Accounting For Externalities:
Harnessing The "Face-In-The-Mirror" Phenomenon

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ABSTRACT

The principle of "externalities" grows out of the interdependence of consumption – the fact that some private decisions create positive or negative utility for other people who had no voice in the decision. Positive externalities discourage economically appropriate spending because those who would otherwise spend can enjoy the benefits without having to pay; negative externalities encourage economically inappropriate spending because those who would otherwise have to pay a higher price to compensate others for the dissatisfaction they create enjoy an artificially lower price. This paper discusses an approach for addressing externalities by harnessing students' natural inclination toward ethical behavior.

INTRODUCTION

Drawing on classical distinctions from economic theory, one way to conceptualize the goals of business simulation games is represented in Exhibit 1. First, they may take the perspective of the firm as a decision-making unit (the *micro-economic* approach). Alternatively, they may take the society as the decision-making unit (the *macro-economic* approach). Second, they may focus on modeling what outcomes result from various sets of decisions made in a particular decision-making situation (the *descriptive* perspective). Alternatively, they may focus on the desirability of the outcomes resulting from various decisions, and by extension, the desirability of making one set of decisions rather than another (the *normative* perspective).

Most simulation games address the *micro-normative* perspective. That is, they seek to nurture both the students' ability and disposition to make decisions that are desirable from the standpoint of the firm, the ultimate criterion generally being profit.

Simulations with *macro-normative* perspectives are also common, seeking to nurture students' ability and disposition to make good decisions from the perspective of social policy. Here the criteria are not as clear. They may involve economic development (e.g. Sterman & Meadows 1985), social welfare (Faherty 1983), ethical behavior (Wolfe & Fritzsche 1998), or any number of other social objectives.

Micro- and macro-descriptive games are less common in the educational literature, but much more common in the decision policy analysis and decision support literature.. These are simulations that model social and firm-level phenomena, providing regarding method for testing the implications of alternative decisions, independent of any reward for "good" decision making. An illustration at the policy level would be Pechenino & Utendorf (1999) simulation of a pay-as-you-go social security system, or at the firm level, Swarminathan, Smith, & Sadeh's (1998) simulation of supply-chain dynamics.

From a pedagogical standpoint, the distinction between *micro-* and *macro-* approaches is not particularly significant from the descriptive perspective. The purpose of the simulation is the same for both the firm and society – to help students understand the cause-and-effect relationships that determine the consequences of their actions, with no concern for good or bad.

The *micro-* versus *macro-* distinction is much more troublesome when viewed from the *normative* perspective. The outcomes of *micro-* decision-making and those of *macro-* decision-making are related, and a good decision

from the firm perspective is often a bad one from the perspective of society. For instance, a firm can be very successful (profitable) by dumping their waste products in local waterways, thus avoiding the expense of proper disposal. However society ultimately pays through a host of negative social outcomes resulting from the pollution (decreased recreational value, health problems, more expensive treatment to make the water available for household or agricultural use, and so forth).

In the parlance of classical economic theory, *micro-/macro-* conflicts are called *externalities*. That is, a firm's decisions have consequences that are external to the producer-consumer system that is regulated by Adam Smith's concept of the "invisible hand" (Smith 1776). According to the principle behind the "invisible hand," consumers signal what they want by the price they are willing to pay. Producers respond by producing more, thus driving down prices. When the price consumers are willing to pay is low enough, companies can make more money by switching production to another product, thus allocating resources to products to which consumers ascribe greater value.

In the absence of externalities, consumers will spend their money elsewhere when a company offers a product or engages in behaviors that consumers don't value. Knowing this, the company will adjust its efforts, delivering products and activities that deliver value to consumers. In the presence of externalities, some consumers benefit or suffer, even though they did not choose to do business with the company. Because they neither pay nor are paid for the positive or negative value created by the company, price no

longer provides an effective signal to guide production toward the most value-producing use of resources.

The question with which we grapple in this paper is how to handle the problem of externalities in a micro-normative simulation (following the typology provided in Exhibit 1). If externalities are ignored in a simulation of a private firm, where success implies "good" management, the experience creates the possible illusion that management can be successful by violating the best interests of society. Relatively few simulations address this issue. Those that do tend to do it by assessing penalties to managers who incur externalities (Wolfe & Fritzsche 1998), although a few approaches have been suggested through which economic and legal consequences are handled by embedding consequences directly into the profit equation (Cannon & Schwaiger, 2005a, 2005b; Cannon, Cannon, & Andrews 2010; Cannon, Cannon, Friesen, & Feinstein, 2011). We will address this by suggesting a framework for harnessing the natural inclination of students toward ethical behavior, using the concept of debriefing to bring the external consequences of decisions into consideration while evaluating their performance in a game.

We begin by reviewing the concept of externalities in the context of economic utility and social welfare. We then discuss the various approaches that have been proposed for addressing externalities, after which we present a series of illustrative experiential exercises addressing the issues. Finally, we suggest a specific protocol for debriefing, drawing on a rigorous theoretical justification for our approach. The justification, in turn, draws on our

Exhibit 1
Classifying Simulation Games by Macro-economic versus
Micro-economic and Descriptive versus Normative Perspective

Level of Economic Perspective

	Macro	Micro
Descriptive	Simulations giving participants feedback regarding the social consequences of societal-level decisions	Simulations giving participants feedback regarding the firm-level consequences of managerial decisions
Normative	Simulations evaluating participants based on the social consequences of societal-level decisions	Simulations giving participants feedback regarding the firm-level consequences of managerial decisions

Type of Economic Perspective

explanation of externalities, the strengths and weakness of alternative approaches used by society to address them, and specifically, how personal ethics can be economically justified as an approach.

THE PROBLEM OF EXTERNALITIES

The costs incurred to society as a result of externalities are often subtle, but nevertheless, substantial. Earlier, we offered the example of pollution as a source of externalities, imposing costs on society in the form of decreased recreational value, health problems, more expensive treatment to make the water available for household or agricultural use, and so forth. This is an obvious example, because most people can identify with the effects of unpleasant odors, unsightly industrial residues, or the health problems associated with un-remediated industrial waste. However, these obvious problems often obscure an even larger set of subtle effects. For instance, pollution is often a small part of a process that depletes natural resources, converting them from usable to unusable form, dispersing them to locations where, even if they could be converted back to usable form, the cost of recovery far exceeds the cost of original extraction. These are all costs that are imposed on a third party (such as future generations), unaccounted for by the "first parties" directly involve in the marketing exchange that generates the pollution. If the first parties had to account for the true costs of their industrial activities, the "invisible hand" would likely lead them to a different allocation of resources and transaction price.

Nor does the example of industrial consumption and waste adequately represent the range of threats to the "invisible hand" (Mundt 1993; Mundt and Houston 2010). Mundt (1993) argues that, while most discussions define externalities in terms of "third-party" effects (i.e. costs of benefits accruing to people who do not participate in the marketing exchange from which the effects derive), externalities may also accrue as a result of "first-party" effects (i.e. costs or benefits accruing to the active parties to an exchange. This reasoning leads to a classification portrayed in Exhibit 2.

The exhibit refers to externalities as the result of asymmetrical exchanges. This should not be confused with information asymmetries, although asymmetric information may play a role. The usage in Exhibit 2 derives from Mundt's notion of the exchange equation (Mundt 1993; Mundt & Houston 2010). The asymmetries occur when something throws the equation out of balance; externalities are the adjustments necessary to rebalance the equation.

To illustrate, consider a marketing exchange between a seller and a buyer. The seller foregoes benefits received from the best alternative to engaging in the marketing exchange (seller's opportunity cost) when the transaction price received from the exchange matches or exceeds the seller's opportunity cost. Conversely, the buyer engages in the marketing exchange when the transaction price is less than or equal to the cost of the next best alternative for generating equivalent value (buyer's opportunity cost). Furthermore, in a perfectly competitive market, sellers and buyers provide sufficient alternatives that the transaction price matches both the seller's and the buyer's opportunity cost in any given marketing exchange. Equation (1) portrays such an exchange equation.

Exhibit 2
Conceptualizing Externalities

Bearer of External Costs or Benefits

	First-Party	*Third-Party*
Positive	Positive externalities resulting from asymmetries between parties in a transaction	Positive externalities resulting from asymmetries between parties participating in and not participating in a transaction
Negative	Negative externalities resulting from asymmetries between parties in a transaction	Negative externalities resulting from asymmetries between parties participating in and not participating in a transaction

Type of Externality

$$P - O_S = 0 = O_B - P \qquad (1)$$

Where

P = Price paid by the buyer to the seller when engaging in transaction

O_S = Net benefit to seller derived from the next best alternative to engaging in transaction with buyer (seller's opportunity cost)

O_B = Net cost to buyer derived from the next best alternative to engaging in transaction with seller (buyer's opportunity cost)

Externalities occur when something causes either the buyer and/or the seller to miscalculate opportunity costs. This throws the equation out of balance by causing the transaction price to differ from either party's opportunity cost. To rebalance the equation, one must impute externality costs that do not accurately represent the true interests of party(ies) involved. This creates false economic signals, distorting the efficient action of the "invisible hand." Specifically, a positive (negative) externality accrues to the seller when the transaction price exceeds (is less than) the seller's opportunity cost. Conversely, a positive (negative) externality accrues to the buyer when the transaction price is less than (exceeds) the buyer's opportunity cost. Equation (2) introduces positive and negative externalities into the exchange equation.

$$P - O_S - E_S^{Pos} + E_S^{Neg} = 0 = O_B - P + E_B^{Pos} - E_B^{Neg} \qquad (2)$$

Where

E_S^{Pos} Positive externality accruing to seller

E_S^{Neg} Negative externality accruing to seller

E_B^{Pos} Positive externality accruing to buyer

E_S^{Neg} Negative externality accruing to buyer

Having acknowledged the problem of externalities in general, our focus will be on negative externalities. They are much easier to understand, and hence, much more useful in framing ethical arguments. Given the importance of ethical arguments in our approach to accounting for externalities, negative externalities appear to be a logical starting place for our work.

Returning to the concept of the "invisible hand," we propose a simple framework for organizing issues related to first- and third-party effects. In order for the "invisible hand" to function properly, society needs a perfect market, one that possesses four characteristics: (1) *actor rationality*: (2) *feasible alternatives*; (3) *perfect information*; and (4) *lack of third-party externalities*. In the context of this framework, first-party externalities can be roughly associated with the first three conditions, while third-party externalities are obviously addressed in the fourth condition.

The most obvious first-party externalities are those relating to direct violations of what an actor expected from an exchange equation. For instance, a person might buy a car, expecting full and honest disclosure of its working condition. If, after buying it, she realizes that it needs a major engine overhaul, this creates a negative externality, stemming from an overestimate of the car's true value (the determinant of opportunity cost). According to Equation (1), this would create a loss, or a negative externality, for the buyer.

A second, more subtle, form of first-party externality grows out of situations where actors fail to assign an appropriate utility to the exchange in the first place and never realize that that they could have done better. For instance, our car buyer might not have thought to ask about potential engine problems, and then, when she had to overhaul the engine, simply ascribed the problem to her bad luck. Had she been more diligent in her research and decision making, she might have realized that she could possibly have gotten a much better deal. Or, suppose the buyer recognized the potential problem, but no sellers were willing provide assurance that their cars were free of major engine problems. Yet another possibility is that some sellers did offer certified used cars, but the buyer did not know how to find them. In each of these cases, the car buyer might have been satisfied with the transaction. The externality lies in the form of the opportunity cost created by a potentially better transaction, the benefits of which were uncalculated by the buyer.

Analyzing exchanges in terms of *actor rationality*, *feasible alternatives*, and *perfect information* is particularly useful in identifying externalities growing out of opportunity costs. This will prove useful in the debriefing process through which we propose to address the problem of externalities.

Rationality. We use rationality to describe a situation where actors make exchange decisions based on self interest. That is, they must utilize the information they possess in order to maximize their personal utility resulting from an exchange, the wisdom of which is manifest in a lack of regret when they have further considered the information available to them. On the surface, this assumption may seem trivial, but it is not. The field of behavioral economics has grown out of the recognition that actors do not always act rationally (Gilovich, Griffin, & Kahneman 2002). A number of common decision-making biases figure prominently in breakdowns of rational decision making. Most of these can be seen as the direct or indirect result of bounded rationality -- the fact that rationality is bounded by the fact that people are not able to adequately process all the relevant information they have available to them within the constraints of time and energy they are willing and/or able to dedicate to the decision process (Simon 1955; Kahneman 2003).

The direct effects of bounded rationality are embodied in short-cut "heuristics" people employ to make the decision process more manageable. These heuristics vary in the degree to which they approximate optimal results. For example, the concept of "evoked set" in consumer behavior grows out of the fact that consumers either cannot or

choose not to consider all of the product and brand alternatives available when making a given purchase decision. Instead, they consider only those alternatives that come readily to mind, the "evoked set" (Howard & Sheth 1969)). Marketers go to great lengths in an effort to make sure their products and brands are part of potential customers' evoked sets. The problem is not that consumers do not know there are more alternatives available, but only that they often choose not to systematically pursue them.

The indirect effects of bounded rationality are embodied in heuristics and decision response biases that appear to have been bred into the human brain through an evolutionary process of natural selection. Daniel Kahneman (2011) reviews a number of these in his book, *Thinking, Fast and Slow*. He discusses principles such as "anchoring," "substitution," "optimism and loss aversion," "framing," and "sunk cost." For instance, one experiment showed that judges were more prone to impose longer sentences if they had just rolled a pair of dice loaded to give a high number (an example of "anchoring"). A discussion of the specific nature of these principles and how they work goes beyond the scope of this paper. It is sufficient to note that there are a number of in-bred ("fast thinking") heuristics that are triggered by associative rather than logical processes. They are useful in some situations. However, they tend to influence situations that would be better served by "slow thinking" (logical consideration) as well, creating biases such as those illustrated by the example of the judges. These biases are so powerful that even highly trained and disciplined professionals sometimes fall prey to them (Smith & Kida 1991; Elstein 1999; Stanovich & West 2008).

The relevance of heuristic biases to our discussion is that they induce "irrational" decisions – decisions that, upon careful consideration, even the decision-makers would recognize as not serving their self interest. This, in turn, creates first-party "opportunity-cost" externalities. Marketers can actually stimulate these externalities through the use of clever advertising, sales presentations, and other promotional techniques.

Feasible alternatives. The principle of feasible alternatives refers to the assumption that any product or service a consumer desires will be offered, if this can be done at a profit. Suppose, for instance, that consumers would like to have a standard print cartridge that would work on a broad range of printer models, thus creating a large, competitive market in which the price of the cartridge would be very low. Certainly, this is technologically feasible. If consumers would truly like such a cartridge, the fact that no company offers a line of printers that utilizes such a cartridge constitutes a market failure in which monopolistic forces are inhibiting its introduction. As in the rational-actors case, marketers can actually create the situations that generate externalities by actions that create or exploit the product offering conditions from which they emerge.

Perfect information. The principle of perfect information addresses actors' need for guidance in identifying the feasible alternatives that best serve their needs. In the example of our car buyer, not having access to

information regarding the car's need for an engine overhaul clearly represents a failure in the information principle. A number of remedies exist to address the failure to make important disclosures regarding product quality and performance (Mazis, Staelin, Beales, & Salop, 1981). However, opportunity costs are much harder to address because no entity has the responsibility nor motivation for informing their customers of more attractive alternatives. This creates a practical problem of how to ensure consumer access to the exhaustive set of alternatives they need to avoid incurring negative first-party externalities.

Third-party externalities. As we have noted, the first three principles of market efficiency tend to address first-party externalities. The fourth principle specifically addresses third-party externalities. Again, these are the costs or benefits accruing to parties that are not actors in a given exchange. As we saw in our earlier discussion of pollution and industrial waste, third-party externalities have both obvious and more subtle manifestations, both of which are relevant to our discussion of the debriefing mechanism through which we propose to address externalities in this paper.

METHODS OF DEALING WITH EXTERNALITIES IN TRADITIONAL ORGANIZATIONS

Returning to the framework we established in Exhibit 1, recall that we are taking a micro-normative perspective. That is, we are asking what private firms can do to overcome problems associated with externalities, so that their activities maximize the welfare of their owners and contribute to the overall good of society. Such efforts are addressed in the literature on *corporate social responsibility* (CSR). Although many definitions have been proposed for CSR, probably the most widely-known of them was offered by Carroll (1979). He defines CSR as:

"The social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time" (p. 500).

The four responsibilities identified by Carroll were originally conceptualized as a pyramid (Exhibit 3), where each subsequent responsibility sought to address issues left unaddressed by the lower levels. Returning to our example of pollution, a manufacturing company's primary responsibility is *economic*, seeking to find the most effective and efficient methods of production available, so that it can provide a financial return to its owners. As we have seen, the resulting pollution imposes costs (*third-party externalities*) on the company's neighbors, so that government intervenes with *legal* restrictions and remedies address the problem on behalf of third-parties. Of course, no laws are perfect, so both society in general and specific industries develop *ethical* codes that restrain companies from exploiting loopholes in the regulatory structure. For instance, if a manufacturer found that its processes polluted ground water in a way that was not addressed in existing

regulations, but that it rendered the water unpleasant for drinking, the company would have an ethical responsibility to address the problem.

The fourth level of the pyramid addresses what we might consider corporate philanthropy. For instance, aside from meeting its economic, legal, and ethical responsibilities, a company might decide to build a public park adjacent to its manufacturing facilities to ensure that it is contributing positive value to society. The key difference in this fourth level is that no one considers these discretionary activities to be a company's responsibility. In this sense, they don't properly fall within the purview of CSR (Schwartz and Carroll 2003). We address this issue later in our discussion. For now, we proceed by considering only the first three levels of the pyramid.

We can conceptualize economic, legal, and ethical CSR in the context of *integrative social contract theory* (Donaldson & Dunfee, 1999), which posits that there are two types of contracts with their associated social norms. First is the *macro-social contract.* It refers to a general contract that binds all participants in society as a whole. It encompasses a set of hyper-norms that are shared by everyone and define the universal right and wrong within the society. The CSR macro-social contract embodies the economic, legal, and ethical norms that apply to all businesses in a given society, such as the fiduciary responsibility of managers to return a profit to owners, the requirement to obey established laws and regulatory codes, the expectation of honesty and forthrightness, etc.

Within a *macro-social contract* there are several *micro-social contracts* that reflect norms of specific clusters of participants. These clusters may refer to an organization, with a social contract involving *organizational norms*, or a stakeholder group, with a contract involving *stakeholder norms*. In the case of CSR, we see a host of different norms and expectations relating to everything from a company

itself, to the of supporting companies and professions (accountants, lawyers, bankers, suppliers, distributors, advertising agencies, and so forth). To these we may add a myriad of stakeholder groups, including everything from employees, to investors, to consumer and social advocacy groups. Each of these has its own economic, legal, and ethical micro-contracts, often conflicting, but all consistent with the macro-contracts governing society as a whole.

Viewing CSR as the expression of a complex, interacting set of social norms suggests that the Carroll's (1991) original pyramidal concept may be overly simplistic. In a more recent conceptualization, Schwartz and Carroll (2003) view CSR as the product of three interacting domains of responsibility, creating seven prototypic CSR strategies. These are portrayed in Exhibit 4. For instance, a company might choose to address pollution from a purely economic (type-i) perspective, balancing the profit impact of polluting against the costs of legal compliance, non-compliance, threat of litigation, and so forth, along with the imputed costs from the effect of legal and ethical behavior on corporate reputation resulting. An alternative (type-vii) approach would be to establish policies within the firm that mandated profit responsibility while maintaining strict compliance with legal and ethical responsibilities. Within each of these strategic approaches, managers would be tasked with balancing the overall CSR policy to address the pressures created by the micro-norms governing the various organizational and stakeholder groups to which the company must respond.

While our discussion does not address the specifics of each of the seven approaches portrayed in Exhibit 4, conceptualizing them establishes the fact that managers have discretion in the way they pursue CSR. This is critical to our proposed exercise, as we see in the next section.

Exhibit 3
Carroll's Pyramid of Corporate Social Responsibility
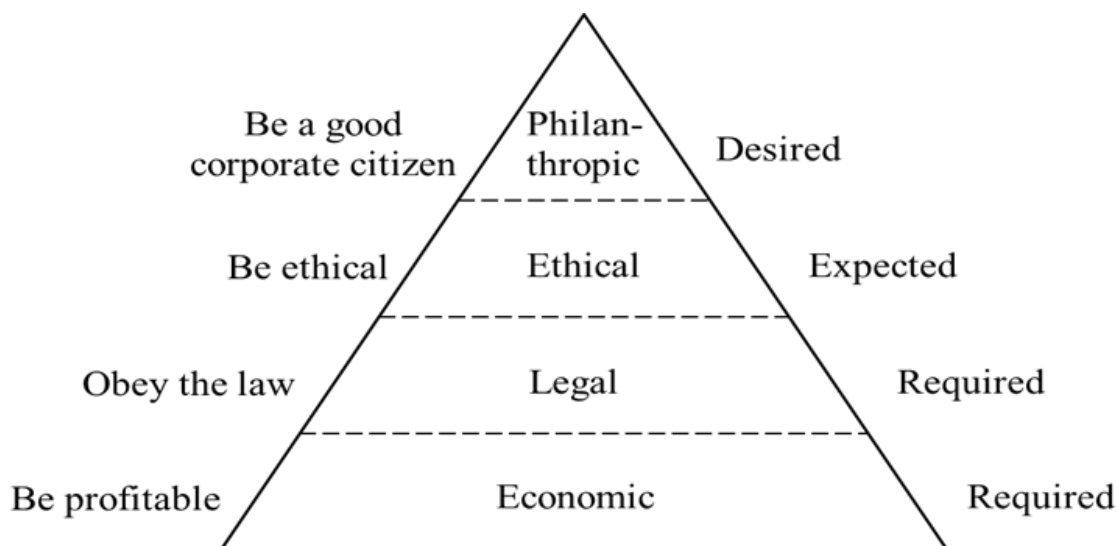
Source: Mark S. Schwartz and Archie B. Carroll. "Corporate Social Responsibility: A Three-Domain Approach," *Business Ethics Quarterly*, 13: 4 (October 2003), 504..

MICRO-NORMATIVE MOTIVATION FOR DEALING WITH EXTERNALITIES: INTRINSIC VERSUS EXTRINSIC MOTIVATION

Recall from our discussion of Exhibit 1 that the rationale for CSR is to correct for cases in which micro-normative motivation fails to serve macro-normative objectives, namely in situations involving externalities. The correction should bring the divergent motivations back into harmony. As a basis for understanding this harmony, let us begin by conceptualizing a utility function to capture the motivations of relevant management decision makers. This is done in Equation (3), where utility is seen as a function of the rewards and costs of a given economic transaction.

$$U_{j,t} = f\left(r_{j,t}, c_{j,t}\right) \tag{3}$$

Where

$U_{j,t}$ = Utility derived by decision maker j at time t

$r_{j,t}$ = Rewards received by decision maker j at time t

$c_{j,t}$ = Cost incurred by decision maker j at time t

$f(\ldots)$ = A functional form that converts rewards and costs into utility. Specifically, rewards are positively associated with utility while costs are negatively associated with utility

The theoretical rationale behind CSR is to increase the costs of transactions that involve externalities to the point that the externalities will no longer add to utility. The costs

do not have to be monetary. As we have seen, they can involve some combination of economic, legal, or ethical sanctions. Schwartz and Carroll (2003) argue that sanctions are essential to the notion of CSR, since they make compliance obligatory. Their approach excludes philanthropic activities from CSR because they are discretionary and are not associated with any particular for of externality.

Some theorists argue that there is a flaw in the CSR approach, because it fails to distinguish between intrinsic and extrinsic motivation (Matthews 1981, 1991; Colman 1994). Extrinsic motivation rewards desired behavior with external rewards such as money, special considerations, or by simply removing negative sanctions. Intrinsic motivation comes from the behavior itself – in this case, the satisfaction of contributing to our social system by reducing the market imperfections created by externalities. Failure in the CSR approach to distinguish between intrinsic and extrinsic motivation ignores three problems:

First, extrinsic motivation separates the motivator from the behavior society is trying to motivate. For instance, if the motivator is a legal sanction, the response is naturally to avoid the sanction, not to remove the externality. The offending manager will be just as likely to exploit loopholes in the law if they prove less expensive, as they are to change the offending behavior. Conversely, with intrinsic motivation, the desired behavior is the motivator, so the managers become their own regulators, focusing directly on the externality.

Second, following the same logic, any increase in extrinsic motivation requires an increase in the external reward, whereas intrinsic motivation grows with the managers' ability to think of new ways to improve the

Exhibit 4
Schwartz and Carroll's Three-Domain Model of Corporate Social Responsibility
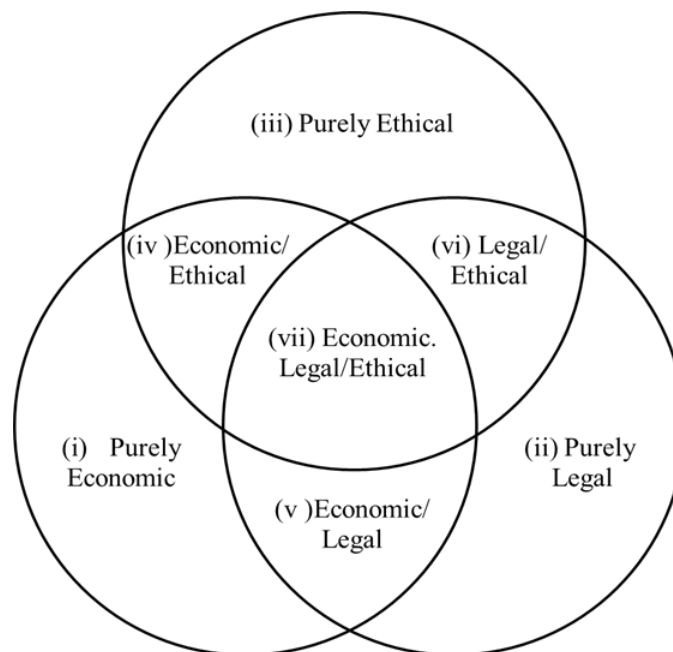
Source: Mark S. Schwartz and Archie B. Carroll. "Corporate Social Responsibility: A Three-Domain Approach," *Business Ethics Quarterly*, 13: 4 (October 2003), 509.

economic system. This makes extrinsic motivation much more expensive to administer.

Finally, the use of extrinsic motivators tends to decrease intrinsic motivation (Deci 1971; Lepper, Greene, & Nisbett 1973; Deci, Koestner, and Ryan 1999; Frey & Jegen 2001). Punishing managers for pollution, or even paying them not to pollute, again focuses their attention on the extrinsic punishment or reward, distracting their focus from the intrinsic rewards derived from finding creative ways to meet company objectives while protecting the environment.

Unfortunately, both extrinsic and intrinsic motivations tend to be subjective in nature. One manager's extrinsic motivation may be intrinsic to another. Furthermore, managers may change their motivation by simply reframing a problem. To illustrate, consider a hypothetical entrepreneur that we might pattern around the image of Bill Gates'. Gates is the wealthiest person in the world, and one of the most generous. The Bill and Melinda Gates foundation has donated more than $26 billion to charity since 1994 (Bill and Melinda Gates Foundation 2012). At the same time, Microsoft Corp., the company through which Gates gained most of his wealth has been harshly criticized for its monopolistic practices, imposing negative externalities on society (Baseman & Warren-Boulton 1995).

According to *self-determination theory*, and its attendant sub-theory, *cognitive evaluation theory*, intrinsic motivation grows out of three characteristics: *competence*, *autonomy*, and *relatedness* (Ryan and Deci 2000). From this perspective, the apparent subjectivity of intrinsic versus extrinsic motivation becomes easier to unravel. Again, using our hypothetical Bill Gates as an example, Gates chose (experiencing *autonomy*) to create Microsoft. By creating a common, user-friendly platform for personal computer operations he revolutionized the way we do work in society. The fact that he was able to do this no doubt gave him a sense of accomplishment (*competence*) and fulfillment in having facilitated a major step forward in the way people do work (*relatedness*). Undoubtedly, his wealth was highly motivational, but, from this perspective, not *extrinsic*. It reinforced his sense of competence, autonomy and relatedness, thus contributing to his *intrinsic* motivation.

Given the economic importance of addressing externalities, Schwartz and Carroll's (2003) argument that CSR ultimately involves restrictions (*extrinsic* motivations) is persuasive, highlighting the importance of their interactive three-dimensional framework portrayed in Exhibit 4. By suggesting that there are seven general strategic categories from which managers might choose to address the problem, the exhibit reframes the motivation from *extrinsic* to *intrinsic*, offering creative (*competence* evoking) alternatives (providing *autonomy*) for reconciling the economic requirements of business with the good of society (establishing *relatedness*). Theory would suggest that, if the objective were to reduce Microsoft's monopolistic activities, the imposition of traditional economic, legal, or social sanctions (extrinsic motivation) would not be the most efficient approach. The extrinsic motivation would evoke a response based on economic, legal, or social motivations, mobilizing the enormous

Exhibit 5
Utility Response Curves to Extrinsic and Intrinsic Rewards
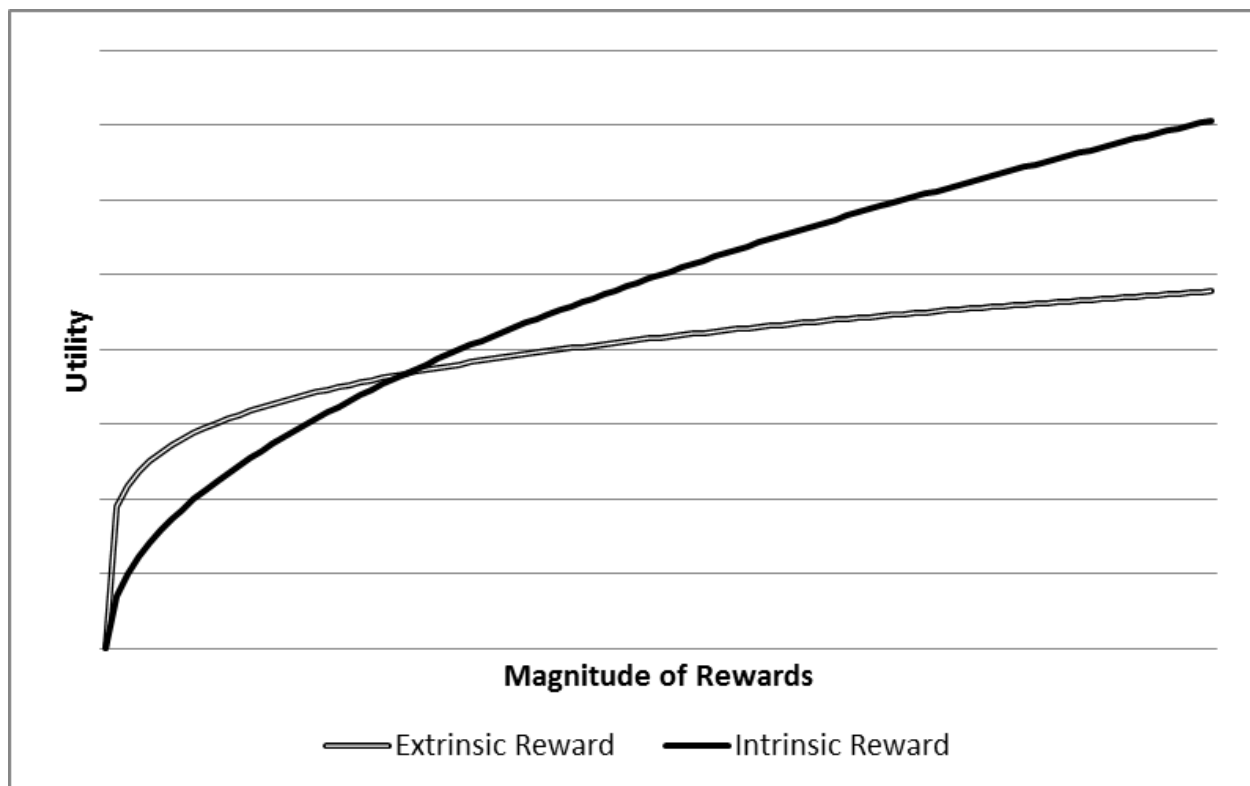
resources of the company to fight the sanctions. The effect would be to focus attention on the fight, crowding out any potentially positive motivation (Frey & Jergen 2001) to find a creative solution that would meet Microsoft's objectives while also creating a more responsive market for society.

Note that Microsoft's need to make a profit, comply with legal requirements, or conform to ethical standards will not go away. These requirements would simply embed themselves in a larger motivational scheme. A useful framework for conceptualizing this is Herzberg's *two-factor theory* of motivation (Herzberg, Mausner, & Snyderman 1959). The theory distinguishes between *hygienic* factors that are necessary to satisfy people, and *motivational* factors that inspire effort. Hygienic factors can be seen as similar to extrinsic motivators, in that they give people things they want, but don't motivate them to immerse themselves whole-heartedly in the task for which they are being rewarded. Freedom from sanctions related to the creation of externalities might be seen as hygienic, while finding creative ways to meet the company's need for profit and simultaneously contributing to the health of our economy might be motivational.

Two-factor theory suggests that the management decision maker's utility function takes a particular form. While positive utility is derived from both extrinsic and intrinsic rewards, the utility derived from extrinsic rewards increases rapidly to a point of saturation, after which it is subject to dramatically diminishing returns. The utility derived from intrinsic rewards also increases at a continually diminishing rate, but the saturation is much less dramatic. As a consequence, there is a level of extrinsic rewards where the marginal utility derived from an additional extrinsic reward is less than the marginal utility derived from an additional intrinsic reward. This is portrayed in Exhibit 5.

To lend intuition to our application of Herzberg's two-factor theory, again consider how our metaphoric Gates might respond to pressures designed to reduce Microsoft's monopolistic influence. If he saw his problem as reducing the economic, legal, and social pressure on the company so Microsoft could continue doing business as usual, the motivation to address the problem of market efficiency would be largely extrinsic. It would command enormous attention until the problem is solved and would diminish dramatically when the pressure on the company began to recede. By contrast, if he saw Microsoft not only as highly profitable technological innovator, but also as a catalyst for increasing market efficiency, the motivation would be intrinsic and continue beyond each level of accomplishment. For instance, the company might see itself as a kind of technology incubator, facilitating innovation by providing consulting services to companies created to interface their products with the Microsoft platform.

Herzberg's two-factor theory requires a functional form (Equation 3) that identifies utility derived from extrinsic and intrinsic rewards offset by disutility derived from cost incurred. In addition, we propose (and offer an experiential learning exercise to illustrate) that utility derived from intrinsic motivators can be manipulated by the level of extrinsic rewards *and* the salience of the intrinsic motivator stimuli (i.e. the "face in the mirror").

Equation (4) models these effects.

$$U_{j,t} = \left(a \cdot r_{j,t}^X \right)^{1/g} + \left(b_{j,t} \cdot r_{j,t}^I \right)^{1/h} + \left(d \cdot c_{j,t} \right)^k \tag{4}$$

$$b_{j,t} = \frac{v \cdot S_{j,t}}{w \cdot r_{j,t}^X} \tag{5}$$

Where

a = A parameter with value greater than or equal to zero that establishes the utility response to an increase in extrinsic reward

g = A parameter with value greater than one that establishes the rate at which marginal utility decreases with an increase in extrinsic reward

$r_{j,t}^X$ = Decision maker j's extrinsic reward in time t

$b_{j,t}$ = A variable with value greater than or equal to zero that establishes decision maker j's utility response at time t to an increase in intrinsic reward. Variable $b_{j,t}$ must be less than the parameter a for marginal utility of an increase in extrinsic reward to exceed the marginal utility of an increase in intrinsic reward as reflected in exhibit 5.

h = A parameter with value less than parameter g but greater than zero that establishes the rate at which marginal utility decreases with an increase in intrinsic reward (the marginal utility of extrinsic rewards decreases at a faster rate than the marginal utility of intrinsic rewards decreases)

$r_{j,t}^I$ = Decision maker j's intrinsic reward in time t

d = A parameter with value less than zero that establishes the utility response to an increase in cost incurred

k = A parameter with value greater than 1.0 that establishes the rate at which marginal disutility increases with an increase in cost incurred

$c_{j,t}$ = A variable with value greater than or equal to zero that represents the cost incurred by decision-maker j at time t when engaging in a particular activity.

v = A parameter with value greater than or equal to zero that establishes the degree to which salience affects the utility response to an increase in intrinsic reward.

$S_{j,t}$ = The salience of intrinsic reward for decision maker j at time t

w = A parameter with value greater than zero that establishes the degree to which extrinsic rewards erode the utility derived from intrinsic rewards.

The first term in equation (4) indicates that extrinsic rewards increase utility at a decreasing rate. The second term indicates that intrinsic rewards also increase utility at a decreasing rate. However, the parameters g and h are constructed such that the marginal utility derived from extrinsic rewards decreases at a faster rate than marginal

utility derived from intrinsic rewards. Consistent with discussion above, this suggests that there is greater utility benefit from larger levels of intrinsic rewards than benefit from larger levels of extrinsic rewards. The parameters *a* and *b* represent the respective weights of extrinsic and intrinsic rewards in generating utility. Either parameter (*a* or *b*) can take the value of zero, indicating that no utility is derived from extrinsic or intrinsic rewards.

As discussed earlier, the utility derived from intrinsic rewards is influenced by the level of extrinsic rewards and by the way the problem is framed (ethical awareness). Equation (5) depicts these relationships. The parameter *w* indicates the degree to which extrinsic rewards reduce the utility gained from intrinsic rewards. Intuitively, continuing using academic writing as an example, the parameter *w* reflects deterioration in utility gained from intrinsic satisfaction in developing a theoretical framework (intrinsic reward) when one is writing to a deadline (extrinsic reward). The salience variable ($S_{j,t}$) includes ethical awareness and can be influenced by reflecting on or being confronted by the influence of externalities (both first- and third-party). The parameter *v* establishes the degree to which salience affects the utility response to intrinsic rewards. Together, this functional form suggests that the utility response to intrinsic rewards ($b_{j,t}$) can be proactively influenced by the degree of extrinsic rewards and ethical awareness. The remainder of this paper is devoted to discussion of experiential learning exercises and debriefing intended to increase ethical awareness, and hence the salience of intrinsic rewards ($S_{j,t}$).

THE EXERCISE

Deci's *self-determination* and *cognitive evaluation* theories, combined with Carroll's three-dimensional interactive framework provide a powerful framework for developing our exercise. The purpose of the exercise will be twofold: First, it will seek to inform students regarding the nature and social costs of externalities. Second, it will immerse them in an experiential environment where they have to make decisions that pit these social costs against their success as profit-oriented managers. The resulting conflict creates an opportunity to explore the role of personal values in management and how these values affect the relationship between free enterprise and the well-being of society. It will help students reconcile their personal values with their managerial responsibilities and ambitions, helping them establish a healthy balance between intrinsic motivation and extrinsic rewards. The exercise will progress in three stages:

Preparation. In the class period prior to the exercise, the professor will conduct a lecture/discussion addressing the concepts of free-enterprise and market efficiency. This will address the basic theoretical concepts discussed in the beginning sections of this paper, including the role of the *invisible hand*, the requisite conditions of *rationality*, *feasible alternatives*, and *perfect information* as discussed earlier in this paper, along with a discussion of *first-* and *third-party externalities*, and the nature of first- and third-party externalities. The discussion would then progress to

corporate social responsibility and, ultimately, to the role of *extrinsic* and *intrinsic* motivation as a basis for economically, legal, and ethically responsible social behavior.

Administration. The actual exercise will be conducted at the beginning of the next class, with the topic framed as "Marketing Decision Making." The actual group exercise should take between 15 and 20 minutes. Students will be divided in groups of three to discuss a short (one-paragraph) case in which they are confronted with a trade-off between higher profit or foregoing some profit in favor of a decision to avoid externalities. One member of the group will be given the task of taking notes, recording the decision process – what objectives were considered, what decisions and decision criteria, key arguments, the final decision and rationale. The cases will be constructed to represent at least two first- and two third-party externalities. The first-party externalities would grow out of asymmetries created by problems involving *rationality*, *feasible alternatives* (monopolistic situations), and lack of *perfect information*. Third-party externalities would represent any situation where a transaction imposed costs on a non-participating person or on society in general. While our intention in this paper is to provide a general framework for experientially teaching the concepts and their importance rather than proposing a specific set of cases, the following examples illustrate the approach:

- *Used car transaction* [Classification: First-party externality / information asymmetry]. You have just purchased a used car for $15,000. It was in excellent condition with an attractive price (just below the recommended "private party" price on Kelly Blue Book). You checked out the car on CARFAX and it appears that nothing suspicious appeared. Shortly after buying it, you discover a major problem that will probably require you to buy a new engine in the near future, a repair that you estimate will cost you $3,000. You decide to sell the car rather than replacing the engine immediately or postponing the repair and risking engine failure while you are on the road.

  Discussion questions: How you would engage your understanding of the marketing mix to pursue the transaction. To whom would you target your efforts? How would you prepare the car? Price it? Promote it? How would you conduct the actual transaction and deliver the car?

  Discussion notes: This is an interesting case, because it is the only one in which the actor has no responsibility as an *agent* for investors of some other *principal*. (See Eisenhardt, 1989 for a review of agency theory). Here the question is simply an ethical one – whether to exploit information asymmetries to pass the first-person externalities absorbed in a previous transaction along to another person. There are, of course, a number of ways to address the issue. One of the most obvious is a simple application of the "Golden Rule" – Do unto others as you would have them do unto you, or Siidgwck's principle of justice: "It cannot be right for A to treat B in a manner in which it would be wrong for B to treat

A ..." (Sidgwick, 1907, p. 380, as quoted in Hunt & Vitell, 1986, p. 6). This is generally accepted as an ethical mandate for marketing as well (Hunt & Vitell, 1986).

- *How you look matters* [Classification: First--party externality / irrational behavior]. Jack has an important out-of-town company event that he needs to attend. This is Jack's first year in the company and he does not know the customs. He put off buying a suit until he arrives on site and talks to his senior colleagues. He then decides to go to a store and buy a suit for himself. A local person recommends him go to "Fashion Spot" that offers suits of various brands and price range. When he arrives the store, Paul, a senior and highly experienced salesperson, greets him and offers help. After a short conversation, Paul sees that this event is really important for Jack and Jack is really worried about his look. Jack knows the management wears expensive suites of certain brands and he wants to look like them. In the store the price gap is quite wide between suits of same quality but different brands. Given Jack is a junior staff and does not earn as much as do his seniors, he doubts whether he should buy an expensive suit. Paul knows Jack's income and his worries about his choice of brand. He can sell him a relatively affordable suit of the same quality as an expensive one, and no one would likely know the difference. However, Paul's compensation partly comes from sales commission, so if he sells an affordable suit, he would earn less than he would otherwise. Based on his experience, Paul knows that he can persuade Jack into buying an expensive brand.

  Discussion questions: What would you do if you were Paul? How would you frame your role – as a salesperson? A clothing consultant? An employee of the clothing store? How would you describe the alternative suits? How would you address price? What would you recommend and how persuasive would you try to be?

  Discussion notes: One of the popular terms now applied to salespeople is *sales consultant*. This implies an ethical responsibility to deliver the value implied by the consulting contract, which, in this case, is to assist the customer in processing the available information to make an optimal decision – one that creates no first-party externalities. This conception is consistent with the *service-dominant logic* of marketing, which maintains that the object of marketing exchanges, no matter how complex, is ultimately to provide service to the buyer in deriving value from the consumption process (Vargo & Lusch, 2004).

- *The only store around* [Classification: First Person Externality / Monopolistic Market]. Dan is manager of a campus store located on the grounds of a small, relatively isolated college. Most of the students live on or near campus, as do many of the faculty and staff. Students typically do not have a car to use for shopping. Faculty and staff do, but, given the relatively isolated nature of the college town, they tend to limit shopping trips where possible. Dan is responsible for all the store's marketing activities, including store layout and assortments, purchasing, promotion, and pricing. With respect to price, he knows that he can charge 5% more than a regular store would charge in a similarly sized town. In fact, this is necessary to pay the surcharge imposed by the college in addition to the normal charges associated with leasing and maintaining retail property of the type used by the store. However, he believes that he could charge an additional 5% to 10% without any appreciable effect on demand or the generally favorable attitude of the students. Some faculty and staff also shop at the store, although they are more sensitive to price and the assortment of products carried in the store. Dan has a compensation package that pays him a percentage of the profit returned by the store.

  Discussion questions: How would you market your store if you were in Dan's position? How would you target your marketing efforts? What kinds of products would you carry? How would you price them? Promote them?

  Discussion notes: This provides a classic opportunity to discuss how Exhibit 4 can lead to creative solutions, depending on how Dan defines his target market. In the most limited and obvious application, his solution would be to take a type-i (solely economic) approach, targeting students and such local residents as might share their purchasing needs, focusing exclusively on economic payouts in service of his self-interest and agency duties to university. He faces no legal constraints beyond giving the university its agreed-upon payments, and he can easily rationalize any ethical issues regarding high prices, given his judgment that students' attitudes will not suffer, suggesting that they are satisfied with his service. An alternative might be to take a type-iv (economic and ethical) approach, seeking creative ways to meet his self-interest and agency responsibilities while delivering greater value to his customers. To illustrate, one way to do this might be to broaden his target market to include the entire university community, using the increased economies of scale to create more efficient merchandising practices (Dubelaar, Bhargava, & Ferrarin, 2002) to justify lower prices. This, in turn, would bring in more business from the larger price-conscious community. If feasible, the effect would be to provide a much needed local shopping alternative while also increasing profits.

- *Crystal Mines Co.* [Classification: Third Person Externality]. Crystal Mines Co. bought the rights to mine coal in a naturally preserved area. Mining the coal will bring huge profits to the company and bring much-needed jobs to the economically depressed area surrounding the proposed mine. Unfortunately, the mining operations would also have some very negative effects on the environment. First, as the coal is located in a beautiful place that many people enjoy visiting on their vacations, mining the coal will destroy much of the natural beauty. Second, mining operations will also damage the ecosystem in that area, doing irreparable harm to several species of flora and fauna. Finally, the extraction of the coal will impose significant tax on future generations of people, who will no longer have

access to this non-renewable natural resource. Notwithstanding these problems, the mining operations promise to be extraordinarily profitable. Furthermore, if Crystal Mines decides not to move ahead on the project, the surrounding populations will generate enormous pressure to make the rights available to other companies whose mining operations would have the same effect as those being considered by Crystal. This is not to mention the enormous pressure the company feels from investors who demand a continual stream of new, profitable projects that will given them a desired return on their investments.

Discussion questions: What would you do if you were in charge of the Crystall Mines project? Would you conduct mining operations? If so, how would you organize them? How would you structure financial arrangements for your mining operations? How would you promote them? How would you explain your decisions to investors, local citizens, conservation groups, and other key stakeholders?

Discussion notes: This again provides an opportunity to develop a highly creative set of alternative solutions. On the surface, the answer is obvious – open the mine, create jobs, and chalk the rest up to the cost of progress. A type-vii (economic,-legal and ethical) solution might be to create a public trust, sell the rights to the trust, and lease the land in such a way as to generate an acceptable return on both the initial investment and subsequent mining operations. The funds accruing to the trust would be available for environmental remediation and activities designed to compensate future generations for depletion of the coal.

Debriefing. Note that the actual exercises were written as marketing cases with no specific cues for engaging ethical values. The point of this is to set up a "connect-the-dots" epiphany, where participants will see how framing the problem from a *micro-normative* rather than a *macro-normative* perspective can disengage one's ethical values. The debriefing process would be designed to confront participants with the reality of how this can happen and the effects it has on our social and economic system, not to mention our personal sense of self-esteem, values, and moral development. It confronts them with the "face in the mirror" – the image of themselves as decision makers, saying things and making decisions that they would potentially find reprehensibly unethical if done by other people.

One of the dangers of the exercise is that confronting students with what appears to be hypocritical behavior would damage their self-image. The answer to this figures prominently in the debriefing process: Our discussion of ethics draws heavily on the notion of "framing" – thinking of decisions in the context of the goals they are designed to achieve (Tversky & Kahneman 1981). As we saw in our hypothetical discussion of Microsoft, our metaphoric Bill Gates could see monopolistic activities in a very positive light if framed in light of the company's contributions to modern, efficient computer-based business practices. If framed in terms of overall market efficiency, an environment that would maximize the opportunity for diverse players to make innovative improvements on the basic Microsoft platform, the same activities appear much less positive.

The point of the "discussion notes" at the end of each case above is to illustrate how a creative application of marketing principles might address both the externalities inherent in each situation and simultaneously address the practical economic realities of marketing. In each case, the discussion should lead to a solution in which participants see their thinking lead to creative ways to incorporate their ethical understanding into their decision-making process without compromising the other constraints they face in the marketplace (such as the need to make a profit). In each case, the creativity is designed to inspire intrinsic motivation by tapping students' sense of *competence*, *autonomy*, and *relatedness* in conformity with Deci's *cognitive evaluation theory* (Ryan & Deci, 2000).

In sum, then the purpose of the debriefing process Looking at the broader task of the debriefing process, it is to help participants recognize the potential problems improper framing can create by focusing attention away from important ethical issues. In terms of Equation (4), the discussion should create an increase the value of v, increasing the salience of the intrinsic rewards associated with ethical behavior. Cast in terms of the classic *affective hierarchy* of educational objectives (Krathwohl, Bloom, Bertram, & Masius, 1964), the exercise aspires to intervene at the highest level, *characterization by value* where participants internalize the ethical values we are discussing and use them as a guide for on-going behavior.

SUMMARY AND CONCLUSIONS

One of the neglected aspects of classical economic theory, both in practice and simulation games designed to prepare people for practice, is the rationale treatment of externalities in reconciling the objectives of micro-normative and macro-normative systems. The purpose of this paper has been to address this issue. We have developed a theoretical framework for integrating the handling of externalities into ethically-driven managerial motivation. We then discussed how the principles we have discussed could be used to both help students understand the practical implications for ethical decision making and, even more important, incorporate this understanding into a value orientation that might shape the way they make managerial decisions.

While our exercises are intended to be illustrative, the approach they illustrate stands on its own, providing a useful way to incorporate the principles of values-clarification into the treatment of business ethics in the classroom. If this instruction is conducted in a broad enough range of settings, theory suggests that it should develop a value-orientation that students will both absorb and be able to transfer to their work in actual business organizations, following the logic of Krathwohl's affective taxonomy (Krathwohl, et al., 1964).

Although we have proposed experiential exercises to address values acquisition (awareness of the ethical implications of externalities and their increased salience in decision making), we have sought to express the theoretical underpinnings in mathematical form. This provides a useful

vehicle for incorporating the exercises into micro-normative simulation games as well. This would follow the predominate logic described by Wolfe and Fritzsche (1998) in their review of how ethics are typically addressed in management and marketing simulation games. However, the mathematical foundation provides the basis for a more rigorous incorporation of ethical rather than economic and legal principles into the treatment of the subject.

As we have noted, some efforts have been made to address economic and legal considerations by monetizing the reputational (Cannon & Schwaiger, 2005a, 2005,b; Cannon, et al., 2010; Cannon, Cannon, et al. 2011) and legal consequences (Cannon, et al. 2011) of social responsibility. We believe that a similar approach may be taken with ethics. While we do not address it in this paper, we believe that our approach will pave the way for monetizing the value of ethics in simulation design by harnessing the added productivity of intrinsically motivated employees, inspired by the opportunity to create new business practices that are both ethical and economically productive.

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