exactly, feel sometimes, feel never
- 6 I am afraid I will be violent with my child
  - Feel exactly, feel sometimes, feel never
- 7 I feel desperate when my child is difficult
  - Feel exactly, feel sometimes, feel never
- 8 I feel I am doing the right thing for my child
  - Feel never, feel sometimes, feel exactly
- 9 I am anxious if my child is not eating the right food
  - Feel never, feel sometimes, feel exactly

Table 1 **Warmth and rules indices used to identify parental warmth and rule setting - *continued***

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Aged 10 years  
Warmth indices  
Items

- 1 My family goes for walks together
  - Rarely or never, Sometimes, Often
- 2 My family goes for outings together
  - Rarely or never, Sometimes, Often
- 3 My family has meals together
  - Rarely or never, Sometimes, Often
- 4 My parents like to hear about my ideas
  - Rarely or never, Sometimes, Always
- 5 I feel foolish talking to my parents
  - Always, Sometimes, Rarely or Never
- 6 Time I spend talking to parents
  - None, Not very much, Quite a lot
- 7 My mother's attitude toward me is
  - Hostile/Dismissive, Balanced, Affectionate

Rules indices  
Items

- 1 I am allowed to go to the park/playground alone
  - Almost every day, Sometimes, Never
- 2 I am allowed to play in the street alone
  - Almost every day, Sometimes, Never
- 3 I am allowed to go to the shops alone
  - Almost every day, Sometimes, Never
- 4 I am allowed to go on local buses alone
  - Almost every day, Sometimes, Never
- 5 I tell my parents where I am going
  - Rarely or never, Sometimes, Always
- 6 Someone is home after school
  - Rarely or never, Sometimes, Always
- 7 I use my own door key to come and go as I want
  - Often, Sometimes, Never

Table 1 **Warmth and rules indices used to identify parental warmth and rule setting – *continued***

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Aged 16 years

Warmth indices

Items

- 1 I do outdoor recreations with my parents
  - Rarely or never, Sometimes, Often
- 2 I sit down and eat a meal at home with my parents
  - Rarely or never, Sometimes, Often
- 3 My parents are understanding, I can talk to them
  - Rarely or never, Sometimes, Often
- 4 My parents are loving/caring/look after me
  - Not at all, Not very much, Quite a lot
- 5 My parents are helpful/good in a crisis
  - Not at all, Not very much, Quite a lot
- 6 I do things with both parents together
  - Rarely or never, Sometimes, Often
- 7 My feelings about living with my parents
  - Somewhat unhappy, Happy, Very happy

Rules indices

Items

Measures in index:

- 1 How strict are your parents with you?
  - Not at all, Not very much, Quite a lot
- 2 Do parents ask who you are going out with?
  - Rarely or never, Sometimes, Often
- 3 Do parents ask where are you going?
  - Rarely or never, Sometimes, Often
- 4 Would your parents be upset if you were caught shoplifting something under £10?
  - Not at all, Not very much, Quite a lot
- 5 In the past 4 weeks I have had drinks with my parents' knowledge
  - Often, Sometimes, Never
- 6 My parents are overprotective
  - No, Sometimes, Yes
- 7 How would your parents feel if they saw you smoking?
  - Somewhat happy, Unhappy, Very unhappy

away from the mean, which is used as the reference point. Therefore, when the percentiles are given titles such as ‘poor’, ‘average’ or ‘rich’, they are just labels for categories reflecting real values grouped into evenly spaced categories. The same principle applies to the typologies of parenting, and allows for their use as predictor variables as categories in a logistic regression.

We reran tests of multi-colinearity of all the variables on the ordering of the parenting typologies, then rearranged and reran the variables with ‘authoritarian’ as the base style, and this yielded far less powerful results.

### Control variables

We included several control variables on the children, their parents and background factors from childhood and/or adulthood in the models. The purpose of a control variable is to account for variance in the outcome that may not be due to the independent variables, which in this case is parenting style. Therefore we coded all available measures on the child’s background, family and adult life status for inclusion when applicable and available.

### Child attributes

We used the following variables as controls in the analyses, as they are factors on the cohort members that may relate to future drinking behaviours:

- gender
- ethnicity
- religious practice
- attitude on morality issues
- birth weight
- education level
- income
- marital status
- employment status
- number of children

### Parental attributes and background factors

These control variables relate to details on the parents and family background factors that may feasibly account for some variance in the drinking behaviours of their children:

- parents' ethnicities
- mother's age at child's birth
- parents' marital status
- parents' home ownership status
- family income
- parents' education levels
- father's employment status
- parents' drinking habits
- parents' social classes

### Missing data

For both data sets, we only included cases where 70 per cent or more of the questions with which we built our parenting typologies were included. If a case had fewer than this we excluded it due to the bias it could cause. Reliability tests were run to check if there was non-random or systematic missing data, and if the missing cases were somehow related and could alter the outcomes. This was done by coding each case for missingness, and including the measure in the multivariate analysis. If the missingness measure was significant, that indicates there was systematic missing data. This was not found to be the case for any measures in either study tested.

## Results

### The effect of parenting at age 21 months to 5 years on excessive drinking at age 16

To assess the impact of parenting style at age 21 months to 5 years on drinking behaviours at age 16, we used data from the ALSPAC study in the analysis. As noted above, the excessive drinking outcome variable from this dataset is a behavioural index, created using several measures to tap into the construct of problematic drinking behaviour. This index is scored along a

continuum, as we summed and averaged the responses to the questions in the study from the original 1 to 3 scale.

Consequently, multiple linear regression is the statistical method suited for this analysis, as it enables the use of several covariates to predict a continuous outcome variable, such as the drinking behaviour index. Furthermore, this analytical method allows for the use of 'pairwise' exclusion of cases, where missing values are selectively removed from the analysis, as compared to 'listwise' exclusion, which deletes the entire case if there is one missing value within it. This lets the sample size remain at its original level, and allows for the more latent influences to become apparent by achieving statistical significance.

In the first model used to predict the level of excessive drinking at age 16, we used the parenting typology measure from age 21 months to 5 years as the main predictor variable, and added all additional controls into the model. However, this model did not attain statistical significance, and it is therefore not possible to draw any conclusions from the results.

To address this issue, we removed the parenting typology variable from the model, and entered the individual parental warmth and rules indices that we used to derive the parenting typologies as separate predictors. Then we reran the new regression model.

This time, the measures were a good fit in predicting excessive drinking behaviours at age 16, as the overall model was highly significant at the .1 per cent level. Furthermore, four variables from within the model stand out as being statistically significant at the 5 per cent probability level or below.

The first significant measure is the level of warmth between mother and child at age 2 to 5. This variable has a negative beta, indicating that as the level of parental warmth to the child at toddler age increases, the amount of excessive drinking behaviours at age 16 decreases ( $\beta = -.034, p < .05$ ). The parental rules index at age 21 months to 5 was not statistically significant for predicting drinking behaviour at age 16. It should also be noted that these results occurred while controlling, or taking into account, the effect of all the other influences on drinking behaviours entered into the analysis.

Table 2 **Multiple regression of effect of parenting styles at age 5 on drinking behaviours at age 16**

Parenting style	Beta	S.E.	B	t	p
Warmth level	-.034	.021	-.043	-2.021	.043*
Rules level	-.002	.026	-.003	-.124	.902
Controls Gender	.045	.012	.032	2.72	.006*
Ethnicity	.035	.034	.057	1.681	.093
Age of mother at delivery	.019	.001	.001	.976	.329
Birth weight	.048	.007	.021	2.894	.004*
Mother's ethnicity	-.034	.009	-.015	-1.644	.100
Mother's education level	.006	.005	.002	.337	.736
Mother's social class	-.022	.004	-.005	-1.220	.222
Father's social class	.028	.002	.003	1.648	.099
Parents' marital status	-.039	.009	-.019	-2.172	.030*
Parents' home ownership status	-.006	.007	-.002	-.336	.737

$\rho = .001$ ,  $R = .094$ ,  $R^2 = .009$ ,  $\text{Adj. } R^2 = .006$ ,  $F = 2.728$ ,  $df = 12$ ,  $n = 4,026$

\* Indicates statistically significant results.

Of the control measures included in the model, gender, parents' marital status and child's birth weight all emerged as significant predictors of problematic drinking behaviours at age 16. These results indicate that males are more likely to have concerning consumption behaviours at age 16 than females ( $\beta = .045$ ,  $p < .01$ ), babies weighing more at birth have a higher likelihood of drinking more than those weighing less ( $\beta = .048$ ,  $p < .01$ ), and children with parents who are separated or divorced at age 21 months to 5 years are more likely to have problematic drinking behaviours than children with both parents together ( $\beta = -.039$ ,  $p < .05$ ). Full results from this model are illustrated in table 2.

### The effect of parenting at age 10 on excessive drinking at age 34

To determine whether, and how much, parenting style at age 10 impacts alcohol consumption at age 34, we used data from the BCS dataset to run the analysis. In this case, the outcome measure of problematic drinking was a direct measure of units

consumed per week by each participant, with all those consuming more than the government recommended amount classified as binge-drinkers, and those drinking less than that amount considered non-bingers. This naturally dichotomous variable requires the use of a slightly different statistical analysis, as binary outcomes are assessed by using a logistic regression. This method is highly similar to multiple regression used in the previous analysis, but differs in that odds ratios, or probabilities of occurrence, are able to be obtained. This is highly useful for practical research, as it allows for an assessment of risk of membership in the outcome variable depending on the status in the independent and control variables.

In this model, the dichotomous excessive drinking at age 34 measure was the outcome variable, and we included parenting typology, as well as all available controls relating to life circumstance in childhood, adulthood and of the parents, in the model. Results indicate that the model is significant at the .01 per cent level, and three measures within the model emerged with significance.

The first of these was parenting typology, where the likelihood of excessive drinking at age 34 increased by 30 per cent for every decrease in parenting typology. Put another way, children of parents whose parenting style was of the 'disengaged' typology at age 10 are 1.3 times more likely to binge-drink at 34 than those whose parenting style was 'laissez-faire' (OR = 1.29,  $p < .05$ ). The risk of excessive drinking at age 34 for children of 'authoritarian' and 'disengaged' parents grows even more, by 1.66 times, or there is a 66 per cent increased chance of excessive drinking. This also applies to the increased risk in excessive drinking for the child of 'authoritarian' and 'laissez-faire' parents. The risk of excessive drinking at age 34 is 2.14 times higher for offspring of parents who had been 'disengaged' than it is for those whose parents had had a 'tough love' parenting style.

The other significant predictors of whether or not an individual binge-drinks at age 34 are the individual's gender, as being a female decreases the risk of excessive drinking by nearly 70 per cent (OR = .306,  $p < .01$ ) and family income at age 10,

Table 3 **Logistic regression of effect of parenting types at age 10 on alcohol consumption at age**

Parenting style	Beta	S.E.	B	t	p
Parental typology	1.40	.339	.202	2.36	.018*
Controls					
Gender	.314	-.116	.103	-3.52	.0001*
Ethnicity	1.00	.003	.244	-0.01	.991
Marital status	1.51	.411	.220	2.82	.005*
Education level	1.03	.027	.119	0.23	.818
Employment status	.841	-.173	.119	-1.22	.222
Number of children	1.03	.002	.133	0.02	.985
Religious beliefs	.062	.079	.079	0.83	.404
Income	.999	-5.01e-06	5.91e-06	-0.85	.396
Family income at age 10	1.24	.217	.166	1.62	.104
Father's education level	1.19	.182	.135	1.61	.106
Father's ethnicity	.717	-.333	.198	-1.21	.227
Mother's ethnicity	.507	-.679	.326	-1.06	.290

$p = .0001$ , LL = -159.09, Psd  $R^2 = .1309$ ,  $\chi^2 = 47.92$ ,  $n = 355$

\*Indicates statistically significant results.

which, surprisingly, increases the risk of excessive drinking by 32 per cent for each increase in income category (OR = 1.32,  $p < .01$ ). All results from this model are displayed in table 3.

### The effect of parenting at age 16 on excessive drinking at age 34

This question again requires the use of BCS data, and logistic regression in answering it. We found the model that uses the parenting typologies from age 16 as the main regressor to be significant at the .01 per cent level. Within the model, two variables emerged as significant: parenting type and gender.

Parenting type has an odds ratio of 1.34: the odds of excessive drinking of someone at age 34 are 1.34 times greater if that person's parents had exercised an 'authoritarian' parenting style when the person was age 16 rather than one of 'tough love', when controlling for demographics at age 34 and at age 16 (OR =

Table 4 **Logistic regression of effect of parenting types at age 16 on alcohol consumption at age 34**

Parenting type	OR	B	S.E.	z	p
Parental typology	1.34	.294	.185	2.13	.033*
Controls#					
Gender	.274	-1.29	.078	-4.53	.0001*
Marital status	1.19	.175	.433	0.48	.630
Education level	1.05	.049	.122	0.42	.675
Number of children	.761	-.272	.112	-1.84	.066
Religious beliefs	1.01	.015	.062	0.24	.808
Income	.999	-4.47e-06	5.90e-06	-0.76	.448
Religious beliefs at age 16	.976	-.024	.041	-0.58	.562
Family income at age 16	1.07	.066	.069	1.03	.305
Father's employment at age 16	.381	-.963	.209	-1.75	.079
Mother's ethnicity	.323	-1.13	.262	-1.39	.163
Father's ethnicity	1.36	.307	.309	1.35	.176
Father's drinking habits	1.21	.193	.228	1.03	.302
Mother's drinking habits	1.38	.322	.273	1.63	.103
Morality beliefs at age 16	.944	-.057	.427	-0.13	.899

$p = .0001$ , LL = -171.61, Psd  $R^2 = .1503$ ,  $\chi^2 = 60.71$ ,  $n = 385$

# Ethnicity and employment status omitted owing to perfect prediction.

\* Indicates statistically significant results.

1.34,  $p < .05$ ). This also means that for each change in parenting type, the odds of excessive drinking go up 34 per cent. The risk of excessive drinking at age 34 grows by 1.795 times, or 79.5 per cent, for a child with 'authoritarian' and 'disengaged' parents at age 16. The same can also be said of the increased risk of excessive drinking for children of parents whose parenting style was one of 'tough love' or 'laissez-faire'. The risk of excessive drinking at age 34 grows 140.6 per cent: children of parents who are 'disengaged' are 2.406 times more likely to drink excessively than children of parents whose parenting style was one of 'tough love'.

Gender was the other significant predictor, where being female decreases the risk of excessive drinking by 72.6 per cent (OR = .274,  $p < .001$ ). All results from this model are shown in table 4.

Table 5 **Logistic regression of effect of parenting types at age 16 on alcohol consumption at age 16**

Parenting type	OR	B	S.E.	z	p
Parental typology	2.03	.709	.468	3.08	.002*
Controls#					
Gender	1.51	.415	.612	1.03	.304
Religious beliefs	1.04	.043	.062	0.72	.471
Family income	1.00	.001	.088	0.01	.990
Father's employment	.424	-.858	.281	-1.30	.195
Father's ethnicity	.873	-.135	.266	-0.44	.656
Father's drinking habits	1.22	.199	.319	0.76	.447
Mother's drinking habits	.789	-.237	.236	-0.79	.429
Morality beliefs	.457	-.781	.293	-1.22	.222

$p = .0061$ , LL = -90.20, Psd  $R^2 = .1133$ ,  $\chi^2 = 23.06$ ,  $n = 299$

# Ethnicity and mother's ethnicity omitted due to perfect predictions.

### The effect of parenting at age 16 on excessive drinking at age 16

The odds of a child's excessive drinking at age 16 change by 2.03 times between each parenting type at age 16, when controlling for other demographics at age 16 (OR = 2.03,  $p < .01$ ). As the parenting type becomes lower, the odds of excessive drinking go up 103 per cent at this age. Therefore, children of parents who had a 'laissez-faire' parenting style are 312 per cent or 4.12 times more likely to drink excessively at age 16 than those whose parents had a 'tough love' parenting style. The same can also be said of the increased risk in excessive drinking for the children of parents whose parenting style had been 'disengaged' rather than one that exhibited 'tough love'. At age 16, children of parents whose parenting style was 'disengaged' are 736 per cent or 8.36 times more likely to drink excessively than children of parents who had a 'tough love' parenting style.

This measure was both the strongest and only significant predictor of excessive drinking at age 16, when controlling for all other measures. It is important to note that at this age, even gender was not a significant predictor of excessive drinking, despite its strength in the models from other ages.

### The effect of parenting at age 10 on excessive drinking at age 16

Unlike the previous models, the model examining the effect of parenting style at age 10 on excessive drinking at age 16 was not statistically significant ( $p = .447$ ). However, no model, even with the separate warmth and rules indices, could be derived with significant results. Therefore no reliable conclusions may be drawn for this relationship.

### What aspect of parenting matters most?

Using the BCS, we included a full model of the parenting style indices and controls from ages 10, 16 and 34 in a single analysis in order to determine what aspect of parenting style matters most in the effect on excessive drinking as an adult. The results of the model were significant, and indicate that the most important and influential style of parenting changes, depending on the age of the child. At age 10, parental warmth is a strong, significant safeguard against excessive drinking at age 34, as a warm parent decreases the risk by 56.2 per cent compared with a cold parent, even when controlling for parenting at age 16 and demographics at ages 10, 16 and 34 ( $OR = .438, p < .05$ ). Strict parental rules at age 16 decreased the risk of excessive drinking at age 34 by over 43 per cent, and was verging on statistical significance ( $p = .075$ ). Therefore, this model shows that the two strongest ways parenting style reduces excessive drinking is warmth at age 10, and strict rules at age 16. As noted above, the ALSPAC study also shows that warmth, rather than rules, was the significant predictor for drinking behaviour at age 16.

Other influential factors include gender and number of children living in the household at age 34. Both were protective factors, in that being a female is again shown to decrease the risk of excessive drinking, this time by 60.2 per cent when controlling for all other factors ( $OR = .398, p < .001$ ), and having more children in the home also decreases the risk at age 34 by 21.7 per cent ( $OR = .783, p < .01$ ). See table 6 for a full display of these results.

Table 6 **Logistic regression of effect of parenting styles at 10 and 16 on alcohol consumption at age 34**

Parenting style	OR	B	S.E.	z	p
Warmth level at age 16	.986	-.014	.201	-0.07	.945
Rules level at age 16	.563	-.574	.182	-1.72	.075
Warmth level at age 10	.438	-.824	.166	-2.17	.030*
Rules level at age 10	.580	-.543	.186	-1.70	.090
Controls Gender	.398	-.922	.077	-4.74	.0001*
Ethnicity	.811	-.208	.152	-1.11	.268
Marital status	1.11	.104	.270	0.43	.666
Education level	1.03	.033	.895	0.38	.705
Employment status	.903	-.102	.082	-1.13	.260
Religious beliefs	1.04	.042	.047	0.93	.351
Number of children	.783	-.243	.069	-2.76	.006*
Income	.999	.000	7.02e-06	-1.74	.082
Religious beliefs at age 16	.992	-.007	.028	-0.26	.795
Family income at age 16	.983	-.017	.055	-0.30	.764
Family income at age 10	1.09	.089	.114	0.86	.391
Father's employment at 16	.420	-.867	.206	-1.77	.077
Father's education level	1.09	.085	.085	1.09	.275
Mother's education level	1.00	.000	.091	-0.01	.993
Mother's ethnicity	.607	-.498	.212	-1.43	.154
Father's ethnicity	1.24	.217	.197	1.37	.171
Father's drinking habits	1.23	.206	.159	1.47	.140
Mother's drinking habits	1.24	.218	.175	1.55	.121
Morality beliefs at age 16	.983	-.017	.310	-0.05	.957

$p = .0001$ , LL = -376.03, Psd  $R^2 = .1088$ ,  $\chi^2 = 91.84$ ,  $n = 867$

\*Indicates statistically significant results at the .05 level or below.

## Limitations

Like all research of this type, there are several limitations to the study which must be noted. The first is that we conducted this study using secondary data analysis: we used datasets compiled by other organisations, and therefore were limited to the measures they collected, subjects they targeted for the study, the preset coding schemes, and the timing of data collection waves. As this research required very specific measures on parenting and drinking behaviours at very specific ages, asked of a specific type of sample, we managed these limitations by drawing on two separate datasets in order to obtain appropriate measures of

drinking behaviours and parenting measures at the right age brackets of British youth and young adults.

All measures used as index items and covariates in this research were dependent on the data available in the BCS and ALSPAC datasets. While both studies had a sufficient array of measures to conduct the current study, there are of course certain ‘ideal’ measures which we did not include. Indeed, parenting researchers prefer to use a particular set of measures, which, based on other literature on the subject, is a more accurate way to describe warmth and discipline. Even so, every effort has been made to ensure the theoretical and logical soundness of the indices and covariates used in the models, but the limitation of data availability must still be noted.

Conversely, there is a potential limitation of comparing the results of analyses drawn from separate datasets, as the two studies collected different information from different participants in different places at different times. This is not to say the datasets are not highly comparable, as there is certainly an abundance of similarities between the longitudinal datasets collecting information on parents and children born in the UK. But, as the data were not collected on the exact same group, at the exact same time, with the exact same questions asked of them, there is always the possibility of the comparison being a bit unequal as a result.

Finally, there are several limitations inherent to the BCS and ALSPAC datasets, encountered by all studies using their data for secondary analysis research. For instance, the BCS dataset, which began over 40 years ago, may suffer from a range of time-related issues, including response-rate attrition, historical, legal and social changes during the course of the study, and the datedness from the early waves of the data collection. Furthermore, as this study included only babies born in the UK and generally did not follow up on individuals who emigrate overseas, there may be differences in the British Cohort Study’s sample and the actual population of people living in the UK. This is also compounded by the fact that the second wave onwards excluded all participants from Northern Ireland, and the high level of immigration into the UK since the creation of

the Eurozone altered the proportion of those native to the country, but the BCS did not include anyone born outside the country in the research. Therefore, it may not be possible to generalise these findings to the entire UK, or even the entire British population.

With the ALSPAC data, there is a similar limitation about generalisability to the population as, unlike the British Cohort Study, this study did not collect data on children from across the whole country. Instead, the data sample was collected on children born in Avon, England, in one year of the early 1990s. So while the time-related issues of the BCS are generally not a concern in the ALSPAC dataset, the representativeness of the sample of children born in Avon, England, to all those living in Great Britain may be problematic. Furthermore, while the ALSPAC study had very detailed questions on parenting at very early ages of childhood, the study only collected data relating to the mothers of the children, and any details on the fathers were obtained through the mothers' responses. However, as it is a well-established fact that during the early years of life the mother is often the main carer and has the most impact on the development of the child, this limitation is not severe.

We found these results with these specific models, and understand that models using additional measures may indicate a different result due to the inclusion of unmeasured confounding factors. Should any researchers wish to have access to the precise coding used in deriving these models in order that they run tests of replicability, we would be happy to share them.

Every study faces limitations of some kind, and would like to make note of those affecting this research, and suggest that readers take these factors into account when considering the results of the analyses.



# Notes

- 1 The Department of Health more frequently uses recommended daily allowances of 4 units for a man, and 3 for a woman. However, these data are not available from the data sets in question. We consider weekly unit consumption a suitable, if not perfect, measure.
- 2 ( $p = .033$ )
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- 4 Ibid.
- 5 J Rehm et al, 'The relationship of average volume of alcohol consumption and patterns of drinking to burden of disease', *Addiction* 98, issue 9, 2003.
- 6 PMSU, *Alcohol Harm Reduction Project: Interim analytical report*, London: Prime Ministers' Strategy Unit, 2003.
- 7 L Smith and D Foxcroft, *Drinking in the UK: An exploration of trends*, York: Joseph Rowntree Foundation, 2009, for a useful summary.
- 8 Smith and Foxcroft, *Drinking in the UK*.
- 9 ONS, *Smoking and Drinking amongst Adults*, London: Office for National Statistics, 2008; NHS, 'Statistics on Alcohol'.
- 10 ONS, *Drinking: Adults' behaviour and knowledge in 2009*, London: Office for National Statistics, [www.statistics.gov.uk/downloads/](http://www.statistics.gov.uk/downloads/)

theme\_health/drink2009.pdf; NHS guidelines are that men should not drink more than 3–4 units a day, and women should not drink more than 2–3 units of alcohol a day. See [www.drinking.nhs.uk/questions/recommended-levels/](http://www.drinking.nhs.uk/questions/recommended-levels/).

- 11 Proportions of men and women who claimed to have had an alcoholic drink in the previous week fell from 75 per cent of men and 60 per cent of women in 2003 to 72 per cent and 57 per cent in 2005, and remained around this level until 2008; see ONS, *General Lifestyle Survey: Smoking and drinking report*, Office for National Statistics, 2008, [www.statistics.gov.uk/STATBASE/Product.asp?vlnk=5756](http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=5756), (accessed Jan 2011); ONS, *Smoking and Drinking among Adults*, London: Office for National Statistics, 2009, [www.statistics.gov.uk/.../GLFSmoking&DrinkingAmongAdults2008.pdf](http://www.statistics.gov.uk/.../GLFSmoking&DrinkingAmongAdults2008.pdf) (accessed Feb 2011). According to the Joseph Rowntree Foundation, the number of 16–24-year-olds drinking more than 21 units a week has fallen from 34 per cent in 1988 (30 per cent in 2002) to 24 per cent. In fact, in England, 18 per cent of men drink more than 8 units on any one day; see Smith and Foxcroft, *Drinking in the UK*. The main figures on drinking trends come from ONS, *Smoking and Drinking Among Adults*, 2009, and Smith and Foxcroft, *Drinking in the UK*.
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- 15 K Hughes et al, 'Alcohol, nightlife and violence: the relative contributions of drinking before and during nights out to negative health and criminal justice outcomes', *Addiction* 103, no 1, 2008.

- 16 P Hadfield et al, *Alcohol Consumption, Pre-loading, Late Night Refreshment and Transportation in the Camden Special Policy Areas: Interim report to the London Borough of Camden*, 2010.
- 17 In a survey of those who claimed to have drunk alcohol in the past 30 days, there were more respondents in the UK than any other country of the EU27 who had 7–9 drinks per day and 10+ drinks per day on days when they drink alcohol. See EU, *EU Citizens' Attitudes Towards Alcohol*, 2010, [http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_331\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_331_en.pdf).
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communication about alcohol issues was positively associated with alcohol consumption of adolescents. This suggests that it is the type of discussion that is important.

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- 121 ( $\beta = -.034, p <.05$ )
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- 124 ( $\beta = -.039, p <.05$ )
- 125 ( $p = .447$ )
- 126 ( $p = .018$ )
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- 130 ( $p < .001$ ) and ( $p < .01$ )
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- 136 This is the principle of inter-item reliability, or using multiple items to measure a single concept.

- 137 Responses to above items were summed and averaged to create a composite index of each child's overall score on a parental attachment scale between 1 and 3 (1 = cold; 2 = average; 3 = warm).
- 138 These questions were answered by the toddler's mother.
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This project was supported by:



In a free and liberal society, people will sometimes drink too much. Even though ‘binge-drinking’ in Britain has been falling for five years, increasingly public and extreme drinking behaviour among some young adults has fuelled a moral panic. There is considerable disagreement about why some young adults consume excessive amounts of alcohol, how serious a problem this is, and what should be done about it. Proposed solutions tend to focus on the supply-side; very few address the root causes of harmful drinking.

*Under the Influence* investigates how far parenting style affects those children’s drinking behaviour in later life. It analyses data of several thousand children from two separate data sets and compares how their parents raised them against the child’s drinking habits in adolescence and adulthood. It finds that parenting style is one of the most statistically reliable influences on a child’s drinking patterns in adolescence and adulthood. Tough love – parenting which combines affection with firm boundaries – results in children being less likely to have an unhealthy relationship with alcohol in later life.

The pamphlet makes some basic suggestions that can inform parents when they make decisions about alcohol. It also recommends that the Government ensure parents are central to the forthcoming alcohol strategy, and makes it easier for parents to provide the consistent warmth and discipline that averts harmful drinking. Overall, the findings presented are positive for parents: the setting and enforcing of clear boundaries, mixed with high levels of attachment, can and do make a major difference.

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