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WHEN MAKING MONEY IS MORE IMPORTANT THAN SAVING LIVES: REVISITING THE FORD PINTO CASE

Stuart Strother, Azusa Pacific University

Despite a long tradition of ethics training in business colleges, managers commonly make unethical business decisions. This paper reports a five-year study of ethical decision making of business students ($n = 192$). In an undergraduate microeconomics course, students were presented with financial data from the infamous Ford Pinto case where defective engineering, coupled with unethical management behavior, resulted in a number of fiery fatalities. Facing the decision to repair the cars or pay the estimated costs of lost wrongful death lawsuits, 56.8% of students chose to pay for the deaths. This paper describes the classroom experiment and uses logistic regression to compare the characteristics of the group choosing the correct ethical decision (repair the cars), with the group choosing the incorrect ethical decision (pay for the deaths).

Keywords: ethics, Ford Pinto, college students

INTRODUCTION

On a long enough timeline the survival rate for everyone drops to zero. I was a recall coordinator, my job was to apply the formula: A new car built by my company leaves somewhere traveling at 60 mph, the rear differential locks up, the car crashes and burns with everyone trapped inside. Now should we initiate a recall? Take the number of vehicles in the field A , multiply it by the probable rate of failure B , multiply the result by the average out of court settlement C ($A \times B \times C = X$). If X is less than the cost of the recall, we don't do one. Narrator, Fight Club [Motion picture].

Despite a long tradition of ethics training in business colleges, managers regularly make unethical business decisions. This paper reports a five-year study of ethical decision making of business students. In an undergraduate microeconomics course, students ($n = 192$) were presented with financial data from the infamous Ford Pinto case where defective engineering coupled with unethical management behavior resulted in a number of fiery fatalities. Facing the decision to repair the cars, or pay the estimated costs of lost wrongful death lawsuits, 56.8% of students chose to pay for the deaths. This paper recounts the Ford Pinto case, describes various ethical decision criteria, details the classroom experiment, then reports the results of the study.

THE FORD PINTO CASE

In 1971, the Ford Motor Company rolled out the Pinto to compete with economical subcompact imports such as cars made by Toyota and Volkswagen. A pet project of Ford president Lee Iacocca, the Pinto represented significant changes in American automotive manufacturing; the car offered drivers 38 highway miles per gallon of gasoline, weighed about 2,000 pounds and was priced at no more than \$2,000 (Shaw, 2005).

But this popular vehicle had a fatal defect. A 20 mph rear-end collision collapsed the gas tank, spilling fuel, which would then ignite the car. The impact crumpled the car's body so the doors could not open, effectively sealing the driver and passengers in an inferno. These results were discovered during crash tests of prototypes and the actual car. Ford management's "compressed schedule" precluded design changes as the production tooling was in place prior to completion of the crash tests (Shaw, 2005, p. 71).

Despite knowledge of the Pinto's dangers, Ford rushed to produce and sell the car in 1971, one year before known National Highway Traffic Safety Administration standards were to be implemented that aimed to reduce fiery crashes. The Pinto did not meet the new safety standards, and rather than correct the defect, Ford instead "successfully lobbied, with extraordinary vigor and some blatant lies" against the safety standard (Dowie, 1977, p. 20).

Costs of correcting the defect were estimated at only "\$5 to \$8 per vehicle" (Shaw, 2005, p. 72) plus unknown but likely costly production line modifications. From 1971 to 1980 3.1 million Pintos were sold, and Ford faced \$15 million to \$24 million in recall costs. Around that same time, the NHTSA had estimated "society loses \$200,725 every time a person is killed in an auto accident" (Shaw, 2005, p. 72). So the decision to not repair the vehicles had a break-even point somewhere between 77 and 123 lives.

From 1971 to 1980 hundreds of deaths occurred, and Ford faced over 100 lawsuits. In the widely publicized Grimshaw case, in 1972 Lily Gray's Pinto stalled while merging onto a California freeway. She was rear-ended, the car caught fire, and Ms. Gray died. Her 13-year old passenger Richard Grimshaw received disfiguring burns (Mcintosh, 2001). A jury awarded \$3 million in compensatory damages to the victims, and hit Ford with \$125 million in punitive damages, which were later reduced to \$3.5 million. Most of the other lawsuits were settled privately out of court, and so the true costs to Ford remain unknown.

Ford corrected the defect in 1980, but hundreds had already been killed or injured, and the lawsuit damages paid by Ford must have greatly exceeded the estimated repair costs of \$15 million to \$24 million. According to a damning article in *Mother Jones*, "Ford waited eight years because its internal 'cost-benefit analysis,' which places a dollar value on human life, said it wasn't profitable to make the changes sooner" (Dowie, 1977, p. 20).

In the court of public opinion, it is widely agreed Ford made the incorrect decision to not modify the cars but instead plan to pay out the anticipated wrongful death lawsuits. Numerous managers at the Ford Motor Company had undoubtedly graduated with business degrees and had participated in formal ethics training at business schools. Why, then, did they make the incorrect ethical decision, and why do managers today continue to make unethical decisions?

ETHICS

Supreme Court Justice Potter Stewart once stated, "Ethics is knowing the difference between what you have a right to do and what is right to do" (as cited in Baker and Lesch, 2013, p. 322). A business manager's decisions when facing moral dilemmas at work largely depend on their ethical standards which have some basis in philosophy such as deontology and teleology.

Similarly, adhering to a religion such as Judaism or Christianity influences adherents to choose correct instead of incorrect behavior. In the present study, students presented with the Ford Pinto case were enrolled at a Christian university whose professors espouse both Judaic and Christian ideas of correct behavior, therefore those relevant ideas are included below.

Deontology, the science of duty, encourages correct decisions. Koven (2015) notes, “in a deontological system, duties, rules and obligations are determined by some higher power” and “acts are morally wrong or right in themselves” (p. 3). Immanuel Kant and John Rawls provide deontological influence in ethics. Kant’s (1785) concept of categorical imperative suggests moral obligations are always binding in all situations including business decisions, meaning a person should always make the right decision regardless of context. Despite motives such as profit maximization, complying with orders from a supervisor, or avoiding getting fired, a person should always make upright choices. Rawls (1971) broadly addressing the problem of distributive justice offers ideas of liberty (every member of society deserves maximum freedom so long as their freedom does not impinge on another’s freedom) and justice (inequalities are allowed so long as society’s poorest members are not worse off). Had Ford engineers and managers considered categorical imperative and Rawlsian Justice they might have followed their own moral compass (categorical imperative) and favored consumers over company stakeholders (justice), including shareholders and managers, rather than surrendering to pressure from executives. Coase’s (1937) theory of the firm predicts managers act with profit maximization in mind, but the principal-agent problem suggests middle managers may also act to protect their own interests, such as jockeying for favorable performance evaluations, promotions, and bonuses. Managers may go along with executives’ incorrect ethical decisions in order to protect their own interests.

Teleology suggests decisions should be made following the principle of “the greatest good for the greatest number” (Luke, 1994, p. 398). Teleology is consistent with the idea of utilitarianism, the prevailing ethical doctrine in play at Ford when executives decided not to build additional safety features in the Pinto. But the Pinto case ended utilitarianism; as Chewing notes, “Utilitarianism as a defense against personal harm and injury promptly died, never to be argued again in the public domain” (2011, p. 28). Ford’s cost benefit-analysis favoring shareholder wealth over customer safety was perceived as extremely callous, and utilitarianism evolved into a mostly discredited ethical standard. Teleology may encourage decision makers to consider the optimization of expenditures on safety. If Ford maximized safety features, the car may have been too costly to produce. By contrast, excluding all safety features from the car’s design could result in profit maximization. The simple concept of “optimal expenditures on safety” remains problematic to implement. Nonetheless, in the Pinto case, society has spoken that the level of safety features built into the Ford Pinto are far below any optimal safety standard.

Numerous Jewish teachings admonish adherents to practice moral and ethical behavior that apply to business contexts. For example, texts in the Torah admonish caring for the poor by leaving part of the harvest in the field (Leviticus 19: 10), not stealing (Leviticus 19: 11), not lying (Leviticus 19: 12), not practicing fraud and not withholding wages from workers (Leviticus 19: 13). Abundant passages in the book of Proverbs warn about unethical business practices, such as “A false balance is abomination to the Lord, but a just weight is his delight” (11: 1, KJV). Had engineers and managers at Ford followed Jewish principles, it is likely the Pinto rollout would have been delayed until safety modifications could be implemented.

Christianity also provides profuse guidelines for moral and ethical business behavior, with two major ideas. First, people are accountable to God for all of our actions. Jesus taught “No man can serve two masters: for either he will hate the one and love the other...ye cannot serve God and mammon” (Matthew 6: 24, KJV). The apostle Paul admonished the Colossians, “And whatsoever ye do, do it heartily, as to the Lord, and not unto men” (2: 23, KJV). Had Ford employees held themselves accountable to God instead of executives or shareholders, they likely would not have released a product they knew was defective. The second major principle of Christianity related to business ethics is the Golden Rule. Jesus taught “Therefore all things whatsoever ye would that men should do to you, do ye even so to them” (Matthew 7:12, KJV). Ford employees with knowledge of the Pinto’s dangers would likely avoid purchasing such a car for themselves, but they were willing to sell the Pinto to others, violating the Golden Rule.

A person’s business decisions may be influenced by how they think philosophically and religiously. But thinking right is not the same as acting right. Employees at all levels of an organization must exercise ethical behavior, and yet ultimate responsibility lies with a company’s executives. According to Koven (2015), “ultimately, ethical ambiguities must be transformed by pragmatic leaders into specific directives, prescriptions, and proscriptions of behavior” (p. 1).

PRESENTING THE FORD PINTO CASE TO STUDENTS

Four decades after the actual Ford Pinto disaster, the case was presented to students at a large Christian university, with over 100 years’ history, and recently ranked among the top 200 national universities by US News and World Report (Best Colleges). The four-year degree includes one required ethics course, Senior Seminar: Business Ethics, and the business school claims it informally integrates ethics into every course, building “a reputation for pragmatic and ethically based education” (About SBM). But instructors for the ethics course independently select readings, which may or may not include core ethics texts. Additionally, approximately one-fifth of business students fulfill their graduation requirement by taking the Senior Seminar course in another discipline such as communications or political science. It is possible a business student could complete a bachelor’s degree with little to no formal instruction in business ethics.

The university’s general studies curriculum includes five courses in biblical studies, and, like ethics, the Christian faith is expected to be integrated into all business courses. Faith integration in the classroom typically consists of reading a scripture passage, discussing the general principles of the passage, then applying those principles to a business context. While all employees of the university are required to sign a short statement of faith, and are presumably practicing Christians, some professors express experiencing difficulty integrating faith into their specific disciplines, especially for the quantitative courses. Other subjects, however, are a more natural fit for faith-based discussion in the classroom.

This author presented the Ford Pinto case to business students in a required sophomore-level microeconomics course. There are no prerequisites for this course, and the course is not a prerequisite for other courses. On average, students were sophomores or juniors (see Table 1, class mean = 2.84) and had already completed more than half of their required 126 units toward graduation (see Table 1, units mean = 89.4)

Prior to being presented with the Ford Pinto case, the typical student would have completed two or three of the biblical studies courses, which include teachings on moral living but do not include explicit teaching of ethical behavior in the marketplace. One alumnus recently reported in response to the 2014 alumni survey online, “There was not much of an emphasis on integrating ethics in all classes, except for in ethics class.” Perhaps business school leaders assume students will learn ethics serendipitously through religious education, rather than intentionally through formal ethics training.

When the Pinto case was presented, most of the course had been completed already including the study of markets, marginal analysis, supply and demand, and cost curves. In the course, students are exposed to pro-business ideas such as Coase’s (1937) theory of the firm and Milton Friedman’s (1970) essay, “The Social Responsibility of Business is to Make a Profit,” but also contrasting ideas through biblical faith integration exercises that instruct students to be honest, act justly, and care for the poor and the environment. These theoretical lessons encourage students to widely consider multiple stakeholders in their analysis of business decisions, including firms, individuals and governments.

The case was presented verbally in class, accompanied with a short but disturbing video of a test crash wherein a Pinto was rear-ended, the gas tank exploded igniting the car, the car’s body crumpled, and the doors could only be opened with excessive force. The graphic video included crash test dummies violently jolted and catching fire. Figure 1 is a screen shot from the video. The written assignment rubric included the following case description:

You are a business analyst working at the Ford Motor Company in 1976. The new Ford Pinto has sold well in its first year of production, but there have been some challenges. The subcompact product category is crowded with competitors’ cars such as the Honda Civic, the AMC Gremlin, and the Chevy Vega. Additionally, some people have been injured or killed in fiery Pinto collisions. Conduct a cost curve analysis following the guidelines below and write a business report directed to Ford management.



Figure 1. Ford Pinto Fiery Test Crash

Students were given Ford Pinto production data including output, total costs, and total fixed costs. The assignment required students to calculate numerous statistics for each daily output level including average costs, daily profit, annual profit and others. They were to present their calculations in tables and graphs. Figure 2 shows the key graph illustrating three annual profit comparisons which are 1) \$75 million profit without this dilemma, 2) \$67 million in anticipated profit if the company chooses to not repair the cars, but pay the predicted wrongful death settlement amounts, and 3) \$50 million in profit if the company spends \$100 per car to fix the cars. Due to economies of scale the lines on the graph slope upward, but then slope downward due to diseconomies of scale.

Regarding students' final decisions to plan to pay the costs of lost wrongful death lawsuits or to repair the cars, this instructor was careful to avoid bias and provide neutral advice to students with statements such as, "Once you've completed accurate calculations, use whatever criteria you choose to make your decision, such as relying solely on profit maximization calculations, following some ethical criteria, or any other information you wish to use." Students were informed the wrongful death outcome included the death of the driver and/or passengers, and the lawsuit damages would be paid to surviving relatives.

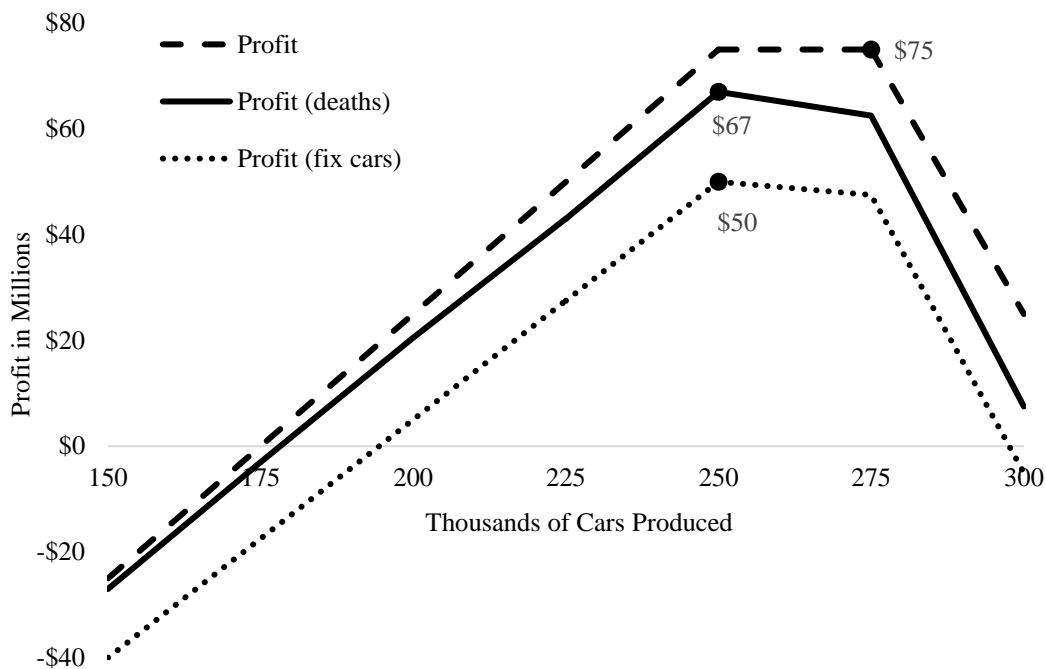


Figure 2. Annual Profit Comparisons from the Class Assignment

RESULTS OF THE CLASSROOM EXPERIMENT

Of the 192 students across five years in the Principles of Microeconomics course, 56.8% chose to not repair the cars, but instead to plan to pay the anticipated costs of the wrongful death lawsuits, which were estimated to be 16 wrongful deaths per year with settlement amounts of \$500,000. This decision resulted in annual profit of \$67 million for Ford per year, as compared to just \$50 million in annual profit if the company repaired the cars (see Figure 2).

Table 1 reports descriptive statistics for all 192 students, the 107 students who chose to pay for deaths, and the 85 students who chose to repair the cars. Independent group mean comparisons were conducted using the *t*-distribution which are also reported in Table 1.

Students who chose to not fix the cars had slightly higher GPAs (mean = 3.27 vs. 3.24); perhaps focusing more on performing “correctly” on the assignment, rather than making a correct ethical decision. Those students had also completed more academic units (mean = 96.76 vs. 87.25) and this difference was statistically significant ($t = 2.53, p = 0.012$). This finding is especially disheartening, as students who have spent more time in business school are expected to exhibit more ethical behavior, however this result may be an indicator of student fatigue; the longer they spend in college, the less engaged they become.

Students who chose not to fix the faulty vehicles also scored lower on this assignment (mean = 74.94 vs. 83.51) and these results were statistically significant ($t = -5.12, p = 0.00$); this was partly due to a -5 percent penalty for making the “wrong” decision. An explanation followed that this decision was wrong primarily due to making an unethical choice, but also wrong numerically in that all forecasted profits were not to be realized due to costs of wrongful death

lawsuits greatly exceeding the predicted \$500,000 per case. Choosing profits over human lives is always a wrong decision.

Table 1. Descriptive Statistics

	mean	median	st. dev.	range	diff.	<i>t</i>
All students (<i>n</i> = 192)						
pay for deaths (1 = yes, 0 = no)	0.57	0.50	0.49	1.00		
female (1 = yes, 0 = no)	0.48	0.00	0.50	1.00		
GPA	3.22	3.26	0.39	1.90		
class (1 = freshman...4 = senior)	2.84	3.00	0.77	3.00		
units	89.40	87.00	27.00	148.00		
grade	78.70	80.00	12.20	60.00		
Students who chose to pay for the wrongful deaths (<i>n</i> =107)						
female	0.47	0.00	0.50	1.00		
GPA	3.27	3.32	0.39	1.94		
class	2.85	3.00	0.76	4.00		
units	96.76	91.00	24.51	115.00		
grade	74.94	76.00	10.97	51.00		
Students who chose to repair the cars (<i>n</i> = 85)						
female	0.54	1.00	0.50	1.00	-0.07	-1.07
GPA	3.24	3.24	0.37	1.75	0.032	0.58
class	2.82	3.00	0.79	4.00	0.03	0.27
units	87.25	82.00	27.55	138.00	9.51	2.53 **
grade	83.51	87.00	12.18	60.00	-8.57	-5.12 ***

* $p \leq .10$. ** $p \leq .05$. *** $p \leq .01$.

Figure 3 shows student decisions by major. Accounting majors had the best ethical behavior with only 38% refusing to fix the cars, and finance majors displayed the worst ethical behavior with 79% choosing the wrongful death option. We may speculate these accounting students were exposed to more discussions of ethical principles in their coursework as accounting curriculum tends to include references to the AICPA code, IMA Code and others.

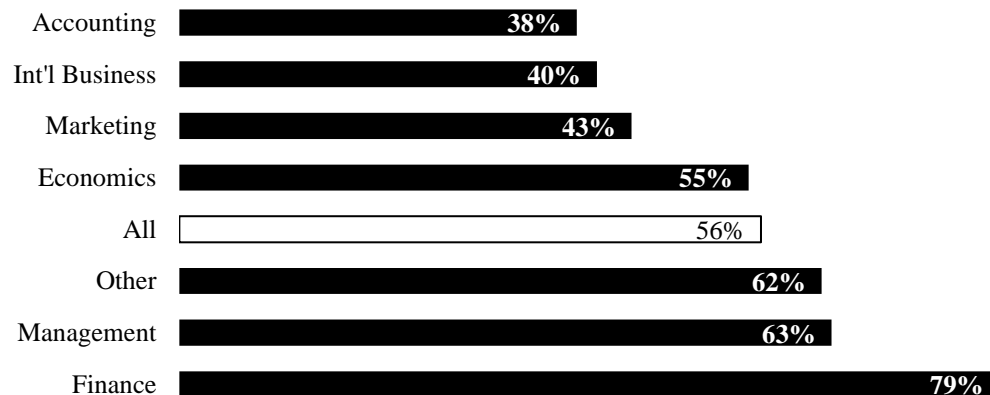


Figure 3. Students Choosing to Not Fix Cars/Pay for Wrongful Deaths (*n* = 192)

Logistic regression analysis was also conducted on the data set and three subsets (marketing, accounting and management majors) classifying students in two categories (1 = pay for wrongful deaths, and 0 = fix the cars). Other majors were excluded due to small samples. These results are shown in Table 2. Each of the four models was statically robust (pseudo $R^2 > .15$). The model including all 192 students showed results consistent with the t -tests reported above. Females were less likely to make the decision to not fix the vehicles ($B = -.364$), and students with higher GPAs were more likely to pay for wrongful deaths ($B = .525$), but these results were not statistically significant in this data set, limiting our ability make inference beyond this data set, however for these 192 students, males and academic high-performers did make the incorrect choice more frequently as compared to females and low-performers. Students were more likely to pay for wrongful deaths if they had completed more academic units ($B = .018, p < .01$), or if they received a low grade on the assignment ($B = -.040, p < .01$). These last two findings are statistically significant.

Marketing students ($n = 30$) were more likely to make the incorrect decision if they had completed more academic units ($B = .063, p < .10$). Accounting students ($n = 21$) were more likely to make the wrong decision if they received a lower grade on the assignment ($B = -.150, p < .10$). Management majors ($n = 88$) were more likely to make the wrong decision if they had a high GPA ($B = 2.179, p < .05$), and if they received a lower grade on the assignment ($B = -.111, p < .01$). Although finance majors were excluded from the logistic regression due to small numbers in the dataset, we may speculate finance majors had the worst ethical behavior (79% chose not to repair the cars) due to a stronger emphasis in the finance curriculum on accurate numerical calculations, rather than on ethical behavior.

Table 2. Logistic regression classifying students in two categories (1 = pay for wrongful deaths, 0 = fix the cars)

	All <i>B</i>	Marketing <i>B</i>	Accounting <i>B</i>	Management <i>B</i>
female	-.364	‡	‡	-.632
GPA	.525	1.330	‡	2.179 **
units	.018 ***	.063 *	.016	-.001
grade	-.040 ***	-.061	-.150 *	-.111 ***
constant	1.268	-5.708	10.977	2.868
pseudo R^2 ††	.186	.408	.273	.335
-2 Log	234.049	30.168	23.915	91.619
% correct	70.3	70.0	71.4	72.7
<i>n</i>	192	30	21	88

* $p \leq .10$

** $p \leq .05$

*** $p \leq .01$

† = removed due to multicollinearity

‡ = removed due to small sample size

†† = Nagelkerke R^2

ASSIGNMENT DEBRIEF

Upon returning the students' papers, a classroom discussion followed, wherein students were informed they made an incorrect ethical decision if they chose to plan to pay the costs of the wrongful death lawsuits instead of making the correct ethical decision to repair the cars. The Grimshaw case was discussed, with an emphasis on the \$6.5 million settlement, which far exceeded the \$500,000 initially estimated cost of each wrongful death lawsuit. Not only had these students made an incorrect ethical choice in favor of profits, no profits would actually materialize. In fact, applying the Grimshaw payout of \$6.5 million, the company would not earn the estimated \$67 million per year, but instead lose \$29 million per year. Students were informed their decisions mirrored the actual Ford case, with managers making an unethical decision that ultimately did not materialize in maximized profits.

As noted above, students who chose wrongly were more likely to be upperclassmen and students with higher GPAs. The latter group tend to be grade-conscious and were disappointed to learn not only did they make an unethical decision, but in doing so, they earned a lower grade on the assignment. Lively, and sometimes emotional, discussions ensued. Numerous students vigorously defended their decision to plan to pay for the wrongful deaths. Their justifications largely fell into three broad categories.

The most common justification was, "I only made this decision because it is a college paper; if I was an actual employee at Ford with lives on the line, I would never make this decision." This is a logical fallacy, as the stakes are very low on a college paper, as compared to making monetary and safety decisions with real people's lives. To say I am only unethical in small matters but would be ethical in large matters is not credible.

The second most common excuse was, "I made my decision based on economics, not based on human lives or ethics." This finding is especially disturbing. Some consider "business" to only be about profits (cf. theory of the firm), but the field of economics more broadly considers not just microeconomic factors such as firm profits and consumer utility, but a wider view of stakeholders including overall societal welfare. These students were informed that ideas of profit maximization and the theory of the firm should only be applied within the confines of ethical behavior.

A third excuse given the instructor was, "I only made this decision because I thought it was the decision you wanted." Students were informed the instructor would prefer they make ethical decisions. Some students felt tricked, and others were saddened with themselves that they failed the ethical test. Emotions ran high. This troubling finding is most consistent with the actual case. Milgram's (1974) research on obedience is informative here. It is likely executives at Ford shifted moral responsibility to the engineers and business managers, who in turn shifted their sense of responsibility back to the executives. Members of an organization are more likely to make incorrect ethical decisions when they can shift blame away from themselves personally, either up or down the organizational chart.

DISCUSSION AND CONCLUSION

Despite decades of scholarship and teaching on ethics in business schools, managers regularly make unethical decisions. Numerous ethics journals exist, and nearly all business schools integrate ethical teaching into the business curriculum, but unethical behavior occurs quite regularly in the marketplace. Ethicists have an unrealistic expectation that, given proper training, people will act correctly. A more realistic approach might be that ethical training may only provide a nudge such a that a person may become more ethical, whereas expecting people to always act correctly may be unrealistic. Perhaps an “optimal level of ethical behavior” exists and business school training can contribute a nudge to increase ethical behavior while not completely eliminating all unethical behavior. This idea of a nudge along the ethical continuum is illustrated in Figure 4.

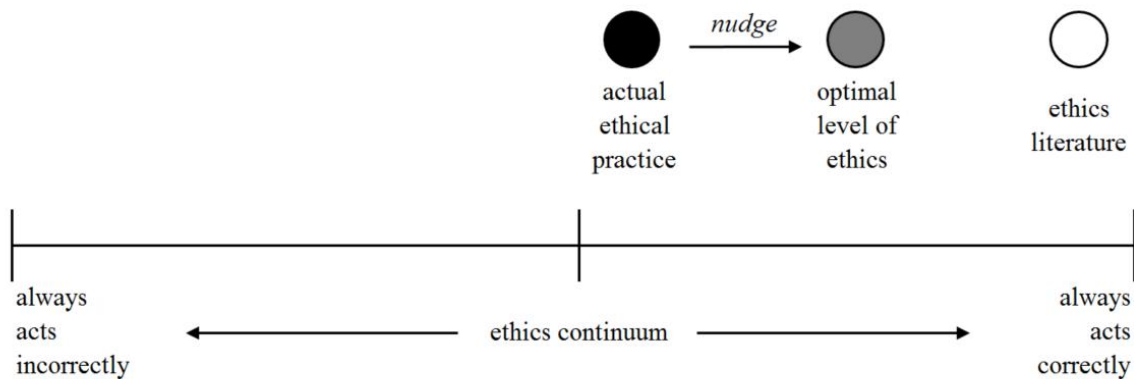


Figure 4. Optimal level of Ethical Behavior

A caveat regarding this study is the weakness of simulation; ethical decision-making in a classroom is not the same as decision-making at an actual firm such as at the Ford Motor Company where real people may be harmed due to poor ethical decisions by company employees. Additionally, ethical behavior by managers at real companies may be encouraged through efforts such as explicitly stating ethical standards and enacting whistleblower systems. The results of this study are descriptive of a large group of college students, and we may only cautiously make inference from these results toward actual decision-makers at actual companies. Had the simulation taken place in the fourth-year Business Ethics course, it is possible different results would be produced.

This paper reports the results of a five-year study of business school ethical behavior. Students were introduced to the Ford Pinto case in the context of the cost curves portion of a sophomore level microeconomics course. It is widely agreed executives and managers made the incorrect ethical choice to produce the Ford Pinto knowing the car was dangerous, and 56.8% of students did not differ from the actual employees of the Ford Motor Company. For less than \$100, the defective gas tank could have been modified, dramatically improving the safety of the car, presumably preventing hundreds of deaths and injuries. This paper contributes a finding relevant to the ethics literature, that despite decades of ethical training in business schools, students remain willing to make unethical choices in favor of profits. It is beyond the scope of this paper to suggest improvements in ethics training; but this study provides evidence there is more work to be done in training ethical leaders of the future.

COMPLIANCE WITH ETHICAL STANDARDS

Funding: This study received no funding.

Conflict of Interest: The author declares that he/she has no conflict of interest.

No animals were involved with this study.

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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APPENDIX A: THE ASSIGNMENT RUBRIC

Principles of Microeconomics, Business Report #3

Case Description:

You are a business analyst working at the Ford Motor Company in 1976. The new Ford Pinto has sold well in its first year of production, but there have been some challenges. The subcompact product category is crowded with competitors' cars such as the Honda Civic, the AMC Gremlin, and the Chevy Vega. Additionally, some people have been injured or killed in fiery Pinto collisions. Conduct a cost curve analysis following the guidelines below and write a business report (APA style) directed to Ford management.

- Introduction and Case Description (maximum 100 words)** 10% _____
- Describe the Ford Pinto.
 - Explain the subcompact car market structure (quote the textbook if necessary).
 - Briefly introduce the major sections of this report.

- Cost Curves (maximum 100 words)** 20% _____
- Write a paragraph describing Table 1, Figure 1 and Figure 2.
 - Complete Table 1, Figure 1 and Figure 2 and include them in your report.

- Normal Profit Maximization (maximum 100 words)** 30% _____
- Write a paragraph describing the data in Table 2. Also note the breakeven price and shutdown price.
 - The market price is \$2,000. Recommend the quantity to produce.
 - If the market price for subcompact cars falls to \$1,500, how many Pintos, if any, should Ford produce?
 - Complete Table 2 below and include it in your report. (Annual profit is daily profit x 250 workdays).

- Revised Profit Calculations (maximum 150 words)** 30% _____
- The Ford Pinto was found to have a defective gas tank. The company can fix the cars for \$100 additional cost, or they will have to pay on average \$500,000 in wrongful death lawsuits lost. Write a paragraph describing this situation and the data in Table 3 and Figure 3.
 - Complete Table 3 and include it in your report (daily cost = \$100 x output, cost of deaths = WDLL *\$500k)
 - Complete Figure 3 showing all three annual profit calculations.
 - State the maximum profit if Ford fixes the cars or if Ford decides to pay the cost of deaths.
 - State whether Ford should fix the cars or pay the cost of deaths, and what quantity to produce.

- Conclusion (maximum 50 words)** 10% _____
- Summarize the analyses above, restating your key decisions.

- Mechanics (factored into above score)**
- Spelling, grammar, punctuation, etc.
 - Graphs and tables have clear titles and labels.
 - Descriptions and explanations of tables and graphs precede the tables and graphs.
 - Page format according to APA style.
 - Correct in-text citations according to APA style.
 - Accurate References page according to APA style.

Total Score: 100% _____

Table 1. Output of Ford Pintos, Per Workday, Year 1976

Output	TC	TFC	TVC	AFC	AVC	ATC	MC
600	\$1,300,000	\$1,000,000		x	x	x	x
700	\$1,400,000	\$1,000,000					
800	\$1,500,000	\$1,000,000					
900	\$1,600,000	\$1,000,000					
1,000	\$1,700,000	\$1,000,000					
1,100	\$1,900,000	\$1,000,000					
1,200	\$2,300,000	\$1,000,000					

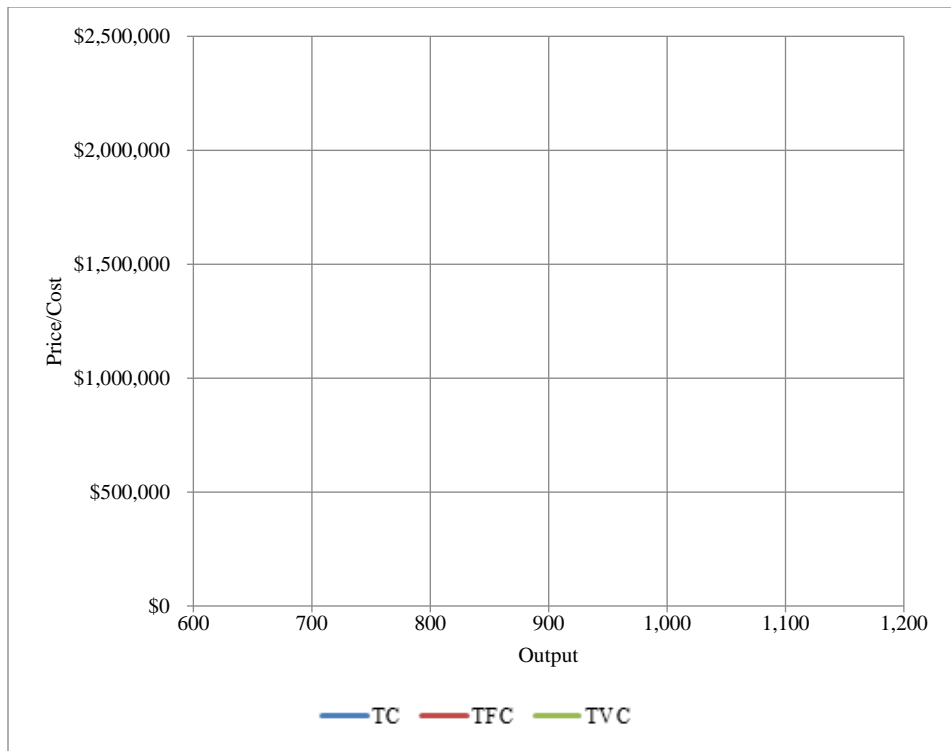


Figure 1. Total Costs, Fixed Costs and Variable Costs

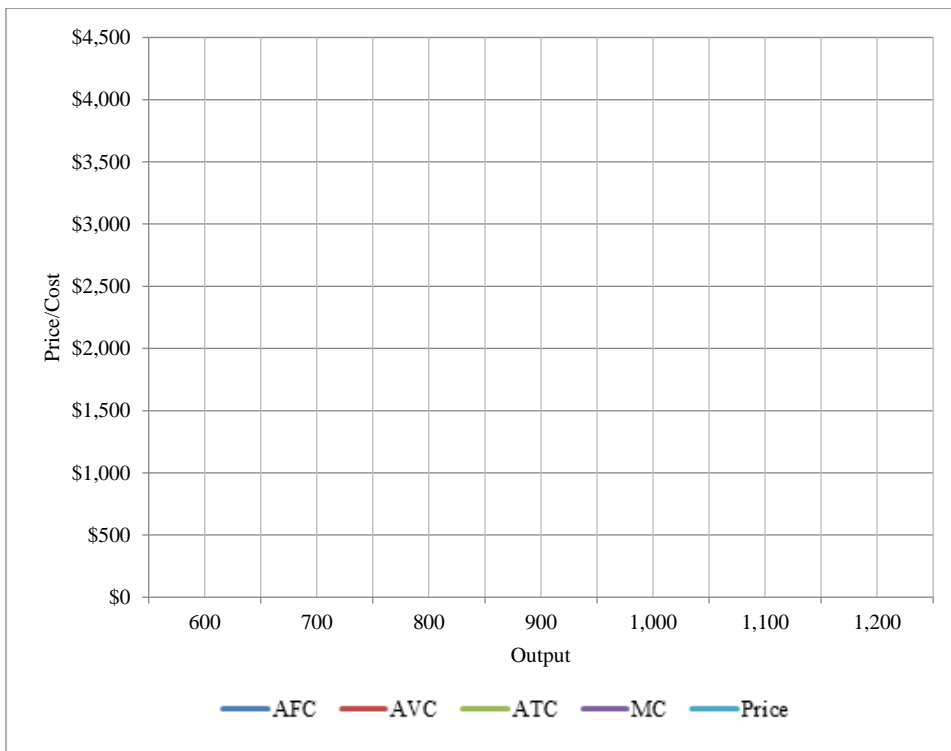


Figure 2. Average Fixed Costs, Average Variable Costs, Average Total Costs, Marginal Costs, and Price

Table 2. Normal Profit Calculations

Output	Price	TR	MR	MC	Daily Profit	Annual Profit
600	\$2,000			x		
700	\$2,000					
800	\$2,000					
900	\$2,000					
1,000	\$2,000					
1,100	\$2,000					
1,200	\$2,000					

Table 3. Revised Profit Calculations

Output	Daily Cost to Fix Cars (+\$100)	Revised Daily Profit	Revised Annual Profit (fix cars)	Wrongful Death Lawsuits Lost	Cost of deaths (\$500,000 each)	Revised Annual Profit (deaths)
600				4		
700				6		
800				9		
900				14		
1,000				16		
1,100				25		
1,200				35		

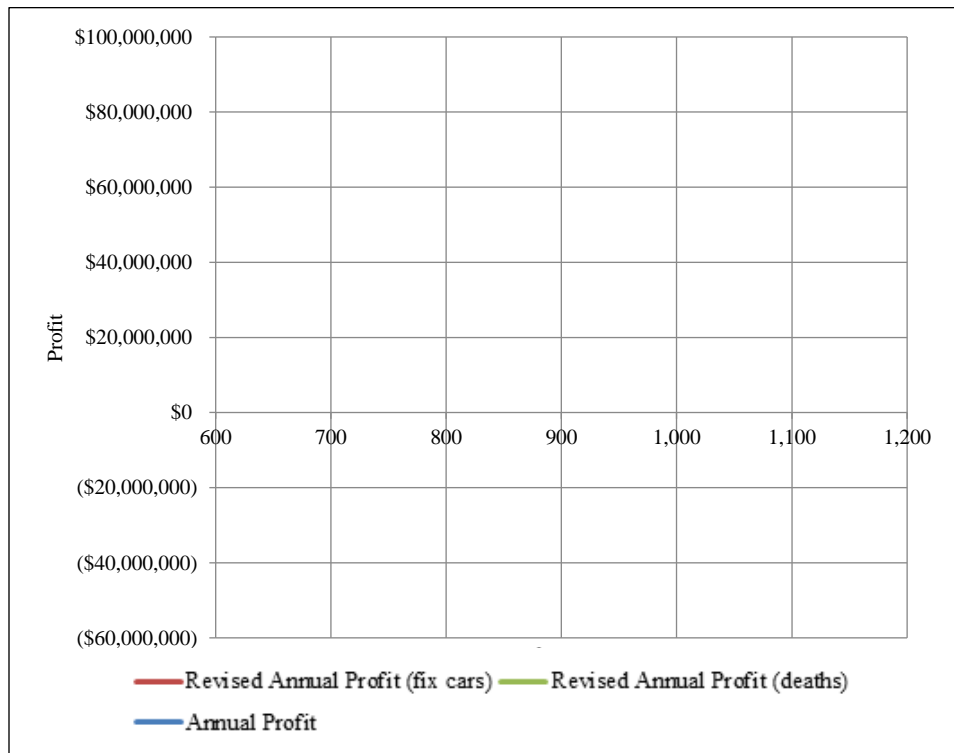


Figure 3. Profit Comparisons