IDENTITY, RATIONALITY, AND CHARITY: BRIDGING THE CHASM

Richard Johnson, Ph.D.
California Institute of Advanced Management

ABSTRACT

The phenomenon of charity has long troubled orthodox economics, the problem being how to characterize it as "rational." With the concept of "identity utility," introduced by George A. Akerlof and Rachel E. Kranton, it is possible to subsume the phenomenon of charity under the rubric of a rational action model. In this paper, a connection is established between their concept and sociological treatments of "identity." Then a model of charitable giving is developed that involves both a "residual wealth" function and an "identity utility" function, which, taken together, determine the amount given to tax-deductible charities. It specifically addresses the responses of charitable givers to changes in taxation rates, which determine the "price" of charity. Implications of this model are then compared with known long-term price elasticities for the impact of tax changes on charitable giving.

I.   INTRODUCTION

The term, "identity utility" was coined by George A. Akerlof and Rachel E. Kranton [1]. In their initial paper, they posited its existence and proposed a general utility function that included both the usual economic utilities (derived from goods that can be acquired through exchange in markets) and the "identity utility" of the agent. The addition of identity utility to agents' total utility functions makes it possible to explain a number of anomalies in economic research and theory without abandoning a rational action model, on which the discipline of economics is based. For example, it explains why workers will, under certain circumstances, and independently of how much they are paid, exert more productive effort than they could "get away with," and proves that this is "rational" behavior [2], contrary to traditional labor economics, which assumes that "labor" prefers to exert as little effort as possible in order to collect its pay. The same general theory makes it possible to explain the phenomenon of charitable giving, building on path-breaking work by Gary S. Becker [3]. This latter topic is the primary focus of this paper.

The publication of the Akerlof and Kranton paper [1] and subsequent publication of their book, *Identity Economics* [2], generated a number of responses, most of them ranging from favorable to laudatory [5] [6] [21] [24] [31] [33] [34] [36]. In general, the favorable reviewers supported the possibility of expanding the scope of economic inquiry to include phenomena, inquiry into which economics has either resisted, or has been unable to satisfactorily address. Savage encapsulated the hopes of some when he wrote: "Identity economics is a step forward, progressing economic theory and understanding a little further along the path from *Homo economicus* to *Homo sapiens*" [30, p. 177]. *Identity Economics* also had its critics [9] [10] [11] [28] [35]. In particular, a set of papers by Davis [9] [10] [11] sought to clarify and correct problems he saw in Akerlof and Kranton's concept. Some of Davis' critical comments are relevant to the substance of this paper, and will be addressed below.

A few scholars have suggested specific mathematical forms for Akerlof and Kranton's general utility function, including Davis [11] and Boulu-Rashef [4]. In so doing, they broke ground

regarding the mathematical "shapes" that Akerlof and Kranton's general utility function might take. This paper seeks to carry the project forward a step, specifically with regard to the phenomenon of charitable giving.

II.   THE SOCIOLOGICAL CONCEPT OF "IDENTITY"

Over a hundred years of sociological theorizing and research have been dedicated to clarifying and explaining what an "identity" is. The evolution of identity theory began with Cooley [8] and Mead [25]. Their contributions were subsequently elaborated by Goffman [17] [18], *inter alia,* Garfinkel [14], Giddens [16], and Perinbanayagam [30], among others.

Cooley [8] is credited with having invented the concept of the "looking glass self," which is embodied in the following model: When we interact with other people, we perform these operations:

- o We imagine how we appear to the Other
- o We imagine the judgment of the Other
- o We feel some sense of pride, happiness, guilt, or shame

This "imagining" does not occur in a vacuum. Mead [25] would subsequently argue that we develop our initial concepts of "self" by taking the viewpoints of others—first, our parental figures, and later, other "authorities" and peers—and seeing ourselves as we *assume* they see us. To secure their approval, we learn to do whatever it is we believe will make us "look good" to them. This begins at an early age (the toddler stage) and continues all our lives. So, initially, we see ourselves from the standpoints of a number of "particular others" in our immediate environments. At some point—Kohlberg [20], for instance, claimed that it was around the age of puberty—we develop an abstract model of all these particular points of view. Mead named this model the "generalized other." The generalized other is a just a metaphor for what actually goes on "in our minds" when we decide whether or not to perform some act, or when, after we have performed an action, we evaluate our performance and our "selves." It applies standards that we have imported into our consciousness from "without," through interpreting the reactions of others, and through "internal" deductive reasoning based on this data. The generalized other consists of a set of beliefs that agents have regarding how they are supposed to act, or what they should aspire to be. These beliefs are held to be true and morally sound. So, in addition to exerting effort to achieve "looking good" in the eyes of the specific people with whom the agent interacts, the agent also invests effort to look good to this generalized other, or put simply, to himself or herself. It follows that, once the generalized other is formed, agents will try to satisfy, in addition to the requirements of particular others, "its" requirements. Thus, one is accountable to oneself as well as to other people.

As we go through life, trying to look "good," or at least not "bad," to one another and to ourselves, we produce what sociologists call "accounts." Accounts are verbalizations that aim to explain anything we might do that seems to us, or to others who are observing our actions, to be "out of the ordinary" and in so doing, to "normalize" it. Mills [27], Garfinkel [14], Scott and Lyman [32], and Goffman [19] stand out among those who explored "accountability." We humans are accountable in different degrees to one another, and for different things. But we are accountable all the time to someone—including ourselves—for something.

The output of these accounts and their rationalizations is the agent's "narrative," the agent's life story, one's representation of who one wants to be, in the eyes of other people and of oneself. These narratives are brought to bear by agents in explaining, when necessary, behavior that looks "out of the ordinary" in order to normalize it, both with live audiences and in their private, inner reflections. These narratives are also used to rationalize what agents do as a matter of course. In both their public and "inner" dialogues, agents seek to produce the appearance of consistency, relative to this narrative, and of conformity to the norms and values embedded therein [27] [16, pp. 51-60]. In the process, the agents produce their personal "identities."

One of the key assumptions of Akerlof and Kranton's theory is that agents *choose* their identities, though this choice may or may not be a conscious one [1, p. 719n6]. In the modern world, the array of possible choices of who to "be" is, due to our social division of labor and the comparative freedom from normative constraints in urban living, much larger than it was in so-called "traditional" societies [12]. The considerably expanded choice set of modern life brings great challenges, as Durkheim discussed in his classic work, *Suicide* [13]. As John Davis has suggested, personal identity is an accomplishment driven by a desire "to sustain personal unity in the face of potential fragmentation of the self…" [9 p. 59], an understandable issue in the modern world, given the broad array of choices and the likelihood that these choices might impose conflicting requirements on the agent, who aspires to a consistent presentation of self. One implication is that, as agents navigate the complex social terrain of modern existence, their personal identities may or may not be identical with the normative requirements of the various groups with which they interact.

The norms and values that become embedded in their personal identities, and the narratives that justify them, come from many sources: Social groups to which they aspire to belong, institutions (such as schools and workplaces) that constrain them to conform, and bits and pieces of popular mythology (such as movies and literature). Through experience, reflection, and logical deduction, each agent produces his personal narrative, which contains a set of norms and values—we will call this set "A"—that are comprised of elements from these sources. The personal narrative is the ultimate arbiter of what the agent views as "right" or "wrong." It is the standard against which the agent compares his actions and thoughts, and he feels "good," "at least not bad," or "badly," about himself depending on how his thoughts and actions measure up. It is his justification for the decisions he makes in his efforts to accomplish his personal identity. It is the source of his decisions regarding where to direct his efforts, how to invest his resources, and, in the case at hand, how much he gives to charity. Our next task is to show how those decisions are "rational."

III.   FROM IDENTITY TO IDENTITY UTILITY

The upshot of this cursory review of the theoretical literature on identity is that human agents are committed to "looking good" in the eyes of their fellow human beings or more usually, a subset of them ("significant others"), whose judgments matter most. They prefer to look good to their "selves" when, in the privacy of their inner discourses, they assess and evaluate things they might do, or that they have done, and decide whether they are "good" or not. When they evaluate them as "good," they approve of themselves, and this is accompanied by whatever physical correlates are associated with "feeling good." When they see them as not "good," or as "bad," they disapprove of themselves, and experience anxiety, guilt or embarrassment, which have their own,

generally unpleasant physical correlates. Since "looking good" makes people feel better, and "looking bad" makes them feel worse, there must be some *utility* associated with looking good or bad.

Akerlof and Kranton gave that utility a name: "Identity utility." In their initial paper [1] and their book [2], they posited its existence and proposed a general utility function that included both the usual economic utilities (derived from goods that can be acquired through exchange in "markets") and the "identity utility" of the agent.

Akerlof and Kranton define "identity utility" as the satisfaction that an agent derives from conforming to the norms and values of a social group or social category. By the arguments of the previous section, this can be expanded to include the individual's norms and values, which are crafted from the norms and values of social groups and social categories. If the agent "looks good" to himself, from which he would derive satisfaction, he gains identity utility. If he "looks bad," he loses it. It is a simple matter of word choice to connect Akerlof and Kranton's gain (or loss) in identity utility with "looking good" or "looking bad," relative to a set of norms and values (or "ideals"), since these would be directly associated with "feeling good" or "feeling badly" about oneself. This equivalence is assumed in what follows.

Akerlof and Kranton use the concept of identity utility to deal with several economic puzzles. Here we consider two examples. In the first of these, they use it to explain why workers will, under certain circumstances, and independently of how much they are paid, exert more productive effort than they could "get away with," as a traditional economic model would assume. To accomplish this, Akerlof and Kranton make a distinction between "insider" Labor, which consists of individuals who are committed to the norms and goals of the Firm, and "outsider" Labor, which consists of individuals whose orientation to work resembles that of the "rational" agent of traditional economics. Insider Labor supplies "high" effort; outsider Labor supplies "low" effort. Insider Labor sees itself as "building a cathedral"; outsider Labor is merely laying bricks in exchange for a paycheck.

It is essential to Akerlof and Kranton's theory that agents (consciously or unconsciously) *choose* their identities. The immediate question here is why a rational agent would *choose* to be an insider, since the reward/effort ratio of an insider is lower than that for an outsider, who seeks to maximize this ratio. So, what needs to be explained, given the assumption that Labor is rational, is how "committed insiders" are maximizing *their* utilities. The incorporation of identity utility into the agent's total utility function makes this easy, at least conceptually: If the agent's identity utility is increased as a result of exerting "high" rather than "low" effort, and if this more than offsets the subjective cost—to him—of his incremental effort, then he will work harder, and maximize his *total* utility in doing so. This decision would, therefore, be rational. The extra effort—or alternatively, the measurable output of this effort—is the "shadow price" that an insider is willing to incur in order to "look good" to himself. He looks good to himself because he has embedded the norms and values of the Firm into his personal identity narrative, and judges his decisions and actions according to it. It can be concluded that the individual who chooses the "insider" identity has made a trade-off between an ordinary economic good—his effort supply—and his identity utility. The trade-off maximizes his total utility.

As another example of the way in which agents trade off "ordinary economic goods" for identity utility, Akerlof and Kranton [2] cite a study of a Chicago street gang's financial records [22]. In that study, the researchers found that a typical "foot soldier" could have earned almost as much as he did in his gang by working for MacDonald's, and at much lower risk. In fact, if we adjusted the economic results of his options by assigning values to their relative risks, the foot soldier might actually have done better, from a purely economic point of view, had he chosen a career in fast foods. We may surmise, however, that there are significant rewards, beyond mere monetary income, for choosing the "gangster" identity over that, say, of a "fast food worker." In his world, the gangster identity presumably receives more "respect." From these displays of respect, he gains identity utility. Thus, one who has the ability to *be* a credible gangster might be strongly tempted to choose the gangster identity over the fast food worker identity, if those were the only available choices. The identity utility he gains from this choice more than offsets—for him—his risk-adjusted losses in income. Thus, his *total* utility is maximized. His choice to be a gangster, to conform to gangster norms, and in so doing, to affiliate with other gangsters, is *rational*. The shadow price of his choice is the difference between the risk-adjusted lifetime incomes associated with these alternatives.

IV.   GENERAL FORM OF THE AGENT'S TOTAL UTILITY FUNCTION

The foregoing examples suggest that an agent's total utility function can be separated into two general components: identity utility and "other economic" utilities. And indeed, this is what Akerlof and Kranton [1] proposed. Let $\mathbf{O}_j = O_j(a_1, a_2,...,a_n)$ be agent j's utility function relative to these "other" goods, and let $\mathbf{I}j = I_j(I_{G1}, I_{G2},...,I_{Gk})$, where the I_{Gi} represent the identity utilities j derives from associating with groups $G_1, G_2,...G_k$). If we let I_A represent the identity utility that agent j attains by "looking good" to himself, which may not be identical with any of the G_i, we can add this to U_j, and get

$$U_j = U_j(\mathbf{O}_j(a_1,...,a_n); I_j(I_{G1}, I_{G2},...,I_{Gk}, I_A))$$

The addition of "I_A," which was not included in the original form of Akerlof and Kranton's identity, responds to the criticism, proffered by Davis [11], that they overlooked the difference between "personal" and "social" identity, and with that, the possibility that the agent has an identity utility function that is not reducible to the identities he manifests when interacting with any of the groups G_i. But since A is itself a set of norms and values, the explanatory model of Akerlof and Kranton is enhanced, but not otherwise affected, by the addition of I_A to the agent's total utility function.

One criticism of Akerlof and Kranton's use of identity utility to explain conformity to norms is that it treats this conformity as a *variable*, rather than as a "given." Sociological orthodoxy has, at least since Talcott Parsons [28] viewed "norms and values" as constraints to rational action, but not as utilities to be maximized. Davis [9] upheld this view in his review of Akerlof and Kranton's initial paper [1]. But to hold onto this limitation is to sacrifice theoretical robustness. When, for instance, an agent is in what Robert K. Merton [26] called a situation of "sociological ambivalence," he must choose an action that violates the norms of one group (or social category) in order to comply with the norms of another group (or social category). Consider the situation of a physician who has to choose between an attitude of "professional detachment" and one of

"warmth" towards the patient. In this case, if we suppose identity utility to be the *only* utility involved, the physician will choose the option that involves the least cost to him in total identity utility. That is, if the identity utility he loses from failing to conform with the one is more than offset by the gain in identity utility he experiences in conforming to the other, he will take the second option. To make this decision, he has to compare two quantities of utility, for otherwise, he would not be able to decide which yields more utility. The standard he applies when making this choice is determined by his personal identity utility function and its set of constraints, which were denoted above by A. He may have difficulty in making this decision. But he will, when dealing with a patient, have to decide. In so doing, he will be making a rational choice, the one that maximizes his total utility. Treating norms as simply "given," fixed constraints would not allow us to model a rational solution to this problem, which is solved, often enough, in practice, though in different ways by different doctors, depending on their respective I_A functions. Thus, in this paper, we will treat identity utility as a continuous function.

Some writers, including Davis [9] and Boulu-Rashef [4], have attempted to specify the total utility function U_j beyond the general form put forth by Akerlof and Kranton. Both of these authors focused on the "identity" component of the agent's total utility function. Davis isolated what this paper has termed "I_A" and included it in an expanded personal identity utility function, which he believed could be modeled as a production function. Boulu-Rashef also suggested that the identity utility function, with all of its components, could be modeled as a production function, and much to her credit, suggested an operationalization of it for empirical work.

The main difference between the approach taken here and those of Davis and Boulu-Rashef is that the identity utility function is directly connected to an "ordinary economic goods" function. As an application of this approach, the focus from this point on will be limited to a specific activity—that of charitable giving.

V.   THE RATIONALITY OF CHARITABLE GIVING

Given the orthodox economists' model of human preferences—we are greedy, effort-averse, and rational—how could it explain charitable giving? In being charitable, the individual reduces his "normal" utility without receiving an "ordinary economic good or service" in exchange. Viewed in traditional economic terms, the decision to make a charitable gift cannot be "rational," because it reduces the total utility of the agent, as measured in terms of money or effort or its purchase-equivalents. Why, then, would a charitable giver be willing to sacrifice his material well-being in order to improve someone else's?

Since charity exists as an empirical fact and because it involves money, Gary S. Becker [3] believed that economics ought to be able to explain it. He tackled the issue by expanding the economist's notion of "income" to include features of the "social environment" and certain "tastes." In his model, there are two elements of interest: the "well-being of the recipient of charity" (a feature of the social environment) and the giver's "taste" for "altruism." He proposed that a giver has a taste for altruism if he "cares" about the receiver enough to part with money or effort for the sole purpose of helping him, while receiving nothing material in return. To render this decision "rational," Becker implicitly defines "caring" in terms of utility: To say that A *cares* about B means that

(a) B's well-being is an element of A's personal utility function: An increase in B's utility causes an increase in A's.
(b) A increases B's personal utility by giving him money or a money equivalent, such as effort.
(c) In doing so, A's personal utility is increased.

If U_B is B's utility function and U_A is A's utility function, these three statements imply that $dU_A/dU_B > 0$, which is another way of saying that A has a "taste for charity," at least relative to B.

In Becker's model, A receives "psychic" *income* from helping B. When B feels good, A feels good, which is his psychic reward. The value of this psychic reward has a "shadow price": that of the money, money-equivalent, or effort that A provided B. This psychic reward cannot be purchased directly in a "market," so it is intangible from an economic standpoint. But since A feels good about it, it is quite tangible to him. If the "feel-good" that A experiences from his charitable gift exceeds the sacrifice in utility associated with its monetary cost, then A gains net utility from his gift to B and his behavior is economically rational.

If we mean the same thing by "psychic income" as "identity utility," then to say that one has a "taste for charity" is the same as saying that one derives identity utility from charitable giving. Akerlof and Kranton strongly imply this [2 pp. 32-3], and Teschl [36], in her review of *Identity Economics*, states it outright. This equivalence is assumed here.

VI. THE TOTAL UTILITY FUNCTION OF THE CHARITABLE GIVER

The total utility function of the charitable giver has two components, which correspond to the identity utility and "normal economic goods" components of the general utility function of Akerlof and Kranton. Both charity and these other economic goods are purchased from what is referred to here as a "residual wealth fund." It is called "residual" because it is what is left over after the charitable giver has allocated his income to living expenses and savings. Another name for it might be, "money available for charity and unspecified, un-budgeted contingencies."

A. The Identity Utility Function

Let A be a rational agent with a "taste" for charity. Let D be the amount that A gives to B. Since A is assumed to be rational, in order for A to give to B, the identity utility A derives must exceed the value of his donation, D. That is,

$$I(D) = (1+\varepsilon)D$$

where D is the amount donated (in currency) and $\varepsilon \geq 0$. In this case, the shadow price of A's identity utility is \$D, the market value of the other goods A could purchase if he chose to keep this money for himself. The value in identity utility that A gains from his charitable gift is at least as great as its money value. From his donation of \$D, A gains $(1+\varepsilon)D$ identity utils.

Assume now that B is a tax-deductible charity, and that A's highest marginal tax rate is 0.25. Then it costs \$(1-T) = \$0.75 to give 1 dollar to B. If A is willing to spend s on B, then A is willing to give $D = \dfrac{s}{1-T} = \dfrac{s}{0.75} = 1.33s$ to B. (For simplicity, we assume that A has no borrowing costs.) Then A's identity utility function can be written as

$$I(D) = (1+\varepsilon)D = (1+\varepsilon)\,\frac{s}{1-T} = I(s)$$

This series of equations implies that $D = \dfrac{s}{1-T}$, a relation that will prove useful later on.

Since A experiences the donation, D as a personal sacrifice associated with his spend, s, we will use the right-hand side of the last equation to express the identity utility component of A's total utility function for charity. That is, A's identity utility is a function of s, his charitable "spend."

If now we let $P = (1-T)$ be the price of charity, we can define the *identity utility component* of A's total utility function as

$$I(s) = (1+\varepsilon)\,\frac{s}{P} \qquad\qquad (1)$$

It follows that

$$I'(s) = \frac{1+\varepsilon}{P} \qquad\qquad (2)$$

The quantity that needs to be optimized is s, the amount of his resources that A is willing to allocate in order to give \$D to B. The quantity s, is subject to a resource constraint. Our next objective is to model this constraint.

B. The Residual Wealth Utility Function

A's identity utility is attained subject to a resource constraint, which we will model with a "residual wealth function." Let F be the funds left over after A has spent his income on his budgeted living expenses and savings. A may not know exactly how large F is, or where it is stored, but believes he can afford to spend some of it on charity. The residual wealth fund, F has the following attributes:

- It is available for charity and "unbudgeted contingencies"
- All of F is in A's highest marginal tax bracket
- If A spends s on charity, he has F-s available for "normal economic goods"
- A gives to only one charity, B (by which we could also denote "all charities" without distinction, for present purposes)

If F = $100, then, when A gives $1 to B, it is worth $1 in terms of "normal economic goods." If A has already given $50 to B, the 51st dollar is still worth a dollar in "normal economic goods," but A may not *feel* the same way about giving it to B as he felt about the 1st dollar he gave. He might ask himself, "What if I need this for something else, some emergency I cannot predict at this time?" In other words, the anxiety A feels about spending the 51st dollar is greater than the anxiety he felt when he spent the 1st dollar on charity. Since anxiety does not feel good, the costs *in utility* to A must increase, the more money he gives to charity. How might this be modeled?

If F is the size of A's residual wealth fund, his residual wealth after spending s on charity is F-s. We wish to find a mathematical expression for the utility associated with F-s. So, let O(s) denote the *remaining utility* that A, having spent s on charity, has for "other economic goods" that he would sacrifice if he spent more than s on charity. If he spends $0 on charity, then s =0 and he has $F for other uses. If he spends the whole of $F on charity, he has $0 for other uses. So, let A's residual wealth function be given by

$$O(s) = f(F\text{-}s)$$

For simplicity, assume that F is worth F "utils." Thus, if he spends $0 on charity, his remaining utility for "other economic goods" is $F, which we equate with F utils. Further, if he gives all of F to B, he has $0 left for other uses, which can be expressed as 0 utils. If we assume that the first $1 of s is worth less to A *in sacrificed utility* than the last $1, it means that as A spends money on charity, his subjective well-being in terms of "other" economic goods declines, and does so at an increasing rate. This implies that the cardinal utility function f has negative first and second derivatives. The simplest function that serves our purposes is this one:

$$O(s) = \sqrt{F^2 - s^2} \tag{3}$$

We see that O(0) = F and that O(F) = 0. Further, the first derivative of O(s) is

$$O'(s) = \frac{-s}{\sqrt{F^2 - s^2}} \tag{4}$$

O$'$ is negative on s ε (0,F). Some tedious algebra reveals that O$''$(s) is also negative on the range of s. So, O(s), as defined in Eq. (4), meets our requirements for A's *residual wealth utility function.*

Eqs. (1)-(4) will be used to calculate A's optimal spend on charity.

C. The Donor's Optimal Spend

Let A's total utility function for charitable giving, relative to F, be

$$U(s) = I(s) + O(s) \tag{5}$$

where O(s) is the remaining utility for A of his unspent funds, and I(s) = (1+ε)s is the utility he derives from spending s dollars on charity. This is reasonable, since whatever A spends on charity is not available for anything else, and whatever he spends on other economic goods is not available for charity. Thus, his total utility, relative to F, is a sum of these two quantities. To find the

optimum spend, s^*, we differentiate Eq. (5), which we can do because both $I(s)$ and $O(s)$ are continuous functions. From Eqs. (2) and (4), we obtain

$$U'(s) = I'(s) + O'(s) = \frac{1+\varepsilon}{P} + \frac{-s}{\sqrt{F^2 - s^2}}$$

(6)

Setting $U'(s) = 0$ and solving for s yields

$$s^* = \frac{I'(s)F}{\sqrt{1+(I'(s))^2}}$$

(7)

where we have used Eq. (2) to substitute $I'(s)$ for $\frac{1+\varepsilon}{P}$ for notational convenience.

Since by hypothesis we must have $(1+\varepsilon)D > \$D$, we must also have $\varepsilon \geq 0$. But beyond this, we cannot know the exact magnitude of ε. So, it will be helpful to assume that $\varepsilon = 0$ to obtain a lower boundary condition (or point of indifference) for s^*. If we assume that $\varepsilon = 0$, then $I'(s) = \frac{1+\varepsilon}{P} = \frac{1}{P}$, and then from Eq. (7) we obtain, as a boundary condition (or point of indifference) for s^* the following result:

$$s^* = \frac{\frac{1}{P}F}{\sqrt{1+(\frac{1}{P})^2}} = \frac{F}{\sqrt{P^2+1}},$$

or more succinctly,

$$s^* = \frac{F}{\sqrt{P^2+1}}$$

(8)

We define this as the *point of indifference (or boundary value) of the donor's optimum spend*, and the shadow price of A's identity utility. Having calculated this optimum, the donor will give at least $\$D = \frac{\$s^*}{P}$. If he is in a state of equilibrium, with $\varepsilon \approx 0$, he will give "about" $\$D$ to charity.

VII.   EXAMPLE 1—IMPACT OF THE 2017 TCJA ON A "MODEL" MIDDLE CLASS DONOR

In December of 2017, the US Congress passed the Tax Cut Jobs Act (TCJA), which lowered marginal tax rates for American tax-payers. Here, we address the responses of these price changes on donor behavior. Our focus here is on people who give to charity from their annual incomes. Bequests from the estates of wealthy donors are not addressed by this model.

To assess TCJA impact, relative to the model developed here, we will apply it to a middle-class donor who will continue to deduct his charitable contributions for tax purposes. We make the following assumptions about this middle-class tax-payer:

- His annual gross income in 2017 was $100,000.
- His highest marginal tax bracket was 0.25 before the passage of TCJA.
- His highest marginal tax bracket will be 0.22 as a result of TCJA.

After a period of adjustment (which may take a year or more) he settles into a new equilibrium, so that his new $\varepsilon \approx 0$. A reasonable narrative for this eventuality is that the donor, after struggling to adapt to the new tax policy, will, after this period of adjustment, be "OK with," i.e., infinitesimally more than "indifferent to" his new pattern of charitable contribution.

The immediate question is, will he change the amount of his charitable contribution to B, and if so, by how much?

To address this question, assume that his take-home income increases by 3% and that he regards his residual wealth fund, F, as a "normal good," which implies that the income elasticity of F is 1. That is, if F_0, his residual wealth before the tax change, is $2,500, then his residual wealth after the change would be $F_0(1.03) = $2,575$. With this information we can generate the data in Table 1.

TABLE 1

Before TCJA	After TCJA
$T_0 = 0.25$	$T_1 = 0.22$
$P_0 = 0.75 (because $P_0 = 1 - T_0$)	$P_1 = 0.78
$F_0 = $2,500$	$F_1 = (1 + \frac{\Delta I}{I_0})F_0 = (1.03)($2,500) = $2,575$
$s_0{}^* = $2,000$ (from Eq. (8))†	$s_1{}^* = $2,030$ (from Eq. (8))†
$D_0 = $2,667$ (because $D = s_0{}^*/P_0$)	$D_1 = $2,603$ (because $D_1 = s_1{}^*/P_1$)

†<u>Note</u>: For convenient reference, Eq. (8) states that $s_i{}^* = \dfrac{F_i}{\sqrt{P_i^2 + 1}}$, where the relevant data for P_i

and F_i are in rows 2 and 3 of this table.

One salient characteristic of this example is that the donor, A, gave $64 less after the tax change, even with the income effect of the tax reduction, though he spent $30 more than before. In percentage terms, and unless A's personal narrative is changed (by pressure, for example, from B), this represents a change of -$64/$2,667, or -2.4%, from his charitable donation in 2017. By our hypothesis that his identity utility increment after the price change, ε_1, is "near zero," the implication is that he feels "OK" in his new equilibrium: He gives $64 less, but had to spent $30

more (an incremental personal sacrifice) to do so, and is "OK" with this trade-off. His personal narrative as it concerns B did not change. He merely adjusted his financial priorities.

VIII. PRICE ELASTICITY IMPLIED BY EXAMPLE 1

The price elasticity of charitable giving, η_p, is defined as

$$\eta_p = \frac{\dfrac{\Delta D}{D_0}}{\dfrac{\Delta P}{P_0}} \tag{9}$$

Since we assumed that $\dfrac{\Delta I}{I_0} = 0.03$, we can divide $D_1 = \$2,603$ by $(1+\dfrac{\Delta I}{I_0}) = (1.03)$ in order to hold income constant. This results in an adjustment of D_1, $D_{adj} = \$2,527$. With this modification, we calculate $\Delta D = (D_{adj} - D_0) = (\$2,527 - \$2,667) = -\$140$. Since $D_0 = \$2,667$, and $\dfrac{\Delta P}{P_0} = \dfrac{\$0.78-\$0.75}{\$0.75}$, the elasticity equation above gives

$$\eta_p = \frac{\dfrac{-\$140}{\$2,667}}{\dfrac{\$0.78-\$0.75}{\$0.75}} = \frac{-0.0524}{0.04} = -1.3123 \approx -1.3$$

A meta-analysis of the price elasticities of charitable giving by List [23, pp. 170-171], building on a classic analysis by Clotfelder [7], suggested that there was a consensus, among scholars of this topic, on a long-term elasticity figure of "around" -1.3. The figure just derived from our model, rounded to one decimal place, is consistent with this measure. This may not be a mere numerical coincidence, as is suggested by the data presented in the next section.

IX. EXAMPLE 2—COMPARISON OF MODEL-GENERATED FIGURES WITH LONG-RANGE EMPIRICAL PRICE ELASTICITIES

Let us define the "baseline" price elasticity of charitable giving as any price elasticity calculated from our model, assuming that ε_0, the identity utility increment before the price change and ε_1, the identity utility increment after the price change, are both "near" zero. We will then set both equal to zero to obtain boundary conditions for the contributions of A, the donor, to charity. Then we will adjust the result by holding income constant to isolate the price elasticity.

List [23] noted that different types of charity have different elasticities, and that there could be an initial disparity between short-term and long-term price elasticities [23, p. 170, p. 171n6]. It may take, for instance, one or two tax cycles for charitable givers to figure out, after an increase (or decrease) in the price of charity, how much they can truly afford to give. We will ignore these differences for present purposes, assume that our baseline elasticities are long-term, and that B represents "all charities" supported by A.

Table 2 shows baseline elasticity measures based on several hypothetical price changes, derived from changes in the tax structure associated with TCJA. The numbers for T_0 and T_1 are the marginal tax rates for middle-class (rows 1 and 2) and wealthy donors (rows 3 and 4), respectively. The impact of state income taxes is ignored in the first four lines. In rows 5 and 6, estimates from a recent *Forbes* article [17], which include the average impacts of *both* state and federal tax schedules on the "average" price of charity stemming from TCJA, are presented. In the odd-numbered rows, the impact of the TCJA tax *reductions* is assessed. In the even numbered rows, conjectures are made about the results of *reversing* these tax changes.

We assume $F_0 = F_1 = \$2500$, Eq. (8), and the relevant prices of charity, P_0 and P_1, to calculate s_0^* and s_1^*. The elasticities calculated below can be shown to be independent of any particular value of F_0. The assignment of \$2,500 to F_0 is just a placeholder for these examples.

Again, we repeat Eq. (8) for convenient reference:

$$s_i^* = \frac{F}{\sqrt{P_i^2 + 1}}$$

Having calculated the donor's optimal spend, we then divide it by P_i to derive D_i. The far-right column is calculated using the elasticity equation (9).

TABLE 2

T_0	T_1	$P_0 = 1-T_0$	$P_1 = 1-T_1$	s_0^*	s_1^*	D_0	D_1	η_b
.25	.22	.75	.78	$2000	$1971	$2667	$2527	-1.3
.22	.25	.78	.75	$1971	$2000	$2527	$2667	-1.4
.396	.37	.604	.63	$2140	$2115	$3543	$3357	-1.2
.37	.396	.63	.604	$2115	$2140	$3357	$3543	-1.3
.207	.152	.793	.848	$1959	$1907	$2470	$2249	-1.3
.152	.207	.848	.793	$1907	$1959	$2249	$2470	-1.5

The price elasticities generated by this model fall within the range, (1.5, -1.1) suggested in a seminal study by Feldstein and Clotfelder [15], as can be seen in the far right-hand column of Table 1. Other studies cited by List [23] suggest that charitable giving is price elastic (i.e., less than -1), though he cites estimates ranging from -0.24 to -2.28. The lower boundary of this interval is based on short-term elasticity studies [23, p. 171n6]. If we calculate the midpoint of the wider interval, we find that it is -1.26, which rounds to -1.3. The theoretical derivations from our model are consistent with both ranges, but support the conclusions of Feldstein and Clotfelder [15].

It is emphasized that bequests from the estates of wealthy donors are not addressed by this model. Our figures are based on the patterns of individual donors who give to charity from their annual incomes. Whether or not the actual long-range outcomes of TCJA match these conjectures, of course, remains to be investigated.

The initial reactions of donors—which will show up in their tax deductions at the end of 2018—may vary from these results, as short-term price elasticities may differ from long-range price elasticities. More telling would be the results from 2019, at which point charitable givers are more likely to have attained new personal equilibria.

X.   CONCLUSION

We have shown that charitable giving is "rational" for agents with a "taste for charity," and that it is rational because the identity utility derived by such agents more than offsets the value, measured in terms of foregone "normal economic goods," of the money spent on charity. We showed how the donor's optimal spend on charity can be derived by optimizing his total utility function, subject to a residual wealth constraint, and proposed explicit expressions for his identity utility function and his utility function for "other economic goods." Using this model, we have deduced price elasticities that are consistent with known empirical measures of the price elasticity of charitable giving.

While identity utility is tangible only to the agent, its effects on the world outside the agent's "mind" are palpable. In the case of charity, the shadow price of identity is the amount of money that the agent, A, spends on B. In the case of "insider" Labor, the shadow price is the difference in this agent's effort supply and that of "outsider" Labor, when pay remains the same. These are just a few examples of the usefulness of Akerlof and Kranton's concept, which could enable economists and other social scientists to collaborate in these and other regions of human knowledge.

References

[1] Akerlof, George A., and Rachel E. Kranton (2000). Economics and identity. *Quarterly Journal of Economics*, 115(3): 715-753.
[2] Akerlof, George A., and Rachel E. Kranton (2010). *Identity economics*. Princeton: Princeton UP.
[3] Becker, Gary S. (1976). Altruism, egoism, and genetic fitness: economics and sociobiology. *Journal of Economic Literature*. 14.3 (September 1976). Reprinted in Becker, Gary S. (1976). *The economic approach to human behavior*. Chicago: The University of Chicago Press, 282-294.
[4] Boulu-Rashef, Beatrice (2015). Toward a personal identity argument to combine potentially conflicting social identities. *Review of Social Economy* (2015), 73.1: 1-18.
[5] Cannard, Toni (2011). Identity economics: how our identities shape our work, wages, and well-being. *Economic Analysis and Policy* 40.2 (September 2011): 241-242.
[6] Carden, Art (n.d.). Identity economics: how our identities shape our work, wages, and well-being. *The Freeman*. Retrieved from www.thefreemanonline.org, 44-45.
[7] Clotfelter, Charles T. (1985). The effect of tax simplification on educational and charitable organizations. *Conference Series; [Proceedings].* Federal Reserve Bank of Boston: 187–221.
[8] Cooley, Charles H. (1902). *Human nature and the social order*. New York: Charles Scribner's Sons.
[9] Davis, John B. (2007). Akerlof and Kranton on identity in economics: inverting the analysis. *Cambridge Journal of Economics* 31.3 (May 2007): 349-362.

[10] Davis, John B. (2009). Identity and individual economic agents: a narrative approach. *Review of Social Economy* 67.1 (Mar 2009): 71-94.

[11] Davis, John B. (2011). Identity economics: how our identities shape our work, wages, and well-being. *Economics and Philosophy* 27.3 (Nov 2011): 331-338.

[12] Durkheim, Emile (1933 [1893]). *The division of labor in society.* New York: The Free Press.

[13] Durkheim, Emile (1951 [1897]). *Suicide.* New York: The Free Press.

[14] Garfinkel, Harold (1967). *Studies in ethnomethodology*. Englewood Cliffs, New Jersey: Prentice Hall.

[15] Feldstein, Martin, and Charles Clotfelter (1976). Tax incentives and charitable contributions in the United States: A microeconometric analysis. *Journal of public economics,* 5(1): 1-26

[16] Giddens, Anthony (1984). *The constitution of society: outline of the theory of structuration.* Oakland, CA: University of California Press.

[17] Gleckman, Howard (2018). 21 million taxpayers will stop taking charitable deductions under the new tax law. *Forbes* (January 11, 2018). Retrieved from https://www.forbes.com/forbes/welcome/?toURL=https://www.forbes.com/sites/beltway/2018/01/11/21-million-taxpayers-will-stop-taking-charitable-deductions-under-the-new-tax-law/&refURL=https://www.google.com/&referrer=https://www.google.com/

[18] Goffman, Erving (1959). *The presentation of self in everyday life*. New York: Anchor Books.

[19] Goffman, Erving (1971). *Relations in public*. New York: Harper and Row.

[20] Kohlberg, Lawrence (1963). The development of children's orientation toward a moral order: I. Sequence in the development of moral thought. *Human Development* 6: 11-33.

[21] Kyriacou, Andreas (2010). George A. Akerlof and Rachel E. Kranton: Identity economics: how our identities shape our work, wages, and well-being. *Public Choice* 145: 325–328.

[22] Levitt, Steven D., and Sudhir A. Venkatesh (2000). An economic analysis of a drug-selling gang's finances. *Quarterly Journal of Economics* 115 (3): 755-89.

[23] List, John A. (2011). The market for charitable giving. *Journal of Economic Perspectives* 25.2 (Spring 2011): 157-180.

[24] Lopez, Helena, and Calapez, Teresa (2012). The relational dimension of identity—theoretical and empirical exploration. *Review of Social Economy* LXX (1) (March 2012): 81-107.

[25] Mead, George Herbert (1934). *Mind, self, and society*. Chicago: University of Chicago Press.

[26] Merton, Robert K. (1976) *Sociological ambivalence and other essays.* New York: The Free Press.

[27] Mills, C. Wright (1940). Situated actions and vocabularies of motive. *American Sociological Review*. 5.6 (1940): 904-913.

[28] Neher, Frank (2011). Akerlof, G. and Kranton, R.: identity economics. how our identities affect our work, wages and well-being. *J Econ* (2011) 104: 95–97.

nonprofit sector: a research handbook. New Haven: Yale Press

[29] Parsons, Talcott (1937). *The structure of social action.* Glencoe, Illinois: The Free Press.

[30] Perinbanayagam, Robert (2012). *Identity's moments: the self in action and interaction.* Lanham, Maryland: Lexington Books.

[31] Savage, David A. (2011). Identity economics: how our identities shape our work, wages, and well-being. *Economic Record* (March 2011): 176-177.

[32] Scott, Marvin B., Lyman, Sanford M. (1968). Accounts. *American Sociological Review*.31.1 (1968): 46-62.

[33] Serna, Gabriel R. (2012). Identity economics: how our identities shape our work, wages, and well-being, by George A. Akerlof and Rachel E. Kranton. *Journal of Economic Issues* Vol. XLV I No. 1 March 2012: 243-4.

[34] Stojanovic, Bozo (2014). Economics of identity. *Panoeconomics* 2 (2014): 253-259.

[35] Teraji, Shinji (2009). The economics of possible selves. *Journal of Socio-Economics* 38.1 (Jan 2009): 45-51.

[36] Teschl, Miriam (2010). Identity economics: towards a more realistic economic agent? *Journal of Economic Methodology* 17.4 (December 2010): 445-452.