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Missing Inaction: Internalizing Beneficial Omissions

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“He who seeth inaction in action and action in inaction, he is wise among men, he is harmonious, even while performing all action.”
 – *Bhagavad Gita*

INTRODUCTION

Are beneficial omissions treated the same as beneficial commissions of the same magnitude? Does it actually matter?

In this Article I argue that while scholarship has paid attention to the omission bias in the context of *harms* (i.e., the discounting of harms caused by omissions relative to harms caused by commissions), it has not considered the omission bias in the context of *benefits* (i.e., the discounting of benefits caused by omissions relative to benefits caused by commissions). This Article argues not only that we should recognize beneficial omissions, but also that policymakers should pay more attention to beneficial omissions than to either beneficial or harmful commissions.

These ideas can readily be applied to environmental policy. Should externalities be internalized by compensating individuals who refrain from generating negative externalities or by taxing individuals who generate negative externalities? According to standard economic analysis, there is no difference between penalizing individuals who generate the negative externality and crediting those individuals who abstain from generating the negative externality. According to neo-classical economics, the level of externality generated will be identical whether we impose a fine for the harmful commission or offer a credit for the beneficial omission. Thus, the tendency to internalize through focusing on harmful commissions rather than beneficial omissions is traditionally assumed to be without significance.

With environmental externalities as my focus, I will argue that the way in which these externalities are internalized is in fact significant. This is true for six reasons. First, providing a credit for non-pollution overcomes the potential inefficiencies of traditional cap-and-trade mechanisms. Second, internalizing by crediting non-polluters neutralizes the wealth effect and therefore serves as a

more efficient way of generating an incentive to abstain from pollution. Third, crediting non-polluters may generate a stronger incentive with lower transaction costs. Fourth, such a scheme may redistribute wealth more efficiently in cases where there is a strong correlation between socioeconomic status and abstention from consumption of a certain commodity. Fifth, the transfer of resources I suggest is preferable because it acknowledges the fact that the recipient of the transfer has contributed to the social good. The fact that the beneficiary is not always motivated by a desire to contribute to society does not change the fact that she has made a contribution. Sixth, when compared with a scheme that achieves internalization through penalization, it is more likely that a scheme of internalization through positive payments will succeed in the legislative process. As I explain below, a scheme with stronger support from small groups is significantly more likely to pass through political-economy barriers.

The internalization of beneficial omissions may have the most obvious advantages in environmental policy. The central goal of environmental policy is the internalization of external costs.¹ Existing scholarship has discussed the differences between different forms of internalization. The two relevant divisions are carrots versus sticks² and taxes versus spending.³ This Article seeks to shed light on an additional angle of this choice that has not been discussed: the internalization of externalities from omissions versus the internalization of externalities from commissions.

Part I surveys existing scholarship on the omission bias and highlights a phenomena this scholarship has not yet addressed—beneficial omissions. Part II proposes the use of a negative-consumption tax (“NCT”) as a mechanism for internalizing beneficial omissions in the environmental field. Part III lays out the advantages of focusing on beneficial omissions rather than beneficial or harmful commissions. Part IV presents three possible modes of implementing the NCT. The Conclusion suggests several other fields in which providing credits for beneficial omissions may be appropriate.

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1. See ALFRED ENDRES, ENVIRONMENTAL ECONOMICS: THEORY & POLICY (2010).
 2. See, e.g., IAN AYRES, CARROTS AND STICKS: UNLOCKING THE POWER OF INCENTIVES TO GET THINGS DONE (2010); Howard F. Chang, *An Economic Analysis of Trade Measures to Protect the Global Environment*, 83 GEO. L.J. 2131, 2149-64 (1995); Giuseppe Dari-Mattiacci & Gerrit De Geest, *Carrots, Sticks and the Multiplication Effect*, 26 J.L. ECON. & ORG. 365 (2009); Brian Galle, *The Tragedy of the Carrots: Economics and Politics in the Choice of Price Instruments*, 64 STAN. L. REV. 797 (2012).
 3. See WILLIAM BAUMOL & WALLACE OATES, THE THEORY OF ENVIRONMENTAL POLICY 211-34 (2d ed. 1988); Robert E. Kohn, *When Subsidies for Pollution Abatement Increase Total Emissions*, 59 S. ECON. J. 77 (1992); Donald Wittman, *Liability for Harm or Restitution for Benefit?*, 13 J. LEGAL STUD. 57, 62-5 (1984). See generally David A. Weisbach & Jacob Nussim, *The Integration of Tax and Spending Programs*, 113 YALE L.J. 955 (2004) (discussing the relevant criteria for the choice between taxes and spending programs).

I. OMISSION BIAS IN CASES OF HARMFUL AND BENEFICIAL OMISSIONS

The bias in favor of *omission* harms rather than equivalent *commission* harms has been extensively discussed in the literature. In a famous Article, Daniel Kahneman and Amos Tversky demonstrated this bias using a simple experiment. They concluded that individuals have a stronger emotional reaction to negative outcomes caused by an action than they do to an equivalent negative outcome caused by inaction.⁴

Vaccinations are a classic example of the omission bias. Ilana Ritov and Jonathan Baron have demonstrated that people consider the risks associated with vaccinations to be more serious than the risks associated with foregoing vaccinations, even when the actual risks are equivalent.⁵ Ritov and Baron found that the central element of the omission bias is the fact that harms caused by omissions are perceived as having been caused indirectly.⁶

Given the extensive literature documenting an omission bias when individuals are weighing relative harms, one would expect a similar tendency to discount beneficial omissions. The beneficial consequences of omissions may also be perceived as having been caused indirectly, leading to the undervaluation of these benefits. Studies by Janet Landman⁷ and by Faith Gleicher⁸ indicate that, in some cases, individuals are biased toward action when the consequences of both the omissions and commissions are positive.

While most of the behavioral literature focuses on biases displayed by ordinary individuals, the omission bias in cases of beneficial omissions also affects the formation of public policy. Policymakers tend to prefer mechanisms that internalize externalities by focusing on commissions; they neglect the option of internalization through focusing on omissions. Such focus on the treatment of

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4. See, e.g., Daniel Kahneman & Amos Tversky, *The Psychology of Preferences*, 246 SCI. AM. 160 (1982). Kahneman and Tversky demonstrated the omission bias with an experiment that asked subjects to evaluate two scenarios. In the first scenario, an individual owns stock in A and considers switching to B. The individual sticks with A, but later learns that, had he switched to B, he would have made an additional \$1200. In the second scenario, an individual owns stock in B, considers sticking with it, but ultimately decides to switch to A. He later learns that had he not made the switch, he would have made an additional \$1200. Kahneman and Tversky's showed that the individual in the second scenario would be more upset, even though both economic outcomes were the same.
 5. See Ilana Ritov & Jonathan Baron, *Reluctance to Vaccinate: Omission Bias and Ambiguity*, 3 J. BEHAV. DECISION MAKING 263 (1990).
 6. See Jonathan Baron & Ilana Ritov, *Omission Bias, Individual Differences and Normality*, 94 ORG. BEHAV. & HUM. DECISION PROCESSES 74, 78-84 (2004).
 7. See Janet Landman, *Regret and Elation Following Action and Inaction: Affective Responses to Positive Versus Negative Outcomes*, 13 PERSONALITY & SOC. PSYCHOL. BULL. 524 (1987).
 8. See Faith Gleicher et al., *The Role of Counterfactual Thinking in Judgments of Affect*, 16 PERSONALITY & SOC. PSYCHOL. BULL. 284 (1990).

commissions may lead policymakers to overlook the possible advantages of encouraging beneficial omissions instead of punishing harmful commissions.

Previous scholarship has extended the behavioral analysis of individuals to policymakers. A number of studies have demonstrated that the omission bias applies not only to laypersons, but also to sophisticated and professional experts such as judges.⁹ Max Bazerman, Jonathan Baron, and Katherine Shonk extended the analysis of behavioral biases to the policy and government level.¹⁰ My study aims to march on the same path.

An illustration of the existence of an omission bias with regard to beneficial omissions at the public-policy level can be found in “feebate” schemes. In these schemes a fee is levied on one person and then rebated to another person who makes a more socially desirable purchase. For example, in a feebate scheme, customers who buy high-emission cars pay a fee that is then rebated to people who buy low-emission cars.¹¹ Feebate schemes have been implemented in a few European countries, including France, Denmark, and Norway.¹² In the past, a feebate scheme was adopted in Canada,¹³ and one is now under consideration in California.¹⁴

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9. For studies demonstrating how judges are prone to biases, see Chris Guthrie & Tracey George, *The Futility of Appeal: Disciplinary Insights into the “Affirmative Effect” on the United States Courts of Appeals*, 32 FLA. ST. U. L. REV. 357 (2005); Chris Guthrie, Jeffery J. Rachlinski & Andrew J. Wistrich, *Inside the Judicial Mind*, 86 CORNELL L. REV. 777 (2001); and Robert A. Prentice & Jonathan J. Koehler, *A Normality Bias in Legal Decision Making*, 88 CORNELL L. REV. 583 (2003).
 10. See MAX H. BAZERMAN, JONATHON BARON & KATHERINE SHONK, *YOU CAN’T ENLARGE THE PIE: SIX BARRIERS TO EFFECTIVE GOVERNMENT* (2001).
 11. Such a scheme avoids some problems that afflict cap-and-trade mechanisms. In cap-and-trade schemes, when an actor reduces pollution, it inadvertently incentivizes other actors to increase emissions by increasing the number of pollution permits available. A feebate scheme does not have such an adverse effect on other actors in the market.
 12. David S. Bunch et al., *Potential Design, Implementation, and Benefits of a Feebate Program for New Passenger Vehicles in California*, TRANSP. SUSTAINABILITY RESEARCH CTR. (2008), <http://tsrc.berkeley.edu/sites/tsrc.berkeley.edu/files/Feebate%20Program%20California.pdf>.
 13. The short-lived Canadian feebate system was started in 2007 and ended in 2009. *Id.* at 57-59. One of the reasons for revoking the rebate was that it did not remain revenue neutral. De facto feebates exceeded fees. *See id.* at 63.
 14. One of the first feebate programs was implemented in Sweden in the energy-production sector. Rebates were given to factories that emitted low levels of nitrogen oxide relative to the amount of energy produced, and fees were imposed on factories with high nitrogen oxide omissions relative to the amount of energy produced. This program was very successful. It aimed to reduce carbon dioxide emissions by thirty five percent in five years. It reached that target in only three years. After five years emissions had declined by sixty percent. Katrin Millock & Thomas Sterner, *NOx Emissions in France & Sweden*, in CHOOSING

But the feebate scheme raises a question: why should the rebate be limited to individuals who *do* buy a car? Needless to say, those who do not own or drive a car emit less pollution than car owners, even those who drive low-emitting vehicles. Why restrict the feebate to owners of cars that emit a low level of emissions, instead of providing it to individuals who abstain from car emissions altogether? Such a scheme does not seem to make much sense from the perspective of either fairness or efficiency. The only reason for excluding these individuals from the rebate is the high number of non-car users whose behavior is inelastic. They would not own a car even if no feebate was available to them. But discriminating between individuals based on their elasticity raises fairness concerns. From the economic perspective, transferring resources to such individuals is not inefficient. Rather, it is mainly a transfer effect. The main reason for excluding these individuals from such a scheme seems to be political. Policymakers attempt to reduce the cost of the program in order to increase the feasibility of its implementation.

Furthermore, the feebate scheme suffers from a built-in problem that might defeat its ability to achieve an overall reduction of emissions: the rebound effect. The increased fuel efficiency induced by the feebate scheme might lower the fuel price per mile. As a result, individuals might increase their total travel miles, causing an overall increase in emissions.¹⁵

Scholars have justified feebate programs on the grounds that these programs promote technological advances and accordingly reduce long-run emissions. But this argument is unsatisfactory for two reasons. First, there is no unequivocal evidence that emission reduction through technological advancement offsets the incentive to abstain from consuming dirty commodities altogether.¹⁶ Second, incentivizing abstention from consumption of a dirty commodity might also generate technological advancements—perhaps ones that enable citizens to rely less on car transportation altogether.

So why is it that feebate schemes are limited to individuals who purchase cars, and do not apply to individuals who avoid car usage altogether? The omission bias may shed some light on this problematic policy choice. Buying a low-emitting car instead of a high-emitting car is perceived as a commission on the part of the purchaser. In contrast, an individual who contributes to the environment by abstaining from buying a car altogether is perceived as benefiting

ENVIRONMENTAL POLICY: COMPARING INSTRUMENTS AND OUTCOMES IN THE U.S. & EUROPE 117 (Winston Harrington, Richard D. Morgenstern & Thomas Sterner eds., 2004); see Kenneth C. Johanson, *Feebates: An Effective Regulatory Instrument for Cost-constrained Environmental Policy*, 34 ENERGY POL'Y 3965, 3966 (2006).

15. See Bunch et al., *supra* note 12, at 261-62; Kenneth A. Small & Kurt Van Dender, *Fuel Efficiency and Motor Vehicle Travel: The Declining Rebound Effect*, 28 ENERGY J. 25 (2007).

16. Johanson, *supra* note 14, at 3966. The asymmetry between the internalization of positive and negative externalities may also influence the focus on fining car users, rather than crediting non-users. See Ariel Porat, *Private Production of Public Goods: Liability for Unrequested Benefits*, 108 MICH. L. REV. 189 (2009).

the environment only indirectly, and the value of such contribution is discounted accordingly.

II. THE MECHANISM FOR INTERNALIZING BENEFICIAL OMISSIONS: THE NEGATIVE-CONSUMPTION TAX

There are several ways in which environmental externalities can be internalized, including (1) taxing harmful commissions, (2) taxing harmful omissions, or (3) crediting beneficial commissions. Another common method is to place a regulatory ceiling on the total allowable amount of pollution and then permit the trading of individual quotas. This type of policy is commonly known as cap-and-trade. The NCT provides an additional and novel way to internalize externalities: by crediting beneficial omissions. In particular, the NCT provides a refundable tax credit to individuals who do not consume or use certain dirty commodities.

It may be argued that there is no economic difference between a tax on polluters and a credit for non-polluters. Both instruments may yield the same economic outcome. However, this is not necessarily true if one accepts that public goods and private goods are not fully convertible. By taxing polluters, the value of public goods from which non-polluters benefit increases equally to the value of private goods they would have received by crediting them the value of their non-pollution. Yet the benefit the non-polluters gain from the increase in public goods may not be as high as their benefit from an increase in private goods. In order to convert the increase in the level of public goods to an increase in the level of private goods, there is a need to target non-polluters and provide them a credit.

The NCT can be described as a version of a tradable pollution quota regime in which the quota can be sold back to the government. In essence, individuals are given a permit to pollute through the consumption of a dirty commodity, but can sell back their permit to the government. It makes no difference whether individuals (1) are *not penalized* for performing an action that directly harms the public or (2) are *credited* for abstaining from an action that directly harms the public.¹⁷ From the perspective of standard economic analysis, the two are

17. There might be one crucial difference between internalization of omissions (which requires a credit) and internalization of commissions by means of a tax. A credit might incentivize certain actors to perform activities that have a potential for generating negative externalities so they would qualify for a credit for refraining from generating the externalities and thus overall the credit will increase the number of actors generating negative externalities. This point was famously raised by Ronald Coase. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 41-42 (1960); see David A. Koplow & Philip G. Schrag, *Carrying a Big Carrot: Linking Multilateral Disarmament and Development Assistance*, 91 COLUM. L. REV. 993, 1026-42 (1991); Jonathan B. Wiener, *Global Environmental Regulation: Instrument Choice in Legal Context*, 108 YALE L.J. 677, 726-7 (1999). This problem does not apply to the NCT. Any individual is entitled to the credit—the credit is not based

equivalent. If the harm avoided is equal in magnitude to the benefit conferred, then the effects of the two policies on society are equivalent.¹⁸ The claim that policymakers should prefer one over the other calls for an explanation.

The NCT can be classified as a downstream regulatory mechanism. In contrast to upstream cap-and-trade mechanisms, which apply to polluting producers, the NCT applies to the consumers of polluting commodities. While upstream regulatory mechanisms are the most effective instruments in the abatement of pollution in the production process,¹⁹ downstream regulatory mechanisms may reduce external costs to a greater extent. This is because downstream mechanisms are effective in fostering a fundamental change in consumption habits.²⁰ By conferring benefits to consumers, especially those consumers of low socioeconomic status who are most prone to modify their consumption habits, the NCT may generate social benefits as well as promote environmental goals.²¹

There are three conditions necessary for the implementation of the NCT—one administrative condition and two substantive conditions. The administrative condition is that government agencies must be able to easily and cheaply obtain information about which individuals consume the dirty commodities

on one's previous consumption pattern and thus does not incentivize generating negative externalities *ex ante*.

18. Even though the two are economically equivalent, a tendency to take positive externalities generated by action more strongly might be explained by an effect similar to the Knobe effect. In the Knobe effect, an individual judges differently two equivalent cases in which the agent has foreseen the externalities of his actions, but those externalities have not played any role in motivating him to perform the action. In cases where the externalities are negative, people tend to attribute intention to the agent in the causation of the consequences. But in cases where the externalities are positive, people tend not to attribute intention to the agent. See Joshua Knobe, *Intentional Action and Side-Effects in Ordinary Language*, 63 ANALYSIS 190 (2003). Similar to the case of the Knobe effect, the agent might differentiate between two equivalent cases in which the agent has foreseen the external consequences of his actions but is not motivated by them.
19. See Debbie Niemeier et al., *Rethinking Downstream Regulation: California's Opportunity to Engage Households in Reducing Greenhouse Gases*, 36 ENERGY POL'Y 3436, 3438 (2008).
20. Lawrence Baker et al., *Effect of Consumption Choices on Fluxes of Carbon, Nitrogen and Phosphorus Through Households*, 10 URB. ECOSYSTEMS 97 (2007).
21. Upstream regulation tends to be more regressive than downstream regulation. Typically, abatement costs for producers are passed down to consumers in the form of higher energy prices. A low-income household will bear a greater financial burden as a proportion of earnings due to the universal price increase. See David Fleming, *Tradable Quotas: Using Information Technology to Cap National Carbon Emissions*, 7 EUR. ENV'T 139 (1997). The social benefits I discuss are distinctive from this redistributive difference between upstream and downstream regulation.

with which the NCT is concerned. The two substantive conditions stem from the policy considerations described above. The first and more obvious condition is that the consumption of the commodity must generate considerable external costs. As with standard green consumption taxes, there is no rationale for applying the NCT to commodities that do not generate a significant negative externality. The second substantive condition is that consumption of the commodity must serve as a reasonable proxy for the socioeconomic status of the consumer. This is a key condition for many of the normative justifications discussed in the next Section.

There are various ways of implementing the NCT. The policy's different instantiations exist across two dimensions. The first is the revenue dimension. Although the NCT seems at first glance to be a spending program, its budgetary effect depends on the context in which it is implemented. For example, the NCT could be coupled with a positive tax. While non-polluters would receive a credit, polluters would be taxed. Similar to a feebate mechanism, the NCT could be designed as a revenue-neutral system by imposing a positive consumption tax that raises sufficient revenue to cover payments and administrative costs. (The choice as to how to fund the NCT depends mainly on budget constraints and political economy considerations and will not be discussed in this Article.)

The second dimension is whether the NCT is implemented in a continuous or binary structure. A uniform credit could be provided to individuals who generate pollution under a certain level, or the level of the credit could be determined in proportion to the pollution level. Using a binary credit allows for a greater correlation between socioeconomic status and receipt of the credit. Using a continuous credit allows for the more accurate internalization of externalities. These two dimensions of the NCT will be discussed more extensively in the Section that deals with the practical implementations of the NCT.

III. ARGUMENTS FOR FOCUSING ON INTERNALIZATION OF BENEFICIAL OMISSIONS THROUGH THE NCT

This Part will present six arguments for the NCT. The first three arguments focus on the NCT as a mechanism for enhancing internalization. The remaining three arguments concern secondary policy goals that the NCT promotes.

A. *The NCT as an Efficient Cap-and-Trade Mechanism*

As noted in the previous Part, the internalization of beneficial omissions through the NCT is essentially a tradable pollution-quota regime in which the quota can be sold back to the government. Similar to the NCT, under a cap-and-trade regime it is possible to provide positive payments for non-pollution. Under the NCT, individuals are given a permit to pollute by consuming a dirty commodity but can sell their permit back to the government through the NCT

mechanism. This version of cap-and-trade is considerably more efficient than the standard cap-and-trade regime.²²

A cap-and-trade regime imposes a limit on the total amount of pollution that can be generated. But a standard cap-and-trade regime does not impose a floor. Under cap-and-trade, pollution can be generated even if its value to the polluter is less than its social cost.²³ Individuals use the permit to pollute. They may also transfer the right to pollute to other parties, even when the value of the permit to the polluting party is lower than the social cost of pollution, so long as its value to the user is greater than zero. In such cases, the pollution is inefficient because, in the aggregate, it reduces social welfare. Such inefficient pollution could be prevented if the permit could be sold back to the government for a price that reflects the estimated social cost of the pollution. Under such a regime, the pollution permits will not be used if the private value of the pollution is lower than the cost it imposes on society. In such cases, individuals will prefer to sell back their permits to the government for a higher value than the value they (or a third party) attribute to the pollution rights.²⁴

Here is an illustrative example. Assume that the estimated social cost of each ton of CO₂ emission is \$10,000. Further assume that there are two factories that produce iron and these are the only CO₂ polluters in the economy. The

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22. The most significant cap-and-trade mechanism adopted in the United States is the SO₂ Allowance Trading Program, which was established under section 14 of the Clean Air Act, 42 U.S.C. § 7651 (2006). This program allocated allowances for emission of SO₂ by electric power units, which could be transferred or saved for later use. A penalty was imposed on emissions which exceeded the allowance which the plant holds.
 23. Such a consequence will occur under cap-and-trade mechanisms in which the permits are freely endowed to the parties, such as in the case of the United States SO₂ Allowance Trading Program. Freely endowing permits may assist in confronting the problems raised in the scholarship with a permits regime, such as the strategic usage of permits by incumbent companies to keep new entrants from competing or the extraction of scarcity rents by actors who buy substantial shares of the permits. See Robert N. Stavins, *A Meaningful U.S. Cap and Trade System to Address Climate Change*, 32 HARV. ENVTL. L. REV. 293, 355 (2008). Decentralization of the ownership of permits through the free allocation of permits may assist in mitigating these problems. There might be other ways to eliminate the centralization of permits without freely endowing them, such as freely endowing options for permits. The main reasons why initial free allocation of permits is adopted are political. The free endowment of permits increases the political feasibility of the program.
 24. While there has been some limited discussion regarding a cap-and-trade mechanism, to my knowledge no such scheme has actually been implemented. For a brief discussion of such a model, see Georg Grull & Luca Tachini, *Cap-and-Trade Properties Under Different Hybrid Scheme Designs*, 61 J. ENVTL. ECON. & MGMT. 107, 109-10 (2011). For a discussion of different variations to the conventional tradable pollution quota regime, see Tsilly Dagan & Talia Fischer, *Rights for Sale*, 96 MINN. L. REV. 90, 121-23 (2012).

value of each ton of pollution is a decreasing function, in which every ton is valued \$1,000 less than the previous ton. For Factory A the first ton is worth \$14,000, and for Factory B the first ton is worth \$12,000. Each factory is allocated five tons of CO₂ emission.

In the first scenario, the government implements a conventional cap-and-trade regime in which it decides to cap emission to ten tons and allocates each of the factories a permit to emit five tons. Under such a regime, Factory A will end up with a permit to emit six tons, buying a permit to emit one ton from Factory B. Factory B will end up with a permit to emit four tons. The value of the marginal ton of emission for each of the factories is \$9,000. Thus, the social costs for the last four tons of emissions is \$40,000, and exceeds the private benefit to the two factories (\$38,000).

In the second scenario, the government offers a negative-consumption tax after allocating the emissions permits. Under this regime, the government would offer to buy back permits for a price equal to their social cost of \$10,000. Such a policy will ensure that the amount of pollution will not exceed the social optimum. Factory A would be credited for selling back to the government a one ton polluting permit, and Factory B would be credited for selling back to the government a permit for three tons of pollution.

The sell-back cap-and-trade mechanism of the NCT is especially relevant in cases where (1) there is substantial asymmetric information regarding the economic value of polluting and (2) the government and environmental agencies are relatively ignorant regarding the value of the permits in the market. In such cases, it is not sufficient for the government to put a ceiling on the quantity of pollution; it also needs to put a floor on the price of each pollution permit if it seeks to eliminate all inefficient pollution. Assuming policymakers prefer a cap-and-trade mechanism to a tax mechanism (perhaps due to lower administrative costs), they should opt for the NCT.

B. The NCT as a Means for Controlling Wealth Effects

Due to the wealth effect, positive taxes face stronger limitations on the magnitude of the tax than do negative taxes. Imposing a green tax of a high sum, in which the individual has to buy the right to pollute, bars individuals with low incomes from the option of buying the right to pollute. This is true no matter how strong the intensity of their preference for purchasing the option to pollute. This is due to the wealth effect: an individual may not be able to purchase the right to pollute due to a lack of disposable income, even though such a right would be highly beneficial to her. This low-income individual may value the right to pollute much more than well-off individuals who ultimately purchase the right.

One might argue that the wealth effect is a *de minimis* cost of green taxes and can therefore be ignored. But in many cases the ability to purchase the right to pollute can be extremely important for the disadvantaged, and barring them from the ability to purchase the right to pollute may have substantial ramifications on their future development and welfare.

The application of the NCT to car ownership demonstrates this point. Imposing an extremely high cost on car usage—in the form of a fuel tax, tolls, or a direct tax on car ownership—may substantially limit the mobility of individuals who cannot afford to pay the tax. The tax may impose considerable restrictions on their autonomy, ability to find jobs, and their efforts to improve their economic situation.²⁵ In the case of a positive tax, these individuals are essentially forced to refrain from consuming the commodity because they do not have the necessary resources to pay the tax. In contrast, in the case of the negative tax, they are endowed with the right to own the commodity, and, although they have a strong incentive to cash-in that right, they are not forced to abstain from consuming the commodity. This is not a subsidization of pollution: it does not affect the relative price of pollution to other goods, but only changes the initial base-line of whether the individual is endowed with the right to pollute.

There might be other ways of addressing this problem within the framework of a green tax. It may be possible to impose a means test for the green tax whereby only individuals with an income above a certain threshold would be required to pay the tax. However, such a policy would have a few problems. The first is that including a means test as part of a green tax would impose considerable administrative costs and would impair the tax's administrative elegance, which is one of its prime advantages. The second is that excluding low-income individuals from the green-tax scheme would undermine the efficiency of the green tax in eliminating inefficient pollution costs. Considerable parts of the disadvantaged population will incur no costs when polluting and thus will still generate sizable amounts of inefficient pollution. Thus, in order for the tax to be effective in the internalization of the external costs, a larger tax would have to be imposed. Accordingly, it is preferable to use a negative tax rather than a positive tax to ameliorate the wealth effect.

C. Internalization of Beneficial Omissions Through the NCT as a Means of Generating Stronger Incentives

Internalization of beneficial omissions through the NCT may generate a stronger behavioral incentive than an economically equivalent positive tax. The two following Subsections discuss the stronger incentive that could be generated through the NCT. The first will explain how the NCT can generate a stronger incentive, and the second will explain why generating a stronger incentive is desirable.

1. The NCT as an Internalization Mechanism that Generates Stronger Incentives than Other Mechanisms for Internalization

25. For a discussion of the distributional significance of enabling minorities and the poor to commute to work, and the impact of the option to commute to work on individuals in general, see Tsilly Dagan, *Commuting*, 26 VA. TAX REV. 185, 219-31 (2007).

If the wealth effect can be controlled, a positive green tax of a certain sum and a negative-consumption tax that provides an equivalent credit should both lead to the same pollution equilibrium. The same amount of cars would be purchased, regardless of whether a person has to pay an extra \$100 to own a car or receives \$100 in exchange for not owning a car. The economic incentive is the same in both cases. The individual would have \$100 more if she decides not to own a car than if she decides to own one.

Behavioral analysis changes this picture. Framing the \$100 as a prize for not polluting might generate a stronger incentive to abstain from polluting than the payment of \$100. This is true because individuals are likely to perceive the payment as merely part of the price of the dirty commodity. Although classic behavioral theory suggests that penalties generate a stronger incentive than bonuses,²⁶ the case of a green tax versus an NCT is somewhat more complex. Paraphrasing Uri Gneezy and Aldo Rustichini's Article "A Fine is a Price,"²⁷ one might argue that a tax constitutes a price. A tax on a commodity is likely to be perceived as part of the commodity's price. In their Article, Gneezy and Rustichini demonstrate how imposing a fine may in fact encourage the fined behavior instead of suppressing it. When the fine is conceived as part of the "price," its effect on the behavior of individuals is often weaker than might be expected. In contrast, a bonus may generate a stronger incentive than the tax, inspiring individuals to abstain from buying the commodity. The bonus will never be perceived as part of the price of the commodity, but rather will be viewed as independent compensation. As such, it will have greater impact on the behavior of individuals.

Professors Yuval Feldman and Oren Perez argue that green taxes may have a "payment effect." The fact that one is paying the costs of pollution has a moral purification effect, which legitimizes pollution and may increase usage of the dirty commodity.²⁸ Under the NCT, the polluter does not pay any direct price for his actions; therefore there is no act of moral purification, and thus the desire to avoid pollution may be intensified relative to a positive green tax. Thus, relative to the conventional framing of a positive green tax, the NCT's framing may be more effective in deterring individuals from using the dirty commodities.

It could be argued that a credit for environmentally beneficial behavior will backfire and weaken the incentive to abstain from pollution. Scholars have

26. See Edward McCaffery & Jonathan Baron, *Tax Policy in an Era of Rising Inequality: The Political Psychology of Redistribution*, 52 U.C.L.A. L. REV. 1745, 1750 (2005).

27. Uri Gneezy & Aldo Rustichini, *A Fine is a Price*, 29 J. LEGAL STUD. 1 (2000).

28. Yuval Feldman & Oren Perez, *How Law Changes the Environmental Mind: An Experimental Study of the Effect of Legal Norms on Moral Perceptions and Civic Enforcement*, 36 J.L. SOC'Y 501, 527 (2009).

demonstrated how private incentives can “crowd out” altruistic incentives.²⁹ Turning an otherwise selfless behavior into an action which promotes self-interest may weaken the incentive of individuals who are attracted to the warm glow of altruism. In other words, the extrinsic financial incentive might crowd out the intrinsic incentive for maintaining a clean consumption pattern.

The crowding-out critique should not apply to credits for the abstention from consuming polluting commodities. According to some models of altruistic behavior, people are motivated to behave altruistically when their behavior signals their altruistic character to others.³⁰ This is what some scholars label the reputational motive.³¹ The addition of an external motive muddies the altruistic signal.

According to this argument, there is unlikely to be a crowding-out effect in cases in which there are built-in self-interest motives for performing an action (or inaction). In these cases, due to the extrinsic motives that accompany the altruistic behavior, performance of the behavior does not clearly signal the altruistic character of the agent. As a consequence, adding an additional extrinsic motive is unlikely to decrease reputational incentives because there is no strong motive from the start. Because the signal is accompanied by noise from the start, adding additional extrinsic motivation should not substantially alter the noise-to-signal ratio.³² For that reason, crediting beneficial omissions (such as abstaining from consuming dirty commodities) will not have a significant crowding-out effect. For example, choosing not to own a car does not transmit a strong reputational signal regarding one’s altruistic character because of the many other possible self-interested motives for not owning a car (cost savings, fear of accidents, and the like). Since the reputational signal is weak from the

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29. See RICHARD TITMUS, *THE GIFT RELATIONSHIP: FROM HUMAN BLOOD TO SOCIAL POLICY* (1971) (showing that programs which compensate blood donors weaken the incentive to donate blood); Bruno S. Frey & Felix Oberholzer-Gee, *The Cost of Price Incentives: An Empirical Analysis of Motivation Crowding-Out*, 87 *AM. ECON. REV.* 746, 751-52 (1997) (showing how the willingness of a town to accept a nuclear-waste site decreases when compensation is offered); Uri Gneezy & Aldo Rustichini, *Pay Enough or Don't Pay at All*, 115 *Q.J. ECON.* 791, 798-800 (2000) (finding that students collecting donations had greater receipts when offered no compensation); see also Oren Bar-Gill & Chaim Fershtman, *Public Policy with Endogenous Preferences*, 7 *PUB. ECON. THEORY* 841, 843-44 (2005) (explaining how a subsidy for a public good might decrease its supply in the long-run).
30. See Paul Seabright, *Continuous Preferences Can Cause Discontinuous Choices: An Application to the Impact of Incentives on Altruism* (Institut D'Economie Industrielle, Ctr. for Econ. Policy Research, Working Paper No. 4322, 2004), http://neeo.univ-tlse1.fr/1221/1/continuous_preferences.pdf.
31. See Roland Bénabou & Jean Tirole, *Incentives and Prosocial Behavior*, *AM. ECON. REV.* 1652, 1653-54 (2006). Bénabou and Tirole point to reputation, together with intrinsic and extrinsic reasons, as the motivations driving altruistic behavior and attempt to model how the three distinct motivations interact.
32. *Id.*

start, adding additional extrinsic motivations such as refundable tax credits would not have any substantial crowding-out effect.

This point can be crudely applied to omissions in general. Due to the lower salience of omissions, the signaling component is unlikely to be a significant factor in motivating an omission. As a result, the crowding-out effect caused by extrinsic rewards is much weaker in the case of omissions than in the case of commissions.³³ Thus, policymakers' focus on omissions should be greater than their concern for commissions due to the weaker adverse crowding-out effect when adding external motivations.

2. The Desirability of Generating a More Powerful Incentive

The Subsection above may raise the following question: why is it desirable to provide a strong incentive for not polluting? In truth, it is desirable to avoid generating both too weak an incentive and too strong an incentive. The economic incentives should be set at the exact point at which the costs of pollution of the marginal commodity equal the marginal benefit of its usage. Strengthening economic incentives past this point may have a sub-optimal effect, because individuals may refrain from consuming the dirty commodities even when it would be efficient to pollute.

However, there are three justifications for employing a behavioral frame to create a bias toward avoiding pollution: (1) counter-balancing the status quo bias, (2) the precautionary principle, and (3) minimizing transaction costs and optimizing the motivational mix.

a. Counter-Balancing the Status Quo Bias

According to the status quo bias, individuals tend to overestimate the value of assets or rights they already possess.³⁴ In the case of pollution, people will tend to overestimate the value of the dirty commodity they currently possess or consume. If a policy designed to decrease the usage of the polluting commodity through the internalization of the external costs of the pollution is adopted, then the frame that creates the strongest bias against the pollution should be endorsed. Due to the status quo bias, it is very likely that the polluting commodity is overvalued. Thus, when designing the mechanism through which the

33. There are no empirical studies which compare the crowding-out effect in cases of omissions and commissions, but there is some data indicating that the crowding-out effect applies in the case of penalties. See Bruno S. Frey & Reto Jegen, *Motivation Crowding Theory*, 15 J. ECON. SURV. 589, 599-600 (2001). But see Yuval Feldman & Orly Lobel, *The Incentives Matrix: The Comparative Effectiveness of Rewards, Liabilities, Duties, and Protections for Reporting Illegality*, 88 TEX. L. REV. 1151, 1205-06 (2010) (arguing that there is no crowding-out effect in the case of penalties).

34. See William Samuelson & Richard Zeckhauser, *Status Quo Bias in Decision Making*, 1 J. RISK & UNCERTAINTY 7, 45-46 (1988).

pollution costs are internalized, a frame that creates a bias against the pollution of the commodity should be adopted in order to cancel out the status quo bias towards maintaining the polluting behavior.

b. The Precautionary Principle

The second justification for creating a bias toward refraining from pollution is the precautionary principle. This principle prescribes tilting policy decisions toward environmental considerations.³⁵ There are many interpretations of what exactly the precautionary principle entails, and I will address three that are most relevant to the NCT.³⁶ One interpretation of the principle is that the error costs of over-pollution are higher than the error costs of under-pollution, because the error costs of over-pollution are irreversible and serious. For example, concentration of greenhouse gasses is an effect we cannot roll back. The reversibility of many of the non-environmental costs—such as in the car, air travel, and electric consumption examples discussed below—has substantial value which should be taken into account.³⁷

The second interpretation of the precautionary principle calls for society to offset our tendency to underestimate environmental costs by aiming for a pollution level that is lower than the estimated optimal amount.³⁸

35. The precautionary principle is widely accepted internationally and has been incorporated into environmental policy. It has, for example, been endorsed in the Rio Declaration, *see* INDUR GOLANSKY, *THE PRECAUTIONARY PRINCIPLE: A CRITICAL APPRAISAL OF ENVIRONMENTAL RISK ASSESSMENT* 5 (2003), and in the United Nations Framework Convention on Climate Changes, *see id.* at 16.

36. For an overview of the different interpretations of the precautionary principle, see Julian Morris, *Defining the Precautionary Principle*, in *RETHINKING THE PRECAUTIONARY PRINCIPLE* 1 (Julian Morris ed., 2000); Richard B. Stewart, *Environmental Regulatory Decision Making Under Uncertainty*, 20 *RES. L. & ECON.* 71, 75-76; and Cass Sunstein, *Beyond the Precautionary Principle*, 151 *U. PA. L. REV.* 1003, 1011-15 (2003).

37. Regarding the option value of reversible decisions, see Kenneth J. Arrow & Anthony C. Fisher, *Environmental Preservation, Uncertainty, and Irreversibility*, 88 *Q.J. ECON.* 312 (1974). Cass Sunstein notes that every action is irreversible in the sense that time is linear and it will never be possible to make the alternative decision in the same point of time. *See* Cass Sunstein, *Irreversible and Catastrophic*, 91 *CORNELL L. REV.* 841, 860-63 (2005). For that reason, he adopts a more limited definition of reversibility—whether the decision carries with it sunk costs, defined as costs which are not recoverable. *Id.*

38. The underestimation of costs stems from the availability bias. Individuals tend to focus on the scenarios that are cognitively more available to them. *See* Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 *SCI.* 1124, 1127 (1974). For the application of the availability bias to the precautionary principle, see Sunstein, *supra* note 36, at 1009. Sunstein argues that the precautionary principle not only may not cancel out the availability bias, but may even be driven by the bias. Familiarity may significantly impact the cognitive

The third interpretation of the precautionary principle calls attention to the “unknown unknowns” which are typical in the case of pollution. In the estimation of pollution costs, there is much greater uncertainty than in the estimation of many other costs. This is a result of scientific doubts regarding the consequences of pollution and the inherent uncertainty that accompanies any long-term projection. This uncertainty justifies a larger safety margin, which should lead policymakers trying to avoid uncertainty in the direction of under-pollution. Thus, the precautionary principle could be understood as a variation of a maximin strategy in cases of genuine uncertainty. Genuine uncertainty characterizes many situations of environmental costs, including the greenhouse effect.³⁹

c. *Incentivizing Through Behavioral Means: Minimizing Transaction Costs and Optimizing Motivational Mix*

The arguments above do not themselves justify adopting a frame that is tilted against polluting behavior. Even if one accepts the argument that policymakers should aim for an equilibrium in which the pollution level is lower than the assessed optimal level, this does not necessarily entail achieving this level through behavioral means. The most straightforward method for achieving this is to increase the economic price of the polluting behavior. One could increase the level of the positive tax instead of altering the frame to include a positive consumption tax.

There are two reasons why intensifying the incentive against polluting behavior should be executed through behavioral framing and not by changing the real economic price. The first is efficiency. Increasing the real economic price of pollution requires greater transfers of real economic resources. Such transfers are accompanied by transaction costs. In contrast, intensifying an incentive through behavioral means does not require additional transfers of real resources, and thus the transaction costs that accompany the enhancement of an incentive through behavioral means are substantially lower.⁴⁰

Second, the NCT may achieve a desirable “motivational mix.” Both individuals and society might have preferences with regard to second-order motiva-

availability of certain scenarios. *Id.* In addition to familiarity, there might be other factors that affect the saliency of certain scenarios over others. Recent experiences may have greater cognitive availability than past experiences. See Howard Kurneuter, *Limited Knowledge and Insurance Protection*, 24 PUB. POL’Y 227, 250 (1976). For this reason, individuals and policymakers may neglect to fully take into account low-probability outcomes that they have never personally encountered. This can lead to substantial miscalculations and potentially enormous costs associated with overlooked, low-probability outcomes.

39. Sunstein, *supra* note 37, at 886-89.

40. Regarding the transaction costs which accompany taxation, see Joel Slemrod & Shlomo Yitzhaki, *The Costs of Taxation and the Marginal Efficiency Cost of Funds*, 43 IMF STAFF PAPERS 172, 173 (1996).

tions.⁴¹ We might prefer being motivated by internal factors rather than by external factors, even when the magnitudes of the motivations are equal. External factors exist independently of the subject motivated by them. Internal factors are subjective or intersubjective elements, such as perception. Although it is hard to completely *separate* the two, it is possible to at least *distinguish* between the two. Although in order to be motivated both are required, one of the two may have a greater role in triggering the motivation.

At the level of the individual, it is possible to argue that being motivated by an internal factor enhances one's sense of autonomy.⁴² Although the behavioral framing is not a "pure" internal motivation such as altruism—it is generated by an external framing—it can be considered an internal motivation relative to motivations which stem from purely objective external conditions.⁴³ When we point to a bias, we actually view the internal factor as being the active and more dominant element in motivating the individual.

On the societal level, the crowding-out of internal motivations by external motivations may be justified under a cost-benefit analysis in the short run, but the costs may exceed the benefits in the long run. Crowding-out internal motivations can kill such motivations. Individuals might become accustomed to external motivations only, and the appeal of intrinsic motivations could be substantially weakened. This might create substantial problems in other cases in which it is not possible to provide external motivations to replace internal motivations.⁴⁴

Although the NCT essentially provides an extrinsic motivation for inaction, as discussed above, it might have greater compatibility with intrinsic motivation than the alternative of providing an external motivation via a positive tax. In an incentive generated by a positive tax, the external factors have a greater role—not paying the additional amount for polluting—while perception has more of a passive role. In contrast, the incentive of the NCT is based also on an internal element—how one perceives the payment she receives. Although it is an interpretation of external factors, the intensification of the external factors is by means of the internal processes of interpretation (in which perception plays a

41. Regarding second-order preferences, see AMARTYA SEN, CHOICE WELFARE AND MEASUREMENT 84, 99-104 (1982); and Harry Frankfurt, *Freedom of the Will and the Concept of a Person*, 68 J. PHIL. 5, 6-10 (1971). For the view that the intrinsic value of an act is part of the act's outcome, see JOSEPH RAZ, THE MORALITY OF FREEDOM 269-71 (1986).

42. Edward L. Deci & Richard M. Ryan, *The Support of Autonomy and the Control of Behavior*, 53 J. PERSONALITY & SOC. PSYCHOL. 1024, 1033-35 (1987).

43. *Id.* This assertion is contestable—one may claim that a behavioral framing is a stronger form of manipulation than the offering of an external reward, and thus is a greater infringement on autonomy.

44. Samuel Bowles, Review, *Policies Designed for Self-Interested Citizens May Undermine "The Moral Sentiments": Evidence from Economics Experiments*, 320 SCIENCE 1605, 1607-08 (2008).

much more active role). Thus, even if it is possible to reach the same level of incentive through conventional extrinsic-economic means, the “motivational-mix” under the NCT may be more desirable if one accepts that there may be a preference for internal motivations over external motivations.

D. The Efficient Enhancement of the Welfare of Disadvantaged Individuals

Policies that provide credits for beneficial omissions might be justified within a cost-benefit framework, even though they may be much more costly to administer than policies that penalize harmful commissions. Although there are substantial costs associated with the recognition of beneficial omissions that the direct benefits do not necessarily offset, there may be indirect benefits that offset these costs. The indirect benefit is the efficiency of enhancing the welfare of individuals of low socioeconomic status by reassigning them resources through a merit-based system. The individuals’ contributive action plays a significant role in their entitlement to resources based on their merit or virtue.⁴⁵ As noted above, the credit for contribution through an omission might be refundable if it exceeds the individual’s tax liability.⁴⁶

While the receipt of funds by individuals of low socioeconomic status in conventional transfer programs is frequently accompanied by substantial stigma costs,⁴⁷ the transfer of resources to those very same individuals in the context of merit transfer programs will not be accompanied by such costs. The resources are not transferred to them based on the fact that they are disadvantaged individuals, but rather due to their positive contribution to society. Scholars have noted that many of the social policies that attempt to pro-

45. Regarding merit, virtue, and other possible bases for desert claims, see GEORGE SHER, DESERT 109-32 (1987). Regarding the justification of desert in cases in which the agent has not intended to generate positive externalities, see Adi Libson, *Redefining Tax Fairness: The Equal Contribution Principle* (Sep. 29, 2013) (unpublished Ph.D. dissertation, Bar-Ilan University) (on file with author).

46. The claim that redistribution through the legal system outside the classic tax and transfer redistributive mechanisms may be more efficient goes against the dominant strand in the current literature, which claims that such redistribution creates a “double distortion.” See Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667, 669 (1994); David A. Weisbach, *Should Legal Rules Be Used to Redistribute Income?*, 70 U. CHI. L. REV. 439, 446-53 (2003). *But see* Richard S. Markovits, *Why Kaplow and Shavell’s “Double Distortion Argument” Articles Are Wrong*, 13 GEO. MASON L. REV. 511, 550-55 (2005); Brett H. McDonnell, *The Economists’ New Arguments*, 88 MINN. L. REV. 86, 111 (2003); Chris William Sanchirico, *Deconstructing the New Efficiency Rationale*, 86 CORNELL L. REV. 1003, 1006-11 (2001).

47. DAVID ELLWOOD, POOR SUPPORT 115 (1988).

mote the welfare of the least well off in society are often self-defeating.⁴⁸ The effect of a welfare policy on the recipients of that policy is not only a function of the amount of resources transferred, but is also a function of the form in which the resources are transferred. In many cases a side effect of welfare policies is to damage the self-esteem of the recipients.⁴⁹ This psychological cost might be greater than the benefits of the social programs.⁵⁰ Policies that target those who are worse off may reinforce an image of the recipients as “inferior” members of society who have to be “taken care of” by social institutions.⁵¹ Transferring resources to individuals in response to their contribution to society bypasses these costs in cases in which there is a strong correlation between contribution and socioeconomic status. This possibility is too often overlooked in the scholarly literature, perhaps due to the methodological difficulties of incorporating the effect of the *form* of redistribution.⁵²

E. The Normative Conception of Citizenship as a Justification for Internalization of Beneficial Omissions Through the NCT

One of the central advantages of internalizing beneficial omissions through the NCT is that it underscores the social contribution of individuals of low socioeconomic status that otherwise would not have been acknowledged. This

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48. See Frank Munger, *Dependency by Law: Poverty, Identity and Welfare Privatization*, 13 IND. J. GLOBAL LEGAL STUD. 391, 410 (2006) (describing how welfare law functions as a mechanism for social control instead of an empowering mechanism).
49. See ELLWOOD, *supra* note 47, at 115; Anne L. Alstott, *The Earned Income Tax Credit and The Limitations of Tax-Based Welfare Reform*, 108 HARV. L. REV. 533, 565 (1995). For other advantages of universal welfare programs over targeted welfare programs, such as political sustainability, see THEDA SKOCPOL, *THE MISSING MIDDLE* 30 (2000).
50. See David A. Super, *Offering an Invisible Hand: The Rise of the Personal Choice Model for Rationing Public Benefits*, 113 YALE L.J. 815, 830-31 (2004). For an example of a study providing a model of the stigmatization effects associated with welfare programs (and claiming that welfare programs should aim at minimizing the inability signal they generate), see Tomer Blumkin, Yoram Margalioth & Efraim Sadka, *The Role of Stigma in the Design of Welfare Programs* 3-4 (CESIFO Working Paper No. 2305, 2008), <http://www.econstor.eu/bitstream/10419/26350/1/568432398.PDF>.
51. ELLWOOD, *supra* note 47; Munger, *supra* note 48; Mary Bryna Sanger, *Welfare Reform Within a Changing Context: Redefining the Terms of the Debate*, 23 FORDHAM URB. L.J. 273, 280 (1996).
52. For a discussion of the effect of the context in which resources are transferred on the welfare and well-being of the individual, see Daphna Lewinsohn-Zamir, *In Defense of Redistribution Through Private Law*, 91 MINN. L. REV. 326, 354-57 (2006). Regarding the importance of taking side effects into account, see Elizabeth Anderson, *What is the Point of Equality?*, 109 ETHICS 287 (1999); and Jonathan Wolff, *Fairness, Respect and the Egalitarian Ethos* 27 PHIL. PUB. AFF. 97 (1998).

justification applies in cases where there is a strong correlation between low socioeconomic status and abstention from consuming a given good. Crediting such individuals transforms them from non-contributing individuals into contributive citizens.

Individuals of a low socioeconomic status cannot make a significant financial contribution through the tax system. For this reason, they are sometimes viewed by society as social burdens—citizens who do not contribute to the social good. By acknowledging and underscoring their in-kind contribution through omissions equivalent to the commission of financial contributions, policymakers would enable these individuals to be treated as contributing citizens.

Framing these individuals as contributors to the social good would treat them as active, rather than passive, subjects. Such a conception of active citizenship is consistent with Aristotle's normative conception of citizenship as described in the *Politics*. There, Aristotle noted that "[t]he citizen in the full sense cannot be better defined than by his participation in judicial or political office."⁵³ On this view, a true citizen should be actively engaged in the functions that the state executes. Although Aristotle focuses only on involvement in public office, some scholars argue that the active component in Aristotle's definition of citizenship should be extended beyond engagement in political office to other forms of participation in the life of the polis. Donald Morrison argues that Aristotle's definition presents citizenship in the fullest sense.⁵⁴ However, there may be forms of participation which embody Aristotle's conception of citizenship but do not involve taking part in political office. Indeed, active citizenship can be fulfilled through engagement in the production of public goods. By abetting pollution, one is directly producing a public good, whether through abstention from pollution or through other means.

Hannah Arendt's conception of citizenship is also derived from the Aristotelian approach. According to Arendt, one of the central elements of citizenship is "the right to be seen in action."⁵⁵ Recognizing the individual's active contri-

53. ARISTOTLE, *POLITICS* III (Richard Robinson trans., 1995). It is important to note that Aristotle's conception of citizenship is not descriptive but normative. Aristotle admits in his *Politics* that many states use an alternative definition of citizenship.

54. Donald Morrison, *Aristotle's Definition of Citizenship: A Problem and Some Solutions*, 16 *HIST. PHIL. Q.* 143 (1999). Susan Collins also expands the Aristotelian conception of citizenship. See SUSAN D. COLLINS, *ARISTOTLE AND THE REDISCOVERY OF CITIZENSHIP* 129 (2006).

55. HANNAH ARENDT, *ON REVOLUTION* 130 (1963). For a discussion of Arendt's active conception of citizenship, see MARGARET CANOVAN, *HANNAH ARENDT: A REINTERPRETATION OF HER POLITICAL THOUGHT* 124-32 (1992). Arendt's conception of active citizenship was the main reason for her objection to the modern structure of representative democracy. She supported an alternative structure of councils, in which citizens directly engage in the public sphere. See ARENDT, *supra*,

bution to society acknowledges his citizenship and status as an active political subject.

While active contributions are salient and do not need to be highlighted, the tendency to ignore omissions calls for the assistance of a social mechanism that acknowledges such contributions. Underscoring contributions that take the form of omissions is especially significant due to the fact that, for many individuals with low levels of resources, omissions are their main (and sometimes only) form of contribution.

The application of Arendt's approach may go hand-in-hand with an expressive view of the law. According to this view, the form in which a law is structured has inherent value, separate from its effect on behavior. This is because the form in which a law is structured conveys a message to the citizenry.⁵⁶

In the case of the NCT, administering the credit through the tax system conveys that the recipients received the resources transferred to them in the context of merit-based desert. Their in-kind contribution to society (abstaining from generating negative externalities) is equivalent to the paradigmatic contribution of the individual to the state (making a tax payment). Conveying this message through the legal system is crucial for the ability of these citizens to view themselves as contributors to society. As stated above, the framing of these individuals as active contributors is extremely important in light of the aforementioned conception of active citizenship.⁵⁷

at 258. Regarding Arendt's model for democracy, see J.F. Sitton, *Hannah Arendt's Argument for Council Democracy*, 20 POLITY 80 (1987).

56. Regarding expressive theories of law, see Richard H. Pildes, *Why Rights Are Not Trumps: Social Meaning, Expressive Harms, and Constitutionalism*, 27 J. LEGAL STUD. 725 (1998); Richard H. Pildes & Elizabeth S. Anderson, *Slingshot Arrows at Democracy: Social Choice Theory, Value Pluralism, and Democratic Politics*, 90 COLUM. L. REV. 2121 (1990); Richard H. Pildes & Richard G. Niemi, *Expressive Harms, "Bizarre Districts," and Voting Rights: Evaluating Election District Appearances After Shaw v. Reno*, 92 MICH. L. REV. 4833 (1993); and Cass Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021 (1996). For a critique of expressive theories of law, see Matthew D. Adler, *Expressive Theories of Law: A Skeptical Overview*, 148 U. PA. L. REV. 1363 (2000).
57. It should be noted that adopting the NCT on grounds of the active conception of citizenship may also be justified under a non-expressive view. Policy not only expresses a certain worldview and incentivizes individuals to behave in certain ways, but also affects the formation of their preferences. See Bar-Gill & Fershtman, *supra* note 29. Thus, even if the expression of public values has no value per se, it might have value in its effect on the formation of preferences and values. Signifying an individual's contribution through omission might enhance that individual's preference for social contribution and active citizenship by making those activities more accessible. For a similar argument that policymakers should internalize the effects of different forms of environmental regulatory mechanisms on the preferences of individuals, see Michael Livermore, *Reviving Environmental Protection: Preference-directed Regulation and Regulatory Ossification*, 25 VA. ENV'T L.J. 311, 314-15 (2007).

This view stands in contrast to the claim made by Professors David Weisbach and Jacob Nussim regarding the considerations that should be taken into account when determining whether a spending program should be integrated into the tax system as a tax expenditure or as an independent spending scheme. Weisbach and Nussim argue that the exclusive considerations for determining whether a program should be integrated into the tax system are cost-benefit analysis of coordination on the one hand and specialization on the other.⁵⁸

This Article suggests a fundamentally different premise—that the institution through which the policy is applied has an expressive value and affects the formation of preferences. Policymakers would be wise to take this premise into consideration. Although from an economic perspective there might not be any difference between the two mechanisms, from a legal-expressive perspective there is a significant difference. Each mechanism used to implement the scheme conveys a different message to the recipients regarding the reason they receive payment. The law per se has an effect on the recipients quite apart from the economic consequences of the law. In addition, the way the law is framed might have an effect on the formation of the preferences of individuals.⁵⁹

The expressive view justifies implementing the NCT, even if the administrative costs of implementing the NCT through the tax system are considerable. The NCT is not a subsidy, but rather is an integral part of defining one's proper tax liability in fairness terms. The state should not take advantage of the fact that the public goods were supplied willfully, and should provide a credit for these contributions.⁶⁰

Providing this credit through the tax system recognizes individuals for their contribution to society, a contribution that is equivalent to the financial contribution of a conventional tax payment.⁶¹ It does so by increasing the saliency of the contribution. Thus, among the three main functions of the tax system—raising revenue, regulating of behavior, and redistributing of wealth⁶²—the

58. For a detailed account of the advantages and disadvantages of tax expenditures versus direct spending programs, see Weisbach & Nussim, *supra* note 3.

59. See Bar-Gill & Fershtman, *supra* note 29.

60. Cf. Scott Hershovitz, *Two Models of Tort (and Takings)*, 92 VA. L. REV. 1147, 1175-78 (2006) (arguing that there should be a distinction between compensation for actions that the agent had a moral duty to perform and gratuitous benefits that the agent had no moral duty to perform).

61. For a discussion of the incorporation of such incommensurable normative considerations into a cost-benefit analysis, see Arden Rowell, *Partial Valuation in Cost-Benefit Analysis*, 64 ADMIN. L. REV. 723, 724, 732-38 (2012). Rowell argues for distinguishing between commensurability and monetizability. Normative considerations should be monetized according to the public's willingness to pay for the particular normative dimension, even if monetizing only captures a fraction of the value in question.

62. Reuven S. Avi-Yonah, *The Three Goals of Taxation*, 60 TAX L. REV. 1, 3 (2007).

credit given to non-polluting individuals should be classified under the first function (the one which comprises the “normal tax” baseline⁶³). While the latter two functions are fulfilled jointly by the tax agencies and by the spending and regulating agencies, the revenue-raising function is the exclusive province of the tax system. In order to convey the message that the NCT is an integral part of the revenue-raising function, the NCT must be situated within the tax system.⁶⁴

F. *The NCT’s Ability to Overcome Political-Economy Barriers*

From a public-choice perspective, there is a much greater chance that an NCT will be adopted than an economically equivalent positive green tax. One of the greatest barriers that green taxes face is a political barrier—the need for adoption by the relevant political institutions.⁶⁵ The acceptance of a policy by the majority and by the government is especially dependent on the effect of the policy on organized lobby groups. Some scholars have extended models of political competition to the field of environmental policy.⁶⁶ This scholarship assumes the existence of lobbies, and has not attempted to explain the conditions needed for their formation.

Mancur Olson is the most prominent scholar who has addressed the variables that affect the formation of lobbies. According to Olson, one of the key factors for determining whether an interest group will form a lobby is the size of the group. In contrast to the intuition that large pressure groups are more powerful, Olson claims that small interest groups will tend to form lobbies, while

63. Regarding the concept of the “normal tax” baseline, see Michael J. McIntyre, *A Solution to the Problem of Defining a Tax Expenditure*, 14 U.C. DAVIS L. REV. 79, 81, 102-03 (1980); and Daniel Shaviro, *Rethinking Tax Expenditures and the Fiscal Language*, 57 TAX L. REV. 187, 217-18 (2004). For an argument supporting the efficacy of the “normal tax” baseline and the tax-expenditure analysis which it enables, see J. Clifton Fleming Jr. & Robert J. Peroni, *Can Tax Expenditure Analysis Be Divorced from a Normative Tax Base?: A Critique of the “New Paradigm” and Its Denouement*, 20 VA. TAX REV. 135, 172-75 (2010).

64. For a similar argument regarding the expressive value of the tax system, see J. Clifton Fleming, Jr. & Robert J. Peroni, *Reinvigorating Tax Expenditure Analysis and Its International Dimension*, 27 VA. TAX REV. 437, 492-93 (2008); and Fleming & Peroni, *supra* note 63, at 175-79.

65. Robert N. Stavins has argued that “it is important to identify and design [environmental] policies that will be optimal in Washington not just from the perspective of Cambridge, New Haven or Berkeley.” Stavins, *supra* note 23, at 353.

66. See Toke S. Aidt, *Political Internalization of Economic Externalities and Environmental Policy*, 69 J. PUB. ECON. 1 (1988); P.G. Fredriksson, *The Political Economy of Pollution Taxes in a Small Open Economy*, 33 J. ENVTL. ECON. & MGMT. 44 (1997).

large interest groups will not. Thus, the former might have greater impact on the policies adopted.⁶⁷

Olson's observation sheds light on one of the most significant barriers to the implementation of environmental policy through green taxes. Most green taxes impose additional costs on specific segments of the population. According to Olson's model, a green tax that is especially relevant to a limited segment of the market will most likely generate a pressure group against the enactment of such a tax. This reality is explained by the low transaction costs involved in forming a lobby among a small, limited group. In contrast, it is less likely that a lobby or pressure group will form among the group benefiting from such a tax, which in most cases is comprised of the majority of the members of society. According to Olson, it is unlikely that large groups will form a lobby or pressure group due to the problem of free riding.⁶⁸

The use of a negative tax instead of a positive green tax may aid in overcoming these political barriers. While a positive tax imposes the costs of internalization on a small group and the benefits of the internalization on a large group, a negative tax will have the reverse effect. For instance, in the case of the internalization of the costs incident to car usage under a conventional positive tax, car users have to pay a sum that equals the costs they impose on society through car usage; the rest of society will benefit from the additional revenue that the tax generates. In contrast, in the case of the negative tax, car users will benefit from the policy that will not impose on them directly the external costs of their behavior, and the public at large will be allocated the costs of buying from the drivers the right to pollute.⁶⁹

67. See MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION 2* (1965).

68. For other scholars supporting this view, see JAMES M. BUCHANAN & GORDON TULLOCK, *THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY* 283-95 (1962); and DANIEL FARBER & PHILIP FRICKEY, *LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION* 13-33 (1991).

69. Taking into account one's proportional share in public goods, there is no distributional difference in the outcome of a negative and positive tax. Thus, the "winners" and the "losers" under both policies do not change. This point can be demonstrated through an example. Assume that the external costs of car usage are \$10. There are 90 individuals who drive a car and 10 who do not. The distributive effect of a positive consumption tax is that individuals who have a car will have to pay \$10 each—\$900 in total. Taking into account the rise in public revenue, each individual benefits by \$9 from the increase in the public revenue as a result of the tax. Overall, the car owners incurred a cost of \$1 and the non-car-owners have incurred a benefit of \$9 as a result of the tax. The distributive effects of a negative tax are that the non-car-owners receive a credit of \$10. In order to finance the credit, there is a need to spend \$100 of the public's funds. Thus, each individual has to pay \$1. Overall the car owners have incurred a cost of \$1, and the non-car-owners have acquired a benefit of \$9. This is an identical distributional outcome as a positive income tax. The claim that the winners and losers in each one of the policies are not identical has to assume that people discount private benefits and public benefits differently—they disregard the latter in comparison to the former.

According to Olson's model, a lobby will be more likely to form in the first case, where the group paying the cost is both smaller and less diverse. In contrast, in the latter case, Olson's model predicts that if a lobby forms, it will be a lobby for adopting the policy proposed. Such policy leaves the smaller group—which could more easily form a pressure group—better off.⁷⁰ The example above might not be relevant in a country with a strong auto industry, such as the U.S. In such a case, the analysis might be reversed.

V. IMPLEMENTING THE NCT

In this Part, I present three possible applications of the NCT to the realm of environmental policy. In the conclusion of the Article, I will point to more general applications that recognize beneficial omissions outside the realm of environmental policy. In each of the examples below, I provide a general blueprint for how the NCT will work. In the car ownership example, I discuss the grounds for a binary structure of the NCT. In the air travel example, I address the application of the NCT to global external costs. In the electricity consumption example, I examine a non-binary application of the NCT.

A. Car Ownership

The classic example for the implementation of the negative-consumption tax is car ownership.⁷¹ Car ownership fully satisfies the first substantial condi-

This does not have to be rooted in behavioral frames, but may be rooted in an economic justification—that the money they control is worth more to them than the money which the government controls, and that a public liability does not spread over all citizens equally.

70. There may be an additional factor which should be taken into account and might affect the projection above—the means each one of the groups have at their disposal. Although the non-owners of cars are a smaller and more cohesive group, they also have fewer means at their disposal, which might impede their lobby efforts.
71. There are three ways in which cars could be taxed to reduce the negative externalities they generate: (1) taxing car purchasing, (2) taxing car ownership, or (3) taxing car usage. For the effects of each one of the forms of taxation of cars on carbon-dioxide emissions, see Yoshitsugu Yayashi, Hirokazu Kato & Val Teodoro, *A Model System for the Assessment of the Effects of Car and Fuel Green Taxes on CO₂ Emission*, 6 *TRANSP. RES. (PART D)* 123 (2001). The main reason that the NCT applies to ownership rather than car usage is that car ownership better realizes the second condition listed for the implementation of the NCT. It serves as a stronger signal for socio-economic status. While owning a car is strongly correlated to socio-economic status, it is less clear if there is such a strong correlation with the use of a car. Recently, a similar scheme to the one suggested in this Article, in which carrots are used to incentivize drivers to abstain from driving in peak-hours, has been tested by researchers at Stanford University. See John Markoff, *Incentives for Drivers Who Avoid Traffic Jams*, *N.Y. TIMES*, June 11, 2012, <http://>

tion for the NCT since the ownership and use of cars creates substantial negative externalities. The main negative externalities are the air pollution and climate change resulting from emissions,⁷² but there are also other externalities such as noise pollution, congestion.⁷³ In addition, the extensive infrastructure that care usage demands—such as roads, parking, and emergency medical services—comprises a significant share of the overall costs that accompany car usage. Damages to property and people in car accidents are an additional and substantial external cost created by automobile use.⁷⁴ The aggregated external costs—including congestions, accidents, air and noise pollution, and climate change—amount to \$0.32 per vehicle miles traveled (VMT).⁷⁵

www.nytimes.com/2012/06/12/science/experimental-campaigns-pay-drivers-to-avoid-rush-hour-traffic.html. For discussion of an experiment in Bangalore which saved 9,000 person hours via a “carrot” incentive to drivers to abstain from commuting in peak hours, see Deepak Mergu, Balaji S. Prabhakar & N.S. Rama, *An Incentive Mechanism for Decongesting the Roads: A Pilot Program in Bangalore*, PROC. OF ACM NETECON WORKSHOP (2009), http://simula.stanford.edu/Incentive_mechanisms/NetEcon_final.pdf.

72. Reducing the external costs of gas emission is more complex than it seems. Enhancing fuel efficiency has adverse effects, which are discussed in the scholarship as the “rebound effect.” The enhancement of fuel efficiency reduces the price of the commute per mile, which results in an overall increase of car usage and therefore may result in an overall increase in fuel consumption and air pollution. See sources cited *supra* note 15.
73. Recent scholarship has emphasized reliability costs, which, although associated with congestion costs, are distinct. The unreliability of commute time is a direct cost on the drivers. See OECO INT’L TRANSP. FORUM, *Improving Reliability on Surface Transport Networks* 67, 84 (2010).
74. For a more detailed account of the different negative externalities generated by car usage, see VICTORIA TRANSP. POLICY INST., *TRANSPORTATION COST AND BENEFIT ANALYSIS: TECHNIQUES, ESTIMATES AND IMPLICATIONS* (2d ed. 2009), <http://vtpi.org/tca/>.
75. *Id.* at 8-11. European projections estimate that by 2020 the total of external costs of car usage in Europe will reach EUR 0.20 per kilometer. See Stef Proost, *A Full Account of the Costs and Benefits of Reducing CO₂ Emissions in Transport*, in *THE COST AND EFFECTIVENESS OF POLICIES TO REDUCE VEHICLE EMISSIONS* 151, 158 (2008). Proost approximates that the costs of air pollution together with the climate change cost will roughly be 0.018 EUR per km, the cost of congestion 0.028 EUR per Km and the cost of accidents 0.019 EUR per km. (All sums are in 2003 EUR value.) Proost’s main argument is that a dominant component of the external costs consists of the costs which are a direct factor of kilometers driven—congestion costs and accident costs, as opposed to pollution costs, which are a direct factor of fuel usage. For that reason, a tax on fuel does not perfectly internalize the external cost. Some of the tax on consumption should be levied on kilometers driven and not only on fuel usage for a full an accurate internalization of the external costs. *Id.* at 159.

Car ownership also fulfills the administrative conditions necessary for an effective NCT. Governmental agencies already maintain databases of car owners, and thus hold complete information regarding individuals who consume the commodity.⁷⁶ The NCT could therefore be implemented relatively cheaply. If the NCT were implemented on car ownership, every household that did not own a car during a certain period of time would receive a refundable tax credit.

Car ownership also satisfies the second substantive condition mentioned above since it serves as a relatively strong proxy for socioeconomic status. Individuals of a very low socioeconomic status tend not to own cars, while individuals of a high socioeconomic status mostly do own cars.⁷⁷ The strong proxy for socioeconomic status that car ownership provides is one of the reasons for preferring it over alternative criteria for car pollution, such as miles driven.

The binary feature of car ownership intensifies its correlation to socioeconomic status. The correlation between car ownership and socioeconomic status is much stronger than the correlation between different levels of car usage and socioeconomic status because of its clear-cut binary nature.⁷⁸ The binary feature, however, requires justification. The normative motivations behind using an NCT suggest that it should not be structured or tailored based on redistribu-

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76. Not only does the fact that government agencies already hold such information reduce the economic costs of implementation, but it also prevents the emergence of a civil-liberties concern related to the government's collection of additional information about citizens.
77. For example, according to 1995 U.K. data, in the lowest income decile the average of cars per person is 0.16, compared to 0.83 cars per person for the highest income decile. Joyce M Dargay, *The Effect of Income on Car Ownership: Evidence of Asymmetry*, 3 *TRANSP. RES. (PART A)* 807, 808 (2001).
78. The mileage gaps between the first and tenth deciles are not as substantial as the socio-economic gaps between car owners and non-owners. As a study has shown, a vehicle-mileage tax is not much more progressive than a universal registration fee, assuming revenue neutrality. While it reduces the annual tax price as a percentage of annualized lifetime income of the tenth decile relative to a registration fee, it also reduces the annual tax price as a percentage of annualized lifetime income of the first decile relative to a registration fee. See Margaret Walls, *Distributional Aspects of an Environmental Tax Shift: The Case of Motor Vehicle Emissions Taxes*, 52 *NAT'L. TAX J.* 53, 62 (1999). Regarding the regressive effect of both VMT and fuel tax, see James M. Poterba, *Is the Gasoline Tax Regressive*, 5 *TAX & ECON.* 145 (1991); and B. Star McMullen & Lei Zhang, *Techniques for Assessing the Socio-Economic Effects of Vehicle Mileage Fees*, OREGON TRANSP. RESEARCH & EDUC. CONSORTIUM (2008), http://ntl.bts.gov/lib/30000/30200/30267/0801_McMullen_VehMileageFeesFinalReportFinal.pdf. But see Sarah E. West, *Distributional Effects of Alternative Vehicle Pollution Control Policies*, 88 *J. PUB. ECON.* 735 (2004) (claiming that, due to the greater elasticity of the mileage driven by lower-income earners in response to a price increase, the VMT and the fuel tax are less regressive than is claimed in some scholarship).

tive considerations.⁷⁹ Its basic structure must be justified on efficiency grounds. Justifying a binary credit on economic grounds is not a simple task. At first glance, binary credits seem to be inefficient due to their inelasticity and rigidity.⁸⁰ The need to justify adopting a binary credit may be relevant to other possible implementations of the NCT.

The efficiency cost of adopting a binary credit is quite high. Dividing people into two rough categories—those who generate external costs through car usage and those who do not—does not seem to correlate closely with the actual external costs that individuals generate. The credit would have been much more closely correlated to the actual externalities generated by individuals if it did not ignore the fact that the different levels of usage are dispersed along a continuum. The consequence of a binary credit—treating equally individuals who make extensive use of their car and individuals who barely use it—seems to violate vertical equity. According to the principle of vertical equity, individuals with different levels of welfare (or any other metric with which the tax base is considered) should be treated differently for tax purposes.⁸¹ Treating two individuals the same for tax purposes, despite the fact that they are quite different on the very grounds on which the credit is justified, violates vertical equity.⁸²

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79. This stems from Kaplow & Shavell's general observation that integrating redistributive considerations and efficiency considerations is inefficient due to the double distortion it generates. See Kaplow & Shavell, *supra* note 46.
80. Regarding the problem of oversimplification in the usage of binary categorization in transport analysis, see Michael G. McNally & Anup Kulkarni, *Assessment of Influence of Land Use Transportation System on Travel Behavior*, 1607 J. TRANS. RES. BOARD 105, 110 (1997).
81. RICHARD MUSGRAVE, *THE THEORY OF PUBLIC FINANCE* 160 (1959).
82. It is important to emphasize that this point does not counsel against instituting a negative environmental tax; it merely raises an objection to the criterion suggested above for such a tax—car ownership. Instead, one might determine a baseline of fuel usage or driving mileage, and any individual who consumes less than the baseline would receive a refundable credit in proportion to how much less than the baseline she consumed. Such a credit would not have to be binary and would be far more responsive to the level of external costs the individual generates. A similar scheme has been already suggested. See Kara M. Kockelman & Sukumar Kalmanje, *Credit-Based Congestion Pricing: A Policy Proposal and the Public's Response*, 39 TRANSP. RES. (PART A) 671 (2005). According to this suggestion, road tolls based on congestion externalities should be returned to all licensed drivers in a uniform fashion. Under such a scheme, drivers who drive less than the average in high-peak hours will receive a credit which may be refundable. Although this scheme mainly deals with the external costs of congestion, it could similarly be designed to deal with other negative externalities of car usage, such as pollution. This suggestion was built to address one of the central critiques of the conventional congestion pricing mechanism—its regressive distributional impact. For scholars discussing the inequity of conventional congestion pricing, see Richard Arnott, André de Palma & Robin Lindsey, *The Welfare Effects of Congestion Tolls with Heterogeneous Commuters*, 28 J. TRANSP. ECON. & POL'Y 139 (1994).

But there are two reasons why a binary credit is not necessarily inefficient. First, due to the “tyranny of small decisions”⁸³ effect, dividing polluting behavior into two broad categories—those who have a car and those who do not—may be an effective method for internalizing pollution. According to this theory, if decisions concerning externalities are lumped into one big decision, individuals would be much more sensitive to the costs they generate. Overall, they would generate a lower level of externalities through one large decision than the level they would have reached in a series of small decisions. The tyranny of small decisions applies to many environmental choices, including driving. Indeed, it may be desirable to lump the decisions regarding the externalities one generates through car usage into a one-time decision about whether to own a car at all.

A second justification for the binary structure is that car ownership may be a more accurate criterion for estimating the external costs an individual generates through car usage. There are also some externalities that stem from car ownership per se and not from the mileage driven in the car. These costs include the external costs of the infrastructure needed for the import of cars and the cost for scrap handling of used cars. These external costs are constant per car, and are not affected by the mileage driven.

Besides fulfilling the threshold condition for the implementation of the NCT, the car example seems to fulfill some of the central rationales mentioned in Part II of this Article. Enabling a governmental buy-back option may be very important in the car example, but on slightly different grounds. In the car example, there might be a strong reason for not enabling individuals to trade permits. While there is a strong reason to endow every household with the option to own a car, partially on redistributive and fairness grounds, the government might not be interested in enabling individuals to aggregate permits. If this premise is accepted as true, then the government buy-back option may be needed to replace the ability to trade the permits with others.

B. Air Travel

The NCT might also be implemented in the context of air travel. Under the NCT, individuals who refrain from air travel over a certain period of time would receive a refundable tax credit.

Air travel fulfills the administrative conditions for the implementation of the NCT because government agencies hold complete information regarding the identity of individuals who travel by air. Until recently, such databases existed only for international flights, but now domestic databases exist as well.⁸⁴

83. See Alfred E. Kahn, *The Tyranny of Small Decisions: Market Failures, Imperfections, and the Limits of Economics*, 19 KYKLOS 23 (1966).

84. The Transportation Security Administration Secure Flight Program collects data of traveling passengers on domestic flights. See *Secure Flight Program*, TRANSP. SECURITY ADMIN., <http://www.tsa.gov/stakeholders/secure-flight-program> (last visited February 14, 2013).

The case of air travel also satisfies the two substantive conditions for the implementation of the NCT. First, air travel generates high negative external costs. The most substantial cost is the emission of greenhouse gases. Emissions vary depending on the size of the aircraft, but in any event significantly exceed the parallel cost generated by auto transportation.⁸⁵ Similar to auto transportation, air travel also causes substantial air and noise pollution.⁸⁶ The component of external costs caused by congestion also exists in the case of air travel, although such costs are much lower than in the case of auto transportation.⁸⁷ Similar to auto travel, air travel also demands substantial infrastructure, although the infrastructure costs per passenger are probably much lower.

Air travel also fulfills the second substantive condition for the implementation of the NCT since there is a strong correlation between air travel and socioeconomic status. Air travel could fairly be classified as an exclusive product that is consumed mostly by individuals of higher socioeconomic status. Its consumption is a non-linear, marginal increasing function with respect to income.⁸⁸ Although air travel is a commodity that is closely correlated to socioeconomic status, the implementation of the NCT in the case of air travel might not benefit the worst off individuals as much as the implementation of the NCT in the case of auto travel. While in the case of auto travel there are strong grounds for implementing a binary credit—whether the individual owns a car or not—in the case of air travel the grounds for establishing a binary credit are weaker. The fact that an individual did not make use of air travel should entitle

85. Jos Dings et al., *External Costs of Aviation: Background Report*, CE DELFT 47 (2002), http://www.ce.nl/art/uploads/file/02_7700_04.pdf.

86. In the case of noise pollution there is only one key parameter which affects the magnitude of the costs—the model of the airplane. The millage of the trip does not affect the costs because the noise externalities take place only in takeoffs and landings. Dings and his colleagues estimate the external costs of noise at 9 EUR per passenger for a 40-seat airplane, 5 EUR per passenger for a 100-seat airplane, and 4 EUR per passenger for airplanes with 200 seats or more. *See id.* at 52.

87. Congestion cost PKT (per passenger per kilometer of travel) is \$0.0017 (in 1995 USD). *See* Milan Janić, *Aviation and Externalities: the Accomplishments and Problems*, 4 *TRANSP. RES. (PART D)* 159, 161 (1999).

88. According to the Bureau of Labor Statistics, in 1997 the bottom quintile spent 0.5% of its annual expenditures on airfare, while the top quintile spent 1% of its annual expenditures on airfare. In absolute terms, the top quintile spent over eight times as much on airfare than the bottom quintile, which is substantially higher than the general ratio of expenditures (in which the top quintile spent a bit over four times as much as the bottom quintile). *See* *ISSUES IN LABOR STATISTICS: EXPENDITURES ON PUBLIC TRANSPORTATION*, U.S. DEP'T LABOR STATISTICS (1999), <http://www.bls.gov/opub/ils/pdf/opbils34.pdf>. Additionally, the elasticity of demand for air travel in relation to income is estimated to be fairly high. *See* John Mutti & Yoshitaka Murai, *Airline on the North Atlantic: Is Profitability Possible?*, 11 *J. TRANSP. ECON. & POL'Y* 45, 48 (1977).

him or her to a credit of the marginal unit from which she abstained from consuming—one flight. But this is not a substantial credit. However, if the individual does not use air travel at all, it may be possible to credit her for more than the external costs of a single flight. It is possible to attribute to her the additional infrastructure costs per passenger that were eliminated, assuming that potential passenger usage is a key variable for the amount of infrastructure expenses.

In contrast to the administrative consideration, substantive considerations suggest that there may be good reason to implement the NCT on international flights only, since international flights may serve as a better proxy for socioeconomic status. In addition, international flights may impose higher external costs not only in absolute terms but also in relative terms. This is true because there is no substitute good with similar external costs, such as in the case of domestic travel.⁸⁹

One of the questions raised by the air travel example is whether the state should internalize global externalities. A substantial portion of the external costs of aviation listed above are costs which the state does not necessarily incur, but rather are global costs that the world as a whole incurs. I refer here to the external cost of greenhouse gas (GHG) emissions. Economically, it might not make sense for the state to fully internalize a social cost that it does not fully incur. It is possible to justify the state's internalization of such external costs, however, if it accepts international obligations to limit its generation of GHG emission. Given such obligations, the state does have an economic interest in internalizing the full costs of GHG emissions.

In the case of air travel, the state might have an additional interest in implementing the NCT: internalizing the negative national pecuniary externalities of traveling abroad.⁹⁰ Pecuniary externalities affect the relative prices of assets, but do not have any real effect on production. Due to the fact that such externalities do not imply economic efficiency or inefficiency, they are mostly dismissed in economic analysis.⁹¹ Although there are no pure economic grounds for internalizing pecuniary externalities, there might still be a national interest for internalizing such externalities in the case of air travel. Traveling abroad leads to the use of foreign products for which there are domestic substitutes. A domestic vacation may be a close or perfect substitute for a vacation abroad. In addition, an individual traveling abroad is most likely to purchase foreign products to which there exist domestic substitutes. If they had not travelled

89. Martijn Brons et al., *Price Elasticity of Demand for Passenger Air Travel: A Meta-analysis*, 8 J. AIR TRANSP. MGMT. 165, 167 (2002) (noting that long-distance flights suffer a smaller number of substitute modes than short-distance flights).

90. DAVID N. HYMAN, *PUBLIC FINANCE: A CONTEMPORARY APPLICATION OF THEORY TO POLICY* 98 (9th ed. 2007).

91. See E.J. Mishan, *The Postwar Literature on Externalities: An Interpretive Essay*, 9 J. ECON. LIT. 1, 5-6 (1971). Following Mishan, Harvey Rosen also ignores pecuniary externalities in his book on public finance. HARVEY ROSEN, *PUBLIC FINANCE* 82 (7th ed. 2005).

abroad, many of these individuals may have purchased similar products in the domestic market (and would have paid a sales or VAT tax to local authorities).

The rationales for the implementation of the NCT in the air travel example are different than those of car ownership example. In contrast to the implementation of the NCT in the auto travel context, in the air travel context there is no reason not to use a conventional cap-and-trade mechanism. Thus, the need for a government buy-back option is less compelling. In the air travel case, there is no reason to assume that the government may have allocated too many permits due to asymmetrical information. The allocation of permits is limited in scope—one unit per individual—while additional units of pollution are taxed.

Additionally, in the air travel example there is no special justification for endowing every individual or household with the option of using air travel. Unlike car ownership, air travel is not perceived as a 'key good' that every household or family should have an option to enjoy.⁹² For the same reason, the rationale of controlling the wealth effects is not as strong; that effect is especially relevant to key goods for which it is especially important to control the constraining effects of low wealth levels. The public-choice rationale is also less relevant to the air travel example. Because air travel is more of an exclusive good, the size of the group that abstains from its consumption is bigger and thus the public-choice rationale is less relevant.

On the other hand, the enhancement of welfare and the transformation of individuals into contributive citizens are especially strong in the case of air travel. These rationales are a function of the intensity of the correlation of the consumption pattern to socioeconomic status. Due to the fact that air travel is a relatively exclusive good, especially in comparison to car ownership,⁹³ these rationales are especially relevant to the implementation of the NCT in the air travel example.

C. Residential Consumption of Electricity

An additional possible application of the NCT may be found in the realm of energy consumption at large, and, more specifically, in the residential consumption of electricity.

There are two forms in which the NCT may be implemented in the field of electricity consumption.

The first form is similar to the implementation of the NCT in the case of car usage: a binary credit given to individuals who forgo the option of a certain form of consumption by not owning the instruments that enable that con-

92. Steven Raphael & Michael Stoll, *Can Boosting Minority Car-Ownership Rates Narrow Inter-Racial Employment Gaps?*, 2001 BROOKINGS-WHARTON PAPERS ON URB. AFFS. 99, 101, 103 (emphasizing the near universality of car ownership and its effect on many significant dimensions in life (such as finding and maintaining a job)).

93. U.S. DEP'T LABOR STATISTICS, *supra* note 88. Compare this to near universality of car ownership. *Id.*

sumption. Just as in the case of a credit provided to an individual who does not own a car, a credit could be provided to an individual who does not own an appliance that accounts for a large share of household electricity usage over a fixed period of time. The classic example is an air-conditioning unit. Air-conditioning accounts for a large share of household energy consumption (and an even greater share of discretionary electricity consumption).⁹⁴

It is harder to justify a binary application of the NCT through an appliance credit than it is to justify a binary credit in the case of car ownership. Car ownership generates substantial external costs on its own—costs which are not simply functions of usage—and accordingly there is a strong justification for eliminating any credit from individuals who own a car. The same cannot be said of the ownership of any electric appliance. The appliance credit also raises an administrative problem that does not apply to car ownership. In contrast to the car example, there is no government agency that collects data regarding the identity of individuals who own certain appliances. The implementation of the NCT to electricity consumption would entail incurring substantial administrative costs for data collection, and would also raise civil-liberty concerns because the government would need to collect additional data that it does not currently possess.

The second potential form is a credit for households that have low electrical consumption. As stated in Part II, this method may be equivalent to a tradable and refundable cap-and-trade regime, in which households are endowed with permits for electricity consumption that they may sell to other users, or even back to the government. This regime seems to fulfill the three conditions for the implementation of the NCT.

At first glance, the administrative costs of such implementation seem high. Such costs would include the collection of data regarding household electrical consumption and the administration costs of permit transactions. However, the administration is less complex and costly than it seems.⁹⁵ Under the regime that Debbie Niemeier and her colleagues have proposed, households would be endowed with permits for GHG emissions. The utility company would then obtain from the household the permits needed to cover the GHG emissions for producing the electricity that the household has consumed. The utility company would then transfer permits to the regulator for the aggregated amount of GHG emission it generated by providing electricity to households. If a household intends to consume a greater amount of electricity than the GHG emission

94. According to the U.S. Energy Information Administration, air conditioners account for sixteen percent of end-use residential electricity consumption, more than any other appliance. See *End Use Consumption of Electricity 2001*, U.S. ENERGY INFO. ADMIN., <http://www.eia.gov/emeu/recs/recs2001/enduse2001/enduse2001.html> (last visited February 14, 2013).

95. D. Niemeier et al., *Rethinking Downstream Regulation: California's Opportunity to Engage Households in Reducing Greenhouse Gases*, 36 ENERGY POL'Y 3436, 3439-40 (2008).

permits enable, it must purchase GHG permits from a lesser-consuming household.

Niemeier and her colleagues have labeled this regime a ‘household cap-and-trade’ regime (HHCT). They argue that administering the HHCT would not be as costly and complex as it might initially seem. Households have a billing account with a utility company, which includes complete information regarding the electricity consumption of each household. The only additional accounts needed are for the household’s permit balance and the permits that it owes for the current billing cycle. Platforms for trading pollution permits already exist, and the transactions costs are fairly limited. The main difference between the HHCT and a NCT is that, under the NCT, households have the option to sell back to the government the permits they have not used. The price in this transaction may exceed the price offered by other households, preventing inefficient pollution.⁹⁶

Needless to say, the first substantive condition—that the commodity to which the NCT applies generates significant negative externalities—is also fulfilled in the case of electricity consumption. The production of electricity is accompanied by significant CO₂ emission. Residential electricity consumption accounted for 15.1 PERCENT of all CO₂ emission in the U.S. in 2009.⁹⁷

The applicability of the second substantive condition for the application of the NCT—correlation to socioeconomic status—is slightly more problematic. The form suggested for the application of the NCT is not binary, and thus the correlation between the NCT and socioeconomic status may be weaker than in the other examples. As stated above, binary applications of the NCT correlate more strongly with socioeconomic status. Although the correlation between electricity consumption and socioeconomic status is not as strong as in a binary implementation of the NCT such as in the car example, electricity is still a normal commodity correlated to income.⁹⁸ And in the case of electricity, consumption by individuals with higher incomes will be greater, and thus the correlation between the NCT and socioeconomic status will be maintained.

The rationales applicable to the implementation of the NCT in the case of residential electricity consumption are distinctive from those applicable to the car and air travel examples. The governmental buy-back option is especially relevant to the residential electric consumption example. In contrast to the air travel and car examples, in the electricity example the individuals or household

96. *Id.* at 3443-44.

97. *Emissions of Greenhouse Gases in the United States 2009*, U.S. ENERGY INFO. ADMIN. 22-23 (2011), [http://www.eia.gov/environment/emissions/ghg_report/pdf/0573\(2009\).pdf](http://www.eia.gov/environment/emissions/ghg_report/pdf/0573(2009).pdf).

98. The elasticity of electricity consumption to income is greater than zero, which means it is positively correlated to income, although it is much smaller than unity. Given an increase in income, the consumption of electricity will increase, but at a substantially lower rate than the rate of the increase in income. See E. Rephael Braunch, *Short-Run Income Elasticity of Demand for Residential Electricity Using Consumer Expenditure Survey Data*, 14 ENERGY J. 111, 119 (1993).

are not endowed with a unitary permit, but rather are given permits for several kilowatt hours of consumption (with the option of using only some portion of the permits). Under such conditions, a cap-and-trade regime makes more sense than a binary credit.

Electricity is a “basic” commodity in the individual’s consumption pattern: it can be used for many distinctive forms of consumption and thus there is much greater uncertainty in assessing the subjective value the individual attributes it. As a consequence of the uncertainty regarding the value the individual actually attributes to each unit of consumption, electricity consumption presents a classic case for the implementation of the governmental buy-back option.

The other rationales for the NCT are less relevant to electricity consumption. In the case of consumption (which is on a continuum), controlling for income is less important. There is no crucial threshold such as in the binary case. Both rationales—enhancing welfare and acknowledging contributions—are less relevant in cases of a continuous credit. This is true because there is no well-defined borderline separating the individuals receiving the credit and the individuals who don’t. They are merely on different points along a continuum, and thus the credit does not assist in signaling certain individuals as contributors. The same reasoning applies to the public-choice rationale: because the groups are not well defined with clear borders separating between a small and big group, the conditions for lobby formation are not fulfilled.

Overall, it seems that the best form for implementing the NCT on residential consumption of energy is through a permit regime administered through the utility companies. Under such a regime, individuals whose consumption is lower than that allowed by their permits can sell some of their permits to other households or back to the government. Although the correlation between socioeconomic status and electricity consumption presumably would not be as strong as in cases of a binary credit and exclusive commodities, there would still exist a correlation between the two.

CONCLUSION

This Article has shown that beneficial omissions do not receive the attention they deserve, and that the option of internalizing externalities through crediting such omissions has largely been neglected.

This Article has raised several possible advantages of internalizing externalities by crediting omissions. First, on economic grounds, such internalization may be more efficient both as a mechanism for internalization of externalities and as a distributive mechanism. It eliminates inefficient pollution that may accompany a conventional cap-and-trade mechanism. Framing an incentive as a credit may generate a stronger effect than framing the incentive as a tax or fine, and thus may reach the optimal pollution level with a lower level of real transaction costs. In cases in which there is a strong correlation between omissions and low socioeconomic status, internalization through crediting the omission may enable efficient redistribution. The transfer of resources in the context of

merit-based desert eliminates the stigma costs that accompany conventional transfer programs, and thus enhances the recipients' welfare to a greater extent.

Second, crediting omissions may assist in achieving the desirable goal of framing the worst off individuals in society as contributing citizens. A mechanism that highlights the contribution of the worst off to society transforms them into active contributing citizens both in their own eyes and in the eyes of others. The passive inaction of not consuming dirty commodities is framed as an active contribution—one that makes an important contribution to the social good.

Third, on political economy grounds, crediting omissions might be more feasible than other schemes for internalizing external costs of pollution.

This Article has also suggested a mechanism for acknowledging in-kind contributions through omissions in the field of environmental policy: a negative-consumption tax. A few possible implementations of the NCT were discussed: (1) an NCT for individuals who do not own a car; (2) an NCT for individuals who do not make use of air transportation; and (3) an NCT for individuals who consume low levels of residential electricity.

In this Article, I have explored the normative justifications for internalization of beneficial omissions on three planes: efficiency, reinforcement of active citizenship, and political economy. I have also sought to demonstrate the feasibility of internalizing beneficial omissions through a negative tax mechanism, in cases such as car ownership, air travel and electric consumption. Although the environmental field is the ideal locus for implementing the internalization of beneficial omissions, such internalizations may well have much wider ramifications.

