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2-10-2011

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Maurice Stucke

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Am I a Price Fixer? A Behavioural Economics Analysis of Cartels

MAURICE E STUCKE*

Introduction

Several assumptions underlie current economic thinking on cartel prosecutions. First, general deterrence of cartels (rather than specific deterrence, retribution, incapacitation, and rehabilitation) is the aim for competition authorities. The second assumption, which is the ‘generally accepted approach’[1] under neoclassical economic theory, is that price fixers behave as ‘rational’ profit maximisers.[2] Executives conduct a cost–benefit analysis to see if the crime’s benefit is worth the risk of punishment.[3] They weigh the expected gains from the cartel against the costs from participation, which include the magnitude of likely punishment discounted by the probability of cartel prosecution.[4] The third assumption is that to optimally deter cartels, a rational prosecutor would seek, and a rational jury or judge would impose, the optimal penalty (which includes civil damages and civil or criminal penalties). The optimal penalty levied against a cartel should equal at least the violation’s expected net harm to others (plus enforcement costs) divided by the probability of detection and proof of the violation.[5] Setting the antitrust fine at this optimal level, a US DOJ official told the US Sentencing Commission, ‘would result in the socially optimal, ie, zero level of price-fixing’.[6]

Part I of this chapter considers deterrence of cartels under neoclassical economic theory. Despite (i) escalating criminal and civil fines in the US (and abroad); (ii) treble private civil damages; (iii) longer jail sentences; and (iv) a generous leniency programme, the US has not reached optimal deterrence. Before the US responds with greater fines and jail sentences, it makes sense to evaluate the assumptions underlying optimal deterrence theory, and consider how the behavioural economics literature might shed light on achieving general deterrence. Part II examines two key assumptions underlying optimal deterrence theory: first, humans are rational, self-interested and with willpower, and second, antitrust crimes reflect dispositional traits.[7] Part III makes several recommendations aimed at assisting competition authorities to draw on behavioural economics insights as to the role of dispositional and situational traits in collusive behaviour.

I. Deterrence of Cartels under Neoclassical Economic Theory

A. Record Fines and Jail Sentences

To deter cartels, the US ‘has steadfastly emphasized the importance of individual accountability and stiff corporate fines’.[8] Believing that existing criminal penalties were suboptimal in deterring antitrust offences, the US over the past 35 years increased the Sherman Act’s criminal penalties to a maximum incarceration of 10 years, a corporate fine up to US\$100 million, and an individual fine up to US\$1 million. Alternatively, criminal fines in excess of the statutory maximum may be imposed under 18 United States Code 3571(d), which provides for a fine of twice the gross gain derived from the crime or twice the gross loss of the crime’s victims, that is twice the gain derived by, or twice the loss caused by, the cartel rather than the defendant.

In May 1999, the DOJ secured a US\$500 million antitrust fine, ‘the largest criminal fine ever imposed in the United States under any federal criminal statute’.[9] It was against F Hoffman-LaRoche Ltd for leading a worldwide price fixing conspiracy for certain vitamins.[10] In fiscal year 2007,[11] the DOJ’s Antitrust Division obtained over US\$630 million in criminal fines, then the second highest level in its history.[12] The Division did better in 2008 (securing over US\$696 million in fines)[13] and in 2009 just over US\$1 billion in fines.[14] Between 2000 and 2009, the Division secured over US\$4.2 billion in criminal fines.[15]

The DOJ, unlike some law and economics scholars,[16] believes that corporate (or individual) fines are inadequate to deter cartels.

As a corporate executive once told a former Assistant Attorney General of [DOJ]: “as long as you are only talking about money, the company can at the end of the day take care of me ... but once you begin talking about taking away my liberty, there is nothing that the company can do for me.”[17]

Since companies conspire to fix prices through their employees, and the employers cannot reimburse the penalty of prison, the

DOJ over the past 35 years has sought longer incarcerations, rather than larger individual fines.[18] Over the years, the average number of individuals incarcerated for antitrust violations has increased.[19] In fiscal year 2007, the DOJ's Antitrust Division secured a record number of jail days (31,391)[20] (more than double its 2005 record and quadruple the annual record set before 2000)[21] and record jail sentences for foreign nationals who violated the US Sherman Act.[22] The average jail time for antitrust violators increased during the past decade.[23] In 2008, 'the five highest totals in terms of annual jail days imposed in Division history have all occurred in the last six years, and the 12 longest jail sentences imposed in cases prosecuted by the Division all occurred during this stretch.'^[24] In January 2009, a 61 year-old executive was sentenced to 48 months in jail, the longest incarceration imposed for a single antitrust violation.^[25]

B. Leniency Programme

Besides criminal fines and incarceration, the US offers a carrot unique for any federal felony.^[26] Under its Corporate Leniency Program, as revised in 1993, 'a corporation can avoid criminal conviction and fines, and individuals can avoid criminal conviction, prison terms, and fines, by being the first to confess participation in a criminal antitrust violation, fully cooperating with the Division, and meeting other specified conditions.'^[27] Amnesty is automatic for any antitrust violator if there is no pre-existing investigation, and may be available if the company co-operates after the investigation is underway, and all officers, directors, and employees of a corporation qualifying for automatic amnesty are protected from criminal prosecution.^[28] To make the amnesty programme 'even more effective at detecting and prosecuting cartels',^[29] as of 2004 US courts can limit civil private damages recoverable from a co-operating leniency applicant.^[30]

The DOJ, among others, praises its Leniency Program as the 'most effective investigative tool.'^[31] The majority of its 'major international investigations have been advanced through the cooperation of a leniency applicant'.^[32]

C. Despite Record Penalties, No Evidence of Optimal Deterrence

Although price fixers prosecuted in the US 'are already being sent to jail with increasing frequency and for longer periods of time'^[33] and criminal fines are at record levels, quantifying their impact in deterring cartel behaviour remains difficult.

Unlike other crimes (such as murder or auto theft), cartels do not lend themselves readily to statistics of crimes committed and prosecuted. Detecting cartels is difficult. Price fixing is often covert. Supra-competitive pricing is not determinative of price fixing: higher prices can result from imperfect, albeit lawful, competition. Cartel victims may not know when and to what degree they are being victimised. Companies though internal policing may not detect price fixing. (Indeed unlike other white-collar crimes where executives divert company funds to themselves, companies stand to gain in the short run with increased profits.) Finally, other criminals (such as drug cartel members) who engage in unrelated criminal activity have greater incentives to reveal the conspiracy for leniency; price fixers are often unassuming executives, with little interaction with prosecutors.^[34]

Given this difficulty in detecting cartels, no reliable estimate exists of the number of illegal cartels operating today. The number of cartels prosecuted annually could represent 10 per cent of all outstanding cartels or 90 per cent—nobody knows.^[35] It is unknown whether significant increases in criminal fines and jail sentences have significantly reduced the number and duration of illegal cartels. Another issue is causation. Besides criminal penalties, other factors deter cartel behaviour, such as industry conditions (for example, increased competition from entrants or changes in market demand); active civil antitrust enforcement (such as enjoining mergers that significantly increase the likelihood of express collusion); and the community's informal social and ethical disapproval of price fixing. Likewise, lax civil antitrust enforcement may make anticompetitive mergers more attractive than collusion.

Reliance on the annual number of cartel prosecutions can be misleading. Different administrations can have different antitrust priorities. The DOJ at times devotes more resources to prosecute civil antitrust violations, such as monopolistic practices. Also the number of prosecutions does not equate necessarily with greater or lesser deterrence. Prosecuting more cartels can reflect either better detection of cartel activity or ineffective antitrust enforcement elsewhere (such as permitting industry consolidation through mergers to where co-ordination becomes feasible). For numerical comparisons to be meaningful, the total number of cartels or the probability of conviction, neither of which are readily quantifiable, must remain relatively constant. If the probability of conviction increases, then the number of price fixing convictions may increase (if the overall number of cartels remains constant) or decrease (if the overall number of cartels decreases as cartel members are more concerned about prosecution). If the probability of conviction decreases (for example, due to changes in enforcement priorities), the number of convictions may decline (if the overall number of cartels remains constant) or increase (if total cartel activity increases given that administration's lax antitrust enforcement). Thus, a low (or high) number of antitrust criminal prosecutions could reflect in theory aggressive or lax enforcement.^[36]

One could measure deterrence indirectly by the number of multinational cartels that intentionally carve out the US. The DOJ identified 'many cases' where it 'discovered cartelists who were colluding on products sold in other parts of the world and who sold product in the United States, but who did not extend their cartel activity to US sales'.^[37]

Although this is promising, other factors indicate that the US has not reached optimal deterrence.^[38] Presumably if the leniency programme has increased the probability of detection and conviction, then, under optimal deterrence theory, penalties should decrease (assuming that the cartels' net harm remains similar). This has not happened. Presumably increased detection

would lead eventually to shorter-lasting cartels. This has not happened. The average duration of prosecuted cartels, according to one recent study, ‘does not appear to have changed substantially over the past century’.[39] This is interesting because over the past century cartels were at times legal, and at other times lightly punished. Despite escalating prison terms and fines, price fixers, observed one DOJ official, ‘tend to be recidivists’.[40] The DOJ’s Antitrust Division has more attorneys currently than when antitrust violations were misdemeanors, and these attorneys are busily prosecuting many cartels. At the close of its 2007 fiscal year, the Division had the highest number of pending grand jury investigations since 1992.[41] In 2008, that number increased.[42] ‘While there may have been years in the Division’s history when there were more open investigations,’ said a DOJ official, ‘there has never been a time when the Division’s docket involved so many matters of national and international scope affecting such massive volumes of commerce.’[43] Major cartels (some detected under the Leniency Program) continued to operate *after* the Division’s publicised record US\$500 million fine against F Hoffman-LaRoche. For example, the cartels involving thin-film transistor liquid crystal display panels[44] and air transportation[45] (among the ‘largest and most far-reaching antitrust conspiracies ever detected by the Division’)[46] were formed after 1999. The ‘high tech international’ cartel to fix the prices of Dynamic Random Access Memory (DRAM) sold to manufacturers of personal computers and servers began approximately a month before the record criminal fine and continued for several years thereafter.[47] As *Business Week* observed with the release of the movie, *The Informant*, ‘for all the splashy headlines, stiff sanctions, and caught-on-tape teaching moments generated by the ADM case, price fixing appears to be as pervasive as ever’.[48]

With evidence that cartels are undeterred, the predictable response under optimal deterrence theory is to increase: (i) the probability of detection (which is difficult with the already generous amnesty programme to induce price fixers to implicate their co-conspirators); or (ii) the criminal (and/or civil) penalties, as they are presumably sub-optimal in deterring cartels. New penalty milestones, a DOJ official predicted, are forthcoming.[49]

II. Behavioural Economics

Optimal deterrence theory assumes that rational offenders know of their act’s illegality, calculate their illegal acts’ likely costs and discounted benefits, and refrain from criminal action when the costs outweigh the benefits.[50] Behavioural economics uses facts and methods from other social sciences—like psychology and sociology—to understand the limits of this rationality assumption. Testing these assumptions in experiments, behavioural economists find that people do not behave under certain scenarios as neoclassical economic theory predicts. Human behaviour is more nuanced, diverse, and complex, and may vary depending upon situational variables.

A. Dispositional Factors

Criminals, at times, suffer bounded willpower and knowingly (and contrary to their long-term interests) seek an immediate benefit with deferred costs.[51] Of course not all criminals are alike. Some (for example, heroin addicts seeking money for their next fix) may be more susceptible to hyperbolic discounting and bounded willpower than others.[52] Executives, who have reached the position where they can influence corporate pricing decisions, should have greater willpower than heroin addicts. Nor is price fixing, which occurs for years, if not decades, a crime of passion. Moreover, executives engage in cost–benefit analysis when deciding how to allocate corporate funds, enter markets or launch new products.

But if price fixers are rational profit maximisers, why do they violate the law in the first place? With so much to lose, why would executives risk incarceration and being branded a felon to enhance corporate profits? Either jail is an inadequate deterrent or executives may not be as rational as their theoretical profit maximising counterparts.

Executives often engage in cost–benefit analyses, but it is unknown how many, before fixing prices, actually calculate their likely fine and sentence under the Sentencing Guidelines. Many conspirators, aware of their actions’ illegality, go to great lengths to conceal their price fixing.[53] But not all individuals are aware of the action’s criminality and likely penalties.[54] Willpower may be imperfect. Executives weigh the immediate benefit of increased profitability for the firm, bonuses, career advancement, and non-economic benefits (such as prestige and admiration from their peers) versus the long-term possible cost of detection. Moreover, any risk analysis (beyond a rough estimate) is difficult. In advising corporate clients whether to seek leniency, there is difficulty in calculating the corporation’s likely exposure to antitrust penalties.[55] A corporate attorney at least can measure *ex post* the client’s exposure for participating in the cartel over a specific time period. Executives, on the other hand, would consider *ex ante* their exposure (which depends on the cartel’s likely length and scope).

Moreover, the cost–benefit analysis may differ when an executive decides to (a) join, versus (b) continue in, the cartel. Under rational choice theory, sunk costs should not affect the profit maximiser’s decisions (such as feeling obligated to go to the theatre on a particular night, after purchasing a season subscription). Sunk costs, however, do influence decision-making.[56]

Another issue is overconfidence bias, whereby price fixers overestimate their skills and ability to avoid detection.[57] Thus executives, in several behavioural studies, were overconfident in their ability to manage a company, systematically

underestimated their competitors' strength, and were prone to self-serving interpretations of reality (such as taking credit for positive outcomes, and blaming the environment for negative outcomes).[58] Groups also exhibited over-optimism, where pessimism was viewed as disloyalty.[59]

A third issue is salience. Since the probability of detecting and prosecuting a cartel is unknown, such ambiguity should favour deterrence: even risk seekers, the empirical evidence suggests, are averse to ambiguity.[60] But price fixers may suffer from the availability heuristic: their 'perceived probability of detection will depend not only on how frequently offenses are detected but also on how salient or vivid the method of detection is'.[61] Executives, like ordinary citizens, may overestimate the likelihood of incidents that come readily to mind and underestimate the likelihood of less salient events. Thus do more Americans die from (a) homicide and car accidents; or (b) diabetes and stomach cancer? Many Americans choose the former (as these highly-publicised incidents come readily to mind), even though more Americans die from diabetes and stomach cancer (by a ratio of nearly 2:1).[62]

Antitrust convictions may be salient to antitrust lawyers, but executives in industries without recent antitrust prosecutions may underestimate the likelihood of detection.[63] No other country incarcerates price fixers at the levels of the US. But even in the US, the number of prison sentences is relatively small. Between 1990 and 2007, the DOJ's Antitrust Division secured prison sentences for 284 individuals, not all of whom were convicted for antitrust offences.[64] In contrast, in 2004 alone, state and federal courts in the US convicted nearly 1,145,000 adults of felonies.[65] Presumably white-collar crime is more salient to white-collar executives, who hear about antitrust crimes from corporate counsel, at compliance sessions,[66] and in the business media. Some price fixing prosecutions, such as the Sotheby's and Christie's auction house trial, are well-publicised. But the signals at times may be mixed. For example, the DOJ, during the Bush administration, prosecuted global cartels, but its civil antitrust enforcement significantly declined.[67] In one survey of the public perceptions of deterrence, the US respondents with more education and higher incomes generally believed that a street crime was more likely than the white-collar crime of fraud to be detected and severely punished.[68] Consequently, some lawyers find it highly effective to include in their antitrust compliance programmes a former executive, whose career was ruined by a price fixing scandal.[69]

The preceding discussion assumes that executives dive headlong into a price fixing conspiracy, after engaging in a flawed cost-benefit analysis. This is similar to deciding whether to rob a bank on the way home. Such stark and immediate choices may be true for some, but not all, price fixers. As one price fixer said, 'you don't just automatically become a criminal overnight'.[70] So the next section addresses how cartels can arise from a series of choices, each one seemingly innocuous relative to the prior bad choice.

B. Situational Factors

Another bias is the fundamental attribution error. This happens when we over-value dispositional or personality-based explanations for other people's observed behaviour while undervaluing situational explanations for the behaviour. People make 'decision errors that not only harm others, but are inconsistent with their own consciously espoused beliefs and preferences—decisions they would condemn upon further reflection or greater awareness'.[71] Do we largely attribute criminal behaviour to some dispositional flaw, which fortunately neither you nor I have? For example, one would think that government torturers and death squad executioners are inherently sadistic; their crimes simply reflect their dispositional vices. Yet government torturers and death squad executioners, according to one study, were not 'unusual or deviant in any way prior to practicing their new roles nor were there any persisting deviant tendencies or pathologies among any of them in their years following their work as torturers and executioners'.[72] In fact, the Brazilian government during its training process weeded out sadists.[73] Similar findings of normalcy were found in a study of 400 al-Qaeda members.[74] So if torturers and suicide bombers are not inherently evil or pre-disposed to criminality, why should we presume corporate price fixers are?

Missing in antitrust analysis today is the extent to which situational factors contribute to criminal cartel activity. These situational factors do not excuse the executives of their criminal behaviour. Instead, by examining such factors, corporations and policy makers can consider other means (besides higher fines and longer sentences) to deter cartels.

It is unlikely that many executives set out to violate the Sherman Act when joining their new employer or in their new position within the firm. Few envision themselves as felons in a federal prison.

Milgram's Obedience Experiments

In these experiments, the test-subject and a confederate were told that the experiment tested the effects of punishment on memory. To determine their assigned roles, the confederate and test-subject drew lots (which were rigged) so that the test-subject always received the teacher role. The teacher-participant then administered a test where the confederate-learner was to memorize word pairs. Each time the confederate-learner answered incorrectly, the teacher-participant was to administer an electric shock to the learner. A 'shock generator' had thirty clearly marked voltage levels ranging from 15 to 450 volts, with designations from *Slight Shock* to *Danger: Severe Shock*. Two switches after the last designation were simply marked XXX.

Unbeknownst to the teacher-subject, the confederate was not actually receiving electric shocks. The confederate-learner gave standardized responses. In one variation of the experiment, the confederate-learner pounded on the wall of the room in which he was bound to the electric chair after the 300-volt shock was administered. The teacher-subject could hear the pounding. Thereafter, the learner

no longer responded; the experimenter instructed the teacher-subject to treat the absence of a response as a wrong answer, and to continue with the experiment. As the experiment continued, the teacher-participant was told to administer increasingly more intense shocks to the non-responsive confederate-learner, even to the levels marked XXX.

These experiments actually sought to measure at what voltage level the teacher-participant would disobey and refuse to continue with the experiment. Milgram varied the situational factors to determine the extent to which they altered the degree of obedience. S Milgram, 'Behavioral Study of Obedience' (1963) 67 *Journal of Abnormal & Social Psychology* 371.

Likewise, before his famous experiment, Stanley Milgram asked college students, psychiatrists and middle-class adults for their predictions. No one predicted that the experiment participants would administer shocks above 300 volts. Nearly all the subjects, they predicted, would disobey the experimenter, only four per cent of the subjects would administer 300 volts, and only a pathological fringe (about one in a 1,000) would administer the highest shock of 450 volts.[75] They were wrong. In his primary experiment, all 40 subjects administered shocks up to 300 volts (when the learner-confederate pounded on the wall), and 26 subjects complied until the end and administered 450 volts.[76] Similar results occurred in a recent version of this experiment.[77]

Nor do dispositional 'deeply aggressive' human traits explain these results. In one variation of Milgram's experiments, the 40 participants could choose the voltage level. The average shock was only 60 volts. Three subjects did not go beyond the lowest voltage. Twenty-eight did not go beyond 75 volts (where the confederate-learner 'grunted'). Thirty-eight subjects did not go beyond 150 volts (where the confederate-learner 'protested'). One subject administered 325 volts, and another administered the maximum 450 volts.[78]

Milgram's experiments highlight the importance of situational factors in explaining how ordinary blue-collar workers and white-collar professionals,[79] contrary to their own expectations, administered a lethal dosage of 450 volts to an unresponsive, possibly dead, fellow test-subject. Social psychologist Philip Zimbardo, the pioneer of the famous Stanford prison experiment, identifies from the social research 10 situational factors that enable ordinary people to commit evil acts. Granted, the correlation between these 10 situational factors and corporate price fixing is imperfect, and other situational factors may provide better explanatory power for certain cartels. Nonetheless his 10 factors help explain why dispositional traits alone are insufficient to explain why corporate executives commit crimes, like price fixing.

The first situational factor is to pre-arrange some form of contractual obligation, verbal or written, to control the individual's behaviour in pseudo-legal fashion.[80] This obligation, Milgram's experiments show, can be surprisingly weak. The teacher-subjects were told that the experiment was voluntary and they could keep the money regardless. Unlike corporate executives, Milgram's subjects were not threatened with the loss of employment, the reduction in income, or any social ostracism for failure to obey. Nor did Milgram's teacher-subjects expect additional financial compensation for compliance, or the prospect of promotions and accompanying status. Nonetheless, most teacher-participants felt obligated to complete Milgram's experiment.

Price fixing cartels can range from one extreme (the docile middle-manager asked to implement the mechanics of the cartel) to the other extreme (the rogue employee who fixes prices unbeknownst to others within the company). Although the degree of initiative and compulsion varies along this continuum, in both extremes the corporate executives generally collude to increase corporate profits, the goal of any profit maximising firm.[81] Unlike other white-collar criminals whose interests are antagonistic to the corporation's interests (such as embezzlers), the corporate price fixers typically do not pocket directly the ill-gotten proceeds.[82] Some executives benefit indirectly through higher compensation and promotions. Thus the end of price fixing, namely increased profitability, is desirable from the corporation's perspective. It is only when the means are exposed that the corporation's and executives' interests conflict, and Jonah is tossed overboard. At times, the executives may be retained[83] and even promoted.[84]

The second situational factor is to give the participants meaningful roles to play (such as the 'teacher' and 'learner' in Milgram's experiment) that carry with them previously learned positive values and automatically activate response scripts.[85] Before detection and prosecution, corporate price fixers are perceived as upstanding citizens, not society's outcasts.[86] Indeed, they have sufficient clout within the company to oversee pricing and marketing decisions. One problem for many years was that US judges refused to incarcerate price fixers, given their stature in society.[87]

The third situational factor is to present basic rules that seem to make sense before their actual use, but 'can then be used arbitrarily and impersonally to justify mindless compliance'.[88] The basic rules in Milgram's experiment made sense initially (the effect of a slight penalty—a mild shock—as an incentive to remember); the danger arose when the rules continued to be implemented when they no longer made sense.

Ethical transgressions in organisations, according to several studies, are attributable to many factors, including 'unclear standards' and 'pressure to perform'.[89] For example, after being involved in over a dozen antitrust cases in the 1940s, General Electric (GE) disseminated in the 1950s its written policy that employees must 'conform strictly to the antitrust laws'.[90] But GE executives were under tremendous corporate pressure to meet their departments' financial goals. Each year, these managers had to budget for more profit as a percentage of net sales and a larger percentage of available business.[91] These 'reach' goals

were unattainable, according to some mid-level GE executives, absent collusion. If they failed to meet these ‘reach’ goals, the GE executives could expect to be fired. Collusion may have been illegal, one GE executive rationalised, ‘but it wasn’t unethical’.[92]

Consequently, corporate higher-ups, as in one study, might view the price fixing as ‘isolated incidents of human weakness tempted by the prevailing low morals in a few isolated industry subcultures’.[93] In contrast, the mid-level managers closer to those convicted for price fixing may attribute the blame to conflicting company goals or moral grey zones where ‘[t]he need to survive conflicts with the drive to be super clean’.[94]

The fourth situational factor is when the issue is reframed to disguise the unpleasant reality with a more desirable alternative. In Milgram’s experiment, the participants were ‘teachers’, who were ‘helping’ the ‘learners.’ Likewise, cartel members at times reframe their anti-competitive activity as ethical conduct that promotes a greater good. For example, professional associations label their members’ anti-competitive agreement as part of their ‘canon of ethics’, and rationalise the loss of competition as ‘the risk that competition would produce inferior engineering work endangering the public safety’.[95] Price fixing may be reframed as honouring one’s word with competitors,[96] the importance of which varies across cultures and countries.

The fifth situational factor is to create opportunities for the diffusion of responsibility or abdication of responsibility for negative outcomes.[97] In Milgram’s experiment, the experimenter (who was actually a 31 year-old high school biology teacher) in a firm but polite voice used a series of prods to instruct the teacher-participant to continue.[98]

In another variation of Milgram’s experiment, the teacher-participant administered only the test, while a confederate administered the shock for every wrong answer. In this situation, the degree of compliance was even higher: 37 of the 40 participants proceeded to the highest voltage level.[99] Similarly responsibility for the cartel is diffused when senior executives reach the terms of the cartel but leave its implementation to lower-level executives.

Greater compliance may also be attributable to the reduced salience, as the teacher-participant was not directly administering the shock. Two variations of Milgram’s experiment demonstrate the impact of increased salience on compliance: fewer teacher-participants administered the maximum voltage when the confederate-victim was in the same room; compliance was even less when the teacher-participant had to force the victim’s hand on a shock plate.[100] Behavioural economist Dan Ariely found a higher degree of cheating when the graduate students were paid in tokens (rather than directly in cash) for every correct answer. Even though the tokens were immediately redeemable for cash, the intermediary step made cheating less salient and easier to justify (much like taking a pen, rather than a dollar bill, from the office supply closet is easier to justify).[101] People generally perceive indirect harms less problematic than direct harms.[102]

Likewise price fixing may be easier for cartel members who do not directly deal with the end customer, such as cartels for intermediate manufactured goods and services.[103] Despite cartels’ greater harm to the economy and consumers than petty crime, price fixing is less salient than if the corporate executives broke into the consumers’ home and stole their televisions.[104]

The sixth situational factor fostering criminality is to begin with a ‘small, seemingly insignificant first step, the easy “foot in the door” that swings open subsequent greater compliance pressures, and leads down a slippery slope’.[105] In Milgram’s experiment, the first steps were seemingly innocuous: a mild 15 volt shock, which was less than the slight tingly pain from the 45 volt sample shock each teacher-participant received.

The DOJ does not report how cartels originated, so it is unknown what percentage of cartels originated in smoke-filled rooms versus gradually out of social networks.[106] A price fixing conspiracy can begin with friends sharing helpful pieces of competitively-sensitive information. For example, managers in the Sydney hotel industry, as part of their friendships, regularly shared competitive information about price and occupancy.[107] Although the authors did not find any evidence of explicit collusion, they did find a norm within this social group against price cutting.[108]

The seventh situational factor on the path to evil is to increase the level of activity by small incremental steps, in such a way ‘that they are hardly noticeably different from one’s most recent prior action’.[109] In Milgram’s experiment, the voltage increased in 15 volt increments. Each step increase seemed minor relative to the past voltage. The teacher-participant does not see the number of volts in isolation but relatively as 15 additional volts. If the teacher-participant could administer 300 volts, then 15 additional volts would seem relatively minor. Thus, a ‘gradual increase in the size of demands is an effective tactic for changing attitudes and behaviour’.[110]

Likewise, it would be interesting to see how cartels develop and evolve. Informal sporadic information exchanges can progress to more regular, formal information exchanges (facilitated at times by trade associations) that lead to mutual accommodations over particular geographic markets or customers.[111] Each step takes the cartel members closer to the smoke-filled room.

The eighth situational factor is where the ‘just and reasonable leader’ changes gradually by becoming more demanding and unjust.[112] Take for example, the 61 year-old former Sea Star Line executive who after pleading guilty received in 2009 the longest sentence ever for an antitrust violation.[113] His attorney argued at the sentencing hearing that the senior vice president participated in the price fixing scheme under orders from the company’s part-owner, who ‘was powerful’, ‘threatened and directed the termination of employment at others at Sea Star,’ and ‘significantly intimidated’ the executive.[114] Nor did the former naval officer, according to his defence attorney, personally profit from the price fixing scheme; he participated in it ‘only to keep his job’.[115]

A ninth situational factor is to make exit costs high.[116] In Milgram’s experiment, the exit costs for the teacher-participants were nominal. The teacher-participants had no social bonds with the lab workers. They committed themselves only to an hour

for the study, and were paid at the beginning of the survey US\$4.50 (including 50 cents for carfare). This payment, they were told, 'was simply for coming to the laboratory, and that the money was theirs no matter what happened after they arrived'.[117] To extricate themselves from this experiment, they need only walk out of Yale University's Linsly-Chittenden Hall. Yet few did.

In contrast, the exit costs for cartel members are greater. The executives likely have social bonds with their co-workers and industry participants.[118] Their identity may be intertwined with their employer, which brings them status within their community, as well as a sense of superiority and power from their position within the firm. Consequently, unlike other white-collar criminals who can weigh, and switch between, legitimate earnings and illegitimate gains (such as insider trading), an executive engaging in price fixing has higher switching costs. The price fixer, after all, colludes with the other major companies in that industry. To extricate themselves from the cartel, the executives must leave not only the company, but depending on the cartel's scope, at times, the industry altogether. Whistle-blowing may earn the honest employee the reputation of 'troublemaker' and traitor.[119] Thus, only 20 per cent of British respondents in a recent survey were willing to immediately report a large company's price fixing to authorities: 14 per cent would not report it fearing too much was at stake and that they might lose their job (two per cent would not report because they believed price fixing should be legal). Contrary to the assumption of self-interested maximisers, only six per cent required a monetary bounty in addition to guaranteed anonymity. Instead, 49 per cent chose the option of reporting the crime only if they could remain anonymous.[120]

The tenth situational factor is offering 'an ideology, or a big lie, to justify the use of any means to achieve the seemingly, essential goal'.[121] In Milgram's experiment, the paid volunteers' actions were seemingly helping Yale complete a scientific study on memory and learning. The ideology of science as promoting a greater good was the subtext, as the lab assistant told the teacher-participants 'the experiment requires that you continue'.[122]

At times, cartel leaders 'have successfully inculcated their members with a social norm that price-fixing is normal and not blameworthy'.[123] Cartels may appeal to a higher ideal to justify their price fixing. Ideologies that depend on '[r]uinous competition, financial disaster, evils of price cutting and the like', observed the US Supreme Court, 'appear throughout our history as ostensible justifications for price-fixing'.[124] Cartel members may justify their actions as self-preservation or to combat other 'genuine or fancied competitive abuses'.[125] For example, a quick Google search identified the following Code of Pharmaceutical Ethics (which the Pharmacy Council of India adopted):

No attempt should be made to capture the business of a contemporary by cut-throat competition, that is, by offering any sort of prizes or gifts or any kind of allurements to patronizers or by knowingly charging lower prices for medical commodities than those charged by fellow pharmacist if they [are] reasonable.[126]

The executives are not personally profiting. They are only seeking a 'fair' profit for their company. Their customers are unethical in lying about low prices charged by the other competitors, and with the industry's excess capacity, ruinous competition will lead to bankruptcies, plant closings and layoffs.[127]

Competition law is itself vulnerable during times of economic distress,[128] and at times, even the US Supreme Court is susceptible to such excuses.[129] Similarly, executives may justify their price fixing by pointing to state-owned enterprises, which are immunised from competition, industries where price fixing is immunised, or lax antitrust enforcement of mergers, where the cartel's customers or suppliers enjoy greater market power.[130] Foreign nationals 'frequently' told the DOJ that cartel activity was not a criminal offence in their home countries and 'still a culturally accepted way of doing business there'.[131]

III. Recommendations

Rather than seeking new milestones in criminal fines and incarcerations, competition authorities should consider how the inter-disciplinary behavioural economics literature can improve their understanding of the dispositional and situational factors that facilitate executives to engage in collusion.

A. More Empirical Post-Conviction Review

A good starting point is for the DOJ to conduct a more empirical post-conviction review.[132] Cartels can be quite durable. Many conspiracies, including those with 11 or more conspirators, can last for years, if not decades.[133] The average duration of international cartels successfully prosecuted between 1983 and 1994 was approximately 90 months; the average duration declined below 80 months for the period 1995 to 1999, and trended upward to nearly 90 months for the period 2005 to 2008.[134] Indeed, as Judge Posner found, of cartels with more than 10 members, 64 per cent lasted six years or more and 32 per cent lasted more than 10 years, which represent higher percentages than cartels involving 10 or fewer members.[135]

Why are cartels more durable than the Chicago School's static framework would predict? One answer may lie in the behavioural economics research: namely, price fixers, like the test subjects in other experiments, may be more trusting and co-operative than rational choice theory predicts. As the behavioural experiments show, where trust will lead to more favourable outcomes, people tend to trust at a higher level than if all are operating under a traditional game theory.[136] Recent studies of

cartels have found the striking sophistication of their organisational structure, including compensation schemes to handle variations in demand for each cartel member's products.[137] Such compensation schemes reflect 'the level of organisational trust and cohesion necessary to implement such a scheme'.[138] In fact, many cartels, according to a recent study of 81 international cartels, suffer from little cheating among their members.[139] Although the compensation schemes minimised the incentives to cheat, perhaps the cartel members were not opportunistically seeking ways to cheat. Cartels that had to punish cheaters were less stable and more likely to suffer a natural death than cartels that did not punish in response to perceived cheating.

Social norms, long-standing personal relations, and peer pressure may facilitate trust in cartels with many members.[140] In the DOJ's NASDAQ antitrust case, an accepted business norm among the NASDAQ market-makers was not to trade certain stocks in odd-eighth increments (such as quoting a bid or ask price for that stock at US\$101/8) but only in even-eighth increments (such as US\$10¼). This quoting convention, according to the DOJ's civil complaint, had the effect of increasing the spread and the market makers' profits. After reaching this common understanding to adhere to this quoting convention, the defendants, which included all the leading Wall Street investment firms, allegedly used peer pressure to enforce it. According to the DOJ's complaint, Wall Street executives made it known throughout the industry that for a market maker to 'break the spread' (by using odd-eighth quotes in stocks with dealer spreads of three-quarters of a point or greater) was 'unethical' or 'unprofessional'.[141] This norm, according to one trader, was part 'of the traditional and ethical on-the-job training that all of us got, and it encompasses not only that you don't put in unprofessional-looking [markets] it ... grew out of a self-imposed industry standard of ethics and conduct'.[142] To coerce non-market makers to adhere to this 'ethical standard', traders used peer pressure. They would telephone traders who violated the norm (for example, 'tell him to straighten up his [expletive] act and stop being a moron') and refuse or threaten to refuse, to deal with traders and firms that violated the quoting convention.[143]

After securing its criminal convictions, the DOJ by itself or through a pilot programme with social scientists, should interview the price fixers and publicly report the following: How were the cartels (including those with many members) formed and enforced? Did they act as many profit maximiser game theories predict, or were they more trusting and co-operative than these theories' predicted? If so, why? As the number of conspirators increased, were there other specific factors that enabled them to collude? Why did certain companies repeatedly violate the antitrust laws? What steps did the company take after its earlier conviction to increase antitrust compliance, and why were they unsuccessful?

The DOJ also should make available a computerised database identifying all civil and criminal antitrust consent decrees, pleas, or litigated actions involving cartel activity under § 1 of the Sherman Act. The database should include certain industry characteristics, such as: (i) the number of conspirators (and best estimate of their market shares); (ii) the length of conspiracy; (iii) the product or services market in which collusion occurred; (iv) the number of competitors (and their market share) who were not formerly alleged to be part of the conspiracy; (v) the number of entrants (and their market shares) during the period of the conspiracy; and (vi) the nature of the conspiracy.[144] This data can help those in academia, private practice and the antitrust agencies to better understand collusion, and further develop screening mechanisms to identify industries more susceptible to collusion.[145]

B. Improving Corporate Culture

If people tend to be conformists,[146] then companies, if earnest about antitrust compliance, must change their culture so that antitrust violations are genuinely viewed as illegitimate. Our moral judgments are highly attuned to group norms and the moral judgments of our family, friends and peers.[147] If the corporate culture prizes self-interest and doing whatever it takes to raise corporate earnings, then antitrust may not be the only corporate crime committed, as executives bribe foreign officials, inflate earnings or dump toxic chemicals.[148] Here several factors come into play.

One factor involves the prevalent ethical and moral norms within the corporate culture.[149] In one variation of Milgram's experiment, when two lab experimenters of equal status gave incompatible demands, no shocks were delivered past the point of disagreement.[150] Thus, the company must do more than simply provide ethical codes and training. Moral corporate leadership can play an important role to signal to lower-level employees that illegal conduct is unacceptable.[151] As a senior antitrust official during the Bush administration observed:

A culture of competition must begin at the very top of the company. Respect for the law is a necessary, but not sufficient, condition. Senior management must value competition and must be vocal in making that commitment known to employees. In the cases we prosecute, we find almost invariably that in companies that violate the antitrust laws, the tone of disrespect for the law and for competition permeated the entire company, usually starting at the very top. Look at some of the people we have prosecuted: Alfred Taubman, the chairman and principal shareholder of Sotheby's; Mick Andreas, son of the long-time chairman and CEO, Dwayne Andreas, who was himself being groomed to take over the reins. In fact, ADM is a particularly good illustration of the kind of corporate culture that breeds antitrust crimes. It was a culture that believed, as one senior executive put it, that, 'Our competitors are our friends. Our customers are the enemy.' Both in representing defendants in criminal investigations in private practice and now as a prosecutor, this is exactly the attitude I've found in almost every company that commits antitrust crimes. And it's an attitude that can be changed only if the company's senior officers and directors all believe in the value of competition and communicate to their employees.[152]

Some senior executives view antitrust compliance as an annoyance, meant for lower-level employees, not themselves.[153] One

recent survey of British residents asked whether price fixing is harmless or harmful and whether it should be punished. Although the overwhelming majority across categories considered price fixing harmful, a higher percentage of senior-level management considered price fixing as harmless compared to junior executives and non-executives.[154]

Cartels are not necessarily a few isolated mid- or lower-level executives gone wild. Illegality may infect the entire corporate culture. Cartels often involve senior company officials. Sixty-nine per cent of all individual criminal defendants between 1955 and 1997 were corporate officers.[155] Similarly, another study found that successful cartels 'will often develop a hierarchy, separating high-level policy decisions made by executives from the more frequent ongoing monitoring and negotiations undertaken by lower-level managers'.[156] In the citric acid cartel, for example, a group of senior executives, who called themselves 'the masters,' negotiated the cartel's broad terms, while a second level of executives, the 'sherpas', worked out the details.[157]

One survey of 283 international cartels found 174 instances of recidivism during the period of 1990 to 2005, with 11 companies having 10 or more convictions during this period.[158] Cartels in one industry spillover to adjacent markets and 'involve one or more common players from other cartels'.[159] In response to this spill-over effect, the DOJ has an 'Amnesty Plus' programme for the company's collusion in other industries.[160]

Besides the company's ethical and moral norms, a second factor is the extent within this corporate culture that co-workers are encouraged to, and actually do, disobey. Ethical transgressions in organisations may be attributable in part to intolerance of criticism.[161] But dissent is meaningless if employees continue to price fix. The teacher-subjects in Milgram's experiments, for example, could dissent, and many did. Despite their protestations, most teacher-subjects continued with the experiment. Verbal dissent must transform into non-compliance. In one variation of Milgram's experiment, two confederates and the subject administered shocks. When the two confederates disobeyed and refused to go beyond a shock level, 36 of the 40 subjects likewise refused to continue.[162]

Consequently, for effective antitrust compliance, companies should promote whistle-blowing to a senior corporate ethics officer (who reports directly to the board), outside board members, or counsel. 'In addition to strong, positive leadership, it is important also that a company have sound incentive structures in place', a DOJ official noted, 'There should be strong negative incentives against violating the antitrust laws and strong positive incentives for reporting and deterring violations'.[163] Some research suggests that MBA students may be less ethical than other students.[164] As business schools increasingly incorporate ethical issues across the curriculum,[165] they should address the situational and dispositional factors that can lead to criminal behaviour.

Finally, besides corporate culture there are issues of industry culture. To facilitate trust, cartel members may promote a group identity with its own ethical norms of behaviour.[166] For example, athletes abide by unwritten rules to ensure a 'fair' contest.[167] Likewise industries can develop rules as to fair competitive behaviour and punish sharp business practices. Realtors, for example, condemn as 'unethical' brokers 'poaching' another realtor's clients.[168] Companies serious about antitrust compliance must ensure that their ethical norms trump conflicting industry norms.

C. More Informed Merger Review

A structural mechanism to foreclose tacit or express collusion is merger review. After all, the Clayton Act[169] seeks to arrest anticompetitive effects in their incipiency. But as I discuss in greater detail elsewhere, the US merger policies over the past 30 years have increased the risks of false negatives.[170]

Neoclassical economic theory assumes that cartels with many rational self-interested firms are unstable.[171] In reviewing their recent merger data, the US competition agencies said that: 'Although large market shares and high concentration by themselves are an insufficient basis for challenging a merger, low market shares and concentration are a sufficient basis for not challenging a merger'.[172] Although collusion (tacit or express) occurs in concentrated markets,[173] the DOJ often prosecutes cartels in unconcentrated or moderately concentrated markets, the structure of which, in theory, should not be susceptible to collusion.[174]

Industries where price fixing occurs may represent the outer boundary: collusion is possible, but only through formal agreement.[175] But express collusion should not be left to criminal enforcement. The DOJ cannot prosecute all collusion.[176] Nor is the DOJ's Amnesty Program the answer. No doubt the Amnesty Program has its benefits.[177] Its 'winner-take-all approach' some claim 'creates distrust and panic within the cartel and destabilises it,' with 'the stakes so high, the cartel members can no longer afford to trust one another and go back to being cutthroat competitors'.[178] But if each conspirator believes its co-conspirators will seek amnesty, and if each conspirator must be first to request amnesty, then no collusion should occur. The mutual distrust in theory should prevent cartels from forming. Many conspirators, however, overcome this distrust and collude. Some maintain that leniency programmes create a 'race among conspirators' and 'quickly crack cartels that may have otherwise gone undetected'.[179] But the average duration of prosecuted cartels does not appear to have changed substantially over the past century.[180] Cartels broken up through amnesty programmes are not necessarily less stable and of shorter duration than other cartels. Instead, as a recent study found, cartels prosecuted through amnesty applications generally last on average *longer* (10.3 years) compared to other cartels (8.1 years for the entire sample).[181] These statistics may be

biased[182] but suggest caution. The fact that corporations are lining up for amnesty may mean good business for antitrust prosecutors. Yet the amnesty programme failed to deter the cartel's formation and its charging for many years supra-competitive prices.

An amnesty program may undercut the moral outrage from price fixing. Offering complete leniency to one culpable price fixer to catch other cartel members, prosecutors can argue, enables them to better prosecute difficult-to-detect cartels. But citizens may disagree.[183] Moreover, leniency programs can raise institutional concerns. As prosecutors increasingly rely on the amnesty program and guilty pleas:

those firms and people left to prosecute are those against whom the evidence may be weakest or against whom the Antitrust Division may not ordinarily seek to prosecute as a matter of policy. If the Antitrust Division does not prosecute in those situations, then cartel members might be incented not to admit a criminal violation and instead risk trial. Perhaps not surprisingly, the Antitrust Division has not fared well in these types of trials. If the criminal cases are more difficult to prosecute, then the Antitrust Division needs to be that much better-prepared and capable to try them.[184]

If the government increasingly relies on self-reporting through the amnesty program, it may under-invest in independently investigating cartels, which reduces the probability of detecting cartels and the incentives to seek amnesty. The decline in amnesty applications may lead to the erroneous conclusion that the program is working. Of course, prosecutors cannot refuse guilty pleas or amnesty applicants to polish their trial skills. But prosecutors must have sufficient resources to independently investigate cartel activity and other antitrust violations.

This is not to argue for the amnesty programme's abolition. Instead, in a well-functioning antitrust enforcement programme, a leniency programme should be *a* weapon, not the *primary* weapon, to detect and deter cartels. With more empirical work, including the post-conviction analysis described above, the agencies can refine their co-ordinated effects theory for merger review.[185]

Conclusion

Competition authorities recognise that 'there seems to be no secret recipe for an effective penalty'.[186] Even if one accepts the assumption of rational agents, optimal deterrence theory suffers other problems, including the difficulties in (i) empirically measuring deterrence; (ii) determining the probability of detection and harm, which may vary by industry; (iii) applying an optimal fine for a global conspiracy; and (iv) deterring corporate executives from engaging in cartels.[187] Not surprisingly, competition authorities have found optimal deterrence theory 'somewhat difficult to apply in practice'.[188]

As this chapter argues, it makes little sense to assume that executives behave as rational profit maximisers who readily respond to incremental changes in criminal penalties.

Optimal deterrence theory assumes that financial gains should motivate, and financial penalties should deter, self-interested agents' behaviour. Yet some executives refrain from price fixing for ethical concerns, for fear of social disapproval from their peers, or because of other informal norms.[189] Informal norms may have a powerful influence on behaviour. But if price fixers are not ostracised by their peers and can continue in their careers, deterrence is weakened.[190] One cannot assume that by criminalising conduct policymakers necessarily inculcate these moral and social concerns.[191] Policymakers can develop the informal norms against price fixing by accentuating the conduct's immoral and unethical content.[192]

Informal norms will not deter everyone. Here the neoclassical model can help assess when fines are sub-optimal for rational profit maximising firms who would view the discounted penalty as an incidental business expense. For them, the likelihood of the infraction should decrease as penalties increase. (Taken to an extreme, when Ethiopian military rulers summarily executed seven merchants for over-pricing and attempting to create a scarcity in Ethiopia's grain and peppers market, prices for these commodities in the following three weeks dropped by nearly 60 per cent.)[193]

But simply increasing the fines and jail sentences is not the cure. Excessive fines can cripple the corporation competitively, causing it to reduce investments in innovation, and if it cannot absorb or otherwise pass along the penalty, to reorganise under the bankruptcy laws or exit the market. Thus, an excessive fine can harm consumers with less innovation, and possibly fewer meaningful competitors and higher prices.[194]

Longer prison sentences are not necessarily effective. Unless one believes that price fixers need to be imprisoned for a purpose other than general deterrence, then even for devout utilitarians, the optimal prison term should be shorter, rather than longer: 'after a relatively short time the marginal cost to society of additional prison time likely would exceed the gains from additional deterrence'.[195] Moreover, judges or juries will likely reject optimal deterrence theory when jail sentences appear excessive relative to the crime's moral nature.[196]

Ultimately the economic model must account for social policies that can influence the executives' decision to engage in price fixing, including the perceived probability of detection.[197] Thus, the optimal means to deter cartels will involve a pluralism of mechanisms, including criminal and civil penalties, structural means (improved merger review), and developing informal norms that highlight price fixing's ethical and moral implications.[198]

Empirical work, while lacking the glamour of dawn raids on the conspirators' lair, may provide better insights as to why executives break the law, and what mixture of legal, social and moral norms can best deter their behaviour. It also may reduce

the need to incarcerate ageing executives to longer jail sentences, at the taxpayers' expense.[199]

* Associate Professor, University of Tennessee College of Law; Senior Fellow, American Antitrust Institute. The author wishes to thank Dwight Aarons, John M Connor, Kenneth Davidson, Damien Gerard, Herbert Gintis, Hays Gorey, Tim Greaney, Joseph E Harrington, Jr, Thomas Horton, John Kirkwood, George W Kuney, Christopher Leslie, Margaret C Levenstein, Stephen Martin, Robert Moldén, Christopher L Sagers, D Daniel Sokol, Gregory M Stein, Valerie Y Suslow, Avishalom Tor, Florian Wagner-von Papp, Dick Wirtz, the Seattle University School of Law faculty, and participants of the NYU Next Generation of Antitrust Scholarship Conference (29 January 2010) for their helpful comments.

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- [16] See, eg JC Gallo et al, 'Department of Justice Antitrust Enforcement 1955–97: An Empirical Study' (2000) 17 *Review of Industrial Organization* 75, 101 (summarising economic literature that non-monetary sanctions are costly, should be used only with maximal monetary sanctions and when offenders are poor); N Garoupa and D Klerman, 'Corruption and the Optimal Use of Nonmonetary Sanctions' (2004) 24 *International Review of Law and Economics* 219, 220; GS Becker, 'The Economic Way of Looking at Behavior' (1993) *Journal of Political Economy* 385, 391.
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- [18] American Antitrust Institute, *Transition Report on Competition Policy* (6 October 2008) 39 (average individual fine for 1990–2007 was US\$147,100).
- [19] AAI, *ibid.*; Gallo et al, *ibid.* n 16, 104 (showing trend between 1980–97). Numerical comparisons should be regarded cautiously, since the Reagan administration focused on localised bid rigging involving road construction or government procurement. Subsequent administrations have focused increasingly on international cartels, which can involve fewer defendants but greater commerce: AAI, *ibid.*, 29–30, 32.
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- [21] Hammond, 'Recent Developments'.
- [22] Hammond, 'Recent Developments', *ibid.*
- [23] Hammond, 'Evolution of Criminal Antitrust Enforcement', *ibid.* n 14, 9 (average jail time was 31 months in 2007, 25 months in 2008, and 24 months in 2009).
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- [33] Hammond, 'Recent Developments', *ibid.* n 8.
- [34] ME Stucke, 'Morality and Antitrust' (2006) 2006 *Columbia Business Law Review* 443, 452–57.
- [35] Former Assistant Attorney General Douglas Ginsburg estimated that antitrust enforcers detected no more than 10% of all cartels: 'Sentencing Options: Hearing Before the United States Sentencing Commission' (15 July 1986), available in United States Sentencing Commission, *Unpublished Public Hearings 1986* (1988) 15. Other estimates are that one in six or seven cartels are detected and prosecuted. OECD Directorate for Financial, Fiscal and Enterprise Affairs, Competition Committee, *Report on the Nature and Impact of Hard Core Cartels and Sanctions Against Cartels Under National Competition Laws* (DAFFE/COMP(2002)7, 9 April 2002) 3, 13 (citing PG Bryant and EW Eckard, 'Price Fixing: The Probability of Getting Caught' (1991) 73 *Review of Economics and Statistics* 531); AAI, *ibid.* n 18, 30 (surveying 21 scholarly publications of studies or opinion surveys, nearly all estimates of cartel detection fall within the range of 10–20%) (citing JM Connor, 'Optimal Deterrence and Private International Cartels' (2007) Table 1 www.ssrn.com/abstract=787927).
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- [42] DOJ, *ibid.* n 13 (137 pending grand jury investigations).
- [43] Hammond, 'Recent Developments', *ibid.* n 8.
- [44] Criminal Information filed in *United States v LG Display Co Ltd*, Case No CR 08-0803 VRW (NDCa filed 12 November 2008) (alleging conspiracy from about 21 September 2001 to 1 June 2006).
- [45] Criminal Information filed in *United States v Korean Air Lines Co Ltd*, Case No 07-184-JDB (DDC filed 1 August 2007) (alleging conspiracy from at least 1 January 2000 to 14 February 2006).
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- [52] SM McClure et al, 'Separate Neural Systems Value Immediate and Delayed Monetary Rewards' (2004) 306 *Science* 503, 506. Half of convicted jail inmates were under the influence of drugs or alcohol at the time of the offence, 31% of jail inmates grew up with a parent or guardian who abused alcohol or drugs, and 46% had a family member who was incarcerated: Bureau of Justice, 'Bureau of Justice Statistics' (2010) bjs.ojp.usdoj.gov/.
- [53] CR Leslie, 'Trust, Distrust, and Antitrust' (2004) 82 *Texas Law Review* 515, 628.

[54]US DOJ, *Antitrust Division Manual*, 4th edn (2008) III-20-1 (in determining whether to prosecute Sherman Act violations criminally or civilly, consider whether the evidence clearly shows that defendants were unaware of, or did not appreciate, their actions' consequences); ABA Section of Antitrust Law, *Antitrust Compliance: Perspectives and Resources for Corporate Counselors* (2005) 32 (citing example of corporate ignorance of illegality of fixing mark-ups); New Zealand Ministry of Economic Development, *Cartel Criminalization: Discussion Document* (January 2010) 38 (discussing naïve cartelists).

[55]Part of this difficulty, which individuals may avoid, is determining the company's exposure to private antitrust damages and attorneys' fees.

[56]ME Stucke, 'Behavioural Economists at the Gate: Antitrust in the Twenty-First Century' (2007) 38 *Loyola University Chicago Law Journal* 513, 571. Executives in theory could decide daily whether to continue with the cartel, based on the volume of commerce involved so far, the extent of their participation and role in the cartel, and the degree to which they personally profited from the offence (including salary, bonuses, and career enhancement). US Sentencing Commission, *Federal Sentencing Guidelines Manual* (2009) § 2R1.1 Application Note 2. At times executives abandon the cartel, but the frequency to which they behave as rational choice theory predicts, is unknown.

[57]WPJ Wils, 'Optimal Antitrust Fines: Theory and Practice' (2006) 29 *World Competition: Law and Economics Review* 183.

[58]For recent surveys of the empirical literature see C Engel, 'The Behaviour of Corporate Actors: A Survey of the Empirical Literature' (May 2008) Max Planck Institute for Research on Collective Goods Preprint No. 2008/23 7-8; S DellaVigna, 'Psychology and Economics: Evidence from the Field' (2009) 47 *Journal of Economic Literature* 315.

[59]Engel, *ibid.*, 10.

[60]McAdams and Ulen, above n 2, 22.

[61]McAdams and Ulen, above n 2, 18.

[62]Annenberg Media, 'Judgment and Decision Making' (2001) www.learner.org/discoveringpsychology/11/e11expand.html?pop=yes&pid=1524.

[63]M Bigoni et al, 'Risk Aversion, Prospect Theory, and Strategic Risk in Law Enforcement: Evidence from an Antitrust Experiment' (22 June 2008) SSE/EFI Working Paper Series in Economics and Finance No 696 (finding the amount of fines that subjects paid in previous rounds of a repeated Bertrand price game with differentiated goods had a significant and substantial negative effect on their willingness to communicate in the next round). Of course, the probability of detection can vary by market, so rational cartel members may rely on historical enforcement statistics to estimate probability of detection and prosecution.

[64]AAI, above n 18, 39.

[65]Bureau of Justice, above n 52.

[66]But see Kolasky, above n 40 (noting complaints from Antitrust Division's field offices of 'how sloppy many large, publicly traded companies have become about antitrust compliance').

[67] See ME Stucke, 'Does the Rule of Reason Violate the Rule of Law' (2009) 42 *UC Davis Law Review* 1375, 1452-54 (collecting sources).

[68]A Schoepfer et al, 'Do Perceptions of Punishment Vary Between White-Collar and Street Crimes?' (2007) 35 *Journal of Criminal Justice* 151, 159.

[69]ABA, above n 54, 34; Hammond, 'Evolution of Criminal Antitrust Enforcement', above n 14, 13 (noting that the salience of seeing price fixers in action (in the videotaped lysine cartel) 'caused some foreign governments to question, if not rethink, how they investigated and treated cartel offences').

[70]ML Benson, 'Denying the Guilty Mind: Accounting for Involvement in a White-Collar Crime' (1985) 23 *Criminology* 583, 592.

[71]F Gino et al, 'See No Evil: When We Overlook Other People's Unethical Behavior' (11 January 2008) HBS Working Paper No 08-045, 4.

[72]Zimbardo, above n 7, 290.

[73]*Ibid.*, 290.

[74]*Ibid.*, 291.

[75]S Milgram, *Obedience to Authority* (New York, Harper & Row, 1974) 30-31.

[76]Milgram, 'Behavioral Study of Obedience' (1963) 67 *Journal of Abnormal & Social Psychology* 371, 376.

[77]JM Burger, 'Replicating Milgram: Would People Still Obey Today?' (2009) 64 *American Psychologist* 1.

[78]S Milgram, 'The Perils of Obedience' *Harper's Magazine* (December 1973) 62.

[79]Milgram, 'Behavioural Study', above n 76, 374.

[80]Zimbardo, above n 7, 273.

[81]Kolasky, above n 40: the DOJ has 'rarely, if ever, seen a case where an employee who committed an antitrust violation was acting solely for his own benefit and not the company's'.

[82]Parker and Nielsen, above n 3, 583; ABA, above n 54, 31: 'history of antitrust prosecutions is rife with examples of ministerial employees who participated in the crime even though they personally would not profit'; Benson, above n 70, 595.

[83]When news that Virgin Atlantic's most senior director was embroiled in a price fixing cartel, a company spokesman was asked if Virgin considered firing him. The company spokesman replied, 'Not at all. The board discussed all this in 2006 and they fully supported him and the business has moved on.' A Osborne, 'Virgin Boss Caught up in BA Price Fixing case' *Daily Telegraph* (London, 14 July 2009) 1.

[84]See, eg A Stephan, 'Hear No Evil, See No Evil: Why Antitrust Compliance Programmes May be Ineffective at Preventing Cartels' (July 2009) ESRC CCP Working Paper No. 09-09, 11; M Peel, 'BA Executive Facing Charges is Promoted', *Financial Times* (London, 27 November 2008).

[85]Zimbardo, above n 7, 273.

[86]One Westinghouse executive convicted in the electrical equipment price fixing conspiracy, for example, was a vestryman of the local Episcopal Church. RA Smith, 'The Incredible Electrical Conspiracy (Part I)' *Fortune* (April 1961) 132-33.

[87]Assistant Attorney General Stanley N. Barnes, 'Promoting Competition: Current Antitrust Problems and Policies', Speech at Metropolitan Economic Association, New York (25 October 1954); see, eg CB Renfrew, 'The Paper Label Sentences: An Evaluation' (1977) 86 *Yale Law Journal* 590, 592 (describing how one judge finds it 'extremely difficult' to sentence antitrust offenders who were 'community leaders of previously unsullied reputation'); *United States v Alton Box Board Co.*, No 76 CR 199, 1977 WL 1374 (ND Ill, 4 March 1977).

[88]Zimbardo, above n 7, 273.

[89]M Kaptein et al, 'Demonstrating Ethical Leadership by Measuring Ethics: A Survey of US Public Servants' (2005) 7 *Public Integrity* 299, 305.

[90]Smith, above n 86, 135.

[91]*Ibid.*, 172.

[92]*Ibid.*, 135; see also Gino et al, above n 71, 5.

[93]J Sonnenfeld, 'Executive Apologies for Price Fixing: Role Biased Perceptions of Causality' (1981) 24 *Academy of Management Journal* 192, 195.

[94]*Ibid.*, 196.

[95]*National Society of Professional Engineers v United States*, 435 US 679, 681(1978); *Sugar Institute v United States*, 297 US 553 (1936); Leslie, above n 53, 575-76. In a recent case, the Kentucky Real Estate Commission promulgated and enforced administrative regulations that banned real estate brokers and sales associates from competing with each other by offering consumers cash rebates or other inducements. Many brokers conceded that repealing or modifying the Commission's rebate ban would generate a bidding war and lead to lower prices for consumers, but they offered in a private survey various justifications, including that the ensuing competitive behaviour would make the realtors 'look unprofessional in the eyes of the public'. 'Complaint', *United States v Kentucky Real Estate Commission*, Civil Action No. 3:05-cv-00188-S (WD Ky 31 March 2005). The Commission taught brokers in licensing courses to refrain from offering such rebates; asked brokers to inform the Commission when competing brokers offered rebates; and brought disciplinary actions against brokers who offered rebates. 'Competitive Impact Statement', *United States v Kentucky Real Estate Commission* (26 July 2005).

[96]Leslie, above n 53, 575-76.

[97]Zimbardo, above n 7, 274.

[98]Milgram, 'Behavioural Study', above n 76, 373.

[99]Milgram, 'Obedience', above n 78, 122.

[100]*Ibid.*, 34.

[101]D Ariely, *Irrational: The Hidden Forces That Shape Our Decisions* (London, Harper Collins, 2008) 221.

[102]Gino et al, above n 71, 11.

[103]Levenstein and Suslow, 'Breaking up', above n 39, 11; Connor and Helmers, above n 40 (accounting for majority of cartels); Gino et al, above n 71 (discussing identifiable victim effect where people have greater concern for identifiable, than statistical, victims).

[104]A Stephan, 'Survey of Public Attitudes to Price-Fixing and Cartel Enforcement in Britain' (May 2007) CCP Working Paper 07-12, 17-19 (finding weak support for imprisoning price fixers: few of surveyed UK residents compared price fixing to theft and fraud, and 65% had trouble relating price fixing to another kind of illegal act with which they were familiar). Americans in one study viewed price fixing more severely. M Wolfgang et al, *National Survey of Crime Severity* (US Government Printing Office, 1985) viii (respondents considered the 'hard-core' antitrust crime a more serious crime than someone 'armed with a lead pipe, rob[bing] a victim of \$1000. No physical harm occurs.') But in a later survey, Americans recommended a stiffer sentence for a street robbery than a price fixing violation with about US\$15 million in overcharges (adjusted mean sentence of 11.3 years versus 5.7 years for the antitrust violation, and a median sentence of five years versus two years for the antitrust violation). US Sentencing Commission, *A National Sample Survey of Public Opinion on Sentencing Federal Crimes* (October 1995) 38.

[105]Zimbardo, above n 7, 274.

[106]R Blumenthal and C Vogel, 'Witness Says Price-Fixing for Auctions Began Earlier' *New York Times* (New York, 28 November 2001) D2 (testimony of a separate price fixing agreement that arose from two executives commiserating on the sad state of profitability of the business).

[107]P Ingram and PW Roberts, 'Friendships among Competitors in the Sydney Hotel Industry' (2000) 106 *American Journal of Sociology* 387.

[108]*Ibid.*, 392-93.

[109]Zimbardo, above n 7, 274.

[110]Burger, above n 77, 3; Gino et al, above n 71, 16 (discussing change blindness where individuals are less likely to notice others' unethical behaviour when it occurs in small increments).

[111]Leslie, above n 53, 591-92 (discussing cartel creep).

[112]Zimbardo, above n 7, 274; see also S Hartwell, 'Moral Development, Ethical Conduct, and Clinical Education' (1990) 25 *New York Law School Law Review* 131, 142 (in Milgram-like experiment, 23 of 24 law students followed the professor's advice and advised the confederate client to perjure herself).

[113]DOJ, 'Former Shipping Executive Sentenced', above n 25.

[114]Peter Baci's 'Sentencing Memorandum', *United States v Baci*, Case No 3:08-cr-00350-TJC-TEM-1 8 (MD Fl, 26 January 2009).

[115]J Bonney, 'Justice Department Expands Price-Fixing Investigation' *Shipping Digest* (16 February 2009).

[116]Zimbardo, above n 7, 274.

[117]Milgram, 'Behavioural Study', above n 76, 372.

[118]Leslie, above n 53, 565-68 (describing social friendships among cartel members). In Zimbardo's prison experiment, group camaraderie and emergent social norms may influence behaviour. Students were randomly assigned into two groups: Prison Guards and Prisoners. While the experiment was scheduled to go on for a couple of weeks, it was stopped after six days. Even though everyone involved knew that the experiment involved students, who were randomly assigned between prisoners and guards, the student prison guards became sadistic and student prisoners became depressed and showed signs of extreme stress.

[119]Leslie, above n 53, 586 fn 504 (describing the electrical equipment cartel).

[120]Stephan, 'Survey', above n 104, 27.

- [121]Zimbaro, above n 7, 274; see also J Milton, *Paradise Lost* (London, Penguin, first published 1667, 2000 edn) 9 ('The mind is its own place, and in itself/Can make a Heav'n of Hell, a Hell of Heav'n').
- [122]Milgram, 'Behavioural Study', above n 76, 374.
- [123]Leslie, above n 53, 586.
- [124]*United States v Socony-Vacuum Oil Co Inc*, 310 US 150, 221 (1940); see also Leslie, above n 53, 588.
- [125]*Socony-Vacuum*, 310 US 150, 221 (1940); Benson, above n 70, 591 (offenders justifying price fixing as necessary for industry's well-being).
- [126]West Bengal Pharmacy Company, 'Code of Ethics' www.wbpharmacycouncil.org/index.php?option=com_content&view=article&id=24&Itemid=54.
- [127]F Machlup, 'The Nature of the International Cartel Problem' in CD Edwards et al (eds), *A Cartel Policy for the United Nations* (New York, Columbia University Press, 1945) 17–18.
- [128]D Crane, 'Antitrust Enforcement During National Crises: An Unhappy History' (December 2008) *Global Competition Policy Magazine*.
- [129]*Appalachian Coals Inc v United States*, 288 US 344, 377–78 (1933) (holding competitors' proposed price fixing in a distressed industry fostered 'fair competitive opportunities' and did not violate the Sherman Act).
- [130]Benson, above n 70, 591.
- [131]Hammond, 'Price Tag', above n 26.
- [132]See Stucke, 'Behavioural Economists', above n 56; ME Stucke, 'New Antitrust Realism' (January 2009) *Global Competition Policy Magazine*. See further the emphasis given to ex post assessment of outcomes in WE Kovacic, 'Criminal Enforcement Norms in Competition Policy: Insights from US Experience', ch 3 in this volume.
- [133]JM Connor, 'Cartels and Antitrust Portrayed: Internal Structure—Private International Cartels 1990–2008' (3 April 2009) 4, 8 ssrn.com/abstract=1372849 (finding cartels' median and mean duration was 57 and 82 months, respectively, and that global cartels lasted 57% longer than the average cartel); MC Levenstein and VY Suslow, 'What Determines Cartel Success?' (2006) 44 *Journal of Economic Literature* 43, 51–52 (noting that duration is bimodal, with cartels lasting only one year, and twice as many lasting between four and six years).
- [134]Connor, 'Cartels and Antitrust Portrayed', *ibid.*, 11; see also Kolasky, above n 40: '[c]artels are more durable [than] sometimes thought. After the ADM plea, the Wall Street Journal stated: "If colluders push prices too high, defectors and new entrants will set things right." Our experience has shown that this is not the case. Several of the cartels we prosecuted had been in existence for over ten years, including one (sorbrates) that lasted 17 years, from 1979 to 1996.'
- [135]RA Posner, 'A Statistical Study of Antitrust Enforcement' (1970) 13 *Journal of Law & Economics* 365, 402.
- [136]T Chorvat, 'Law and Neuroeconomics' (2005) 13 *Supreme Court Economic Review* 35, 43; CF Camerer, 'Behavioral Game Theory: Predicting Human Behavior in Strategic Situations' in CF Camerer et al (eds), *Advances in Behavioral Economics* (Princeton, Princeton University Press, 2004) 374, 378 (summarising trust games). Other neuroeconomics literature suggests that some people are more likely to be trustful and tend to co-operate, while others are more likely to behave according to the standard game theory predictions: Chorvat at 55.
- [137]Levenstein and Suslow, 'Breaking up', above n 39, 29; JE Harrington, 'How Do Cartels Operate?' (2006) 2 *Foundations and Trends in Microeconomics* 1, 57–62; Kolasky, above n 40.
- [138]Levenstein and Suslow, 'Breaking up', above n 39, 29.
- [139]*Ibid.*
- [140]Leslie, above n 53, 537–45, 565–66, 589–90; *American Column & Lumber Co v United States*, 257 US 377, 411 (1921) (noting how intimate personal contact, social norms of business honour and social penalties can help stabilise cartels).
- [141]See 'Complaint', *United States v Alex Brown & Sons Inc*, 169 FRD 532 (SDNY, 1996) (No 1:96cv05313).
- [142]'Competitive Impact Statement', *Alex Brown & Sons*, 169 FRD 532 (SDNY, 1996) (No 1:96cv05313).
- [143]'Competitive Impact Statement', *Alex Brown & Sons*, 169 FRD 532 (SDNY, 1996) (No 1:96cv05313): 'novice traders learn quickly that if they want to keep their jobs on an OTC desk, they will do well not to beat the price of fellow market makers. Breaking the spread, as it is called, just isn't done. One veteran who tried on occasion to narrow an OTC spread told Forbes, "I used to get phone calls from people. They'd scream, "Don't break the spread. You're ruining it for everybody else."'
- [144]Keeping the data consistent can be difficult. Market definition at times is problematic. Identifying conspirators may depend on the sufficiency of evidence and burden of proof, which differs in the civil and criminal context. Other firms could have been involved in the conspiracy, but the evidence was insufficient to prosecute. The criteria should be whether a criminal or civil complaint was brought against the firm (and whether the matter was criminal or civil). Granted, the data at times may underreport the number of firms involved in the cartel, but having data with such caveats is better than no data.
- [145]R Abrantes-Metz and P Bajari, 'Screens for Conspiracies and Their Multiple Applications' (2009) 24 *Antitrust* 66 (describing screening mechanisms to detect cartels).
- [146]T Blass, 'The Man Who Shocked the World' (March/April 2002) *Psychology Today* (average obedience rates in experiments similar across countries).
- [147]J Haidt, 'The Emotional Dog and Its Rational Tail: A Social Intuitionist Approach to Moral Judgment' (2001) 108 *Psychological Review* 814, 818–19; SS Simpson et al, 'Exploring the Micro-Macro Link in Corporate Crime Research' in SB Bacharach (ed), *Deviance in and of Organizations, Research in the Sociology of Organizations* (Connecticut, JAI Press, 1998) vol 15, 57–58 (threat of informal sanctions from friends, colleagues and family salient to surveyed MBA students' and executives' decisions regarding price fixing).
- [148]MS Baucus and JP Near, 'Can Illegal Corporate Behavior Be Predicted? An Event History Analysis' (1991) 34 *Academy of Management Journal* 9, 34 (finding that *Fortune* 500 firms with prior violations more likely to commit additional unlawful civil or criminal intentional wrongs, such as price fixing).
- [149]Simpson et al, above n 147, 'Micro-Macro Link' 35 (finding that firm culture that is criminogenic and one in which supervisors request managers to engage in illegal conduct influenced surveyed MBA students' and executives' decisions regarding price fixing).
- [150]Milgram, 'Obedience', above n 78, 107.
- [151]M McKendall et al, 'Ethical Compliance Programs and Corporate Illegality: Testing the Assumptions of the Corporate Sentencing Guidelines' (2002) 37 *Journal of Business Ethics* 367, 379 (citing studies of importance of top management for ethical conduct).
- [152]Kolasky, above n 40. ADM's senior management distrusted their salespeople, who tended to become advocates for their customers and cut prices, and fired their best salesman for discounting off the cartel price. Harrington, above n 137, 71.
- [153]ABA, above n 54, 34.
- [154]Stephan, 'Survey', above n 104, 12–13.
- [155]Gallo et al, above n 16, 104–107; see also Stephan, 'Hear No Evil' above n 84, 8–10 (collecting employee positions of 40 international cartels prosecuted between 1998–2008).
- [156]Levenstein and Suslow, 'Cartel Success', above n 133, 43–44.
- [157]K Eichenwald, 'US Wins a Round against Cartel' *New York Times* (New York, 30 January 1997) D1.
- [158]Connor and Helmers, above n 40, 23 (finding 170 companies to be price fixing recidivists, of which 11 companies were caught 10 or more times fixing prices).
- [159]Hammond, 'Recent Developments', above n 8.
- [160]Hammond, 'Recent Developments', above n 8 (when a 'company already under investigation discovers the additional, unrelated wrongdoing before the Division,' then qualifying companies can receive amnesty for reporting the second offence, and an additional discount when calculating an appropriate fine for its participation in the first conspiracy). Companies that commit additional wrongdoing and do not take advantage of the Amnesty Plus program potentially face stiffer criminal sanctions.
- [161]Kaptein et al, above n 89, 305.
- [162]Milgram, 'Obedience', above n 78, 118.
- [163]Kolasky, above n 40.
- [164]AJ Daboub et al, 'Top Management Team Characteristics and Corporate Illegal Activity' (1995) 20 *Academy of Management Review* 138, 155–56 (collecting research).
- [165]N Paton, 'Business Schools Put Ethics High on MBA Agenda: In the Wake of the Financial Crisis, MBA Students are Being Taught about Corporate Social Responsibility' *Guardian* (London, 23 January 2010).
- [166]Leslie, above n 53, 584–92; Baucus and Near, above n 148, 27–28, 31 (finding that firms operating in certain industries more likely to engage in illegal activities suggesting that certain industry cultures may predispose managers to select illegal acts); Benson, above n 70, 591 (interviewed antitrust offenders were 'merely following established and necessary industry practices').
- [167]R Hodgetts, 'Cycling's Gentleman's Club' *BBC Sport* (22 July 2003) (discussing professional cyclists' unwritten norms such as discouraging tactical attacks during feed zones or bathroom breaks).
- [168]Virginia Association of REALTORS®, 'StraightTalk—A Guide to Understanding the Code of Ethics' (2006) thecodeisgoodbusiness.com/code/working-with-realtors.aspx: 'Don't try to steal clients from other brokers. This and disagreements over, maybe the biggest source of conflict between REALTORS® ... Go to any city in America and the REALTORS® in that town can tell you who has a reputation for unfairly poaching clients. You don't want that reputation because it will kill your business over time'.
- [169]15 USC §§12–27 (1914).
- [170]Stucke, 'Behavioural Economists', above n 56, 545–75.
- [171]*Business Electronics Corp v Sharp Electronics Corp*, 485 US 717, 727 (1988); RA Posner, 'The Chicago School of Antitrust Analysis' (1979) 127 *University of Pennsylvania Law Review* 925, 932.
- [172]Federal Trade Commission and US DOJ, *Merger Challenges Data, Fiscal Years 1999–2003* (18 December 2003) 2.
- [173]YV Bolotova, 'Cartel Overcharges: An Empirical Analysis' (2009) 70 *Journal of Economic Behaviour & Organization* 321 (finding that markets where cartels have high market shares tend to have higher overcharges, and the number of cartel participants and the size inequality among them are inversely related to the overcharge level; in his sample of modern international cartels, the average cartel market share was 81% (the minimum was 19%, the maximum was 100%), the average leading firm market share was 35% (with a range of 5–80%), and the average number of cartel members was five (with a minimum of two firms and maximum of 40 firms)).
- [174]Levenstein and Suslow, 'Cartel Success', above n 133, 58 (finding no simple relationship between industry concentration and likelihood of collusion); Levenstein and Suslow, 'Breaking up', above n 39, 12 (finding international cartels prosecuted between 1990–2007 had on average 7.4 members); Connor, 'Cartels and Antitrust Portrayed', above n 133, 4, 8 (finding cartels with three or fewer companies accounted for less than 30% of 516 private cartels subject to legal action between January 1990 and December 2008; cartels that involved a third party (eg, trade association) or bid rigging had on average 16.7 firms (with a median of seven firms), cartels with no alleged third party involvement had on average 7.4 (with a median of 4.5) firms); see also Stucke, 'Behavioural Economists', above n 56, 555–56 (collecting earlier empirical work on cartels in moderately concentrated and unconcentrated industries). Interestingly, Professor Connor found a higher percentage of even-numbered than odd-numbered cartels. Each additional conspirator, as economic theory goes, should increase the difficulty in cartel members reaching the terms of co-ordination and detecting and punishing any cheating thereto. Assuming a similar probability of detection, one would expect fewer cartels with 11 members than with 10 members. But more cartels were prosecuted with four conspirators than with three conspirators, with eight conspirators than with seven, and with 10 conspirators than with nine (or seven) conspirators. Moreover the average number of companies involved in cartels was slightly higher between 2000–08 than between 1983–99: Connor, 'Cartels and Antitrust Portrayed', above n 133, 4.
- [175]In merging with one another, cartel members may have less need to price fix. Logically, companies would not collude expressly (and expose themselves to criminal and civil antitrust liability) where they could set their prices at supra-competitive levels without any formal agreement. Thus, express collusion may be necessary for less concentrated industries, in contrast to oligopolies, where the competitors may collude tacitly and legally (ie, each firm setting its price based partly on the strategic considerations regarding its competitors' behaviour).
- [176]Prosecutors may have difficulty obtaining discovery abroad and lack sufficient evidence to prove an agreement beyond a reasonable doubt. Prosecutors also follow the evidence, so criminal cases may cluster around specific industries (consider, eg, the Reagan administration's penchant for bringing localised price fixing and bid rigging cases involving road construction and government procurement). Stucke, 'Behavioural Economists', above n 56, 541.
- [177]NH Miller, 'Strategic Leniency and Cartel Enforcement' (2009) 99 *American Economic Review* 750 (showing that the number of cartel discoveries increases around the date of leniency introduction and falls thereafter below pre-leniency levels, a pattern consistent with enhanced cartel detection). The programmes can reduce the risk of false positives and the DOJ's costs in detecting and prosecuting cartels, resources that can be redeployed to prosecuting other antitrust offences.
- [178]SD Hammond, Deputy Assistant Attorney General for Criminal Enforcement, US DOJ, Antitrust Division, 'Cracking Cartels With Leniency Programs', Paper presented at OECD Competition Committee, Working Party No 3 Prosecutors Program (18 October 2005).

- [179]Hammond, 'Evolution of Criminal Antitrust Enforcement', above n 14, 3.
- [180]Levenstein and Suslow, 'Breaking up', above n 39, 12.
- [181]Ibid, 12 (study of 81 international cartels convicted of colluding between 1990–2007).
- [182]First, highly unstable cartels fall apart before any serious risk of prosecution. More durable cartels continue for longer periods, thereby facing a greater risk of detection (and providing their members with a greater incentive to seek amnesty). Second, amnesty programs when implemented can skew in the short run the reported duration of detected cartels. The immediate rise in detection and conviction from the amnesty program causes less stable cartels to collapse, thereby leaving the more stable cartels, which have longer durations, to be discovered. JE Harrington Jr and M Chang, 'Modelling the Birth and Death of Cartels with an Application to Evaluating Antitrust Policy' (2009) *Journal of the European Economic Association* 1400. In the long run, however, discovered cartels should have shorter durations. Finally, cartels where no amnesty was offered may have been easier to prosecute; thus amnesty was unnecessary. For example, a company will not qualify for leniency in the US when at the time it seeks leniency, the DOJ has sufficient evidence against the company that is likely to result in a sustainable conviction.
- [183]Stephan, 'Survey', above n 104, 25 (survey of British residents).
- [184]ABA, above n 54, 13 (expressing concern that 'the success of the Antitrust Division's Leniency Program has contributed to its problems with developing trial capabilities').
- [185]Stucke, 'Behavioural Economists', above n 56, 579–82 (outlining empirical research to inform merger policy).
- [186]ICN, above n 3, 74.
- [187]Stucke, 'Morality', above n 34, 475–84.
- [188]ICN, above n 3, 74.
- [189]PH Robinson, 'Why Does the Criminal Law Care What the Layperson Thinks Is Just? Coercive Versus Normative Crime Control' (2000) 86 *Virginia Law Review* 1839, 1861–62; HG Grasmick and DE Green, 'Legal Punishment, Social Disapproval and Internalization as Inhibitors of Illegal Behavior' (1980) 71 *Journal of Criminal Law & Criminology* 325.
- [190]Benson, above n 70, 599.
- [191]C Beaton-Wells and F Haines, 'Making Cartel Conduct Criminal: A Case Study of Ambiguity in Controlling Business Behaviour' (2009) 42 *Australian and New Zealand Journal of Criminology* 218.
- [192]Stucke, 'Morality', above n 34, 505–23 (discussing how antitrust agencies can promote moral norms to better deter antitrust crimes).
- [193]DI Baker, Assistant Attorney General, Antitrust Division, US DOJ, 'To Make the Penalty Fit the Crime: How to Sentence Antitrust Felons, Remarks before the Tenth New England Antitrust Conference' (20 November 1977), in JM Clabault and MK Block, *Sherman Act Indictments, 1955–1980* (New York, Federal Legal Publications, 1981) 537 (citing *Washington Post* 9 August 1976, A21).
- [194]Stucke, 'Morality', above n 34, 481.
- [195]OECD, above n 3, 8; see also Parker and Nielsen, above n 3, 573; Ehrlich, above n 5, 62: 'many studies find that increasing the risk of imprisonment for most crime categories has a significantly larger deterrent effect in elasticity terms than increasing the length of imprisonment, especially for violent crimes, and that the magnitude of the elasticities is less than 1'; Jeffrey Rosen, 'Prisoners of Parole' *New York Times* (New York 10 January 2010): US accounts for 5% of the world's population, but nearly 25% of the world's prison population.
- [196]Stucke, 'Morality', above n 34, 487–88 (collecting studies where optimal deterrence theory was rejected when contrary to moral intuition).
- [197]ICN, above n 3, 54 (recognising that while the calculation method of optimal deterrence theory 'is widely considered to be correct, there are some doubts as to its practicability (difficulties of calculation and proof) and some concerns about the companies' rights being impaired if other criteria are completely disregarded in setting the fines').
- [198]ICN, above n 3 (noting additional ways of achieving deterrence, including press coverage).
- [199]US DOJ, 'Annual Determination of Average Cost of Incarceration' (10 July 2009) 74 *Federal Register* 33279 (average cost of incarcerating a Federal inmate in fiscal year 2008 was US\$25,895). Between 1982–2003, per capita expenditure on corrections, including federal, state and local governments, increased 423% (from US\$40 to US\$209 per US resident), more than twice the US Consumer Price Index, the commonly used measure of inflation (184%) for this period: KA Hughes, US DOJ, Office of Justice Programs, *Justice Expenditure and Employment in the United States, 2003* (10 May 2006).

Cartels in the Criminal Law Landscape

REBECCA WILLIAMS*

Introduction

This chapter focuses on cartel criminalisation from the criminal law perspective, and examines the compromises necessary if the criminal law is to be used to regulate cartel behaviour without damage to that project or indeed to the criminal law more widely.

While it is important to be clear about what is meant by ‘criminalisation’, an issue addressed in Part I, it is often evident that the use of the criminal law to regulate cartel behaviour^[1] has essentially consequentialist origins in that it has been motivated by a desire to enhance deterrence, rather than springing from a sense of moral outrage. Nevertheless, as argued in Part II, although this contrasts with our traditional understanding of the role of criminal law, it is in fact not necessarily so out of place against the current moves in English and Welsh criminal law more generally towards a neo-liberal economic approach of regulating, preventing and managing crime. This does not mean, however, that law makers in that jurisdiction have been prepared to dispense with an attachment to morality or the use of the criminal law to convey public censure. One indication of this is the repeated use of the concept of dishonesty throughout economic and property offences, including the cartel offence.

The problem is that these two approaches cannot co-exist, and as demonstrated in Part III, to attempt to send moral signals via an offence adopted primarily for consequentialist reasons amounts to an attempt by the law to pull itself up by its own bootstraps. The result is that a gap can emerge between public opinion and the criminal law which may in turn damage both the process of cartel criminalisation and the criminal law more generally.

Two potential responses to this ‘bootstraps’ problem are identified in Part IV. The first is to embrace the forward-looking nature of cartel criminalisation, focusing on the criminal law solely as a method of regulation and deterrence. The key question then is solely an empirical one; does the criminal law work effectively to deter the behaviour in question? But unless one adopts a position of pure utilitarianism, this approach entails the erosion of the criminal/civil distinction and the moral censure associated with criminal law. For any for whom that is too high a price to pay, the alternative is to shift the focus backwards again to produce an offence which is more in keeping with the traditional core of criminal law.

However, adopting a backward-looking approach raises its own series of challenges, outlined in Parts V and VI. First, it is necessary to identify some form of moral delinquency at the heart of cartel behaviour which justifies the intervention of the criminal law. It is then imperative that the offence is defined and enforced in a manner which fits with, rather than undermining, this backward-looking approach.

I. The Definition of ‘Criminalisation’

It is important to note some caveats at the outset. It will be convenient to refer to the ‘criminalisation’ of anti-competitive behaviour, but this does not mean that there is a universally established understanding of the term ‘criminal’.^[2] For example, Lacey highlights the difficulties raised by civil/criminal law hybrids such as the English Anti-Social Behaviour Order.^[3] Attempts can of course be made to list identifying features of criminal law, such as public or third party as opposed to private harm,^[4] the existence of a mens rea requirement,^[5] social stigma or disapproval,^[6] or stronger investigative powers^[7] and rights of defence,^[8] but of course counter-examples can often be given.^[9] An alternative is to focus instead on the nature of the law’s response or its purpose. We might thus examine punishment,^[10] retribution,^[11] communication of values^[12] or the aim of prohibiting rather than pricing,^[13] but the boundaries drawn by these approaches would be equally controversial. Nevertheless, while not underestimating the significance of this caveat, the debate it entails is clearly beyond the scope of what follows and thus the term ‘criminal’ will be used here in an admittedly loose sense to refer to two features in particular; the tendency of the law in question to provoke social censure or stigma^[14] and the ability of the law to respond with a sentence of imprisonment.^[15]

Secondly, as Lacey notes, there is an important distinction between formal and substantive criminalisation, the former relating to the positive existence of law in the form of legislation, judicial decisions, international treaties and so on, while the latter