THE LOGIC OF EXCHANGE

being Chapter Seven of
A GENERAL THEORY OF VALUE

[A] man can increase his happiness only by endeavoring to increase the happiness of all around him.

Robert Owen.[1]

Offering things of value to each other and accepting things of value in return is how people make their happinesses depend on one another, and how they make happiness increase in total.[2] We call the process *exchange*. What those "things" *are*, and what the larger effects of *systems* of exchange are upon the general welfare, are matters of considerable interest. Indeed, these questions lie at the heart of the disciplines of both political economy, as economics was once called, and social psychology.

This chapter focuses on the process of exchange only at the most intimate scale, i.e., as between two people. By examining with some patience what most of us take for granted about the fine structure of exchange, new perspectives open up on a variety of familiar problems—to name a few: problems involving the nature of fairness, the workings of altruism, and the real value of money.

What can be said at the outset?

An "exchange" begins when the quality and quantity of the good(s) that the first party offers and that the second party will accept is made conditional upon the quality and quantity of the good(s) that the second party offers and that the first party will accept "in return." When the conditions are mutually agreeable, the exchange proceeds—*quid pro quo*, "something for something (else)." Simple enough. But when the two parties differ in their needs, when past and future exchanges between them are taken into account, when the goods in question vary in size and kind, or when the exchange is not entirely voluntary because of its connection to yet other exchanges or the presence of coercion...a single occasion of exchange can become a very complicated thing, and hard to parse. One wonders how we do it. Our theory of value tells us that this complication need not be regretted. Nor need it be avoided *if* it adds complexity-and-organization to the lives of the parties involved. After all, part of the value of an exchange is the *experience* of exchange; not just the pleasure of its accomplishment, but the acquisition of knowledge, of social capital. We mature in give-*and*-take with our environment, not just in one (give), or the other (take). The potential complexity (C_{pot}) of a life of social exchange is far greater than one without. Containing, shaping, and otherwise organizing that life is what makes social conventions and exchange protocols as important as they are. Greater Ω is the goal, even for the process of exchange itself, quite apart from the Ω-boost provided by the goods involved in that exchange.

We could also note at the outset that, phenomenologically, the happiness or sorrow produced by an exchange can seem to have several origins. Each of these, after a fashion, "explains" where the value of the exchange actually comes from. For example, value may be thought of as originating in/from the nature of the goods themselves: what shape they have, what material they are made of, what they *do* for us. Taken alone, this explanation leads to "object-" or "commodity fetishism." Alternatively, value may be thought of as coming from those goods' *sources*—i.e. from the people, places, machinery, laws, and situations that seem most directly and reliably to *produce* the right goods. Taken alone, this explanation leads to the idealization of certain persons, technologies, forms of labor, or institutions. Or, alternative to these two, value may be thought of as emerging almost alchemically from the process of exchange itself. Taken alone, this explanation leads to "exchange fetishism," the idea, that is, that all trade—all bringings-of-people-together, all peaceful back-and-forth between them—is a Good Thing. Each one of these three perceptions of the source of value are reasonable. In fact, far from excluding one another, they implicate one another.

These opening observations will lead into what I hope will be an interesting discussion of the logic of exchange. But first we ought to make clear how *economics* enters into the picture. After all, the study of exchange is often held to constitute the very basis of that discipline. "It is hardly too much to say," writes Kenneth Boulding in *Economic Analysis*, "that the study of exchange comprises nine-tenths of the economist's domain." We ought to see how—in principle anyway—what Boulding says is true.[3]

I. Value, Economic Value, and the Purview of Economics

Things, we say, can have significant aesthetic, sentimental, scientific, moral, political, or personal value while having little or no *economic value*. And vice versa.

Sometimes this opinion is held with dismay. Sometimes it is held with relief.

When it expresses dismay, we are probably thinking: "in a better world, wouldn't objects that have significant artistic or scientific value have economic value to match, at least potentially?" or conversely: "Shouldn't we always be able to show that objects that have significant economic value are also genuinely useful or beautiful or worthwhile?" In a better world, in other words, wouldn't our economic system both reflect and help us realize our most cherished values? Judging by the evidence, it does not, or does not strongly enough. How does economic life, we wonder, come to be so detached from, and at the same time so invasive of, the realm of things and activities we *really* value and take pleasure in?

When the opinion expresses *relief* on the other hand, we are probably thinking: "Thank God there are things that money can't buy, that can't be bought and sold, that can't even be exchanged for each other! Let economic value be limited to goods that are goods in the conventional commercial sense, freeing the other values to operate in more suitable ways."

A third attitude, of course, is equanimity. With this attitude, that different kinds of value co-exist is seen as necessary, and that they sometimes elbow each other is seen as inevitable. Moreover, the general increase in living standards and personal freedoms that seem historically to have accompanied the growth of markets, one can argue, is no small point in favor of economic values. It more than makes up for the not-so-nice ways in which economic values "invade" older forms of life and other values, and we should always bear that in mind.[4]

Dismay, relief, equanimity: which attitude is appropriate? All three seem justified.

I would suggest that the problem lies with the original opinion that there are several incommensurable kinds of value. (We first broached the subject in Chapter Six.) We have held all along, of course, that value is a unitary phenomenon, a "single thing" tied to the increase in the plenitude of the life of the person, group, or system judging the value. And so, for us, the terms "moral," "aesthetic," "scientific," "sentimental", "economic," and so on used in connection with "value," can be no more than the qualifiers they are grammatically, announcing the social context within which value itself—change in Ω—is operative. Different values do indeed "elbow each other." But the interesting question for us is: what are they elbowing each other *for*? Whatever *that* is has the value; whatever *that* is, *is* value.[5]

Along with utilitarians, I have also said that the value of something to someone is indicated by, and is productive of, his or her happiness at having or using or knowing it. "Happiness" is understood as the increase in the total satisfaction that person feels over all of his or her needs. "Satisfaction" and "complexity-and-organization" are like two sides of the same coin: satisfaction is one's own complexity-and-organization experienced; complexity-and-organization is one's own satisfaction embodied. Positive *value* is attributed to whatever increases either.

If artistic, scientific, etc. are all qualifiers of value-proper, *economic* value nevertheless remains an interesting case. For "economic" seems to serve as second-order qualifier to all the others. What do I mean?

Conventionally, the qualifier "economic" is used when things that are valued *for whatever reason* (1) enter a public marketplace as "goods" or "services," and/or (2) when they are (voluntarily) exchanged for one another (which might occur in private), and/or (3) when the peculiar good called *money* happens to be one of the objects in trade. On this common-sense view, things already have value to someone for some purpose *before* they enter the marketplace, before they are swapped, bought, or sold. Without value to anyone, they would not be brought into being, let alone be brought to market.[6] But only *when* they enter the marketplace, or *when* they are exchanged, or *when* they are paid for with money, do they take on *economic* value too.

One of the consequences of this formulation is considerable. For on this view the discipline called economics need not delve into the reasons why people value what they value when they do. Nor need it delve into the nature of the goods valued (i.e., their qualities, origins, or effects). *That* people value things at all is good enough. Economics deals only with the second-order qualifier of value, "economic." Indeed, to the extent that economics is interested in the question of value itself, it is the value *of markets*, *of money*, and *of* various exchange arrangements. Do these not enhance human life by what they do? The answer, clearly, is yes. They too have value in themselves, first-order utility-value, as it were. And if markets were themselves bought and sold (in a market market?), they would have economic value.

This nicely delimits the purview of economics. But more philosophically-minded economists do not find this limitation workable—for at least two reasons. First, because it can be shown to matter a great deal to the behavior of markets *what* type of goods and services are involved, to *whom* they have value *when*, and *why*.[7] These differences are as psychological on the "demand side" (i.e., having to do what people want) as they are technical on the "supply side" (i.e. having to do with the exigencies of production and distribution). Second, because conventionally-conceived economic life—i.e., producing, investing, trading, renting, marketing, consuming, and the rest—is in fact fully enmeshed with supposedly non-economic family and social life, with culture, religion, education, and the like. The intimacy of the engagement of economic life with the rest of life would seem to preclude its isolation as a discipline from any other area of social science.[8]

But if economics as a discipline ought not to rest with the examination of markets, money, and exchange arrangements *per se*, then where should it draw its limits? At *organized* markets, at *official* money, at *formalized* exchange? This would concentrate the field where it is already concentrated of course, namely, where "exchange is regular, systematic, and governed by a historically specific, juridical framework that includes the ability to clearly delineate and confidently transfer property rights."[9] Only in this realm, say most economists, can one hope to use scientific methods to discern "laws" of suppy and demand, risk and investment, and so on—and then only in aggregate, i.e., statistically. But this limitation leaves out the bulk of human exchange, which is fleet and casual and uses non-money tokens.[10] And it tends to leave out the bulk of goods too whose value is slow in coming or hard to appreciate fully in monetary terms, such as the beauty of the physical environment, the worth of a liberal education, or the skills required to make a home out of four walls and a modest income. It leaves out, in fact, all of the places where economics *could* become an interesting way to study human life.

Rather than pursue the question of economics' proper limits any further, however (which would surely require us to survey its history as a discipline moving from a branch of moral philosophy through "political economy" to modern neoclassical economics dominated by national and global policy discussions), let us return to our more fundamental question: what is the defining characteristic of "economic value?" Perhaps starting from here we can get a better idea as to where economic logic properly leaves off. If it does at all.

Going inside the individual or system, as it were, brings us to another, somewhat deeper definition of economic value, one that relates more closely to our discussion of complexity-and-organization. To wit: *economic value accrues to any object or action that has value* of whatever sort and for whatever reason, *but that also requires some effort or sacrifice or risk to produce, obtain, or maintain.*

No markets are necessary in this definition, and no money. And if exchange is involved at all, it is, at a minimum, purely intertemporal exchange—"exchange," that is, between one's present and one's future self: my effort/risk/sacrifice *now* in return for my reward *later*, or my reward *now* in return for my effort/risk/sacrifice later.[11] On this definition, all that is required for economics, *qua* Economics, to have something to contribute to understanding life is the attempt, anywhere, to correlate the effort, sacrifice, or risk involved in an action to the value of its outcome. Rationally, we ought to minimize the former and maximize the latter. Indeed, what does "to economize" usually mean if not to optimize the relationship between effort and outcome, between expenditure or risk and reward, so that in any "exchange" between them positive value is maximized?[12]

This brings us close to the definition of economics that is popular among academic economists today, namely: economics is *the study of how scarce resources are (best) allocated to competing ends.*[13]

We can see again why the term "economic value" does not belong on the same list as "aesthetic value," "moral value," or other kinds of value. Things do (or do not) have economic value *in addition* to (first) having value in other domains. This first value is assumed. Economic value is simply the kind of value we ascribe to things and actions that we value, that are suitable for the market *or not*, that we may wish to exchange for something else *or not*, on which a money-price can be put *or not*, but certainly those things whose production or acquisition consume finite resources that we are inclined not to waste or involve risks that we are inclined not to take. On this definition, happy accidents, the grace of God, gifts, goods that fall into our laps, and so on, have no economic value...at least not until we think of how we might sell them, or what debts we might have incurred, or what envy we might soon have to deal with.

One can also see why "economy" and "efficiency" are such closely related terms. For once a thing's value is appreciated *along with* the conditions of its making or acquiring—and certainly once there is consideration of how to make *those* conditions minimally onerous—the thing takes on economic value as well. It loses its innocence. It can no longer be viewed as an object that has value for us "free and clear"—which is to say, under the condition of there being no (pre)conditions for its acquisition, holding, or enjoyment. Both the good *and* its price now have economic value where neither did before, each because the other exists, bonded to it in partnership, caught up in a balance of conditionality and comparison.

On this view, money, too, takes on a deeper meaning. To be sure, "money facilitates trade," as any introductory economics textbook will tell you; but the phrase is so sweet, so reasonable, that it deflects our attention from what it really means. Existentially, money has the powerfully economic value it does not just because it can be given over in exchange for things of practical use or beauty, but because there are always, and by design, so many *alternative* ways to spend money—a fact that in turn inevitably engenders comparison and optimization. Money which *must* be spent on a *certain* thing at a *certain* time is not really money, at least not to the one who must spend it that certain way. It is something else—a chit, a contract, a gift certificate, an instruction to transfer specific property rights to the holder—a token of another sort. Now, one can always *imagine* spending such money in other ways, and this mental exercise quickly gives us a feeling of its unconstrained "cash" value, the value that is sacrificed by *having* to spend it a certain way. But the chief value of a sum of money is not the value—averaged or totalled—of all the things one could buy with that sum of money, which would be the money's "exchange value" conventionally defined, but the very "alternativity" of real exchange opportunities that it provides. Having money, like having time, always confronts us with the question of what best to *do* with it. Money's value *qua* money lies in the latitude it gives us, a freedom that precipitates us always into "comparison shopping" and thus into economic valuation. The amount of freedom that money gives, I am suggesting, *is* money's unique value as a commodity, not what you can get for it.

To say that "money facilitates exchange," then, is not wrong. But all it does is to deliver us to the more interesting question of what this "facilitation" amounts to. We will look at this question and some of its more surprising consequences later in this chapter and more closely in Chapter Nine.[14]

In Chapters Four and Six, I identified satisfaction with lifefulness. I also identified happiness, being an increase in satisfaction, with value, which is the increase in lifefulness. And so, in close accord with the utilitarian tradition stretching back to Bentham, we might say this about economic value: that "the value of a thing is the happiness it brings" but that the *economic value* of a thing is this value—this happiness—as it is affected by the outcome of a *comparison* of two values, namely, the value of what is gotten, call it V(*i*), and the value of what is done or given over in order to get it, call it V(*j*). V(*j*) is often, but not always, a negative number. The value of exchange-entire is then V(*i*) plus V(*j*), and may or may not itself have *economic* value depending on whether or not some *other* exchange-entire is being forfeited or undertaken as a condition of entering this one.[15]

To conclude: economic value is value in the light of comparisons; specifically, comparisons of (the value of) ends to (the value of) means, and/or of both ends and means to the value of finite resources. This definition has no difficulty acknowledging the importance of acts of exchange in realizing optimum resource usage towards optimum ends. It has no difficulty acknowledging the importance of markets and money in making exchange transactions efficient—"economical"—for a large number of goods. It is a definition that also allows for the fact that we value things for reasons, reasons in addition to the fact that they are themselves economical—efficient—in the use of resources. We value things in the first place because they make us happy, i.e., because they are beautiful, because they are right, handy, funny, challenging, comforting, unusual, enabling, ennobling, tasty, and so forth. We value them because they satisfy our needs directly or because they are instrumental to doing so. We value them because they will increase the quality and duration of our lives—their plenitude. These valuations are colored, however, at the very moment we begin to entertain what having the goods will require from us "in return." At that very same moment—presto!—their value becomes "economic."

But let us ask: in real life, what good can we get that will demand nothing from us in return? When do we *not* have to choose between alternative uses of our time, money, land, skills, or stores of goodwill with other people? In short, once we expand the definition of economics we must ask the question that has probably been bothering us all along, to wit:

Is there escape from the economic realm?

The answer is, to all intents and purposes, no. "The best things in life are free" we like to say, but this is not true: they were merely paid for long ago and/or by somebody else.

Nor are the free things in life best. The fact is that just about everything we value as adults—and not just marketplace commodities—requires, or once required, the conscious application of patience, ingenuity, education, time, and effort to secure and to appreciate. Not everything difficult or requiring attention is worthwhile, to be sure, but everything worthwhile is difficult or requires attention.[16] Robinson Crusoe did not need money. But he economized nonetheless by using his time and the island's resources as efficiently as he could to make his life as comfortable as he could.

This is not something we like to hear. When we receive a gift or have dinner at a friend's house (or are taken to a restaurant), we *try* to discard thoughts of how much the gift or dinner cost either in terms of money or in terms of effort. We *want* relief from the economic; we *want* to believe in value "pure and simple" even as we know full well that payments were made, and furthermore, that repayments of some kind are due from us. As we saw in Chapter Four, we give this all a moral slant when we call for more love or hope or forgiveness in ourselves and others. But the basis for this advice (i.e. feel more love) may itself be economic in the following sense: *economic computations are effortful*. Certainly, economic computations are more work than just trusting in God, or in another person's loving-kindness, or that "everything will work out for the best." Economic computations take time; they take attention. They are more care-full than care-free, and so, by their very nature, they reduce our present and short-run feelings of freedom. If it does nothing else, in other words, love saves time and effort. Is it not marvelously, dizzily, easy to spend time with the person you love? Of course it is. With no fear and no accounting going on, spending time with the one you love doesn't seem like "spending" anything at all, only getting. Every exchange is stress-free—hardly an "exchange." But when one sees that getting-away-from-economic-thinking in this way *is itself economic thinking*, one understands another reason for suggesting, as I did in Chapter Four, that even the most loving relationship remains economic: not just because, in fact, accounting still goes on between lovers (albeit a flexible and forgiving accounting), but because loving relationships as a whole save each party time and trouble.

No: with maturity we find that we must embrace both the reality that value is 'always-already' economic *and* the apparent necessity of our periodic denial of this fact. When "grace" is said before beginning a meal in a devout Christian household, or similarly, when a blessing is offered over the bread and wine in a devout Jewish household, the actual travail of the cook as well as the labor of the household's breadwinner are set aside. Instead, God is thanked. Steaming plates of food, bottles of deep red wine, glistening spoons and twinkling glasses appear arrayed on the table as out of nowhere, not as the result of human effort or at some market price, but through God's unaccountable and unwinnable benevolence towards the family. And thus is the humblest meal made miraculous—a gift. Of course, for the religious person, there are more rational ways of thinking about this ritual, ways that deny neither human agency nor God's. After all, God made the earth fertile *and* gave the cook his or her life and culinary skills. God *made it so that* the breadwinner could earn a salary with his or her work. But these are intellectualizations after the fact. *While* the believer is actually thanking God for what is set before her, all middlemen are removed from the picture. She *wants* to feel the miracle; she longs to deny the economic realm its power; she yearns to experience pure love, which is His love, His grace. *Then* she has the more rational thought...

I direct attention to such beliefs because they are lodged not just in the hearts of the devout. Whole industries thrive on exploiting ordinary people's need to feel intrinsically worthy of getting something for nothing. "No money down." "You have already won." "Free checking." "Buy one, get one free!" The actual and ultimate cost of taking the bait is disguised: it is deeper debt, the obligation to buy things one does not want. Are inveterate panhandlers perhaps people so addicted to the feeling of getting something for nothing ("Blessed are the meek...") that they sacrifice the having of anything substantial at all? And if so, what is *greed* but this same addictive game, played out *with* property and money?

The only goods we truly get for nothing are the four we are born with and into, namely: our bodies with their peculiar genetic constitutions, our parents and immediate family, features of nature (air, sunlight, rain, sunsets...), and the language, laws, art, science, and built environment of our culture. These gifts are large, to be sure. They are immense. Unfortunately, in addition to being distributed unevenly (which requires no end of compensatory mechanisms), they take work to convert into our *own* life's plenitude. They cannot simply be spent without thought of return.

Now, I do not take the idea that no value is really non-economic to indicate some flaw in the design of life. I take it, rather, as an essential property *of* life, prerequisite to its very flourishing. "By the sweat of thy brow," in my view, was no curse except the "curse" of being human and alive and wanting—ultimately inexplicably—to thrive.[17] And when value is thought of as an *increase* in the complexity-and-organization—the lifefulness—of living systems against the impersonal forces of dissolution on one hand and the icy clutch of rigidity on the other, we can begin to see why even the smallest works of goodness or beauty or truth are achieved with some effort, sacrifice, or risk—i.e., with the paying of some *price*, broadly conceived. For as we discussed in Chapter Two, this corner of the universe is *evolving*, and we are swept up in its thermodynamic logic. This logic issues from everything we see with motivated eyes, from everything that now stands forward and now retreats as having "value": food, prey, shelter, mates, utensils, weapons, friends, foes, language, art, tokens, money, telephone calls...and all the mutual swindling and tempting and promising that herds us collectively up the invisible but everywhere-felt slope of Mount Omega.

No, that all value is 'always-already' economic is an extremely interesting and entirely empirical fact about the world rather than the result of some arbitrary, socially-applied dicta about working and paying and buying and selling that we could get rid of if we really wanted to.

Marginalist ("Austrian School") economists, precursors of today's neoclassicals, liked to say that economic value arises from scarcity. From this it follows that what is supremely abundant, like air or sunshine, can have no economic value. They were largely right,[18] and pointed to *satiation* as the reason: no longer hungry, the value or "marginal utility" of another bite of food is almost nil. But now we have a second reason: what is wanted and scarce calls forth work and/or the consumption of resources to obtain. It is the comparing, it is the weighing and optimizing of the value of what we want (usually positive) against the value of what it will take to get what we want (usually negative), that projects both the good wanted and the good given up for it into the economic realm.

Economic value and *value* are eternally wed. And eternally we imagine their divorce.

So how is it that, in an exchange of *i* for *j*, we can see good *i* in terms of what joy it will give us, *as though* it were free, and then consider how great a privation the price, *j*, would be for *i*, *as though* we would get nothing in return, and somehow fuse these two valuations into a single, revised valuation of the whole that is the object-and-its-price, *i*-and-*j*, without losing sight of the original constitutive judgments? I don't know. Perhaps we can do it because alternatives and comparisons exist on both sides of the equation: on the one side are all the other goods one could enjoy for the same price; on the other side are all the other prices one could pay to enjoy the same or some similar good. After a few milliseconds (or a few hours...) of imaginative play with the possibilities on both sides, some invariant structure emerges that we take to be *this good's* core or proper value and *that price's* core or proper disvalue.[19] Humans are highly capable of carrying out the valuational calculus involved in trade, and seem to start practicing it from about the age of 18 months.[20] We may even be partially pre-wired for it, just as we are pre-wired for language acquisition. Note that the value of the dyad: the *good-and-its-price*, is really the value, combined, of the *good-given-its-price* and of the *price-given-this-good*, which in turn, may or may not be equal to the value of the good plus the (dis)value of the price, with each considered independently or in other contexts.[21]

II. Two-Party Exchange

I must now beg the reader's patience in adapting to an expanded notation system. Without it further explorations would be mired in tiresome verbal recitation, while with it, insights into the "logic of exchange" fairly leap from the page. We will deal primarily with simple barter exchange since it throws into relief the perceptions, judgments, and expectations that underlie the more complex economic exchanges we will look at later, involving money.

Allow me to reintroduce our two friends from Chapter One, P(aul) and Q(uentin).

Regardless of the need-strata involved, let the value to Paul of accepting a certain good, service, or token, *j*, from Quentin, be denoted as $V_P(j \leftarrow Q)$, and the value to Quentin of accepting a certain good, service, or token, *i*, from Paul in return be denoted as $V_Q(i \leftarrow P)$.[22]

A *fair exchange* occurs when the value to Paul of *j* from Quentin is the same as the value to Quentin of *i* from Paul; that is, when

$$V_P(j \leftarrow Q) = V_Q(i \leftarrow P)$$

Call this the *Basic Equation of Fair Exchange*.[23] Here, each party gains (or loses) equally. Both parties feel equally happy (or unhappy) with what they got from each other and what they had to pay or give in return. The process of bargaining is concerned with raising the magnitude of each side of the equation.[24] We can say further that the *value of the exchange as a whole* and to the pair of them, denoted $V_{P,Q}(i,j)$, is simply the sum of the values that the exchange has to each.[25] In other words,

$$V_{P,Q}(i,j) = V_P(j \leftarrow Q) + V_Q(i \leftarrow P)$$

which is equal to 2 $V_P(j \leftarrow Q)$ *or* 2 $V_Q(i \leftarrow P)$ if the exchange is perfectly fair.

That the quantity $V_{P,Q}(i,j)$ is so commonly a positive one constitutes the oft-remarked-upon "alchemy of exchange."[26] To wit: when something useless in my possession becomes something use*ful* in your possession, and vice versa, then these two somethings, after we have exchanged them, have come to rest in better places—better places for you and I, certainly, and, in a sense, better places for them too—and this without the things themselves having materially changed in any way. Value is produced on both sides, as though a mutual repatriation of political prisoners had taken place.[27]

Obviously, the value to Paul of receiving *j* from Quentin,$V_P(j \leftarrow Q)$, is not *necessarily* equal to the value to Quentin of receiving *i* from Paul. The exchange does not have to be perfectly fair for its value as a whole to be positive, as we shall soon go into.

It is also true that the value to Paul of receiving the good, *j*, from Ruby, $V_P(j \leftarrow \text{Ruby})$ might be not be the same as receiving it from Quentin. It often matters a great deal to our valuation of a good exactly where and from whom we acquire it. When the good is a token, this applies all the more.[28] This is why we cannot write "$V_P(j)$" or "$V_Q(i)$" or, more generally still, "$V(i)$" or "$V(j)$," unless we have ample reason to believe that nothing important will be left out by so simplifying the picture: Are Paul and Quentin typical? Have goods just like "*i*" and "*j*" been found to have strongly typical values in thousands of exchanges? Only then may we simplify.[29]

The question of fairness and obligations

We can now go on to ask an interesting and related question: if neither Paul nor Quentin can directly feel or assess the value to the other of the good or token he offers, then how is the assessment of *fairness* itself to be made? In other words, who adjudicates the equality of the equal-sign in the Basic Equation of Fair Exchange? This is the question that so preoccupied Marx in the first chapters of *Capital*. Is exchange always an exchange of "equivalents in value"? And if so, what property must both goods in a trade have in common such that "equivalency" between them can be judged? The whole order of economics, thought Marx, depends on our understanding of this equivalency, and it drove him to hypostatize value as the "embodied-labor" in goods as well as the proper basis for comparison between them (rather than market price or utility).

But the judgment of equivalency—or, in our terms, fairness—is more complicated than that, and more complicated than most economists who would let market price do the work will allow. For it depends almost entirely on the social arena in which the exchange occurs. Not only is the value of a good to someone predicated on their need-state (and, sometimes, their knowledge of the labor input into the object), but the *judgment of the fairness of an exchange is itself* subject to social pressures. Everyone—participants and observers alike—can have a quite separate opinion of *that.* If, for example, the exchange is open to view, then friends, family members, lawyers, judges, consultants, arbitrators, brokers, or diplomats all have input—or can. Using history as a guide, they observe, compare, and represent the merits and demerits of the exchange to one or both parties, bringing it to a point that it seems fair to both parties. Norms and conventions also come to the rescue: many exchanges are so routine, so typical, that we simply trust that the question of their fairness was long ago solved.

By far the largest proportion of non-routine exchanges, though, are undertaken without objective, third-party judgments as to the equivalence of their value to both parties. These are private exchanges, and their fairness is judged by each party "on the fly." Appeal to social norms helps frame the bounds of reasonableness, but there is still significant room for maneuver. Such exchanges are often undertaken on two related beliefs: first, the belief that the other party would not consummate the exchange *at all* were it not sufficiently in their interest, and second, and perhaps more importantly, the belief that people ought to be relativists when it comes to valuation and, therefore, when it comes to judgements of fairness.

Let us examine these assumptions for a few moments.

We are—most of us—familiar with the following interior monologue, especially when we are pleased with the high value (to us) of an exchange that we also suspect is, or was, unfair:

> Empathy is well and good. But it is an inaccurate guide to fairness. After all, who am I to judge the magnitude of the happiness or sorrow the other *actually* feels, let alone compare it to mine or anyone else's? Value is subjective, is it not? Hard to measure. Goose and gander... Some people are more demonstrative than others by nature. In my essential ignorance, therefore, I must imagine that he/she

> is as happy (or unhappy) "in his/her own way" as I am in mine. The very fact that we voluntarily exchanged *i* for *j* (or soon will), is indication enough of the equalness of the exchange's value to them and to me.[30]

Strangely, though many proffer this sort of explanation of how fairness-in-exchange ought to be viewed, few believe it at times other than when it is convenient. For not only is it possible, it is common, for either or both parties to an exchange to feel privately that they got the better (or worse) of a deal, one they just accepted. Moreover, verbally or non-verbally, there are a hundred ways of letting the other party know this—by posture and tone of voice, by gloating or grumbling, by innuendo, "body-language," starting rumors, and so on. These not-always-honest expressions are displayed as signs rather than offered as tokens, of course, and serve to pre-condition the next exchange. They can also precipitate smaller-valued, reparative after-exchanges that attempt to equalize any remainders or imbalances of the first. ("Thank you." "No, thank *you*."... "Oh, please..." "No, really." "Well it was the least I could do." And so on.)

The equality sign in the Basic Equation of Fair Exchange is thus an approximately-equals sign, not an "=" but an "≈". This is *not* because of some technical difficulty in assessing the precise value of the exchange to each party, a problem that economists have long acknowledged in connection with measuring utility directly and to which I have no decisive solution myself. It is *because some real inequality* (read: unfairness) *in exchange is as important as it is inevitable to the workings of society.* After almost every exchange there is some residue or remainder of feeling, some expectation about how the exchange could have gone and should have gone, and thus some expectation that future exchanges will be, at least in part, corrective. It is as though, at any given exchange, there were always "virtual goods" traded—goods imagined and expected but perhaps not explicitly offered or accepted at the time.

Now these "remainders," if unacknowledged, inject a measure of guilt or obligation or resentment into the present exchange. But when they are acknowledged in the present as IOUs to be applied to future exchanges, they function with the same efficacy as the goods (or tokens) being exchanged themselves. Indeed, in some sense, remainders function with greater efficiency than presently-exchanged goods. For not only do they not need to be physically present, with all of the material and energic expenditures this presence entails, but, whether or not they are formally acknowledged, *they motivate further social exchange*.

We count on them to do so.[31] For just as perfectly understood statements tend to curtail further discussion,[32] so perfectly fair exchanges tend to curtail the relationship between the parties to them. We call such self-terminating exchanges "cut and dried." And when there is a net social value to be had from the perpetuation and proliferation of exchange as such—for example, in the maintenance of community-feeling with a rich "market" in approval and confidence tokens, or when mutual *loyalty* (which is the forbearance of low-value-to-oneself exchanges) is required to take a couple or group through bad times—such cut-and-dried, self-terminating exchanges (characteristic, by the way, of market transactions involving *cash*) are not of best service.[33] Love's tendency to run out keeps us coming back to each other for "credit."

The all-but-self-evident morality of the "Equal Happiness" principle, then, lies not in the end-state it pictures—i.e., a world so just, so fair, that everyone is equally satisfied in their needs—but in how it produces value-positive social intercourse *in search* of that world.[34] The bitterest redresses and re-matches between people (and peoples), we realize, come out of the same exchange logic as philanthropy, altruism, and unbidden generosity. They come from the urge to repair the past, to redeem and heal it, to bring back justice. And this entails dealing perpetually with the often-only-privately-felt remainders and misunderstandings of previous exchanges.[35]

This being the case, it becomes a matter for concern how to prevent reparative "after-exchanges" from having negative net value and from descending the stratigraphy of forces toward violence. No social dynamic is more harmful than the downward-spiralling cycle of *revenge* (which is a variety of exchange). This is why there are occasions when "letting bygones be bygones," when "calling it quits," "turning the other cheek," "closing the books," letting someone "off the hook," or "rolling with the punches" is clearly the wisest, highest-value course. This is what every religion recommends.[36] From an evolutionary point of view, maxims such as these are propagated precisely in order to prevent cycles of revenge from destroying one or both groups, which would hinder their reproduction.

On the other hand, it is both unrealistic and unhealthy to insist that perfect, no-obligation, no-regret, zero-balance exchanges should constitute the universal ideal for social exchange. Remainders are reminders of our connection to others. Obligations, debts, and bonds rob us of some freedom, true, but they are as essential to the good life as freedom-giving tokens, such as permissions, keys, or cash. To maximize Ω, organization (constraint) must always match complexity (freedom). The question is always one of net direction: shall it be *up* the slope of omega, or down—more life, or less?

The pleasure of others and the value of giving.

One should also not overlook the fact that the pleasure of others generally gives us pleasure too. Indeed, we can hardly *help* enjoying others' happiness, which is why we so like to be around friends and family at parties, weddings, and other celebratory gatherings, as well as around happy countrymen—even tourists—in cafés, shops, bars, and public squares, at sports events, concerts, and festivals. With talk- and game-shows on TV, "happy talk" news, sit-coms, and most commercials, we even choose to watch happiness when the happy ones cannot possibly see us watching them and, very likely, are faking their happiness.[37] Comedies and other "feel-good" entertainments rely on the same habit of mind: as we sit in darkened theaters, we resonate with fellow-feeling both towards the characters whose lives are being played out on the stage or screen *and* towards the strangers sitting in the dark around us, laughing.

The obverse is also true, of course: witnessing others' sadness is enough to make us sad, the more so as that experience is vivid and first-hand.

Let us go a little deeper and ask: why does the experience of other people's happiness or unhappiness make (most of) us correspondingly happy or unhappy almost in spite of ourselves? Why are laughter and tears "contagious?" Why does witnessing another person's anger at some third thing make us angry at it too, while witnessing another's suffering make us suffer along? Why is watching or reading erotica arousing? In short, and to use another metaphor, what causes us to resonate, as a piano does when a note is struck on an instrument across the room...what causes us to resonate to (or with) another creatures' feelings even as we know that their situation is not ours?

In his 1759 treatise *The Theory of Moral Sentiments* Adam Smith took what I will call psychological resonance (he called it "fellow-feeling," others have called it empathy, sympathy, compassion, *einfuhlung*...) to be a simple fact of human nature, and a redeeming fact at that.[38] A more modern view would look for evolutionary reasons for psychological resonance, these having to do with long-ago (if not also present-day) reproductive advantage or group fitness. Along these lines, here is a plausible scenario:

It is a long time ago, tens of thousands of years. Imagine that you and your family (or tribe) are in exile for some reason, or that you are pioneers, or just restless, but in any event that you are wandering and looking for a new place to settle down. What are you looking for? Probably fertile land, fresh water, robust and varied wildlife, no signs of current ownership, strategic views, etc. But let us say that you come upon a human settlement and wander in. You look around. Certainly, to find yourself around happy people—even if you did not know exactly *why* they were happy—is to find yourself somewhere safe, somewhere where you might expect unspecified good things to begin to happen for you and your family as well. By contrast, to arrive at an unkempt place, a place where children are crying, where scowls are the norm, where fear or suspicion or sickness abound...is reasonably to feel fear for yourself and to want to move on. Further inquiry would be unnecessary, even inadvisable.

Consider the animal world. Birds profit immensely by noticing other birds' good fortune at having found a scattering of crumbs or seeds. Before long, the ground is covered with fluttering, pecking animals. Conversely, the feeding flock scatters when only one individual raises an alarm and one other bird responds. Wisely, no animal stops to ask what's *really* going on.

If resonance is instinctive in animals, it may also be innate in humans, and therefore quite involuntary. Research shows that newborns "cry more frequently in response to hearing the cries of other newborns than to hearing other equally noxious sounds, including computer simulated infant cries." And when an eighteen-month-old child will spontaneously comfort a crying baby, offering him or her toys, we must conclude that the nurturing behavior of mothers has not only been transmitted culturally, through imitation, but given its foundation genetically in the resonance of the child's neural system to the emotional condition of others.[39]

In sum: we resonate to each others fortunes and feelings. And whether we intend to or not, we teach by our example.[40] Rather than being some quasi-divine human moral trait, psychological resonance may simply be a manifestation of an ancient and largely inherited wisdom that says: Note well the condition of others, especially others of your own kind, and follow suit.[41]

Here, anyway, we have one explanation of why your emotional state affects me in spite of myself, of why actors move me even as I know they are just acting, of why I gasp or flinch when I see a stranger in imminent danger, of why I am elated or saddened by paintings of certain scenes or the design of certain places, why I laugh out loud or grow sad reading a novel, and even why ordinary people enjoy seeing aristocrats gamboling in wealth and privilege.

But whether or not this particular evolutionary narrative represents the most plausible explanation of involuntary psychological resonance (for there are other, related explanations), the net result for the purposes of our present discussion seems to be this: *the value of an* *exchange in which both parties are made happy, visibly to each other, can exceed the sum of the values of the goods exchanged* for their own (i.e. the goods') utility. If your happiness-in-receiving-*x*-from-me *pleases* me, I experience happiness-in-giving-*x*; and if my happiness-in-receiving-*y*-from-you pleases you, you get happiness-in-giving-*y*, and these two happinesses arise over and above the happiness we each experience upon getting the good(s) or tokens we want from each other. This "positive feedback"—to use an old cybernetic term—causes three things to happen: (1) an *amplification* of your pleasure and mine, one that (2) has a *catalytic effect* on *our* future exchanges with each other, and that (3) *when witnessed by others*—mere bystanders perhaps—creates another catalytic effect that increases yet again the social value of our exchange. This third effect is especially important, because while you and I may feel encouraged to exchange again, *they*—the observers of our happiness—are encouraged to imitate us almost in spite of themselves. We help form a "climate of exchange," and the goods we trade in a sense become shared by all.[42]

Should the goods exchanged cause us each *dis*pleasure of course, then the displeasure is amplified in like fashion, by seeing each other's unhappiness, and/or by others witnessing it too. Unhappy exchanges will be more assiduously avoided then, and more effectively stanched in the community that witnessed them. But before this stanching happens, bad feelings can spread. Negative-value or unfair exchanges can propagate like viruses if *one* party, the "winner," receives something positive at the other's expense and the loser tries to make up his losses by adopting the *modus operandi* of the one who beat him with one or more new partners in exchange.[43]

For further insight we must give our discussion a more formal rendering. Once again, readers with little patience for algebraic expression might want to pick up the arguments from the prose alone, which for the most part reiterates the algebra.[44] The "math" *qua* math is elementary.

Back to fairness and obligations.

Paul produces and offers good or token *i* to Quentin. If Quentin accepts, Paul may also obtain an increase or decrease in satisfaction, $\Delta \boldsymbol{S} = V_p(i \rightarrow Q)$, which is the value to Paul of giving *i* to Quentin. This pleasure in giving or providing a good to someone else is quite distinct from the pleasure of getting or accepting a good from them, whether or not it is a good in return, as we have just discussed. Nor is this pleasure in giving altruistic. Paul may feel pleasure-in-giving for several self-regarding reasons:

(i) He may be made happy by Quentin's happiness at receiving *i*, through resonance, or

(ii) He may experience increased confidence, knowing of the generalized obligation towards himself that he has engendered in Quentin, or

(iii) Paul may be demonstrating to bystanders or to his own conscience how trustworthy, how generous, how resourceful he is and so forth—a process of self-legitimation or self-approval that can proceed almost independently of Quentin's actual happiness or sorrow at what Paul gave him. This is a characteristic of duty-gifts and of charity.[45] Or, related to (iii),

(iv) Paul may gain some satisfaction at making the offer at all and at having his offer actually accepted: in other words, he may reward himself for competence-at-exchange. Most children—and many adults—will at some time or another make extraordinarily bad deals for themselves simply to "do a deal" at all, to *experience* it, to become One Who Deals (which is a kind of legitimacy token) and will even delude themselves as to the merits of the outcome.[46]

For any or all of these reasons Paul may assign positive value to giving or providing a good to Quentin, a value quite apart from whatever good he receives in exchange, be it a sum of money or a favor, a material good or a token. Let us note that the value to Quentin of getting or receiving Paul's good can similarly be enhanced beyond the satisfaction provided by the good itself if, as the receiver, Quentin resonates with Paul's evident pleasure-in-giving. This in turn makes Paul happier yet, as we discussed above, which again increases Quentin's satisfaction...in a sort of reverberation of value.

Of course, if, in offering *i* to Quentin, Paul at the same time is putting himself at risk or sacrificing his own satisfaction at some other stratum of need—if, in other words, the production of "*i*" requires work from Paul—then certainly $V_P(i \rightarrow Q)$ may become negative. But nothing remarkable is being noted here: most goods *cost* us something to give away no matter how much we enjoy giving, or even selling, them. Indeed, at the very least, whenever we offer and give up something—especially something physical, but often also something "merely" psychological, a token—we lose the benefit of *keeping* it, which we might write V_P(keeping i) and V_Q(keeping j). In our simplified model, all these "pluses" and "minuses" are taken to be compounded into Paul's overall assessment of $V_P(i \rightarrow Q)$, and into Quentin's overall assessment of $V_Q(j \rightarrow P)$ too.

Now, a (fair) exchange between Paul and Quentin is likely to occur when both of them believe that the

Value of the exchange to Paul ≈ *Value of the exchange to Quentin*, or

$$V_P(i,j) \approx V_Q(i,j), \text{ or}$$

$$\overset{\text{getting}}{V_P(j \leftarrow Q)} + \overset{\text{giving}}{V_P(i \rightarrow Q)} \approx \overset{\text{getting}}{V_Q(i \leftarrow P)} + \overset{\text{giving}}{V_Q(j \rightarrow P)}, \ldots\ldots$$

which is to say, when "the value to P of accepting token j from Q, plus the value to P of offering token i to Q, is approximately equal to the value to Q of accepting token i from P, plus the value to Q of offering token j to P."[47] No longer so Basic, I shall call this *The Equation of Fair Exchange* [48] and rewrite it as a true equation:

Value of the exchange to Paul = *Value of the exchange to Quentin*

$$V_P(i,j) = V_Q(i,j), \text{ or}$$

$$\overset{\text{getting}}{V_P(j \leftarrow Q)} + \overset{\text{giving}}{V_P(i \rightarrow Q)} + \overset{\text{obligation}}{V_P(\varepsilon)} = \overset{\text{getting}}{V_Q(i \leftarrow P)} + \overset{\text{giving}}{V_Q(j \rightarrow P)} + \overset{\text{obligation}}{V_Q(\varepsilon)}, \text{ where}$$

$$V_P(\varepsilon) = V_P(\varepsilon_Q \leftarrow Q) + V_P(\varepsilon_P \rightarrow Q), \text{ and}$$
$$V_Q(\varepsilon) = V_Q(\varepsilon_P \leftarrow P) + V_Q(\varepsilon_Q \rightarrow P).$$

When the value of giving is negative, it is considered a cost or price paid. Sometimes, the value of getting is negative too.

The epsilon-tokens (or goods), ε_P and ε_Q, introduced above represent any obligations whose future or past value is taken into account now, at the moment of exchange, and whose function is to make the Equation of Fair Exchange "solve" as an equality in the minds of both parties.[49] These tokens include promises from the other (whose value is positive) as well as threats from the other (whose value is negative) all as we discussed in Chapter Five. In purely social exchanges as distinct from business exchanges, obligations are not as frankly acknowledged or as carefully compared as are the goods that are the prime subject of the exchange. While the desire remains to set the value of these epsilon-tokens to zero at some time in the future (meaning: all debts paid or forgiven, all promises made good, all threats obviated or carried out), when a modicum of trust—even love—characterizes the relationship, then eliminating the obligation term completely next time—to "settle the score"—is itself a promise (or threat) that is apt never to be fulfilled. Here $V_P(\varepsilon)$ and $V_Q(\varepsilon)$ are never zero. What is sought by most traders in such relationships is fairness of a more complex-and-organized sort: the kind of fairness that sets the value, duration, and number of occasions that P is obligated to Q to be roughly equal to the value, duration, and number of occasions that Q is obligated to P.[50]

It would be naïve not to make note, at this point, of the unfairness that can occur when one party is more *loving* than the other. For the party who is most persuaded of the merit of love at the outset, or who becomes so persuaded during negotiations, is apt to overestimate two values: first, the value to herself of her own giving, and second, the value (to her) of the other's promises and obligations (which both parties know will soon enough be forgiven or postponed indefinitely). Because of this, the value of what she will now accept from the other can become very modest indeed. This, of course, serves the less-loving party all too well. The less loving one need actually offer or give very little, relying instead on the other's pleasure-in-giving and on their exaggerated trust in the effectiveness of obligations.

Acknowledge this strategy, and a more shadowy light is cast upon the constant promotion (in American popular Christian culture, anyway) of *love* as the solution to every social problem. “Shadowy” because, perhaps, in our hearts, we know that it is *others* who are to be more persuaded that "love is the answer" than we are. What self-seeking person would not prefer to be surrounded by people more hopeful and forgiving, more trusting and more generous than themselves? It is a nation of cowards that would elevate courage to the highest of all virtues: let those most persuaded take the risks. You first into the breach. And because a liar among liars has no advantage, the same might be said of lauding to the skies the virtue of honesty.[51]

In fact, in general, when we allow terms like $V_P(\varepsilon)$ and $V_Q(\varepsilon)$ into the picture of exchange, we allow in also a good deal more of the political dimension of economics. The political dimension is already present in the other terms, of course, because the value of a given good is always predicated on one's prior state of satisfaction, which is in turn highly correlated with one's historical wealth, authority, and social connections. But the terms denoting obligation add yet another dimension, another layer. This is because they are about the past and the future and intrinsically involve, therefore, issues of truthfulness, risk, and enforceability. With obligations, one is cast beyond the concrete, present exchange of goods (or services or tokens) and into the air of uncertainty surrounding the past and the future alike: *did* it happen thus? *will* it happen thus? Although both parties might face these uncertainties together, and even equally (i.e. have the same information), it is typical for one party to be more *vulnerable* to the other's possible untruthfulness or default on a promise, as well as to unforeseeable incidents. In short: one party has more to lose than does the other if things go wrong. Let's look into this.

Let's say that A has more to lose in the future than B should B default on the obligation he presently offers. One might argue that this vulnerability should, rationally, have entered into A's *initial* valuation of B's obligation to him, lowering its value. That is to say, the exchange might go forward as mutually profitable and fair, but A will have already entered this risk-and-consequence-discounted value of B's obligation to him into the equation. B, for her part, is doing the same thing: she is judging the risk and consequentiality of A's failing to meet his obligations to her and discounting the present value of A's offered obligation accordingly. This degree of rationality is far from rare. In social life (which is thoroughly economic) as in economic life (which is thoroughly social), do we not judge each other's promises and threats as more or less credible, more or less enforceable, and make our exchange decisions accordingly?

In a seminal 1990 article, Samuel Bowles and Herbert Gintis looked at the political implications of the exchange arrangements between (classes of) people who have, on the one hand, different capacities, financial and legal, to enforce the fulfillment of obligations to them by others, and on the other hand, different vulnerabilities to default (others' *or* their own, or blind circumstance).[52] The most obvious example is that of the relationship between the typical employer and any one of her *N* employees. Here the exchange is labor for a wage, both agreed to be "worth each other," with commonly-understood obligation terms.[53] If the employee fails to meet his obligations, he gets fired "completely"—he loses his whole job—and must find a new one. If the employer fails to meet her obligations and the employee resigns, she loses only 1/*N*th of her workforce. Big deal. While it is true that when labor is in short supply the employee will likely find a new job quickly and the employer have to wait a while, the imbalance of bargaining power between employees and employers in all but the most extremely labor-favoring markets is considerable.[54] Hence, of course, the formation of labor unions, which allow all the employees of a firm to act as a single individual whose resignation would be at least as disastrous to the firm's owner as the loss of employment would be to any one of the union members. It benefits low-wage employers, therefore, to "divide and conquer," that is, to divide workers into categories, to emphasize their uniqueness and differences from one another though uniforms, titles, seniority, inter-group competitiveness, etc., up to the point that overall productivity begins to suffer...all this just to prevent collective action against them.

One could look at the relationship of money-lenders to money-borrowers in similar terms. The borrower of a sum of money might not be able to return it to the lender. The savvy lender, of course, has already figured her assessment of the costs of collection should the borrower default as well as the probability of default into the interest rate she charges. The lender likely asks for *collateral* too from the borrower: either some asset that is easily sold for money, or money itself in some other form or account owned by the borrower. In this way—i.e., through interest rates and collateral requirements, and by making many loans to *many* individuals no one of whom would break her if they defaulted—the lender protects herself and makes a profit. One consequence of this arrangement, however (and there are many), is that borrowers who already have considerable liquid assets can borrow larger sums of money at lower interest rates and over longer terms than borrowers who have fewer liquid assets. This is because "human capital" collateral such as skill or special knowledge, future labor or future wages, which can be withheld at the will of the borrower, is less attractive to a lender than money holdings or physical assets that can quickly and assuredly be "liquidated." Lenders may threaten wealthy and non-wealthy borrowers alike with embarrassing collection actions and "non-renewal" (i.e. never lending to them again), but only the wealthy can offer sufficient collateral to assure the lender this will not be necessary.

Politicians require the votes of citizens. A vote is a token of confidence given in exchange for one or more promises to make or alter law in the voters' interests. But between elections, politicians are largely out of the control of those who voted for them, and they may or may not fulfill their promises. Between elections, politicians have the upper hand. Indeed, they might have the upper hand during voting too, since a vote cast on account of any one of their promises is the same as a vote cast for them on account of any other promise, while the individual voter interested in fewer than all the politician's promises—and perhaps just one of them—has given his "all" for it, his single vote.

In summary: the wealthy business owner/employer finds herself at an advantage with respect to her individual employees as well as at an advantage with respect to rival less-wealthy business owner/employers. She can fire people more easily and thus pay them less; she can raise money from banks and investors more easily, paying them back less. (With her "deeper pockets" too she can ride out temporary setbacks more smoothly than her rivals or employees, and can avail herself of more extensive legal representation if challenged.) Lenders can spread their risk. Once in office, elected officials graduate to new concerns and respond to new incentives, chief among them (in the U.S.) being campaign contributions from lobbying groups and big business. And so, as Bowles and Gintis conclude, *capital ownership, bargaining power, and legal authority "naturally" flow together, one increasing the other, even though every exchange between worker and employer, borrower and lender, voter and politician, looked at in isolation can argued to be a reasonable one.* If we have any moral objection to the distribution of wealth and power that results nonetheless, then remedies—fresh remedies, anyway—can come only from a deeper understanding of the fine structure of human exchange than we usually deem necessary.

We must turn our boat into the winds of complexity again:

The complexity of judging fairness

Setting aside considerations of good or token *type*, six variables come into play to make an exchange fair: three on either side of the Equation of Fair Exchange on page 21. Assume that we are able to make seven magnitude-distinctions for each of the three variables on each side of the Equation, thus: "high value," "moderate value," "low value," "neutral or no value," "slightly negative value," "moderately negative value," "very negative value."[55] Then there would be 19 possible magnitudes for $V_P(i,j)$ and 343 permutations of the magnitudes of its three individual components $V_P(j \leftarrow Q)$, $V_P(i \rightarrow Q)$, and $V_P(\varepsilon)$. Similarly, there would be 19 possible magnitudes for $V_Q(i,j)$ and 343 permutations of the magnitudes of its three components $V_Q(i \leftarrow P)$, $V_Q(j \rightarrow P)$, and $V_Q(\varepsilon)$. Together this would create 9,331 distinct ways of making a perfect match between $V_P(i,j)$ and $V_Q(i,j)$. That is, there would be 9,331 ways of "solving" the Equation of Fair Exchange.[56]

My point? That even with a degree of precision of valuation (seven "grades") that seems to lie well within the average person's capacity to report of themselves and estimate in others, the number of distinguishably different fair exchanges that could feasibly happen is very large, and the character of any particular fair exchange very specific. Add *unfair* exchanges, and the total number of possible "solutions" mushrooms to over one hundred thousand.[57] Add consideration of good/token type—i.e. whether diminishing in marginal utility, climactic, GKG, receding-goal, or addictive, each with unique temporal characteristics—and the number of combinations generated by the Equation of Fair Exchange would seem to overbrim anyone's capacity to deal with them rationally. How do I weigh the value of an addictive good from you to me against the value a climactic good from me to you in return? How am I to include differences in the enforceability of, and vulnerability to, default of obligations? Aaaaargh!

So we must ask the question: do ordinary people *really* carry out such elaborate estimates, enumerations, and computations as this? "Surely not," we want to say. "Who has the time?" Drastic simplification of some sort seems necessary—necessary both to theorists like myself and now you, dear reader, as well as to better-adjusted individuals, i.e., people who go about their lives buying and selling, giving and receiving, appraising and investing, directing their time and attention fluidly from this person to that person and back again in a resource-optimizing way without, it seems, taking a second thought. The complexity we uncover when inquiring even shallowly into the logic of exchange must somehow—if it is real—be managed *and* be covered over, be dealt with *and* denied. But how?

Here are three possibilities.

(1) Perhaps the degree of precision of quantification and enumeration people actually carry out *is* minimal. Perhaps they make only *four,* say, rather than seven magnitude-distinctions per variable. Or simpler yet, perhaps people get by with making a *single* judgment as to the total value of the exchange to themselves, merely rank-ordering the magnitudes of the three components of $V_{self}(i,j)$, and then doing the same, imaginatively, for the other party, $V_{other}(i,j)$. If any or all of this is the case, then re-enter Love. For, as I suggested in Chapter Four and commented upon earlier in this chapter, "loving" is the name we give to relationships that are mutually beneficial across several needs and in which value estimations on both sides are kept approximate and accounting vague. In a loving relationship, value parity is expected to come about by itself, and only in the longest of runs, over dozens or hundreds of exchanges. Whatever else love does, love

simplifies the inherent complexity of interpersonal exchange enormously: more or less intuitively, one simply does what feels good to oneself and the other.[58] In a strange way, one can be selfish.

(2) However, love's purported nemesis—money—also simplifies exchange. For if money is widely enough accepted to be the metric of all value, then Paul's converting $V_P(j \leftarrow Q)$, $V_P(i \rightarrow Q)$, and $V_P(\boldsymbol{e})$ into some equivalent-in-value-to-him amounts of money and then adding these amounts to arrive at the value of the exchange to him, can also effect a considerable efficiency; especially if Quentin does the same. With money the measure, the anxiety of estimating the value of the various tokens, obligations, and goods involved in an exchange is now greatly reduced. One need only think of everything's market value. Moreover, when money is the dominant metric of value, it matters little to whom, specifically, that money is given or from whom, specifically, that money is received. When A's money is as good as B's is as good as C's, everyone is a stranger and the life of exchange can be the simpler for it. Going interest rates settle the question of time and risk.

(3) People behave norm-ally. Norms, conventions, laws, rituals, formalities, and rules of etiquette, like stable market prices, are much easier to refer to and carry out than actions based on value calculations made from scratch. Life is simpler when people do what is expected of them, and when what is expected of them is everywhere spelled out. When tradition tells us what is worth what, we do not have to figure anything out: we merely "do what is done in these situations." Codes of conduct have a recommendation for every common problem if not a commandment; and when they do not, we take recourse to lawyers, to more faith, or more patience.

To summarize: fully considering and executing a fair exchange is a complex, time-consuming, and vexing matter, riddled with uncertainty. Given that there are (at least) three ways to tame that complexity, it would seem that we have some choices as to which to use: shall we construe our relationships as "loving," "commercial," or "codified"? Which shall be which; and why? Wisdom in this matter would seem to be crucial when the increasing complexity and pace of urban life propels so many people to monetize value where they shouldn't, to invoke love to blur things over when they needn't, and to reject formality of all kinds as stifling of their freedom.

I suggest that the wisdom lies here: we (should) choose how to simplify exchange, and how much to simplify it, *by maximizing the value (of each type of) exchange, given the person and the situation.* Perhaps evolution has already emplaced this wisdom in our cultural practices.

If so, we ought to be able to show quite scientifically that family relationships are loving because people who share households and genes cannot increase the plenitude of their lives using any other exchange-simplification method. Similarly, we ought to find that business relationships are just the sort that are best simplified by the use of money, the standardization of goods, and the relative lack of importance of the personalities of the traders. Long-codified and ritual behaviors are everywhere, of course, but we should find that they dominate in diplomatic relations, in religious and military life, in sports, and in traditional arts.

Are we done? I'm sorry dear reader: not quite. Let's say that there are, in fact, three ways in which the Equation of Fair Exchange could be streamlined, as I have just described. A small question still nags us: *do we actually use them*? The answer might be: no.

The possibility remains that we do indeed carry out a fine and most elaborate computation of values, a computation which is at least as complex as the one pictured by the Equation of Fair Exchange and perhaps *more* complex, but that proceeds *hidden from consciousness*. After all, we can each a ride a bicycle, catch a ball, and whistle a tune without being able to explain exactly how we do so. Our nervous systems solve a thousand mathematical equations simultaneously every time we recognize a face, pour a cup of coffee, or just stand upright without falling over, and we know nothing of the myriad computations involved. Physicists have only recently figured out how a child makes a swing begin to swing from a dead stop without touching her feet to the ground or being pushed...

Now, is it not true that we "somehow" know a good deal when we see one? Can we not read others' feelings with uncanny delicacy and certitude; do we not quickly come to trust or distrust them, to see and *not* see their point of view at once...and all this with little overt training? In *Wealth of Nations*, Adam Smith declared that the proclivity for "truck and barter" (i.e. for deal-making and trade) was an ineradicable part of human culture. Might we have become so deeply trained in the ways of value appraisal and exchange that its logic and protocols, like those of language itself, have become second nature to us?

Plausibly so.[59] Our "equations of exchange" might be too simple by far to describe what we actually do quite thoughtlessly.[60]

More skeptically, we might ask this: is it even true that we do not *consciously* engage in extended calculations when we are engaged in "non-economic" exchange? Certainly, contemporary Americans are under considerable cultural pressure not to admit to doing so, to downplay *any* calculatedness in human relations. We are under pressure, rather, to *seem* at least to act out always out of love or trust or tradition. If we profess belief that only Shylocks calculate, that only politicians, lawyers, and master criminals take every man's measure...then it is easy to declare that we are not *one of them*! No, sir-ee. And if, in concession, we offer that such fine-grained calculations might be carried out by all of us, but if so, then *unconsciously*, is this not because of the shame we feel at our own well-practiced expertise? One need not be a Freudian to consider such denial—such repression—a distinct possibility.

Of course, there are many exchange situations in which extensive computations of value and hair-splitting comparisons of advantage are carried out with full cultural acceptance—in business negotiations and in international diplomacy, to mention two. The heresy here is to suggest on the one hand that ordinary, social, "non-economic" exchanges are hardly less complex and consciously considered than important business, diplomatic, and military maneuvers and, on the other, to suggest that we are naturally so expert at exchange and value appraisal that our equations are still a shabby representation of the true complexity of what we think about but cannot—or will not—report.[61]

Let us remain agnostic on this issue, however. What can safely be said, I believe, is this: how and whether one chooses to simplify the dynamics of exchange depends on the amount of time and the value of the time available to reckon and weigh things, on the size of the stakes in the exchange,[62] and on the rules and relationships that pre-exist between the trading parties. Context seems to guide our choice. Order appears; and our 9,331 possible kinds of fair exchange fall roughly into five "domains." Referring to the Equation of Fair Exchange again, here they are:

Gift Exchange. Gift exchange is characterized not by lack of the demand for immediate reciprocity, or for reciprocity at all, as is sometimes asserted.[63] Nor is it characterized by the relatively high value of the obligation term (for it can be just as high in business loans); nor even by the lack of precision with which all the terms of the Equation of Fair Exchange are evaluated (which would ally gift exchange with love). Rather, gift exchange is characterized by the relatively high value that is given to the value of the giving/providing component on both sides of the exchange. That is to say, in a simultaneous gift exchange between P and Q, both $V_P(i \to Q)$ and $V_Q(j \to P)$ dominate the other terms in the Equation of Fair Exchange.

If the giving and the return giving are separated in time, making of the gift exchange actually two occasions of exchange, then, on each occasion, the value in giving on one side is balanced by a (negative) remainder-value, or obligation, on the other. This is not to say that the value in getting/receiving is not positive in gift exchange, only that it is happiness in giving that is the weightier term and that dominates, while obligations hold the balance over the time in-between. Indeed, in some persuasive, or even coercive, gift-giving situations, one gives *only* in order to incur obligation in the other.[64]

As though to keep just such difficulties under control, a large number of the gifts in most cultures—primitive and modern—are prescribed in kind, size, and timing. Gifts to hosts at dinner parties, gifts to new neighbors, gifts to employees on their last day at work, gifts at birthdays, weddings, anniversaries, graduations, are all highly conventionalized. One must give the "appropriate," i.e. proper, gift at the proper time and in the proper manner. And one can expect a precise and proper reciprocation. Here, *not* giving (or accepting) an expected and appropriate gift is the signal worth noting.[65]

Barter Exchange. In barter exchanges (or *swaps*), the value of getting/receiving goods or tokens dominates over the value of giving/providing them on both sides of the exchange, while the value of remainders—of obligations—are kept to a minimum. Indeed, the value of giving/providing in barter exchange is most often, on balance, negative, making it a *cost* to the giver/provider. Many exchanges between firms are really barter arrangements, agreements to act in certain ways in return for acting in certain ways. And often, to the frustration and delight of lawyers, obligations are not clearly delineated.

Commercial Exchange. Commercial exchanges are like barter exchanges except that the good offered by one party is *money*. More so than barter, however, commercial exchange allows obligations either to disappear, as with cash transactions, or to come to the fore with interest rates and repayment schedules. And with conditions of various sorts applying to these interest rates and repayment schedules, varying degrees of obligation can be very precisely stated, adjusted, and exercised by money. Indeed, economists are in agreement that when we call money a "store of value," we are referring precisely to money's usefulness in constituting *evidence* of degree of obligation owed to you by others.[66] This is not to say that money can never be given in a gift exchange without making it commercial (although many instinctively feel this way). Money is a good in its own right.

Financial Exchange. Financial exchanges are commercial exchanges where the goods exchanged by *both* parties are money or different forms of near-money, such as government or corporate bonds, treasury bills, company shares, national currencies, mortgages, loans, and other debts, stock options, futures...in short, "financial instruments." Here the value of the obligation terms, $V_P(\varepsilon)$ and $V_Q(\varepsilon)$, dominate over any values in giving/providing or getting/receiving at the time of exchange. Financial exchanges can obviously become extremely complex.

Political Exchange. As practiced in the halls of representative government and other democratically run institutions, the chief currency of political exchange is the *vote*: one's own vote and the credible promise to "deliver" others' votes too. Votes are not the only currency, however: so are promises of "support" in the form of suitable rhetoric, and so are uses of (previously vote-won) authority to set legislative agendas and schedules, both of which are indirect ways to obtain votes. Political exchanges place little emphasis on the giving/providing component of exchange, and a great deal on the getting/receiving and obligation components. Essential to the art of political exchange is determining the real value to the other of the particular goods they want while dissembling or concealing the value of the good one wants oneself. With discipline provided only by the need to appear consistent with one's with stated beliefs and voting record, the idea is to consummate exchanges that are positively valued by both sides but that are unfair—with the advantage (the higher value of the exchange) being to oneself rather than the opposition. Positively valuing *fairness itself*—a factor we will study in a moment—is eschewed, for it is a weakness. Political exchange is probably the most complex-and-organized form of exchange there is, especially when the giving/providing component of valuation is allowed to enter along with the receiving/getting and obligation components. Adding further weight (and complexity) is the fact that political exchanges are often about setting the very rules and conditions by which *other* exchanges—financial, commercial, barter, gift, and future political ones—can legally be carried out.

Dividing exchange into these five domains helps organize them.[67] It is conceivable, though, that Paul and Quentin are not reading each other very well and come to interpret the domain of a given exchange rather differently. If, for example, Paul interprets a certain exchange as a gift exchange while Quentin thinks it is a barter, it will not take long for the disagreement to materialize in some sort of conflict or later infelicitous token offering. For one party there will be a remainder, an obligation; for the other, none. When a remainder value on one side is substantial and *not so noted* by the other side, conflict awaits.

Other observations can be educed from what we have laid out so far:

In truly altruistic giving, as in unpunished theft, the Equation of Fair Exchange in its current form does not hold. Neither altruistic giving nor theft are fair. But the Equation *can* hold for certain exchanges which we would classify as acts of *bribery* or *extortion.* Fairness does not always imply legality or vice versa. Imagine that P has been harmed by Q in some previous exchange between them. Q has thus incurred an obligation to P, the value of which should properly enter into their next exchange. But Q now denies this obligation or contests P's valuation of it. In desperation, P *blackmails* Q—that is, he announces to Q his intention to take certain actions, or to reveal to other parties certain information, about Q's activities that would prevent or seriously hamper the continued satisfaction of one or more of Q's needs in his exchanges with others. Q succumbs. He offers to give over to P either (i) something of less or equal value (to him) than his loss would be if P made good his threat, or (ii) something that matches P's valuation of the obligation owed him, whichever is smaller.

Now, acts of extortion that deal in tokens at the stratum of legitimacy and below are illegal. These exchanges are, by our definition in Chapter Five, *coercive*, and, in a civil society, the state reserves the right to administer or at least adjudicate all coercive exchanges. Exchanges having the very same structure as I have just outlined, however, but which deal exclusively in tokens of the upper three strata, are not illegal. No less extortionary, they are *persuasive*, and are to be found throughout business and family life.[68] Consider:

• A child threatens to scream in the department store. The child's mother offers the child a gift or concession (a freedom token) to keep quiet. Child keeps quiet. (For a while.)

• At Acme Widget Company, A knows that B is legally able to act, should she choose to, in ways that would lose A, say, the *confidence* of others. And so over time A makes offers to B that are generally more positive in value to B than A would normally make were B *not* able to act in ways that would hamper A. What is this but prudence? No bribe is demanded by B, and no extortion, but if we looked and watched closely enough, would we not catch B casually letting her *capacity* to harm (or help) A be known to A?[69] Do we not all hold each other hostage in this way? Do we really respect each other *just* on principle?

• In the workplace, the positive value to oneself of one's work will nearly always be denied or underplayed to superiors, if not also to one's peers. Let us look a little more deeply into this last form of extortion, because it has clear economic implications.

Economists typically classify work as a "disutility." This seeks to universalize the idea that the activity called *work* (or labor) has intrinsically negative value to the worker. In commercial exchange, this negative value is counteracted chiefly by the receipt of a money-wage, salary, or fee, which, of course, has positive value. Critics of standard economic theory are fond of pointing out that many if not most people *enjoy* their work. After all, they point out, work provides meaning: it satisfies social needs for esteem and companionship, it structures time, it educates, it generates feelings of competence, and so forth. There is something wrong with a theory, they say, that at its very foundation must make work a burden, a disutility, in order to make its own models operate. Is this a well-founded argument?

Well, people who enjoy their work do sometimes confide that they would "do it for free," or that they feel guilty that they are paid so much. (After all, if you love your work you are probably doing it well, work longer hours, and make more money than your peers.) But notice how careful such people are about *who* they make these happy confessions *to*. For whether or not your work *is* a disutility to you, it never pays to make this fact known to the one who is compensating you for it. For this would eventually, if not immediately, decrease the size of the compensation.[70] More generally, in terms of Equation of Fair Exchange, if i is a good or service provided by P to Q, and j is money offered to P by Q for i, then, from P's point of view, $V_P(i \rightarrow Q)$ needs to seem to Q to be negative in magnitude. "This is no gift," declares P. Conversely, from Q's point of view, $V_Q(j \rightarrow P)$ needs to seem to P to have negative magnitude. "This really hurts me to pay," protests Q. In this way, P, who covertly *enjoys* producing i, gets to have both his enjoyment *and* the money he earns for "sacrificing" himself so much to his work. It pays all workers, from janitor to CEO, to profess that they have better things to do than *this*. And so, partly as a consequence and partly as a reflection of an ethos, counting work as a disutility is likely to stay in introductory economics textbooks as a realistic description of the economic world, covering both people who hate their jobs *and* those who would rather do nothing else.[71]

Quasi-fairness and the value of fairness itself

We are not yet done with complexities of "simple" dyadic exchange. With our equations so far, fairness was imposed and represented by the equality sign. Indeed, by "fairness of exchange" we meant equality of the *value* of the exchange to both parties. The value to each of *fairness itself* however, was not represented. One of the parties, for example, might not initiate or carry through an exchange unless they thought it would be *fair enough*, even though they knew that the exchange would be of some advantage to both of them. Here, fairness-as-an-outcome has been foreseen and then internalized as having value per se, a value to be commingled and balanced with the values of giving-to, getting-from, and obligating the other with goods or tokens. It would seem that not only humans value fairness per se: capuchin monkeys, and probably chimps, do the same.[72]

In order for us to describe this situation, the value to P of the exchange of *i* for *j* needs to include not just the value to P of giving *i* to Q, not just the value to P of getting *j* from Q, and not just the value to P of the obligation between them, but also the value to P of the *difference between* $V_P(i,j)$ and $V_Q(i,j)$ per se. In other words, when fairness itself is assessed and valued by each party—positively or negatively as the case may be—the Equation of Fair Exchange must undergo another elaboration. Thus:

Value of the exchange to Paul considering fairness = *Value of the exchange to Quentin considering fairness*

$$V_P(i,j) + V_P[V_P(i,j), V_Q(i,j)] = V_Q(i,j) + V_Q[V_Q(i,j), V_P(i,j)]$$

This expression contains unspecified second-order functions of functions, i.e. values of values. Noting that "valuing fairness" is the same as "*dis*valuing *un*fairness," we are able to remedy this somewhat and construct the following simpler rendition:

$$\overset{\text{value to P of exch. not considering fairness per se}}{V_P(i,j)} - a_P\overset{\text{unfairness of exchange}}{[|V_P(i,j) - V_Q(i,j)|]} = \overset{\text{value to Q of exch. not considering fairness per se}}{V_Q(i,j)} - a_Q\overset{\text{unfairness of exchange}}{[|V_Q(i,j) - V_P(i,j)|}.$$

Here a_P and a_Q are the "coefficients of fairness value" to P and Q respectively, and can vary between –1 and +1. The term $|V_P(i,j) - VQ(i,j)|$ represents the absolute size of the inequality in the values of the exchange to P and Q (these values assessed before or without including considerations of fairness itself).[73] And the expressions "$V_P(i,j)$" and "$V_Q(i,j)$" are expandable as the Equation of Fair Exchange on page 21 says they are.[74]

We might name the last equation the *Equation of Quasi-Fair Exchange.* With it we can make larger statements than we can with the Equation of Fair Exchange alone, since with our new, higher-order formulation, the exchange need *not* be fair at the level of $V_P(i,j) = V_Q(i,j)$—and many exchanges in real life are not—in order to "solve" and go forward. This is because with Equation of Quasi-Fair Exchange each party *can value fairness itself differently,* this in such a way that *the underlying unfairness is neutralized* over and above any obligation terms generated during the exchange, and sometimes instead of them. When Equation of Quasi-Fair Exchange solves but Equation of Fair Exchange does not, we can say that the exchange is *quasi*-("as if")-*fair.*

On the assumption, then, that $V_P(i,j) \neq V_Q(i,j)$, let us spend a few moments playing with the Equation of Quasi-Fair Exchange to see what it reveals.

When $a_P = 0$, this tells us that the importance of (i.e. value of) unfairness *per se* to Paul is nil. Even though he may notice the unfairness, Paul is morally indifferent to it and concentrates only on the value to himself of the exchange. He is totally self-centered.[75] Now, when $a_P = 0$ and the unfairness is in Paul's favor, then $a_Q = -1$, which is to say, then Quentin must *dis*value fairness or, which is the same thing, must positively value *un*fairness. In some sense, Quentin must *like* trades where he comes out second best, which makes him something of a *martyr*.

Conversely, when $a_P = 0$ and the unfairness is in *Quentin's* favor, then $a_Q = +1$, which is to say Quentin must *dis*value *un*fairness, which is to say, he must positively value fairness. To see what this implies, replace a_Q with +1 and see how Quentin's side of things devolves into $V_P(i,j)$. Interpretation: in order to feel or to claim that there is quasi-fairness between himself and Paul (who, remember, doesn't care one way or the other), Quentin must effectively deny or ignore the value to himself of the exchange, leaving only (his thought of) Paul's welfare. This is the hallmark of the *paternalist.* The value to himself of the exchange can be no greater than it is to Paul: so interested is he in the exchange being fair that this is all he will allow himself. Or so he says. When Quentin at the same time covertly enjoys $V_Q(i,j)$ and does not really punish himself for the non-quasi-fairness this implies, we can speak of him as a *self-interested paternalist.*

It would seem that we have found at least one arena of social life in which the adage "opposites attract" makes sense: *people who are self-centered as well as morally indifferent to fairness attract either martyrs or paternalists.* Conversely, *martyrs and paternalists seek out* *people who ignore or strongly discount "the whole fairness issue."* These couples can accommodate each other; they can trade, even as they would disagree about "values" when the subject comes up.[76]

Can one person be both a martyr and a paternalist? I believe so: they flip from one posture to the other as they see who is getting the best of the trade. "Sure," says the paternalist, "I could get more out of this than they do, but that's not the *point*, that's not *why* I do what I do: I am thinking only/mainly of their welfare. That's all I get out of it." "Sure," says the martyr (who might have been a paternalist only a moment ago), "I get less out of this than they do. Indeed, I suffer. But that's O.K: I think good people don't mind being the losers (in this life, or) if a greater good is done."

The martyr-cum-paternalist's association with a self-centered, indifferent-to-fairness *other* is common in the relationships of pet-owners to their pets (especially cats), and of farmers to the animals they have grown fond of. It characterizes also the relationship of many parents to their children and, to some extent, of colonials to "natives," slave-owners to slaves, charity-givers to charity-receivers, employers to employees, teachers to students, and even husbands to wives. Animals and very young children are indifferent to fairness because they are believed cognitively incapable of the abstract computation required, let alone of grasping the moral principle involved. In the other cases, however, a certain amount of complicity is required from both sides if the arrangement is to remain viable: mutual agreement that *fundamental unfairness should be set aside when quasi-fair arrangements yield higher value to each and both parties.* Without this complicity, without the proof that value is enhanced by accepting quasi-fairness, absent the effort to reconstruct the terms of the Equation of Fair Exchange so that it will solve, conflict ensues: the descent of the stratigraphy begins, as down a ladder, to a realm of tokens that *will* work to make fundamental fairness a fact. Either this or an intellectual attack is mounted on the virtues of selfishness, fairness, martyrdom, etc.

I shall not go through all of the permutations of possible values for a_P and a_Q. If we remember that anything said of "Paul" above could just as well have been said of "Quentin" were the situation symmetrically reversed, then, in fact, all of the possibilities have just been enumerated—all, that is, but those that have intermediate values of a_P and a_Q that lie between –1 and +1 (for example, $a_P = 1/2$, $a_Q = -1/2$). But we can think of these intermediate values as representing degrees of self-centered fairness-indifference, martyrdom, and paternalism, all in search of the quasi-fairness that makes fundamentally unfair exchanges morally rationalizable.[77]

The sadist meets the masochist, and both are happy thinking they are making the other happy and that their exchange is fair. Even the thief has his way to reach quasi-fairness: "I (or my people) needed *x* more than they did; they won't miss *x*; they don't care about how unfair life has been to me (or my people)...and besides, they're insured." This is self-interested paternalism with a simple twist: the other experiences negative value.

To round out our discussion of what I have called quasi-fairness, we need to acknowledge the level of complication introduced by misconstruals and deceptions, intentional and unintentional, in the display and reading of signs. We looked into these in the first half of Chapter Five. After all, $V_Q(i,j)$ on the *left* side of Equation of Quasi-Fair Exchange is actually P's estimate of the value of the exchange to Quentin, which might be higher or lower than it really is to Quentin. Similarly, $V_P(i,j)$ on the *right* side is actually Q's estimate of the value of the exchange to Paul, which might be higher or lower than it really is to Paul. When these estimates are off or thrown off, the unfairness term $|V_P(i,j) – V_Q(i,j)|$ can be different on each side, the coefficients a_P and a_Q need not constrain each other, and Equation of Quasi-Fair Exchange can still "solve." This is not just a mathematical fact but a social one: with deception and pretence, a_P and a_Q can take on just about any numerical value because—based partly on present evidence, partly on history, and partly on proclamations as to how much each values, disvalues, or is indifferent to fairness—their true magnitudes, too, are subject to being guessed at by the other party rather than known with certainty. Indeed, both parties can claim that fairness is very important to them and still go ahead with an exchange *that they both know is unfair*. The Equation of Quasi-Fair Exchange disallows this because all of its terms are assumed to be veridically assessed by both parties and acted upon on this basis. But allow deception and misreading, accept pretence, and all bets are off. Recall Table 5.1 in Chapter Five.

From this jumble of deceptions, postures, and asymmetric knowledge, can anything systematic be salvaged of our analysis of the logic of dyadic exchange? I think two important aspects of it can: (1) to the extent that P and Q's assessments of each other's changing satisfaction states *are* accurate for one reason or another, including most people's ability to see through all but the most skillful manipulations of appearances *when we want to*, our two equations hold, as do the various interpretations we have applied to them; and (2), the social fact that, whatever is really going on "beneath," i.e. psychologically, the surface forms of exchange and the proper names for things still have authority. Like masks, like plays or games or codes, they lend order and legibility to complex social interactions and psychological motives they cover over. Is P *really* a martyr? Does Q *really* care about fairness? Is P really *that* unhappy that Q is just a little unhappy? Who knows. But because they *act* thus and *profess* thus, both P and Q are entitled to take each other at their word and to proceed with the exchange on, and in, the terms overtly offered, and they can be held to the most conventional interpretations of what they said and did. This is not unusual or perverse. All cultures depend to some extent on charades of fairness in order to satisfy their members' needs in all their complexity mutual conditionality. These charades are frequently modeled on ancient and/or popular-culture narratives—stories of heroes and 'characters' doing what needs to be done, standing by their word, and making true motives irrelevant. Take this too far, however, and it will not be liars who are ostracized, but truth-tellers, and those who fail to "say their lines" correctly. Where it is understood that everyone is in bad faith, to use Jean Paul Sartre's term, "hypocrite" is a rarely-heard term of slander, and justice becomes the appearance of it.

Nonetheless, the fact remains that without customs to act as guides, simplifiers, and accepted covers to what is really going on, without a certain amount of bad faith tolerated, considerable time and effort must be devoted either to pursuing the truth, which is bottomlessly complex, or to creating the sorts of new appearances that will hold up to closer inspection and cohere with one another. With unravellment a constant danger, so too can coming up with new rationalizations that make unfair trades seem fair become arduous and unproductive. And so whenever, in the life of a society, traditional codes of conduct (which convey and warrant legitimacy and approval tokens) are being pushed aside by the greater demand for confidence and freedom tokens, and whenever, at the same time, compensating for the disappearance of such codes with inventing new ones is too much work and too risky for most individuals to undertake themselves, being *honest* and *open* becomes the easiest—and also safest—strategy for most to adopt in everyday life, leaving the tricky business of manipulating appearances to "professionals" like actors, lawyers, artists, waiters, and politicians. Ease and safety—economic variables both—are two more reasons for an efficiency-minded, freedom-seeking, and would-be egalitarian society to elevate honesty and openness to the status of timeless virtues alongside fair-mindedness, forgivingness, and trust, while allowing some segments of society—those good at it—to specialize in breaking the rules in front of and on behalf of us all.[78] The only catch? Honesty and openness are all too easy for ordinary people to simulate, not just car salesmen. This leaves many of us back where we started: having to take charades seriously.

III. The Net Value of an Exchange

The *total* value of an exchange is very difficult to determine, especially when long-term effects are (properly) taken into account or when we want to consider the extended effect of the exchange upon neighboring others such as friends, relatives, witnesses, and so forth. What I shall call the *net value* of an exchange is a more manageable concept and still instructive: it is the combined value of the exchange to both parties over the same, specific period of time. Let the *net value* of the exchange to its participants, denoted $V_{P,Q}(i,j)$, be defined thus:

$$\begin{aligned} V_{P,Q}(i,j) &= V_P(i,j) + V_Q(i,j) \text{ if the exchange is fundamentally fair or unfair, or } \ldots\ldots\ldots \\ &= V_P(i,j) - a_P[|V_P(i,j) - V_Q(i,j)|] + V_Q(i,j) - a_Q[|V_Q(i,j) - V_P(i,j)|] \\ &= V_P(i,j) + V_Q(i,j) - [|V_P(i,j) - V_Q(i,j)|](a_P + a_Q) \text{ if the exchange is quasi-fair.} \end{aligned}$$

We note immediately that $V_{P,Q}(i,j)$ can be a positive quantity when neither the Equation of Fair Exchange or the Equation of Quasi-Fair Exchange holds. Unfair exchanges can have positive net value. So too can fair and quasi-fair exchanges have negative net value. Should we be concerned? After all, what kind of world is it where charity and theft are both "unfair" and perhaps good, while bribery and extortion could be "fair" and also bad? Is there something wrong with our formulation of all this? Is something missing?

Well, if exchange does not happen *unless* the conditions of equality in the Equations of Fair Exchange or Quasi-Fair Exchange are being met—the giving, the getting, the obligations, the fairness-itself value...all—we could simply say that the computation of net value for an "unfair exchange" is a moot point. There *are* no unfair exchanges. On this view, that an exchange actually happened *proves* that it was fair, at least in the eyes of the exchangers, and all we need do is apply ourselves to discovering how each party saw the situation at the time and to whether the net value of the transaction was positive or negative. This was the substance of our soliloquy on page 14. But this is still not very satisfactory. Why?

For one, because neither fairness nor quasi-fairness is a prerequisite to net positive value, as utilitarians have long known, and as experienced traders are well aware even as they get the worse of a deal. Indeed, most exchanges do not achieve *ideal* results, neither from the points of view of each party, nor, necessarily, from the point of view of society as a whole. Rather, they reach what economists call "Nash equilibrium," that is, a situation in which both parties, not moving from their preferences, settle for the best-to-them of what can be agreed to *at all.* Take, for example, quasi-fair exchanges in which the term ($a_P + a_Q$) is negative. Here the net value of a fundamentally unfair exchange is *greater* than the sum of the values of the exchange to each party (when not considering fairness as such), and it can only happen when either P or Q is (something of) a martyr and the other is disinclined to positively value fairness per se.[79] On the other hand, exchanges involving paternalism by one party always yield *less* net value than fundamentally fair ones—unless the paternalist is self-interested and grabs the greater value that is his, even while he denies doing so, asserting that the exchange is (quasi-)fair.

The truth is that outsiders cannot know how trading parties, in their heart of hearts, are computing their advantage. We cannot really be in their shoes; nor can we easily comprehend their longer-range plans. Take for example, the character one might call the Big Giver. Constant generosity generates a balance of power in favor of the constant Big Giver. While any single exchange between two parties, one giving and one receiving, might seem patently unfair—and might indeed be so—what we may be witnessing is merely a snapshot, a part of a longer-term plan by the giver to build indebtedness in the receiver and/or to climb in status generally in the eyes of witnesses, this in order to build *their* trust in her. Although she may deny her losses or wave them away as a "non-issue," the Big Giver is quite happy to lose in every exchange…*until the exchange that counts arrives and she "calls in her chips."*[80]

Are additional moral and legal constraints necessary to prevent abuses in exchange? Yes; but not, I would suggest, constraints that would in principle disallow unfair and seemingly unfair exchanges to go forward. The only impositions necessary, I would suggest, are (1) those that would disallow coercion by one party in order to force unfair exchanges upon the other, as well as (2) those that would disallow—or that would discourage anyway—exchanges that typically ended in a loss of satisfaction to both parties. To discern *coercion* we need to look back into the nature and need-strata of the goods being traded, as we did in Chapter Five; that is, we need to look into the nature of *i* and *j*. Illegal extortion, for example, involves one party "offering" *not* to take actions that would surely diminish the other's legitimacy or security, this while the target party had every expectation of dealing in goods and tokens far higher on the stratigraphy than this. In moral, roughly-fair exchange we expect a closeness not just in the value of outcomes to both sides but also in the stratum of needs being satisfied. Again: If I alone had in my possession a drug I didn't need and was reasonable wealthy, and you had a disease that this drug alone would cure, then you might gladly part with a large sum of money (or property or promised labor) to obtain the drug from me. This exchange would be fair in some sense, but hardly moral because the goods exchanged are so far apart on the stratigraphy of needs, and the degree of need so different, that the whole exchange dips into the realm of coercion.[81]

Without going into technicalities of game theory or into the exact nature of the goods being exchanged or the needs being satisfied, we can still create a plausible "hierarchy of social value" of exchange types. Starting with the best and going to the worst, we have:

Type I. Fair exchanges of positive net value. Here $V_P(i,j) = V_Q(i,j) > 0$ and $V_{P,Q}(i,j) > 0$. This is the best sort of exchange we could ask for, with fair exchanges of higher positive net value being preferable to fair exchanges with lower positive net value. Then:

Type II. Quasi-fair exchanges in which one party experiences less, but still positive, value than the other, and the net value of the exchange is positive. Here $V_P(i,j) > V_Q(i,j) > 0$, and $V_{P,Q}(i,j) > 0$, which is still "good."[82] Then:

Type III. Quasi-fair and unfair exchanges in which one party experiences negative value while the other experiences positive value, but in which the net value of the exchange as a whole is still positive. Here $V_P(i,j) > 0 > V_Q(i,j)$ but $V_{P,Q}(i,j) > 0$. This is a picture of *exploitation* if the one who experiences the loss of satisfaction accepts it in order to avoid a greater loss (a loss that he is persuaded by the other is certain if he does not accept the terms of *this* exchange), or if he is persuaded that martyrdom will have its rewards elsewhere. Next down the hierarchy:

Type IV. Quasi-fair and unfair exchanges in which one party experiences negative value while the other experiences positive value, as in Type III above, but in which the net value of the exchange is negative. Here $V_P(i,j) > 0 > V_Q(i,j)$ but $V_{P,Q}(i,j) < 0$. This is not a morally or socially good exchange, even though one party profits. It has all the problems of a Type III exchange without its redeeming feature of a positive net value in outcome.

Type V. Fair exchanges in which both parties experience the same amount of pain, the same loss of satisfaction. Here $V_P(i,j) = V_Q(i,j) < 0$, and $V_{P,Q}(i,j) < 0$. What is there to like here? That both parties suffered equally? Fairness is not enough. Acceptable only when even greater mutual loss was certainly avoided or if the net value of a similar but very unfair exchange was only slightly greater. And finally:

Type VI. Quasi-fair and unfair exchanges in which both parties suffer loss of well-being. Here $0 > V_P(i,j) >$ or $< V_Q(i,j)$, and $V_{P,Q}(i,j) < 0$. Again, acceptable only if greater net loss was certainly avoided.[83]

One hesitates to treat so summarily such an enormous moral-philosophical subject as fairness—which is so deeply tied to what we mean by justice. But all that this analysis tries to suggest is that fairness in exchange, although itself of positive social value inasmuch as it prevents envy and enmity, cannot provide a complete ethics. For one, some account needs to be taken of the net value of the exchange to both and all parties. For another, and as I have remarked upon already, some allowance has to be made for the positive motivating effects of occasional and moderate uncertainty at the fundamental level of the Equation of Fair Exchange: slight misperceptions as to the nature and value of the obligations agreed to, for example, surfacing and causing reparative **Type I** or **II** engagements later. The acceptance of quasi-fairness on the part of the traders is also a step towards understanding this "life-goes-on" principle. If fundamental fairness were of paramount social value for example, then exchanges of **Type V** (in which both parties suffer equally) ought to be in second position on our moral hierarchy rather than fifth position—a judgment which, I think, is difficult to defend in the general case. Is it better that everyone should go down with a sinking ship than that some survive?

Moreover, given the *time* it would take to compute and verify it on each occasion of exchange, if *perfect* fairness with *perfect* certainty were essential, most exchanges would not happen at all. Then where would we be? As I have pointed out in several different contexts, a certain amount of laxity, slippage, ignorance, forgiveness, forgetfulness, and hope is absolutely necessary for social systems (and perhaps all systems) to function. The question is: how much?

In theory, endless debate can arise if the net value, say, of a **Type II** exchange exceeds the net value of a **Type I** exchange of the same goods between the same people. To wit: which is to be preferred? **Type II** for its greater net value? or the **Type I** for its deeper, truer fairness? (The problem arises in general whenever an exchange of a lower type exceeds in net value an exchange of a higher type.) I think the answer lies in at least one of the parties examining the actual exchanges at hand more carefully. Generally, doing so will uncover the fact that the two exchanges contemplated do *not* involve the same goods or tokens or obligations at all. How do we know this? Because, for one, the very process of questioning will change the nature of the exchanges in the minds of each, and because, for another, one or both parties would be led to explore the longer-term and geographically-wider consequences of each exchange with some objectivity. These two adventures of the mind will eventually distinguish the two exchanges far enough apart on a spectrum of options and possible outcomes that, if the value-ambiguity persisted, a new exchange, different to either of the previous, could be discovered that was fairer *and* of higher net value.

Adopting this strategy assumes, of course, that the *time* devoted to such adventures of the mind is not of greater value (to either or both parties) than any resulting improvement in the fairness or net value of the exchange would justify. "Time is money," we say, and it should not be spent doing *x* (perfecting this exchange) if it could more valuably be spent doing *y* (eating dinner), as Herbert Simon famously pointed out.[84] But we are often too quick to forget that some, if not all, of the time devoted to perfecting an exchange might itself be valuable in the way it cultivates mental and social ("inter-mental") complexity-and-organization, in which case it does not represent a cost, something negative in value, but a profit, a reward. Some of the time spent in perfecting exchange is therefore not time "spent" but, in a sense, time won because it is *plenitude* gained. It is time filled with the very substance of feeling pleasurably alive among other people: and this is the sort of time that *fills out* one's life rather than shrinks it. Or, if we *must* think of time as always a cost, then this is time *well*-spent whether or not the exchange is, in the end, improved in fairness or net value.

Of course, some of the time spent perfecting an exchange beyond a certain point *can* be wasted. It can even be counterproductive, unenjoyable in itself, and make matters worse with every passing minute. But in deciding whether or not this point has been reached, we need to be sure that not just ultimate effects on the satisfactoriness of the exchange are being weighed but also the value to all participants and observers of the *process of trying* to get it better.[85] These are the kinds of deliberations that must take their *own* value into account.

None of the formalisms that I (or, as far as I can tell, anyone else) have proposed explicitly include this—the value to P and Q of all the talking, thinking, feeling, and imagining that ultimately makes an exchange work in terms of the goods explicitly traded and that, in itself, alters the value of the exchange as a whole. I shall have to leave the matter there, because further complications lie in store.

When the goods exchanged are living things

For all of recorded history and until recently, millions of human being around the world have been owned and traded like goods: traded for each other in barter, traded for money. I refer, of course, to slavery. Slavery was made illegal in Britain in 1833, in the United States in 1865, and world-wide by the United Nations in 1956, but in certain parts of the world it persists, like the Ivory Coast, Eritrea, and China (the use of "prisoners" for labor). In many parts of the world women are still treated as chattel, sold by their parents for money, goods, or labor—a "bride price"—to be the child-bearing servants of the men who buy them. And among many poor third-world countries, children are treated in similar ways: as sources of income by their families, and as all-but-slave-labor by employers.

With kidnapping and forced prostitution, humans again are treated as objects in trade, as property, without rights to self-determination. Orphan-adoption procedures can approximate the same logic, even in the most civilized of societies: babies as living goods.

Lower on the scale of life are animals. Here, farmers regularly buy and trade animals as "livestock," while ordinary people acquire animals like turtles, cats, and dogs as "pets," and buy and raise horses as investment vehicles or as picturesque additions to scenery. Zoo animals, circus animals, show animals, racing animals, work animals, food-producing animals...all are treated as things when they are trapped or bred and exchanged without care for their well-being except insofar as it affects the wealth and well-being of their owner-exchangers. It goes without saying that sport hunters and fishermen execute the most unfair, self-interested and paternalistic "exchanges" possible whenever they practice their sport: the animal's life for their entertainment.

Lower yet on the scale of life, but living nonetheless, are plants. These we cultivate, sell, buy, transport, trade, prune, and eat without compunction, without regard to *their* interests in living longer and better lives. Indeed, we laugh at "tree-hugging" environmentalists and chuckle at the thought that vegetarians could be considered *killers*, as they would be by self-starving Jain saints.

All well known. Let me press on.

Machines and buildings are clearly not alive, and yet to many people they just as clearly have a presence, a dignity, a will to persist. They seem to work smoothly and happily or to be broken and unhealthy. We often give them proper names. We like them comfortably placed. We feel sad to see them age, sad to see them go. Indeed, in some ways we feel more strongly towards machines and buildings and certain artifacts, with their "virtual lifefulness," than we do towards plants, and their real lifefulness, precisely because of the former's non-fecundity, because of their closeness to their own "personal" finitude in breakage, decrepitude, obsolescence, and eventual discarding, precisely because of their dependence on us.

To be sure, we are "projecting" in all this, and from a certain point of view this is absurd, mad. But it ought to be interesting even to practical, unsentimental minds what the consequences might be of feeling an acting *as though* certain if not all machines, buildings, and artifacts were alive, as though they had rights and interests in staying "alive," as though, indeed, they had rights and interests in "flourishing" and "being happy." The idea is this: that it represents moral progress to move from treating these things as mere *objects* that make us happy or not as we produce, trade, and use them, to treating them as *subjects*, as quasi-living entities that themselves issue and receive goods and tokens, whose happiness or lack thereof makes us happy or not in empathy. The idea is to give them voice even as we know that it is our voice we are hearing.[86]

Can we not skirt literal pantheism and literal panpsychism and still see what good these doctrines are able to bring about in the relations of humans to each other and to the physical world? For while the life we see in non-living things is not biological life, it is complexity-and-organization nonetheless, Ω, the preservation and increase of which in all things, with all actions, lies at the very heart of the program of producing value. We want greater complexity-and-organization in things not just for their sake, but so that, by virtue of their lifefulness, every sentient creature that sees and hears and smells and interacts with them is given more life too.

Shabby, stupid, dead, broken, boring, dirty, simplistic, ugly, hostile, wasted, common, cheap, undignified—these are adjectives we apply quite commonly to such inanimate objects as buildings, and these are qualities that *they do not want to have* any more than you or I do. *Let* this be projection. There is nothing "mere" about the process. Where do the virtues come from if not from the more general and ancient conditions of living and multiplying under the sun: courage, health, fecundity, cooperation... The original "projection," if you will, was in the other direction, from things and places onto *us*, from nature's nature onto and into *ours.*

And it continues. When the eyes with which we see the world are the eyes that the world gave us to see it with, the admiration is—or could be—mutual.

Let us retreat for a moment from mysticism's edge and go back to bilateral exchange.

A story. Paul offers Quentin a kitten as a gift. Quentin is not sure he can or should accept it because his girlfriend, Rhonda, is allergic to cats. Paul says *he* can't keep it because his landlord won't allow pets of any kind. Paul wants Quentin to take the kitten, and subtly suggests that he expects only a small obligation to him from Quentin in return. Quentin does not mind the burden of an obligation to Paul, who is his friend, but he does not want to fight with Rhonda, who is not only allergic to cats, but also, he now recalls her saying, a "dog person." He also has his doubts about raising a kitten.

Hours pass as Paul and Quentin negotiate and try to think of other possibilities. Both understand that this is no ordinary gift or trade because the happiness of the kitten is an essential component of their concerns. Taking it to the SPCA is not acceptable; putting it on the street is not acceptable. Perhaps finding a kid in the neighborhood... Meanwhile, the kitten has fallen asleep on Quentin's lap. Rooted to his chair, trusted by eight ounces of life-desiring-life, Quentin accedes.

Quentin buys Rhonda some flowers. He presents them along with the cat. Rhonda says "thank you," touches the kitten with a finger saying "Cute; who's going to feed it?," and goes to bed neglecting to put the flowers in water. Quentin gets the message. The next day, still on the counter, the flowers are wilting sadly. "What did *they* do to deserve to die," Quentin wonders as he looks out the window, considering his options. The kitten has wet the carpet and is mewing.

Let the kitten be denoted *k*. Then, for the first gift exchange to be fair between P and Q (and omitting, for simplicity's sake, fairness-as-such as a consideration), we have

$$V_P(\text{keeping } k) + V_P(k \rightarrow Q) + V_P(\varepsilon) + V_P[V_k(\text{being with P}) - V_k(\text{being with Q})]$$
$$= V_Q(\text{keeping } k) + V_Q(k \leftarrow P) + V_Q(\varepsilon) + V_Q[V_k(\text{being with P}) - V_k(\text{being with Q})].$$ [87]

The net value of this exchange, however, is larger than the sum of the two sides of the above equation, $V_{P,Q}(k, \varepsilon)$, because it is properly "$V_{P,Q,k}(k,\varepsilon)$," the net value of the exchange to the kitten. Properly, that is,

$$V_{P,Q,k}(k,\varepsilon) = V_{P,Q}(k, \varepsilon) + V_k(\text{being with P}) \textit{ or}$$
$$V_{P,Q,k}(k,\varepsilon) = V_{P,Q}(k, \varepsilon) + V_k(\text{being with Q})$$

If any impartial observer were to assesses the net value of this exchange, he or she would judge it by the size of $V_{P,Q,k}(k,\varepsilon)$ rather than $V_{P,Q}(k,\varepsilon)$, and to the extent that Paul and Quentin aspire to this larger view, so too will *they* pay attention to $V_{P,Q,k}(k,\varepsilon)$ and choose to maximize it on some basis that includes fairness as a value to all three parties.[88]

Another way to go about this analysis would be to regard the exchange as being not one single exchange but a *set* of dyadic exchanges between Paul and the kitten, the kitten and Quentin, and Paul and Quentin, exchanges in which they are all treated as equals and the sum of whose net values is the value of the initial gift exchange between Paul and Quentin. Here the kitten is given all-but-full personhood at the outset for the purpose of assessing the net value of the exchange as a whole. The kitten "trades" on it own behalf, offering companionship, amusement, physical comfort, and an alternative way of looking at the world to whomever would offer it best food, shelter, and companionship in return. Best? Notice on *whose* lap the kitten fell asleep.[89]

<u>On the value of inanimate objects.</u>

If the good exchanged is a sentient living creature then it has a real—and I think most people would say, legitimate—interest in the process and outcome of any exchange in which it is involved, as we have just seen. *Its* evaluation of the new dispensation ought to be tallied too, the more so as it is regarded as close to human in intelligence, form, and virtue.[90] Most civilized societies now have laws against cruelty to animals, and we kill those we must—for food or in self-protection—as painlessly as possible. We protect endangered species. We admire (from afar) the traditional American Indian view that nothing in nature can be human property and that such "rights" as we have to harvest and slaughter are by consent of the creatures involved—a consent ever to be won.[91] When it comes to protecting redwoods, say, or rivers and marshes, writers like David Ehrenfeld criticize environmentalists who justify environmental protection on the grounds that natural habitats ought to be preserved for future human use—for our children's hiking, viewing, and hunting pleasure, for biological and medical research, for clean water, atmospheric and climatic health, and so on—rather than on the grounds that the animals and plants of the earth themselves *deserve* to be here as much as we do. Certainly this is a world-view familiar to the Navajos and many other Native American cultures. Ehrenfeld, however, not only wants us to take this impartial view on moral grounds, but believes that, pragmatically, it is the only argument that can stop the erosion of environmental protection laws by the "creative" re-definition of what human interests are.[92]

But who takes up the cause of the thing when the thing exchanged is *in*animate? One is tempted to say: "no one in their right minds."

Easy to understand are the attachments people form to certain smart toys, such as Sony's robotic dog, Aibo (which responds to its name and dozens of commands, recognizes voices, walks, sits, lies down, nuzzles and so on), or like the much more primitive digital cartoon characters, like the ubiquitous Tamagochi of the mid-1990s that, in requiring "care" in order to "survive" and be "happy" seemed less like characters than creatures. The prices people pay for such goods, and the anguish they feel when they are damaged ("hurt") goes beyond their worth to people who are not so attached.[93] But this phenomenon is not restricted to what are essentially computer-driven dolls. For example, there are art collectors who feel strongly that this or that artwork *deserves* to be seen rather than stored away. When a notable artwork is damaged, lost, or stolen, it is not the loss of monetary value that hurts its owners most, nor the personal insult to them through the violation of their property and property rights that is "theft," but concern for the welfare of the piece itself. Theft in this context becomes more like kidnapping. Not surprisingly, the anguished owner-parent wants to know above all whether the piece is *safe.*

The designers and owners of boats refer to them (in English and some other languages) as "she" and "her," forming unilateral-believed-bilateral bonds of trust in each other's capacity to protect, perform well, and remain beautiful. The care lavished on lacquering and cleaning and polishing the vessel go beyond pride in ownership to caring for another obligation-producing entity—silent, patient, cooperative, appreciative, strong, and somehow alive. The same is true of classic cars and motorcycles— beautiful or ugly, it matters little...if they have "personality."

Drive by a house you once lived in and find it neglected, and you feel saddened *on behalf of the house.* The old oak tree is gone, now a stump. See the present owners in the yard and feel anger. Restore a Victorian theater to its former glory, and "a grand old lady" is given new life.

Can a book really be "mutilated?"

Do the best things we make, from poems to paintings to ideas to companies, not take on "a life of their own"?

Designers, engineers, architects, artists, writers, collectors, craftsmen, poets, and ecologists are connoisseurs all, romantics all—men and women who have come to a vision of the world that is large enough to include both nature and the works of humankind as having value *as though they were all living things* that needed, indeed deserved, to be happy. The architect Louis Kahn famously asked brick "what it wanted to be," and it said to him "*an arch*." From this empathy for the most inert of materials, baked mud, he created great architecture. And why, we might wonder, did brick not answer Kahn, "*a pile*"? Because Kahn saw in brick the desire to be more than its lowest, most-disorganized "self." Like you and I, every brick had aspirations to transcend its fundamental stupidity, to rise up in strain and coordination with its fellow bricks in order to "make something of itself." Was Kahn projecting? Of course. But if you see the arches he built in Bangladesh, or the silvery concrete vaults of the Kimbell Art Museum in Forth Worth sailing impossibly over empty space, you will feel uplifted in turn.

Kahn also called buildings a "society of rooms," each room properly having its own light and view and structural integrity yet communicating fully with the others. Rooms too are people, and people rooms. Light itself, he said, does not "know" it is *light* until it dashes itself against stone or wood.

Louis Kahn, one might argue, was a classical humanist in modern times (he died in 1972), an anachronism, and a "hopeless romantic" to boot. But, with the possible exceptions of Alvar Aalto and Frank Lloyd Wright (to whom the Kahn's ideas would be far from foreign or fanciful), Kahn today stands alone as an architect whose work is admired by architects of all ideological and stylistic leanings as well as by every client he had and every user of, and visitor to, his buildings.[94] Cast in philosopher Martin Buber's terms, individuals like Kahn strive to enter into *I-Thou* rather than *I-It* relationships with nature and with the works of humankind as well as with people themselves.[95] On this view, nothing—literally, no thing—is completely describable as an instrument or tool for another; each has, in addition, a desire, a right, to be the best of its kind, to rise in lifefulness, to give and receive pleasure. Beyond just giving its ends due consideration, which Kant asked us to do, it must be addressed as a *Thou* standing in a reciprocal relationship with oneself.

Of course, this quasi-mystical, almost animistic moral posture towards the physical world is extremely hard to maintain against "scientific" demystifiers, against hard-headed realists, materialists, bottom-liners, and other proponents of common sense who are able—or who feel forced—to turn off the quieter voices within them. But its value in creating a life-enhancing environment cannot be gainsaid. Nor, ultimately, can its rationality. Indeed, I would claim that advanced post-industrial societies like our own, living in material prosperity, will soon have nowhere to "go," nowhere to grow in complexity-and-organization, without adopting the higher moral and aesthetic standards implied by considering the objects of our manufacture and trade as "spirited" too, worthy of our respect, or, at the very least, as things whose lifefulness is inextricably involved with ours. An expanded ethics of care for both naturally- and humanly-made objects of beauty would serve the cause of economic progress. This is a theme we revisit in Chapter Ten and in the Coda.

IV. "Exchange Value" Examined, and a Foray Into Understanding Money

In Chapter Six, we described value as the change in satisfaction it brings about: $V = \Delta \boldsymbol{S}$: Let us, for the moment, demote this concept of value to "use-value" or "satisfaction-value" only. We do so rhetorically, in order to be able to identify what is often taken to be a quite different sort of value, namely *exchange value.*[96]

Earlier in this chapter I suggested that the *economic* value of a good is nothing other than its use- or satisfaction-value balanced against the value of what must be given up in order to acquire, keep, or enjoy it. By common understanding, the "exchange value" of a good, by contrast, does not depend on the value of having, using, or keeping it. It depends, rather, on the value of what *else* one would obtain were it to be given over as a payment in an exchange. The only satisfaction we could take from *keeping* a good that has *only* exchange value would be the satisfaction we might take in anticipating the acquisition of that other good.[97] The furniture store owner has no use for all that furniture: he thinks mainly of the money that selling it will bring in. The *money* is what he wants, and the furniture has only exchange value. As odd as it sounds: the seller pays furniture for money. Symmetrically, to the one who has money but no furniture, the money has only exchange value; the buyer pays money for furniture. The difference is that furniture cannot be exchanged for much else *but* money, while money can be exchanged for almost anything in the world.

I have said nothing here that the average ten-year-old doesn't know. So let us head into deeper waters.

In a society where most of life's necessities and all of its luxuries are available *only* in exchange for sums of money, the conventional idea of "exchange value" steps to the fore, eclipsing all others. And because money stands as the exemplary case of a good that has *only* exchange value and one, moreover, that is costless to store, money steps to the fore as the good whose value in general eclipses that of all other goods. Ironically, in doing so, it comes to have not just exchange value but considerable satisfaction-value in the feelings of security and legitimacy that just having and holding enough money provides. But set these aside for now. What is the exchange value of money? And how would one begin to quantify it in terms other than, well, money?

From what I have said so far, and as most people believe, the exchange value of a specific sum of money ought to be defined as the greatest (or alternatively, as the average) use-value of what can be bought with it. That is, the exchange value to P of owning *x* dollars, which we can denote $V_P(\$x)$, must be equal to $V_P(j)_{max}$ where j is the most satisfying thing P can buy for x dollars. Alternatively, it can be equal to $\frac{1}{N_{(j)}}\sum_{j=1}^{N_{(j)}} V_P(j)$, where $j = 1,2....N_{(j)}$ are all the sets of goods that x dollars will buy for P.

But as sensible as it is, this definition all but eliminates the unique meaning of exchange value. It does so by referring it always *away*, to the use- or satisfaction-value of what *could* be gotten for it, a value which it now bears symbolically, one step removed. It does not allow us to put our fingers on what is unique about money: after all, by this definition, *anything* that can be bartered—anything that can be given away to someone who will accept it and that one does not really want for oneself—has "only exchange value". Paul's garage-sale junk also has "only exchange value." So do his compliments. So do hostages. Why privilege money?

The answer lies in $N_{(j)}$. What is unique about money is the unusually large size of $N_{(j)}$, the number of things that it can be exchanged for, and more than this, *the number of ways it can be divided up to maximize the number of things it can be exchanged for.* The size of $N_{(j)}$ is a function of the "*extent* of the market," to use Adam Smith's vague but useful phrase, and, x, the amount of money in question. For a given amount of money, as the "extent" of the market increases (i.e., as the number and variety of vendors and goods increases), so too does the number of goods increase and the number of alternative ways and occasions that the money can be spent increase. Conversely, for a fixed extent of the market, as the amount of money in question increases, so does the number of goods and of alternative ways and occasions that it can be spent increase—in this case geometrically. When everyone will accept money in payment for things of value for the simple reason that everyone else will too, $N_{(j)}$ becomes as large as it possibly can for the largest number of people who have money at all.

The *buying power* of a particular sum of money (or anything else), then, should be thought of not as the satisfaction-value (contemplated) of consuming what can be bought with it—which is its exchange value—but, together with this, as its *exchangeability* per se, that is, *as the value provided by the number of opportunities one has to use it*. We realize that this "number of opportunities" is precisely what we mean, in a decision-making context, by the number of options available to the decision-maker, and what we mean, in a systems-theoretical context, by the total number of alternative states in which a system could possibly be. This concept ought to be familiar to the reader as a kind of *complexity*. Because $N_{(j)}$ increases so sharply with \$$x$,[98] it makes sense to measure \$$x$'s exchange value not with $N_{(j)}$ but with $\log N_{(j)}$, specifically with $\log_2 N_{(j)}$, which the reader will recognize from Chapters One and Two is our measure of *potential complexity*, C_{pot}, in units of bits. This measure, $C_{\text{pot}} = \log_2 N_{(j)}$, as it turns out, increases smoothly and almost linearly with x.[99] For example, in a marketplace where there is something for Paul to buy at every price point between \$1 and \$100 (in increments of whole dollars), and Paul *has* \$100, $C_{\text{pot}} \approx 28$ bits. If he has only \$50 to spend in this marketplace, $C_{\text{pot}} \approx 18$ bits, and with \$20, $C_{\text{pot}} \approx 9$ bits.

Now in reality, does Paul *want* to spend his $*x* in $N_{(j)}$ different ways? Probably not. Indeed, he can only conceive of a few ways to spend it even "in theory," i.e., even ignoring his current preferences and needs. This makes $N_{(j)}$ *for Paul* a much smaller number than $N_{(j)}$. Like most people, Paul is terrible at exhaustively enumerating combinations. Rather, he gets an "impression" of C_{pot} after mentally trying out a few ways to spend his money, gauging how easy this is to do, and extrapolating. ("Wow," he says upon entering the Mall of America, largest in the world, "you could go *crazy* here!" "Oh," he says upon visiting Pickin' Easy Country Store, "Nice place. Do you think they have....?") Or perhaps he makes up his mind beforehand to use his $100 to get two items only, a T-shirt and a pair of tennis shoes, and then gauges the extent of the market by the variety of spending opportunities he still faces. No matter. If we treat Paul's buying preferences as the distribution of probabilities that he will spend his $*x* dollars in this way (j = 3, say) rather than that (j = 23, say), where each j is a unique partition of $*x*, then a measure such as $-\sum p(j)\log_2 p(j)$, summed between $j = 1$ and $j = N_{(j)\text{P}}$ would give us a useful measure of the actual complexity, C, that Paul actually experiences of this market, with this amount of money.

We are now ready to make a conjecture based on our general theory of value: *Paul is most satisfied with his $x when the extent of the market and his buying preferences are together such that* Ω *is maximized for that x,* which from Chapter Two we know occurs when $C/C_{\text{pot}} = 1/\sqrt{2}$. Getting any more (or less) money than this has the value ΔΩ.

Easy to say, of course. But this conjecture,which I think is reasonable and empirically testable,[100] points us in a certain direction, one that connects this brief discussion of money to our deeper theory of value, which is about the maintenance and increase of Ω.

To summarize: the buying power of a sum of money is not just the value of what goods you can buy with it, but also the value of the very alternativity of that money's deployment: it is the product of that money's exchange value and its exchangeability.

buying power = *exchange value* × *exchangeability*

Without getting into further technicalities, it is clear from this statement that if exchangeability is zero, then the sum of money in question has no buying power. If its exchangeability is high but there is nothing out there you want to buy—that is, if its exchange value is zero—then the money has no buying power either (at least not to you). A high-quality diamond owned by you or me has limited buying power because although it has great exchange value, opportunities for trading it for something else are very few: it has low exchangeability. One must have sold it (for money) to realize its buying power, and having done so, one will find one cannot buy the diamond back for the same price. Why? The deepest reason is because for the diamond dealer, the diamond has greater exchangeability than it does for you because the extent of the market in diamonds is *to him* quite large, consisting in both a network of other dealers as well as a body of trusting retail customers, whereas for you and me it is very limited.

Money is a token whose speciality is the conveyance of *freedom*, albeit a certain kind of freedom—namely, freedom in the realm of commercial exchange. As I remarked upon earlier, a sum of money that, for one reason or another, must be spent only on a specific item has no buying power. While under such restriction, it is not really money, although it may become money once again when, having been given over in exchange, it finds itself "under new management."

The unique value of money is the freedom-to-exchange it offers its owner: not its *exchange value* but its *exchangeability*. In the efficiency with which it provides this valuable exchangeability, it beats any other good or token or service or commodity we can produce or hold.[101] Many things are exchangeable, as I have pointed out, including, by design, all *tokens*, of which money is one. But money, since it can be untied (almost) completely from any particular person or deed or product, and be brought—laundered and history-less—to another person and another situation for exchange, is the most protean token of all.[102]

I follow Marx, that master-excoriator of "exchange value," in wanting to provide a critique of free-market capitalism and of money's dominance as a token within such a system. I have deep qualms about persistent and growing income inequalities between capitalists and workers worldwide. I will speak of money "usurping" the function of the other tokens, and so forth...and all this sounds rather Marxist. But, as I hope is becoming clear, my critique is based on completely different grounds. It is based on the notion that money promotes not just freedom (which is good), but too easily, unfounded freedom (which is bad), and on the related workings, yet to be discussed, of Gresham's Law, which cheapens all goods whose production costs do not drop faster than the norm and/or expectations. I shall argue that it is important to be able to consider money as a good among goods, a token among tokens. Contra to both Marx and the assumptions of modern economic theory, both of which want to make of money something "mere"—a measuring stick, a register of the relativity of utilities and prices, a neutral "store of value"—it matters a great deal to money's value whence and from whom it comes, and whither and to whom it goes. Even in the marketplace. Even with commodities. This is a fact that we are often asked to deny, but one that, if more frequently acknowledged, would help make our freedom more genuine and the world a better place.

Money was as brilliant an invention as the wheel. Without it, larger-than-family-scale social organization would have been all but impossible. The fact that money can convey not just freedom but *security* and *legitimacy*, usurping to some extent the value of tokens designed to do so because it is exchangeable for them too, is both a tribute to and a critique of the "extent" of the modern market. It is a tribute and critique also of the degree to which people are fixated upon freedom per se. We shall spend the better parts of the next three chapters trying to understand money more deeply, and tracking its still-growing cultural and psychological impact on our lives. •

NOTES to Chapter Seven: *The Logic of Exchange*

[1] Robert Owen, quoted in Henry Spiegel, *The Growth of Economic Thought* (Durham, N.C.: Duke University Press, 1971), p. 441.

[2] The other way to increase happiness is to make the happiness of another person the absolute *prerequisite* of one's own, to do this unilaterally, and without the other knowing. Outside of a loving mother's relationship to her infant, it is a rare and risky strategy.

[3] Kenneth Boulding, *Economic Analysis*, Vol. 1, 4th ed. (New York: Harper and Row, 1966), p. 4.

[4] See Tyler Cowen, *In Praise of Commercial Culture* (Cambridge: Harvard University Press, 1998) for a credible antidote to the usual market-bashing from religious, cultural, and upper-class gatekeepers to the realm of the good and true.

[5] On the argued incommensurability of different values, see Note 7 of Chapter Four.

[6] And what is money? Convention says it is the only good that has *only* economic value. Later I will argue against this view. I will try to show that money is a token among tokens, a good among goods. But it is one whose chief property happens to be wide exchangeability, which itself satisfies our need for choice and *freedom*. In this sense, money is an ordinary good with ordinary value.

[7] The market for used cars does not behave exactly like the market for perfumes. Or professors. The desire for certain sorts of commodities, such as sugar, is easily satiated. These goods tend to reach stable prices and their supply industries a certain stable size. Other sorts of goods, such as legal services, can create the greater need for them as they are "consumed." Their prices can rise almost indefinitely and their supply industries grow to match as we discussed in Chapter Six in describing climactic and addictive goods.

[8] Neither, it follows, can/should any other social science ignore economics. Certain prominent economic theorists—Richard Posner and Gary Becker among them—have long been accused of "economic imperialism:" the attempt to explain larger and larger domains of human behavior in purely economic terms. (For an example of commentary on this development, see Jack Hirshleifer, "The Expanding Domain of Economics," *American Economic Review* 75, no. 6 [December 1985]: 53–68.) But note: it is one thing to show how far marketplace logic and monetary dynamics enter into decisions considered immune to them, such as whom to marry, or whether to send someone to jail, as Posner and Becker set themselves to demonstrating, but it is quite another to extend economics' purview and methods to places where there are no markets, or money, or even public exchanges to be seen, as we are about to do and have already done to some extent with the idea of an economy of tokens.

Most economists accept as a premise of their discipline that market processes are the most resource-efficient way for societies to encourage and then allocate the fruits of capital and labor. This is not surprising. The very definitions of "capital" and "labor" are already steeped in the economic theory and the economic worldview.

[9] Economist and planner Michael Oden of the University of Texas at Austin, personal correspondence, June, 1998. For a study of economics' self-definition, and of the role of the abstraction of a marketplace in that definition, see Geoffrey Hodgson, *Economics and Institutions: A Manifestor for Modern Institutional Economics* (Philadelphia, PA: University of Pennsylvania Press, 1988), and Geoffrey Hodgson and Ernesto Screpanti, eds., *Rethinking Economics: Markets, Technology and Economic Evolution* (Aldershot, U.K: Edward Elgar, 1991).

[10] Nobel economist Ronald H. Coase argued that the coordination of people's economic activity carried costs of two types: *transaction* costs and *administrative* costs, both of which it behooves us to try to reduce as far as

possible. The first, transaction costs, are typical of market exchanges where bargaining might occur, and the second, administrative costs, are typical of the interpersonal and "command" relations within the firm. If transaction costs were always zero, the world would be one huge marketplace of individuals, and there would be no firms—or families, for that matter. And if, by contrast, administrative costs were universally zero, the world would function as one large firm or "family" and there would be no markets. In real life, of course, neither kind of cost is zero, and so the size that a firm chooses to be has to do with how it balances its transaction and administrative costs so as to minimize their sum.

In our terms, administration *is* transaction, and administrative costs *are* transaction costs: the only difference being that "administration" is exchange via non-money tokens, and "transaction" is exchange via money.

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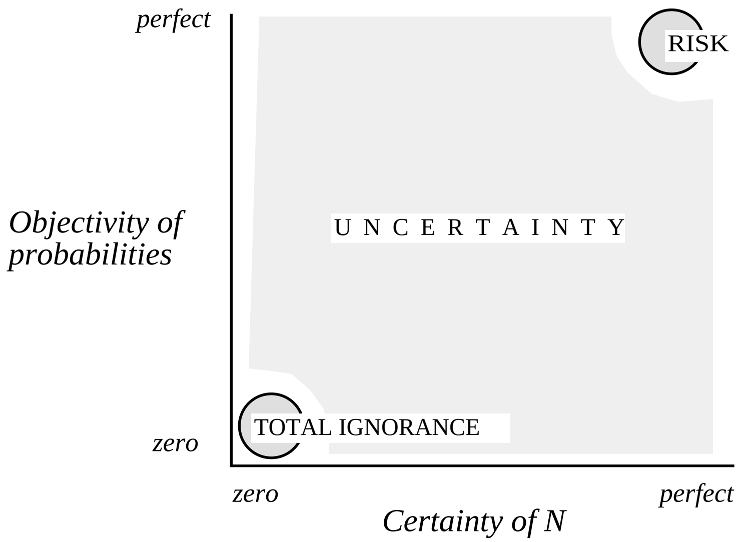
[11] Cf. Derek Parfit, discussed in Chapter Six, pp. 22, 23. Literal trade with one's future self is of course problematic: what can one's future self give one in return when one *is* that "future self" and the self that you are now has long gone? Can the adult thank the child when they are both of the same name and born at the same time of the same parents?

As for "effort/sacrifice/risk": in Chapter Two I talked at length about the difficulty of climbing the Ω-surface and where this difficulty comes from. I remarked that with the notion of worthwhile difficulty—which is a net motion *up* the Ω-surface involving (the risk of) some (smaller) motion down somewhere—the subject of economics had been broached. And here it is.

Another note about risk. Many economists, following Keynes in his *Treatise on Probability*, distinguish between *risk* and *uncertainty*. Risk is uncertainty whose extent you know: you know what the odds are (or ought to be) and you know what all the possible outcomes are upon which those odds are placed. With uncertainty this much is *not* known. The number or type of outcomes are unknown, and computing odds and assigning probabilities under these circumstances is an empty exercise. You can insure against risk, and this in some sense neutralizes it. But you cannot insure against, or gamble on, events the very nature and concatenation of which you are uncertain. Casino gamblers take on risk. Insurance executives and institutional investors take on risk. But entrepreneurs usually don't: their world is too complicated. They face such genuine uncertainty that risk-calculations (and business plans based on them) are for courage-building purposes only. For this, said Keynes, they deserve the above-normal profits they can make.

It also follows, as Keynes argued, that information theory is really about risk and not uncertainty (which is what most scientists only *think* they're talking about).

One could counter by pointing out that risk and uncertainty shade into one another. We generally can't envisage *all* the possible outcomes of our decisions, just the ones that appear on our future-looking radar. Keynes's "risk" just lies at the theoretical extremum when we do know the value of N for sure and we can perfectly objectively assign probabilities to all N possibilities, as in gambling. Move away from that extremum however, and one is in uncertainty. Keynes's opposition of *risk* vs. *uncertainty* is, in my view, thus rhetorical if not misleading: one word (risk) names an extremum, the other (uncertainty) the rest of the spectrum. To do justice to both of the variables involved, we would have to create a space something like this:



Another way to make the distinction is to observe that "risk" usually implies an active, wilful, putting-oneself-in-the-world: one *puts* things *at risk*. "Uncertainty" is more contemplative: it is what one feels in the face of not-knowing. Uncertainty makes one want to learn more, not *do* something that might not turn out as one expects. Risk compounds the *size* of what is at stake with the probability of its being gained or lost: it measures *expected utility*, in the language of decision theory. On such conventional definitions, and contra Keynes, risks are precisely what entrepreneurs and other adventurers take. Of this I am fairly certain.

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[12] Thomas Paine, on the title page of *The American Crisis* (1776), extends this logic in language most people remember: "What we obtain too cheap, we esteem too lightly;—it is dearness alone that gives every thing its value." The second part of the statement does not follow from the first, of course. But that is another matter.

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[13] Paul Samuelson promulgated this definition in his canonical text *Economics* of 1948 (and revised ever since). It came in turn from Lionel Robbins' *An Essay on the Nature and Significance of Economic Science* (London: Macmillan, 1932). Note that, by-and-large, economists have *not* taken up the challenge inherent in so broad and deep a definition of their subject area. If they had, large swaths of moral philosophy, much of human and animal behavior, evolutionary morphology, and nearly all engineering design and management science would have fallen well within the ambit of "economics," along with its usual studies of money and markets. As things are, economists are mostly engineers, money engineers.

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[14] With all these definitions of the nature of economic value laid out before us, we are now in a position to take a position. Here it is.

Let the value of something when it is involved in an exchange for something else, *or* when it is regarded in the light of what will be required to obtain or produce it, be called its economic value. Then, in an exchange of *i* for *j*, *both i* and *j* will have economic value to both traders. Similarly, in working, channelling, or expending a finite resource *k* to get *l*, *both k* and *l* will have economic value to the one who works, channels, or expends. This "economic value," however, is nothing mysterious. It is the ordinary, independent (use-)value of *i* and *j*, or *k* and *l*, *to* someone, but as adjusted, colored, or otherwise inflected by being situated in an economizing, efficiency-seeking context. For example, my lawnmower has value x to me, say, but it might have value $x + \Delta x$ to me the moment my neighbor asks if he can borrow it (and offers the use of his pick-up truck whenever I need it). Example: the price of John's attention is $200/hour when he consults for IBM, but he trades it for a handful of approval tokens when he helps out at the local old-age home.

And let us also remember that the value of something is itself, always and already, a "comparison" in as much as it is a *difference* between two degrees of lifefulness (Ω) or satisfaction. On closer inspection, we realize, economic value consists in the assessing of a difference between two differences.

[15] This value can sometimes be zero in magnitude. However, there is a difference between the "zero" that comes from not considering costs and benefits at all (past, present, or future) and the zero that comes from considering costs and benefits and finding that they are equal and cancel each other out arithmetically. In the second scenario, the good still has economic value as a psychological fact, even though the value of the exchange as a whole is nil.

[16] Said another way: the slope of Ω is always underfoot; and *up* is the only direction that feels worth taking. Recall from Chapter Two that getting *up* the slope of Ω is sometimes best effected by relaxing, by letting certain things go, allowing the Second Law of Thermodynamics to have its way for a while. This is where the attention and good judgment come in: knowing when to apply the brakes.

[17] Actually, Eden was not a place of no-work, a place of no structure or effort, a place where everything good was free for the taking. Adam "tended" Eden and tilled it. He needed Eve, after all, as "*help*mate," and they both *rested* in the evenings (as did God himself on the seventh day—Creation must have been work for Him too.) Eve succumbed to wanting too much, and for nothing. Her sin consisted, on the one hand, in disobeying God, but on the other, in believing the serpent that she could have God-like knowledge for nothing—for the bite of an apple. Her sin—and soon Adam's—was imagining that value, other than that which God provided, could be non-economic.

[18] Mostly right: one can "sell" fresh air and sunshine. The vacation industry sells them all the time to winter- or pollution-tired city dwellers.

[19] The process might be analogous to the how we perceive three-dimensional solid objects from the changing and different two-dimensional views of them our eyes actually get. Quite beneath our awareness, the visual cortex detects organization in the complex patterns of light that cross our retinas and delivers to consciousness the perception of a world of static, or at least persistent, objects—objects that are independent of us and of our particular views of them. The idea that we extract invariants (i.e. organization) inherent the flow of information that comes from changing views of objects, and that this is what it means *to see* objects and surfaces at all, belongs to the perception psychologist J. J. Gibson. See his *The Senses Considered as Perceptual Systems* (Boston, Houghton Mifflin, 1966) and *The ecological approach to visual perception* (Hillsdale, N.J., Lawrence Erlbaum Associates, 1986 [1979]).

[20] See Note 59 below. Let us also remember from Chapter Six that the value of single good or token depends on the way it affects the satisfaction not of *one* but of *several* needs at once, i.e., not on *S*. but on ***S*** . This means that at the very heart of assessing an object's value there is already a comparative scanning of a multi-elemental and dissectible proposition about trade: "Hmmm, *x* represents this much freedom lost and that much legitimacy gained, and this much approval promised. Good. *y*, though, will probably yield me this....."

[21] More succinctly, where V(*i*) is "the value of *i*" to a given judge of it, and the symbol | means "given": $\mathrm{V}(i+j) = \mathrm{V}(i|j) + \mathrm{V}(j|i)$, which is not necessarily equal to $\mathrm{V}(i) + \mathrm{V}(j)$.

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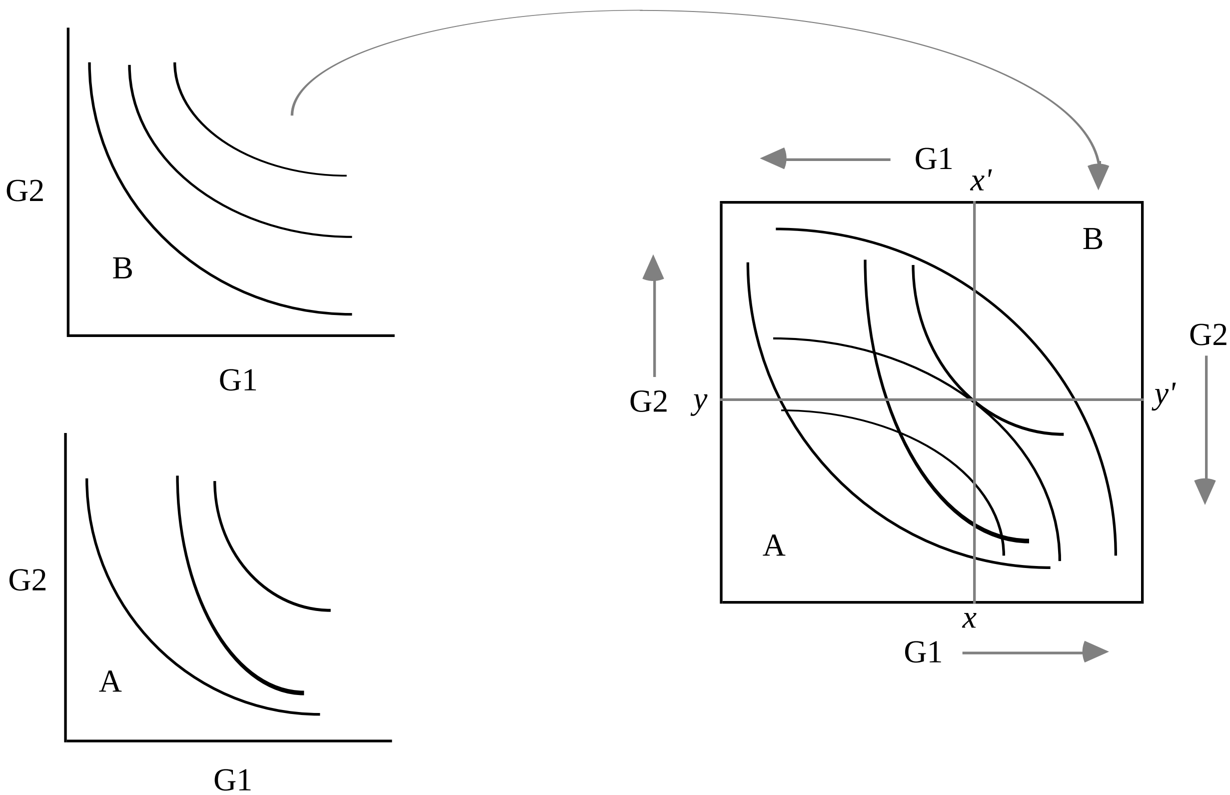
[22] I say "regardless of the need-*strata* involved..." rather than "need-strat*um* involved..." because the value to a given person of a given good or experience or service or token is the change in *total* satisfaction or well-being (***S***) it occasions in them. Let us also remember that this value includes the valuer's anticipations of positive and negative outcomes "down the road," whether or not he will have regrets, etc.

Notation-wise, note also that "V" names a function; it is not the variable, and is thus not italicized, where *i* and *j* are. In Chapter Six, *V* stood alone as a variable itself, and so it was italicized as per the convention in mathematical economics.

[23] The reader may be wondering about the omission of the value to Paul and Quentin of possessing/keeping their tokens (goods or services) rather than trading them at all. This will come up later as we consider the value to the offerer of the thing he himself is offering, e.g. $\mathrm{V_p}(i\rightarrow\mathrm{Q})$, which may be a positive or negative quantity.

[24] The economist most famous for schematizing dyadic economic exchange is Francis Edgeworth (1845–1926). The "Edgeworth Box" is a formalism used in economics texts to this day. It works like this: Let the two parties to the exchange, A and B, be trading two kinds of goods with each other, G1 and G2. Each party is indifferent about certain quantitative combinations of each good, but would still prefer more of both than less of both. For each party, then, one can plot hypothetical "indifference curves" in the space of the quantities of both goods (small figures below). By graphic convention, rotate B's space so that the origin is in the top right hand corner of what is now a box. A and B will trade goods until A has x number of G1 goods and y number of G2 and B's has x' number of G1 goods and y' number of G2 goods, where $x + x'$ = total number of G1 goods and $y + y'$ = total number of G2 goods. This equilibrium position coincides with tangency in their indifference curves. If fairness itself is valued, tangency achieved nearer the diagonal of the box is better. This position also maximizes the marginal utility of the exchange as a whole.



Either G1 or G2 can be considered the price paid for the other if *keeping it* is considered the good. Our analysis does not contest the ingenuity of the Edgeworth Box formalism. It merely takes a different tack towards theorizing exchange, i.e., it looks for different problems.

[25] Only now, with dyadic social exchange involving some sort of sacrifice, payment, or price, would George Simmel allow that *economic value* has come into existence:

> From this can be seen the unique meaning which exchange...has for society. It lifts the individual thing and its significance for the individual man out of their singularity, not into the sphere of the abstract but into the liveliness of interaction, which is so to speak, the body of economic value. We may examine an object ever so closely with respect to its self-sufficient properties, but we shall not find economic value.

As we saw from my discussion at the beginning of this chapter, I have not been quite so narrow in my definition of economic value. Social exchange per se is not, for us, that which defines the "economic-ness" of economic value. What is specifically "economic" about things of economic value is only that they take some effort to get or to achieve, that there are several of them which would satisfy the same need and amongst which we have to choose, and that rationality with respect to these choices—indeed, with respect to methods and results dealing with them generally—seems itself to be necessary.

The passage above is found in the chapter "Exchange," from his *Philosophy of Money* (1907), reprinted in *George Simmel On Individuality and Social Forms: Selected Readings*, transl. Donald Levine (Chicago: University of Chicago Press, 1971), p. 69.

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[26] Or, less romantically, the "gains from trade." The younger Marx did not recognize this something-from-nothing value inherent in economic exchange. For Marx, exchange was a zero-sum game with respect to social value. Exchange could not produce value as such—value that was not already there, from the labor put in it. "No value is created in the circulation process," he averred, using the circle in the word "circulation" to great rhetorical effect. Certainly, therefore, no value is added by the broker or merchant who merely brings certain buyers and sellers together or by the manager who *combines* the skills of workers in the right way... See Karl Marx, *Grundrisse*, ed. and transl. David McLellan (New York: Harper & Row, 1971), Chapter Five, p. 127, and Notebook VI, p. 633.

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[27] Actually, looked at as a chemical analogy, the "alchemy of exchange" is something less than a miracle (or something *more*, depending on your regard for the essential mysteries of nature). Material substances, with their myriad qualities and consequences for life, are made of *combinations* of elements, from molecules to atoms to particles. What is "combination" but the movement of such elements into new contexts, into new arrangements with other elements. What is a "chemical reaction" but the result of an exchange of atoms and electrons between molecules? In this deeper sense, *everything* issues from exchange: matter, energy, information, life itself, where certain increases, if not every increase, in Ω (the good of the good) is somewhere accompanied by a decrease in Ω (the price of the good). The economic exchanges we recognize every day would be just one more manifestation of a deep world-building principle.

Models of economic processes which cleave too closely to classical physics and (to a much lesser extent) chemistry—which is to say, all of the models offered by neoclassical economic theory—have received scathing criticism from Philip Mirowski in his book *More Heat than Light* (New York: Cambridge University Press, 1989). Wrong, wrong, all wrong: human exchange is nothing like physical "exchange." One wonders what Mirowski would have to say about the more sophisticated information-theoretical, ecological, and complexity models being explored today. Bound to mislead simply because Economics is not *really* Biology or Chemistry? I suspect not, if only because of his (Mirowski's) expressed respect for the work of Nicholas Georgescu-Roegen, whose own work tries to move the discipline of economics away from classical mechanics with its forces and equilibria into the realm of statistical mechanics with its concepts of entropy, information, order, growth, and so on. This is the path we too are trying to follow. However, in his article "Mathematical Formalism and Economic Explanation" (in his *The Reconstruction of Economic Theory* [Boston: Kluwer-Nijhoff, 1986]. pp. 222ff.), Mirowski does not advocate an information-theoretical or "bio-mathematical" or psychological approach, but calls, rather, for a more careful following of modern group theory in mathematics.

Mirowski is right that, unlike energy or mass, *value* is not a conserved quantity; nor is its basis—a system's complexity-and-organization—conserved in exchange, with x more of it here meaning x less of it there. When I sell x for a sum of money and with that money buy y, I have not moved or transmuted value-itself from x to y "through" or with money. As I will argue in Chapter Nine, the money you earn is never the *same money* that you spend or save, or give, or lend, even if you use the very same banknotes. Money is a "store of value" only on the most vexed understanding of value. Value can be stored nowhere but in minds and bodies and is nothing other than well-being itself, satisfaction and capability, lifefulness, the mind-and-body's ongoing complexity-and-organization, Ω.

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[28] The link between the valuation of a good and knowledge of its source is sometimes taken to be what distinguishes *gifts* from *commodities*. After all, it matters more (to their value) *who* gave us the flowers; it matters less, or not at all, from whom we bought the dishwashing powder. (So argues, for example, James Carrier in his essay "Gifts, Commodities, and Social Relations," *Sociological Forum* 6; 1 (1991): 110–136.)

Although it is an interesting distinction, I do not think it is a robust one. I think it does matter, always, to and from whom we give and receive things of value, as well as how and where and why: witness the way we budget money for this use or that, the way we maintain brand and supplier loyalty even for commodities like gasoline and banking services, how sensitive we are to salespeople's personalities, advertising messages, store atmosphere and marketing methods, and so forth. That the *degree* of sensitivity-to-source may vary from product to product I can accept. Price aside, we hardly care which power company our electricity comes from. Certainly with tokens, most of which are not gifts in the ordinary sense, our sensitivity is high as to whom they are from.

We have also been tacitly assuming all along that Paul and Quentin are both "principals" rather than "agents," a distinction made in institutional economics. A moment to discuss this:

If I send my assistant (an agent) to buy something at the drugstore, the exchange between him and the drugstore clerk (another agent) is largely perfunctory and unrelated to the nature of the exchange between myself (as principal) and the drugstore owner (as principal). Agents like clerks and "go-fers" are often used when issues of evaluation between the principals have been settled beforehand. The exchanges that they have might be complex and interesting, but they carried out with tokens for which they are the principal actors—different tokens from the ones being exchanged for their principals. Certain agents on the other hand, such as diplomats and managers, are authorized to bargain or make proposals on behalf of the presidents or CEOs (or nations) who are the real principals; and when they do, they become part-principals themselves, acting as though *their* interests were at stake, which they often indirectly are.

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[29] Another subtlety I have let slip by in the interests of manageability was raised in Chapter Four, and that is the possible difference between

the value to P of *j* from Q *in exchange for i from P,* and
the value to P of *j* from Q *in exchange for k from P*;

or the possible difference, on the giving side, between

the value to P of *i* (which he himself offers) in the exchange of *i* for *j* from Q, and
the value to P of *i* (which he himself offers) in the exchange of *i* for *k* from Q.

We are assuming that these differences do not matter or can remain implicit in our formalism until an empirical study brings them out. We are assuming, that is, that the value to either party of what is to be gotten from, or given to, the other party is *judged separately* by each party on its own merits, and does *not* depend on exactly *what* is given to, or gotten from, the other in return.

An example: Paul goes to the marketplace to barter his goat for some roosters (or maybe a boombox; he'll wait and see...). He values his goat *this much.* Although he will do a lot of comparing as he goes around the marketplace looking for something he wants more than his goat, how *much* he values his goat (we are assuming) remains fixed: it is the value *to which* the value of other things, judged on *their* merits alone, will be compared.

Unrealistic? To the highest degree of accuracy, yes, the more so as the good to be received and the good offered in payment are similar in the needs they satisfy.

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[30] The wording here is mine, although as an argument it is common among economists. Indeed it is an argument foundational to the whole neoclassical edifice. In a competitive market in equilibrium, no buyer or seller has power over the other; both are free to trade with someone else, and so the fact that they trade with each other means that they both find the trade to their liking and fair enough. Moreover, paying for well-defined property with well-defined money at publicly announced prices keeps the complications of human relationships nicely at bay, and makes moot any consideration of others' alternatives and motivations. This is the theory. It never quite holds, of course.

Note the affinity to John Rawls's "original position" argument in his 1971 treatise *A Theory of Justice.* We should frame rules-to-live-by, says Rawls, that we would not ourselves mind following if we were to be assigned, at random, to any role or position in a society governed by those rules. With complete risk-averseness on the part of the framers, this would lead to an entirely fair—i.e. equal—distribution of all of society's goods: education, property, opportunities, and even outcomes. In my soliloquy, too, the speaker hides behind a veil of ignorance, but this time in order to legitimate the assumption that outcomes are equal because the exchange was "voluntary."

Voluntariness, of course, is an extremely problematic concept, and not just for my soliloquizer. Do Rawls's rule-framers *voluntarily* sit down and make such rules? If so, then they probably wouldn't need to make such rules because they are so *nice*—so committed to fairness—already. And if they are not so committed, what makes them sit down in the first place? And after they had framed the rules, who or what would make them stick? What if our rule-framers were gamblers or criminals or other sorts of risk-takers, happy to subject themselves to the luck of the draw in an unequal, even unjust, future society? Rawls tackles some of these questions in *The Law of Peoples* (Cambridge, MA.: Harvard University Press, 1999).

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[31] This is also very nicely pointed out by Marshall Sahlins in *Stone Age Economics* (New York: Aldine-Atherton Inc., 1972), pp. 302–304.

We might also note that modern retailers seem to be quite aware of the impossibility of fair exchanges—even of money for goods—and, indeed, are cognizant of the desirability, on this account, of *making no exchange terminal*, i.e., the last one. Return policies at large department stores in the U.S., for example, have the effect of making no sale final. Should the customer feel the least bit unhappy with the purchase (i.e. experience "buyer's regret"), why, they should come back and exchange what they bought for something they now perceive to be a better value! They can even get their money back and start all over again. Was the article you bought put on sale within seven days of your buying it? Come on back and we'll match the price. Can you get it cheaper elsewhere? Bring us proof and we'll meet the price.

We know, of course, that all this *coming back* itself has value to the retailer. First of all, there is the shopper's continuing exposure to temptation, and second of all, the shopper's mounting moral *obligation* to commit him- or herself to a more expensive purchase for the trouble they have caused. *Not incidentally, the new, more expensive purchase will seem less extravagant because of the commitment to a previous price, now just marginally lower, which had been psychologically accepted as a datum.* The buyer finds he spends more more willingly.

And what is the right price for customer *loyalty*? Clearly, for most modern retailers, the time and trouble expended in maintaining a no-fault return policy is a fair price indeed, in the long run.

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[32] The philosopher of science Sir Karl Popper went so far as to say that if perfect understanding between people were achievable, not only discourse but language production itself would come to a halt, both having been made unnecessary. In his view, the historical development and elaboration of language—all languages—is tied up with their inherent ambiguity and imprecision, and with the perpetual mis- and under-understandings of each other's meanings that follow from using language and that require correction.

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[33] Loyalty tokens such as oaths and covenants, explicit or implicit, serve to satisfy security and legitimacy needs for both parties.

> [I]n Japan, *business* relationships are also supposed to operate outside the market, with loyalty to one's employer being more important than whether the relationship is immediately profitable or not. A Japanese scholar named Michio Morishima pointed out, in *Why Has Japan "Succeeded"?*, that '...the "loyalty" market is opened only once in a lifetime to each individual, when he graduates from school or college. It is in this market that those who are able to provide loyalty meet those who are looking for it, their "lords."
>
> James Fallows, "What is an Economy For?" *Atlantic Monthly*, January 1994: 83)

In Japan too—a society where in general, it seems, the economy of tokens is more visible than it is in England or America—children keenly buy and trade friendship stickers: tiny machine-produced photographs of oneself and of one's friends that, attached to books and bags and articles of clothing, constantly indicate the owner's popularity/connectedness.

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[34] Remember that "equal happiness for all" is not the same as the utilitarian's "greatest happiness for the greatest number" principle, and this for two reasons. First, because ours calls for equality of happiness and not highest average happiness, and second, because happiness, by our definition, is quite explicitly *change* in satisfaction

and not satisfaction itself. Indeed, using our nomenclature, the utilitarian's call is actually for the "greatest satisfaction of the greatest number." It would be interesting to explore the consequences of leaving the greatest happiness principle stated as it traditionally has been, together with its variants, while imagining that the "happiness" referred to is not $\boldsymbol{S}$ but rather, as we have it, $\Delta\boldsymbol{S}$, or even $\Delta\boldsymbol{S}//\Delta t$, pleasure.

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[35] Elizabeth Anderson in *Values in Ethics and Economics* (Cambridge, Harvard University Press, 1993) makes this point at length in her critique of the market. Cf. p. 150 ff. See also Note 36 below.

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[36] Many religions, of course, assure the cheated and/or unfortunate that there will be compensation for their present suffering—or better, that there will be an extravagant *reward* for it—in their next life, their life after death. This belief encourages constant generosity in this life as well as the endurance of suffering without seeking redress or revenge.

Marx was not the first—and I doubt that I shall be the last—to remark upon the dupe-making, pacifying utility of this belief when taken too far (its utility, that is, to the exploiting classes, whosoever they might be demographically speaking). On the other hand, the virtues of forgiveness, acceptance, submission, mercy, absolution, and ultimate-future-justice common to most religious traditions do serve an essential and entirely positive purpose. In cutting people off from hurtful/hurting pasts, exercising these virtues can provide occasions for genuine reconciliation, peace, and "rebirth." Since true fairness in exchange is all but impossible, what else could work to clean the plate? Medical amnesia? This would be incapacitating. What else but leaving justice to God could leave one angry, knowing what one knows, but unmotivated to act upon it? With its doctrine of grace, Christianity goes further: forgiveness of others' sins against you ensures God's forgiveness of yours. In Judaism, one day a year—Yom Kippur, or The Day of Atonement—is set aside set aside for justice to be aside, to be replaced by mercy, for all to forgive all, and then to ask for God's forgiveness.

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[37] Elizabeth Anderson's distinction between *public goods* and *shared goods* is relevant here: public goods, as all economists know, are goods to which all citizens have equal legal access regardless of how those goods were paid for: parks, roads, police protection, water, sunlight, and so forth. Public goods can be enjoyed privately (as when one goes to the park and finds a secluded bench, or when one drives alone on the road). *Shared* goods, on the other hand, are those goods whose enjoyment depends in large measure on experiencing the enjoyment of those goods by other people too, at the same time. Think of festivals and parties, busy shopping streets, and so on. They're no fun unless there are other people there to see and emulate. Shared goods, Anderson proposes, are important to civic life at many scales. See her "Consumer Sovereignty or Consumer Disenfranchisement?" in Michael Benedikt, ed., *Center 10: Value* (Austin, Texas: Center for American Architecture and Design, 1997), pp. 27–40.

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[38] Smith's book starts with these words:

> How selfish soever many may be supposed, there are evidently some principles in his nature, which interest him in the fortunes of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it.
>
> *The Theory of Moral Sentiments,* D. D. Raphael and A. L. Macfie, eds. (Indianapolis: Liberty Press, 1976), p. 9.

The topic is also explored by the German philosopher Max Scheler in *The Nature of Sympathy* (transl. Peter Heath [London: Routledge and Kegan Paul, 1954{1931}], pp. 48–50.) "[S]o far as the various modes of *vital feeling* [including happiness] are concerned," Scheler wrote,

> understanding and fellow-feeling are able to range throughout the entire animate universe, even though they rapidly fall off in respect of specific qualities as we descend the organic scale. The mortal terror of a bird, its sprightly or dispirited moods, are intelligible to us and awaken our fellow-feeling, despite our total inability to penetrate those of its sensory feelings which depend on its particular sensory organization.

Scheler did not regard fellow-feeling as automatic, neither did he think it entirely under voluntary control:

> We may notice how our flow of sympathy is by no means dependent on variations in the external stimuli, but fluctuates wildly in spite of them. Thus it often fails them when confronted with the fact and the evidence of intense suffering, and then, often without such powerful inducement, some trifle may open all our soul to human joys and sorrows for days and weeks on end, as if a light were suddenly shone, or a window opened, in a darkened room. It is brought home to us here with especial clarity how fellow-feeling differs, in the *autonomy* of its functioning, from states of mind occasioned by factors external to oneself.

I think Scheler is wrong in one respect here: fellow-feeling never fails if the "fact and evidence" of joy or suffering are freshly put before one's very eyes and experienced first-hand rather than reported second-hand. As Hobbes pointed out, fellow-feeling is neither something we feel for all living or even human beings equally, nor is it entirely self-regarding (where the only "fellow" one feels for is oneself). We all have, as I have put it, "circles of concern" where the *degree* of fellow-feeling (oh, that we could quantify it clearly!) decreases as the radius of the circle increases. One's circle of concern is not so abstract a concept, however. Historically, and to a large extent still today, it coincides with the spatiotemporal proximity of others to oneself, which correlates in turn with the number of times and the vividness with which we witness their joys and sufferings. People who live in the same house, or who work together, or who see each other regularly, are more likely to experience fellow-feeling. Is this not the basis for community? Is this not the problem with the "virtual communities" formed on-line: that the vividness of their presence is diluted and, with it, the strength of their fellow-feeling? Is this not their virtue as well however—that virtual communities consist of people who would otherwise not know or feel (for) each other at all?

Fellow-feeling can extend across species, to animals, especially household pets who are close and frequent parts of our lives. A weaker feeling extends to other people's pets and to wild animals. The fate of fish, insects, plants, and microbes seldom inspire our sympathies. Few can bear to witness the systematic slaughter of warm-blooded animals that sustains our meat-eating habits.

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[39] Marian Radke-Yarrow with Carolyn Zahn-Waxler "Roots, Motives, and Patterns in Children's Prosocial Behavior," in P. H. Mussen, ed., *Carmichael's Manual of Child Psychology,* Volume 4 (New York: Wiley, 1983), p. 89. This research is referred to in Jane Mansbridge's chapter, "Starting with nothing: on the impossibility of grounding norms solely in self-interest," in Avner Ben-Ner and Louis Putterman, eds., *Economics, Values, and Organization* (Cambridge, Cambridge University Press, 1998), pp. 152–153. For a recent overview of the economic modeling of imitative behavior, from restaurant popularity to mass social movements, see David Hirschleifer, "The Blind Leading the Blind: Social Influence, Fads, and Informational Cascades," in Mariano Tommasi and Kathryn Ierulli, eds., *The New Economics of Human Behavior* (New York: Cambridge University Press, 1995), pp. 188–215.

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[40] This is a notion that Kant capitalized upon and that he appropriately took further with his "categorical imperative," which wants us all to be exemplary in the *principles* by which we act and not just in the acts themselves, since it is human to infer/learn/imitate rules of behavior as well as actual behaviors.

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[41] Continuing our discussion in Note 37 above: Empathy is often used to explain altruistic behavior thus: pity for the poor is sparked by the thought of being poor oneself, self-pity. It begins with involuntary psychological resonance but ends with helping oneself: reducing one's own pain. But those who would explain altruism this way—as roundabout self-regard, evolutionarily implanted—omit the option which most empathizers have, which is to leave the scene, to *avoid contact with* people and situations that make them feel bad in the first place. (Decreasing the radius of their circle of concern.) The true altruist not only feels compassion, as we *all* do when *faced* with the despair, sorrow, or pain of others, but takes it upon him or herself to *act* in the other's interest without comparable regard for their own interest. Altruism, that is, begins with resonance and goes further.

Now some, following Immanuel Kant or, today, Amartya Sen, would argue that the most altruistic of altruists is *not* the one who feels most compassionate and acts generously upon that feeling, but the one *who may not feel very much compassion at all* for the one who suffers—and indeed may avoid contact with them—*but who acts to allay the other's suffering nonetheless*. That is to say, the true altruist is one *who acts on ethical principle alone.*

On this view, for example, charity given anonymously and impersonally is more praiseworthy and more altruistic than charity given directly, face-to-face; since in the latter case reciprocal payment will likely be made to the donor in tokens of gratitude and obligation by the donee. The true altruist wants no glory, wants no reward from the receiver of her kindness, and has no interest in obligating them or being blessed by them, etc. Hence her desire for anonymity, her creation of foundations by other names. What could be more admirable?

For an excellent survey of research into this issue extant at the time, and written from the point of view of a psychologist, see Martin L. Hoffman, "Is Altruism a Part of Human Nature?" *Journal of Personality and Social Psychology*, 40, no.1 (1981): 121–167. Hoffman also makes the argument of the previous paragraph. For Sen's views on this matter, see his "Rational Fools," in Jane Mansbridge, ed., *Beyond Self Interest* (Chicago: University of Chicago Press, 1990 [1978]).

[42] Sellers of goods on the Internet might take note. Shopping is better when it is not a solitary experience. Critical to the vitality of a real marketplace is not just the plethora of goods and choices available, not just the ease with which goods can be paid for, *but the witnessing of other people's buying* and of the traces they leave in so doing. This is something television shopping channels such as QVC have understood well with their ceaseless "community-building" chatter, live call-ins, real-time re-pricing, and constantly updated number-sold and stock-left statistics (impossible as these are to confirm)...all in (over?)compensation for the lack of actual human contact and witnessing. With increasing bandwidth, merchants on the Internet may soon find themselves wanting—no, needing—to provide an equivalent, even superior, sales-amplifying-through-social-resonance experience.

The invention of the modern, stock market trading floor took this dynamic to a new level of intensity, providing constant, instantaneous feedback to all traders on each other's actions and on the resultant, moment-to-moment rise and fall of confidence in companies and, indeed, whole national economies. Online trading threatens to dilute this market process by removing the actors from each other's visceral, real-time presence and immersion in immensely rich information fields. One fears that automated trading, which free-rides upon what happens on and around a real trading floor, will eventually not free-ride but, by sheer volume, *override* it, giving the entire stock market a new and emergent behavior which may be less, not more, lifeful.

[43] In zero-sum competitive games (i.e. games whose outcomes are such that your loss is exactly my gain and vice versa), it would be wrong to assert that your unhappiness at losing "causes" my happiness at winning (or vice versa). One can be happy at winning a zero-sum game and at the same time be saddened by the fate of the loser, which lessens somewhat one's happiness at winning. One can be saddened at one's own loss and at the same time feel happy for the winner, somewhat alleviating one's sadness. Indeed, I would claim that this pattern of social resonance is the norm in sports, in business, and in everyday social life, although some argue that this set of feelings is more commonly female than male, and immature rather than mature. (See Carol Gilligan, *In a Different Voice* [Cambridge: Harvard University Press, 1982]).

Happiness at someone else's unhappiness can occur rationally only if (we believe) "they had it coming"—only, that is, if the value of their obligations going *in* to the exchange at which they suffered a loss was very high and long past due for repayment. Symmetrically, with sadness at another's happiness: the value of obligations going in to the exchange must have been very negative and long past due. One need not resort to "cruelty" or "pathology" to explain this occasional inversion of empathy.

Not to brag, dear reader, but it's all there, in the Equation of Fair Exchange.

[44] One of the complications of exchange I will not follow through on formally is the conditionality/unconditionality of offers and acceptances. This would take us directly into the thickets of game theory, a very large and now well-developed science in its own right. Suffice it to say that all exchanges begin in one of the four cells in the diagram below, migrating, possibly, if negotiations continue, into any one of the others.

Acceptances

Offers		Conditional	Unconditional
	Conditional	I will offer i if.... I will accept i if....	I will offer i if... I accept i
	Unconditional	I offer i I will accept i if...	I offer i I accept i

We might note in passing that most exertions of power and authority are done by making conditional offers. Good mothers, good friends, true altruists, and great buildings make unconditional offers.

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[45] Apropos of points (ii) and (iii), Marcel Mauss writes: "To give is to show one's superiority, to be more, to be higher in rank, *magister.* To accept without giving in return, or without giving more back, is to become client and servant, to become small." Marcel Mauss, *The Gift,* transl. W. Halls (New York: Norton, 1990), p. 74, cited by Philip Mirowski in "Refusing the Gift," a paper given at The University of California at Riverside in April 1995, personal copy from author.

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[46] "Previous conversations with Mr. Purty have revealed that he is a man obsessed with deals, a man who'd rather have something he doesn't really want at a heavy discount than the thing he yearns for at full price." Richard Russo, *Straight Man* (New York: Random House 1997), p. 180.

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[47] Note: "*i*" and "*j*" here need not be interpreted as different kinds of tokens necessarily, as when two compliments (approval tokens) are exchanged. Indeed, they may, ostensibly, be the identical token, as in: "You look great," "Oh, you look great too," or "I do" and "I do" in Jewish and Christian marriage ceremonies. Of course, these tokens may sound identical but they are not really identical due to context, timing, nuance, speaker states, and so on.

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[48] Needless to say, this is not the same as Irving Fisher's 1911 equation, also called "The Equation of Exchange," and found in elementary macroeconomics textbooks; to wit, $MV = PT$ where M is the total money stock, V is the velocity of circulation of money, P is the general price level, and T is the total number of transactions.

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[49] For simplicity, I have omitted the possible present value to the giver himself of the obligation he confers upon the other person.

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[50] This passage comprises an analysis of the value of obligations that is too simple by far. Our "epsilon" terms can often be larger in value and more compounded from the outcomes of several further exchanges than the value of the actual goods exchanged then-and-there. In most business contracts, for example (which are always exchanges of some sort as well as the result of such exchanges), conditions of considerable complexity surround and extend the ostensible price-for-service (or -goods) agreement at the time of its signing: close qualification of the responsibilities of the signatories; elaborate layings-out of eventualities after the contract is signed and of their consequences to both parties; the use and holding of "earnest monies" and other shows of security and confidence; complex conditionals involving the relative risk to each party of, and the vulnerability of each party to, default; circumstances under which the agreement is voided; and so forth. Indeed, much of the work of corporate lawyers is comprised of negotiating the structure and valuation of such obligations, such "remainders," rather than the prime subjects of the agreement itself (i.e. the major goods and services promised, and their prices). Negotiations to settle the value of obligations in the main exchange typically involve extensive token exchanges of their own, with their

own side-obligations, formal and informal, between lawyers and lawyers and between lawyers and their clients, at several need strata. (One is quickly convinced that it is easier to practice these negotiations in person than to grasp and account for them all at a theoretical level!)

For a brief overview of how obligations can be analyzed from an economic perspective, see Oliver E. Williamson, "Transaction Cost Economics and Organization Theory," in Neil J. Smelser and Richard Swedberg, eds., *The Handbook of Economic Sociology* (Princeton: Princeton University Press, 1994) pp. 88–90, and for a recent empirical study of the effects of risk on the willingness to incur formal obligations see Bruce Lyons, "Contracts and Specific Investments: An Empirical Test of Transaction Cost Theory," *Journal of Economics and Management Strategy* 3, no. 2, (1994): 257–278. For an extended treatment, see Anthony Kronman and Richard Posner, *The Economics of Contract Law* (Boston: Little, Brown and Co., 1979).

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[51] Game-theoretic studies of social interaction strongly support these somewhat cynical observations, to wit, that *moralizing hypocrites* can easily come to be the dominant character-type in social situations that require cooperative action to achieve the common goal of a public good. These are individuals who do nothing themselves to contribute, but strongly encourage others to do so. See Douglas D. Heckathorn, "The Dynamics and Dilemmas of Collective Action," *American Sociological Review* 61 (1996): 269–270.

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[52] Samuel Bowles and Herbert Gintis, "Contested Exchange: New Microfoundations for the Political Economy of Capitalism," *Politics and Society* 18, (1990): 165–222. This whole issue of *Politics and Society* was devoted to the Bowles and Gintis article and to commentary by respondents, pro and con.

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[53] E.g. the employee promises to work with due diligence even when not supervised, to look out for the firm's interests at all times, to be punctual, presentable, and so forth; the employer promises to pay wages promptly, to maintain a safe and healthful workplace, to ask only for what can reasonably be done in the time allotted, to offer opportunities for advancement, and so forth.

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[54] Without loyalty to the firm and/or to his peers for "purely psychological" reasons, if it is easy for an dissatisfied employee to find a job elsewhere, then the employer has little choice but to offer her a higher wage to stay. From the employing firm's perspective, should this situation obtain with a large number of its employees, then *all* must be offered a higher-than-standard wage in order to retain them.

This higher wage bill, however, is apt to increase the cost and therefore the price of the firm's product, thus lowering the demand for it, thus decreasing its profits and output. If all firms competing in this product niche feel the same pinch—i.e. experience the same shortage of workers this type—and if all, therefore, find they must pay higher wages to retain their workers, then a new industry standard wage is set for that type of work, and new and higher market price for the product evolves. This cycle continues until (1) demand is forced low enough, (2) sufficient new workers can be trained (or imported), or (3) the work they do can be automated or reconstrued, so that a float of unemployed workers can form that will serve to keep the employed ones working at their jobs and loyal to the firm at a fixed and standard minimum wage. This wage economists call the "efficiency wage" for that kind of work, and it can have some paradoxical effects: firms will pay workers unnecessarily high wages while conspicuously turning away those who would do the same job for less money, just in order to keep wolves at the doors of their valued employees. See Carl Shapiro and Joseph Stiglitz, "Equilibrium Unemployment as a Worker Discipline Device," *American Economic Review*, 74, no. 3 (June 1984): 433–444, and Eric Rasmusen, *Games and Information* (Oxford: Basil Blackwell Ltd., 1990): 166–167.

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[55] George A. Miller, in his landmark paper "The Magical Number Seven, Plus or Minus Two" (*Psychological Review* 63, no. 4 [1956]: 81–97) argued that we can make no more than seven absolute judgements on uni-dimensional scale with any reliability, and himself noted how prevalent the seven-position scale already was in his discipline. See Chapter Three, p. 10.

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[56] Gunnar Myrdal cautions us against taking the Panglossian view of the idea that all exchanges are intrinsically fair:

> The whole development [of economic theory] is characterized by a relapse to natural law arguments of a very primitive type. Though these presentations are often formally ingenious, the 'proofs' never amount to more than the propositions that an act of exchange always benefits both parties. The place of a proof is often taken by such emotive terms as 'natural,' 'economical,' 'equilibrium,' etc. which suggest the desired conclusions to the reader. Hence this type of liberalism lends itself particularly well to popular exposition... That is why students of economics often go away with strange ideas of natural economic laws according to which productive factors and capital always flow into the uses in which they are most needed, everyone earns the income he deserves, wages settle down to a natural level, and all is generally for the best.
>
> Gunnar Myrdal, *The Political Element in the Development of Economic Theory.* (London: Routledge and Kegan Paul, 1953), p. 5.

By emphasizing remainders and obligations, and by not in general simplifying the question of value-in-exchange as far as it is usually simplified, I hope to have avoided Myrdal's criticism. Also, later in this chapter, I will propose adding a term to the Equation of Fair Exchange which represents *the value of fairness itself* to each side.

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[57] Or 111,556 to be exact. I have so far left out a fourth term on either side of the Equation of Fair Exchange, which is the value to P and Q of the fairness of the exchange itself. I will correct this soon.

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[58] Is this why smart, habitually-analytical people are often thought of as "incapable of love"? Of course, hate and indifference are simplifiers too. Cf. Chapter Four p. 39ff.

Gerd Gigerenzer, Peter Todd, and the ABC Research Group in their *Simple Heuristics That Make Us Smart* (New York: Oxford University Press, 1999) argue that many of the rough-and-ready "heuristics"—i.e., problem solving methods—that ordinary people use yield results (decisions) that are very close to the ones that patient scientific computation yields using much more data and much more elaborate formulae. Evolution has seen to it, as it were, that humans and animals do *not* need to be supercomputers to get things right enough most of the time—which is very wise of evolution because the time it takes to make a decision is itself is often of the essence to survival.

By way of amendment (for I think at the level of consciousness Gigerenzer et. al. are correct), I will suggest over the next few pages that we might indeed carry out extremely rapid and subtle calculations to make our decisions—far faster, in fact, than any supercomputer, and with the very best formulae—but *unconsciously.* What we are conscious of, and can write down, and can "teach" our computers to carry out, are only the simplest surface manifestations of the what is going on neurologically every second. On this view, every "variable" we identify and every "parameter" we adduce is nothing more, really, than a rough statistic, a blurry picture.

This does not really contradict Gigerenzer et. al., except insofar as one of the consequences of believing we are *actually* doing more than following the simple heuristics is that we are morally enjoined to search for less and *less* simple heuristics to consciously go by, rather than be satisfied with the simple ones that we already (apparently) use. Simple heuristics *don't* work in complex and consequential contexts, ones where "good enough" is not really good enough and a measure of reflection is called for.

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[59] Consider: even before babies can speak they are utterly fascinated with the ritual binaries of taking-hold/not-taking-hold, of letting-go/not-letting-go, and giving/not giving, and so on. These exchange transactions are repeated, often with the same objects, over and over, as though in practice. The baby, it seems, either (1) forgets that he or she has done this before, (2) tires quickly of whatever he or she has in hand and prefers what *you* have, and/or (3) so enjoys the transaction *process* that the value of *having* the object-or-exchange is quite eclipsed. Before long, however—certainly before language fully develops—the child will begin to discern a good deal from a bad one, and begin to demand or hold on to whatever he or she values more highly.

As far as I have been able to ascertain, developmental psychologists have not studied the development of barter; nor is it appreciated how deep and primitive, both ontogenetically and phylogenetically, is the idea of private property—of *mine* vs. *yours*—when applied to "possessions" (which is a little different from the well-studied phenomenon of animal territoriality, which applies to places).

It seems that the higher primates, such as orangutans and chimpanzees, are also quite capable of understanding reciprocity and at least the elementary logic of barter:

> Like us, chimpanzees are also masters of reciprocity, trading food and other favors in expectation of receiving something in return. The sense is so well developed in chimps that zoo-keepers who leave brooms and other articles in their cages need only hold up a piece of fruit and point at the forgotten article to get them to retrieve it.
>
> As in human societies...chimps who are recipients of favors [from each other] and fail to reciprocate produce feelings of indignation in others... In fact, when these selfish individuals beg, they become the objects of aggression—an expression of indignation that...is at the root of our sense of justice. "When animals feel they owe someone else something, the concept of fairness is not far behind."

This is Kim A. McDonald, "The Evolution of Morality," *The Chronicle of Higher Education*, March 15, 1996, p. A11, reporting on the work of primatologist Frans B. M. de Waal of Emory University (quoted above in excerpt) on the occasion of the publication of his *Good Natured: The Origins of Right and Wrong in Humans and Other Animals* (Cambridge: Harvard University Press, 1996). See also Frans B. M. de Waal, "How Animals Do Business," *Scientific American*, vol. 292, 4, April 2005, pp. 73–79, when de Waal reports not long term reciprocity, cooperation, and love (loose accounting with close others), but also a sense of fairness among chimpanzees.

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[60] One wonders how much of the scorn heaped on utilitarianism by humanist and religious scholars—heaped on Jeremy Bentham in particular for the temerity of putting forward an "hedonic calculus"—is, in fact, a defensive reaction to the intimidating amount of intellectual stamina it would require to actually work out the calculus of value and exchange in a calm and scientific way. It would require a vast amount of work to model real social interaction with subtlety, keeping a steady gaze on our many and changeable estimations and desires and their consequences. Perhaps anti-utilitarians, despite what they say in public, have concluded "If it's not going to be simple, forget it!" Easier and more flattering, certainly, are expositions of Man's Unfathomable Complexity, of the Undecidability of Moral Principles, etc. etc. (For an example of this, see Mark Johnson's otherwise very fine book, *Moral Imagination* [Chicago: University of Chicago Press, 1993] especially pp. 120–123.) Kantian and virtue-ethical approaches to ethics also avoid the grinding complexity of thorough-going utilitarianism.

But I suspect that the deeper reason for the contestation between utilitarians and their "enemies" is class-based. Largely happy with the status quo and well-insulated from the consequences of their actions, the aristocracy is attracted to the ethics of character and principle; the bourgeois and proletarian classes, living closer to the bone, meanwhile must calculate consequences constantly to maintain or improve their lots. This is why, to this very day in the academy, Aristotelians, virtue-ethicists, Kantians, theologians, and many poststructuralists look *down* upon all utilitarian thinkers, on pragmatists, Marxists, consequentialists, sociobiologists, economists, and so forth. It's not merely a matter of about who's right and who's wrong; it's about who has the higher *class*. See my "Class Notes," *Harvard Design Magazine*, Summer 2000, pp. 4–9.

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[61] For example, one might make offers to the other party that are of only minimally greater value than *their* best alternative. This takes knowing the other's alternatives, if not controlling them, and it's all part of the game.

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[62] Meaning by "the size of the stakes" not the magnitudes of $V_P(i,j)$ or $V_Q(i,j)$ but the magnitudes of the components.

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[63] See C. A. Gregory, *Gifts and Commodities* (London: Academic Press, 1982), George A. Akerlof, "Labor Contracts as Partial Gift Exchange," *Quarterly Journal of Economics* 97 (1982): 547–569.

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[64] One might transparently feign just enough pleasure-in-giving to mark the good *as* a gift (which by convention must be graciously accepted) without letting the recipient off the hook of later reciprocation for the giver's "sacrifice." If you show *considerable* happiness-in-giving you run the risk of having the recipient decide that, by your own hand, as it were, *you have been rewarded enough* for your generosity. Gifts from doting parents

and grandparents have this quality, and, for more reasons than this but *including* this reason, they are rarely reciprocated adequately. For more on gifts, see also Note 64 below, and Note 10 of Chapter Four.

In the literature of psychotherapy, Erich Fromm perhaps gave the value gift, based on the pleasure of giving per se, the most consideration. See *Man For Himself* (New York: Fawcett World Library, 1969) pp. 68–122

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[65] It is also sometimes observed that, with gift exchange, the fulfillment of obligations is not enforceable except by "non-renewal of contract," i.e. by desisting from offering gifts in the future. In plain language, you cannot call the police or take someone to court or if they don't express adequate gratitude for what you gave them or if they return your gift in kind in good time. You can only choose not to be friends with them anymore. This truth is less about gift exchange as a type of exchange, however, than about the fact that gifts, as a conventional type of good, rarely convey significant "loads" of legitimacy or security or survival. And when, breaking convention, they *do* convey as much, then to renege on the obligation to reciprocate can have weighty consequences—consequences that eventually, indeed, come to involve the law, threats against security or livelihood, and/or violence.

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[66] The idea that money is a negative obligation—a "neg-obligation"—is developed by Frederick Turner in *Shakespeare's Economics* (New York: Oxford University Press, 1999).

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[67] I exclude "intellectual exchange" or the "exchange of ideas" only because these exchanges—most of which would better be called debates, arguments, or conversations—are several steps removed from direct economic exchange of goods or tokens of value. This is not to exchanges of one of the five kinds I have described do not occur during intellectual exchanges. They do. It's only to say that in intellectual exchanges, by definition and by design, attention is by strongly drawn *away* from the need-driven, personal, and value-imbued nature of the ideas being "tossed" back and forth, even as one protagonist *grants* this or that point to the other, *accepts* a correction, *offers* another view, and so on. Instead, attention is drawn towards the subject matter: some feature of the world around that (avowedly) does not affect the protagonists' status or welfare. As with psychoanalysis, it takes very careful listening and an immunity to the imagery and its purported consequences of the argument in order to identify the need-satisfying components of giving, getting, and obligation that are being traded along with the "views."

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[68] When bribery and extortion are illegal, of course, the briber/extortioner runs the risk of punishment by the state. To compensate himself for this risk to his own legitimacy, the briber will often "ask" for disproportionately large "rewards" for not taking the action he threatens to take, which in turn means that the prospective harm he devises for the victim must be large enough to match.

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[69] A more entertaining example? Q is a married man and is P's boss. P has long felt underpaid and undervalued by Q. Together they go to a three-day business meeting in another city and share a hotel room. One night Q gets drunk at a seedy men's nightclub. He staggers into the night with a dancer and doesn't come back till dawn. Back home, P says nothing. He soon gets a raise. Nothing illegal has happened.

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[70] As a young architect and professor, I was once told by a friend—a highly-paid, just-graduated lawyer of the same age—that the reason architects are paid so little (and professors too) is that *they enjoy their work too much*. Most people, he went on, envy the architect his acceptably casual dress code and artistic ways, his creative freedom, his satisfaction at seeing the concrete results of his ideas and labor, the permanence of his achievements, etc. And so The Market has seen to it that the average graduating architect receives roughly a half to a third, in salary, of what a graduating lawyer, doctor, accountant, or engineer gets, a pattern that perpetuates itself throughout the professional careers of probably nine out of ten architects.

Folk wisdom perhaps, but I have come to believe that for the most part my friend was right. Cf. also my remarks along these lines in the introductory pages of the Coda.

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[71] All this said more simply: no one will admit to enjoying their work more than the next person does if there is any danger that this information could be used to decrease their material reward. Because of this bargaining dynamic, I would argue, there is little chance that the enjoyment of work—as real as it is, as important as it is—will

become a prime objective of business culture accepted by both employers and employees, as seems to be the hope of Robert E. Lane in *The Market Experience* (New York: Cambridge University Press, 1991). With reference to Note 69 above, it would clearly pay architects to (pretend to) enjoy their work less. Instead, they emphasize their enviable access to freedom and creativity and clear achievement as though to justify to themselves and to excuse, as a matter of pride, their modest earnings (relative to their training, responsibility, and hours-worked).

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[72] "Monkeys reject unequal pay" Sarah F. Brosnan & Frans B. M. De Waal, *Nature* 425, 297–299 (2003), reviewed in Sean Markey, "Monkeys Show Sense Of Fairness," *National Geographic News*, September 17, 2003 http://news.nationalgeographic.com/news/2003/09/0917_030917_monkeyfairness.html) See also Karl Sigmund, Ernst Fehr ,and Martin A. Nowak "The Economics of Fair Play: Biology and economics may explain why we value fairness over rational selfishness" *Scientific American*, January 2002, available online at www.sciam.com.

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[73] Nothing metaphysical is meant by "absolute" here. A convention in mathematical notation, the vertical bar brackets just mean: take the numerical difference between these two variables to be a positive number always. For example: $(5 - 7) = -2$, but $|5 - 7| = 2$. When the first number is larger than the second, both (...) and |...| give the same result.

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[74] Note that a_P and a_Q need not be equal. Indeed they *cannot* be equal unless $V_P(i,j) = V_Q(i,j)$, in which case their actual numerical value is moot. But a little algebraic development shows that the above equation must have this constraint if it is to solve as an identity:

$$a_P - a_Q = +1 \quad \text{if } V_P(i,j) > V_Q(i,j), \text{ and}$$
$$a_P - a_Q = -1 \quad \text{if } V_Q(i,j) > V_P(i,j)$$

Note also that the value of the exchange to one party is judged by the other party according to the signs displayed by the first party. Such signs are read not naïvely but in the light of whatever is already known of their history and temperament. This asymmetry of knowledge opens the whole computation to all sorts of bad faith and dissemblance—some of the consequences of which we will study briefly at the end of this section. Until then, however, we will assume that each party's perception of the other's value experience is accurate. It follows that both parties would agree as to the size if not the importance ("value") of the unfairness term $|V_P(i,j) - V_Q(i,j)|$ (which, of course, is always equal to $|V_Q(i,j) - V_P(i,j)|$). It is the idea of *importance* that is captured by the coefficients a_P and a_Q.

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[75] This does *not* mean that Paul is necessarily ungenerous in his actions: he may be a very giving and forgiving person but it is *his* pleasure he is counting when he gives. It is his own happiness, not Quentin's, that he values even though it is spurred by Quentin's display or happiness.

One might go on to argue, however, that happiness-at-being-fair is also self-regarding and self-interested: having internalized a social rule, now a virtue, one congratulates oneself for one's fairness, or seeks the congratulations of others or God. See Note 41 above on this feature of the relationship between empathy and altruism.

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[76] One wonders whether the continuing indifference-to-fairness found in some children as they grow up might have begun with the genetic inability to empathize. Earlier I reported research that showed that normal newborns cried "for no reason" other than hearing the crying of other newborns. One wonders: what about the babies who did not? What might we learn if we tracked them through school and into adult life? Indeed, one wonders how many children who grow up socially troubled, even criminal, become so because they are constitutionally unable to resonate to the condition of other creatures, animal or human. After all, if their natural "resonating circuits" were damaged at birth, they would not feel another's pain *or* pleasure (or even their own) except dimly, and would therefore be unmotivated to give any weight to fairness. Some such people may go on to become sociopaths, but others would become great extollers of duty and discipline.

On the other hand, according to Dorothy Otnow Lewis in *Guilty by Reason of Insanity: A Psychiatrist Explores the Mind of Killers* (New York: Ballantine Publishing Group, 1998), "born killers" might understand others' feelings all too well, but bear a grudge so great that the only *justice* they can imagine is hurting an innocent other as badly, or more, than they were. Most born killers harbor revenge feelings for early and drastic abuses to them—often sexual, always physical—and these are vented not on the perpetrators of the abuse but onto innocents *like themselves*, i.e. as they were. This is fair exchange *at all costs* including their own lives and liberty, fair exchange with the generalized Other, with a wicked God who did not protect them! Justice is always about the restoration of symmetry.

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[77] When $-1 < a_P < 0$ and $V_P(i,j) > V_Q(i,j)$, or when $-1 < a_Q < 0$ and $V_Q(i,j) > V_P(i,j)$, the Equation of Quasi-Fair Exchange will not solve unless the exchange is already fundamentally fair, which of course contradicts the assumptions of the Equation of Quasi-Fair Exchange. Nor can a_P or a_Q go outside of the interval {+1, –1} by definition. Remember that when $V_P(i,j) = V_Q(i,j)$, then the relative magnitudes of a_P and a_Q are irrelevant. That is to say, if an exchange is fundamentally fair, or is accepted by convention or habit to be fundamentally fair, then whether or not Paul or Quentin value fairness per se, or even *think* about fairness, is irrelevant.

I would not bring this up again if it were not the condition that describes a considerable number of everyday social exchanges. It describes routine commercial exchanges too—at the supermarket, say, or the gas station. In everyday life we often forget about fairness. We forget that we are "exchanging" at all and imagine we are just *living*. Societies develop institutions, norms, and market systems that people can trust to be essentially fair precisely in order to alleviate the need to mobilize an entire inner courthouse as it were, every time one deals with someone else. Indeed, perhaps *this is what "society" amounts to: a system of human relations that economizes on the total time and effort* (needing to be) *devoted to fairness computations.* "You win some; you lose some" we like to say, especially when the losses are small. Or: "it all comes out in the wash."

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[78] Honesty and openness are also "bourgeois virtues." See Dierdre McCloskey "Bourgeois Virtue," *American Scholar* 63, no. 2 (Spring 1994): 177–193. For his part, sociologist Erving Goffman devoted his career to the tracking and study of appearance-management in Western society, using what he called the "dramaturgical model:" life as theater, life "as but a stage..." See his *The Presentation of Self in Everyday Life* (Garden City, N.Y., Doubleday, 1959), or *Frame Analysis* (New York: Harper & Row, 1974).

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[79] To see why this is so mathematically, see that for $(a_P + a_Q)$ to be less than zero while $a_P - a_Q = 1$ [as required for the Equation of Quasi-Fair Value to solve when $V_P(i,j) > V_Q(i,j)$], then $(1 + 2a_Q)$ must be less than zero, which is to say $a_Q < -0.5$, which is to say Q positively values unfairness in exchanges that go against himself—a mild form of "martyrdom."

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[80] Cf. Sahlins, *Stone Age Economics*, 208ff.

On another note: Economists define the *labor productivity* (of a firm or sector or whole economy) as the number of unit-goods (or services) produced per man-hour officially devoted to producing them. Disregarded is the value of goods produced. *Total profits* divided by *total wages* over a given period of time might begin to address the efficiency with which labor adds value, but it is a rarely used measure, while other disciplines—such as accounting and engineering—employ a wide variety of specific productivity measures. All, of course, are indicators of some kind of efficiency in the form $\frac{output}{input}$. With V(*i, j*) we have, I believe, the basis for a better, if more abstract, measure of labor productivity in economic and social terms. To wit:

$$Productivity = average\ value\ of\ an\ exchange \times time\ rate\ of\ exchange$$

$$= \frac{sum\ of\ the\ value\ of\ all\ exchanges}{number\ of\ exchanges} \times \frac{number\ of\ exchanges}{unit\ time}$$

$$= \frac{sum\ of\ the\ value\ of\ all\ exchanges}{unit\ time}$$

Properly unfolded, and applied to all firms and all cultural and governmental institutions, this measure of social-economic or "value productivity" would, I suggest, do a better job of accounting for economic progress than the standard "widgets/man-hour" one, in spite of the obvious methodological difficulties (a) of measuring value directly, and (b) of measuring it as exhaustively as the model suggests it should be. Remember also that our definition of V(*i, j*) already contains an accounting of the *dis*value of costs other than time itself.

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[81] Remember from the opening paragraphs of this chapter that all exchanges are bi-conditional by definition: "if you will do *x*, then I will do *y*," or "if I do *y*, will you do *x*?" or "unless you do *x*, I will not do *y*," and so forth. And therefore all exchanges use some degree of force, however minimal, as described in Chapter Five. Cf. also Note 43 above.

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[82] Set $V_P(i,j) > V_Q(i,j) \geq 0$ and $V_{P,Q}(i,j) \geq 0$. Economists will recognize this condition as one of "Pareto optimality," i.e. a change of fortunes in which at least *one* person is better off and *no one* is worse off. Once again, unfair exchanges of higher positive net value are preferable to equally unfair exchanges of lower positive net value.

Type II exchanges also exemplify what Herbert Simon called "bounded rationality," on the part of the bargainers. The exchange is not ideal, nor probably the best that can be achieved by each party with each other (or anyone else for that matter) given more time to negotiate, but just "good enough" for them to go through with it now. See Herbert Simon, *Models of Bounded Rationality* (Cambridge: MIT Press, 1982). We could add to this consideration by adding to both sides the value to each party of the *time* they are spending at arriving at the present agreement, V_P(*time*) and V_Q(*time*). See also Gigerenzer et. al., *Simple Heuristics That Make Us Smart.*

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[83] Note that this typology is quite independent of our earlier categorization of exchanges into gift, barter, commercial, financial, and political transactions. That categorization relied on differences in emphasis on the internal components of the exchange, i.e., on the relative values of getting, giving, and obligations in making up the total value of an exchange, and on whether or not money was involved. The typology explored here—**Type I**, **Type II**, etc.— deals with the total value, regardless of composition and internal emphasis. Gift, barter, commercial, financial, and political exchanges can be of any one of the above six types. This makes possible a more complex analysis than we will pursue here: to wit, a 5 by 6 matrix of exchange category (gift, barter...) against exchange **Type** (**I**, **II**.....), giving us 30 in all....

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[84] Herbert Simon, *Models of Bounded Rationality.*

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[85] Simon won the Nobel Prize for Economic Sciences in 1978 largely for treating this question. He gave no serious consideration (as far as I can tell) to the value of the process of exploring/negotiating/deciding to the "personal growth" of the parties involved. For Simon, all time spent in valuation was a *cost* having negative value, "worth it" only if it yielded greater positive value in the outcome than would have been yielded had the time not been thus spent. So: one researches what new car to buy until the gains to further research are smaller than the increasing cost of waiting to have a new car; one might deliberate upon what movie to see until one starts missing them for all the time taken deciding. In short, when you make the best decision you can given the time you have, rationality itself comes to have economic—not to say rational—"bounds."

But Simon's argument misses what we have been getting at: that giving little or no deliberation at all as to what car to buy or movie to see (or product to manufacture, or contract to accept, or woman to marry) might or might not make the decision worse, but it certainly robs us of the pleasures of evaluation, introspection, and discussion, as well as of savoring—indeed experiencing—our rationality and freedom in the first place. If it's *fun* to decide what movie to see, why economize on the process? If it is *interesting* to continue researching cars long after any further information could realistically change one's mind as to which to buy, why stop?

For a discussion of *plenitude* versus just *time*, see Chapter Six, p. 24ff.

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[86] I am grateful to the philosopher Amélie Frost Benedikt, who is also my wife, for her inspiration and help over several years of discussion in thinking about the moral and aesthetic consequences of animism, of behaving as though panpsychism were the case.

The Buddhist-Jainist concept of *ahimsa*—no harm to living things, or even the spirit of inanimate things—goes furthest, perhaps, in converting a universal moral intuition into a way of life, a practice, strict vegetarianism being only the first of many "life-style" consequences. I think it hard for Westerners to believe literally in the life of all things, let alone our duty to protect it; hence the way I have tried to frame the same moral impulse in terms of lifefulness, plenitude, and Ω.

[87] Notice that I have here given explicit expression to the value of keeping a good which until this point I have left implicit as a loss or negative component in the valuation of giving it away in exchange. See p. 21.

[88] Note that if the happiness of the kitten were of *no* concern to Paul or Quentin, that is, if $V_P[V_k(\text{being with P}) - V_k(\text{being with Q})] = V_Q[V_k(\text{being with P}) - V_k(\text{being with Q})] = 0$, then the gift might as well have been a *wood-carving* of a kitten as be a kitten (which Rhonda, no doubt, would have preferred). Notice however, that Paul and Quentin could hold *different* valuations of the (importance of the) happiness of the kitten, just as, earlier, we spoke of the different valuations exchangers might have of fairness per se. In this case, for the gift exchange to seem fair to both parties, the valuations of the other components would have to adjust to compensate for the unequal sensitivities of P and Q to the happiness of the kitten; either this or a discussion must ensue between them—a debate, some persuasion—as to how important a consideration its happiness *ought* to be.

[89] Although this would complete the picture, space is short, and I shall leave analysis of the exchanges between Paul and his landlord and between Quentin and Rhonda on the subject of the cat and the flowers to the complexity-fearless reader.

[90] It is simply the case that we like and value those animals more that have, or seem to have, human virtues like courage, loyalty, family-feeling, humor, fondness for touch, cleanliness, trustingness, intelligence, and so forth. Pity the snake and cockroach, the vulture, and fish.

[91] Paternalism towards the natural world is written into Biblical moral code, of course; with the idea of humanity's God-assigned "stewardship" of nature. Debate rages in environmentalist circles as to whether this form of paternalism is permitted.

[92] See David W. Ehrenfeld, *The Arrogance of Humanism* (New York: Oxford University Press, 1978) and *Beginning Again: People and Nature in the New Millennium* (New York, Oxford University Press, 1993). See also Peter Singer's many books, most recently *Writings on an Ethical Life* (New York: HarperCollins, 2000), especially pp. 86–104.

[93] See for example, Matt Richtel, "Heel. Sit. Fetch Your Batteries," *The New York Times*, December 10, 2000, Section 3, 14. Aibo costs $1500.

[94] The reader may wonder why such certifiably great twentieth-century architects as Le Corbusier and Mies van der Rohe do not make the list (or Philip Johnson or Charles Moore or Peter Eisenman or Frank Gehry). As brilliant and productive and interesting as these men are, they do not command the *consistency* of respect shown to Kahn. Their work raises hackles, their legacies raise questions. They proselytize, self-aggrandize, and pursue programs and styles of architecture that, even in their best work, lie far from the noble comportment and genuine spiritual appeal of Kahn's best work, or Aalto's or Wright's.

For a good introduction to Kahn's thought, see John Lobell, *Between Silence and Light : Spirit in the Architecture of Louis I. Kahn* (Boston: Shambhala 1985 [1979]), Alessandra Latour, *Louis I. Kahn : Writings, Lectures, Interviews* (New York: Rizzoli, 1991), my own *Deconstructing the Kimbell* (New York: Lumen Books, 1991); and on his relationships to clients, see Stephen L. Ross, *Clients of Transcendence : Louis I. Kahn and the Homologous Client-architect Relationship*, unpublished Masters Thesis, School of Architecture, The University of Texas at Austin, 1990.

[95] See Martin Buber, *I and Thou*, 2nd ed., transl. Walter Kauffman (New York: Scribner's, 1970 [1952, 1937]).

[96] Marx has so bamboozled a generation of thinkers on the matter that to say "exchange value" out loud is, in many circles today, to mark oneself a Marxist at worst, a nineteenth-century thinker at best, and certainly not someone to be taken seriously.

The origin of the confusion sown by Marx, I think, can be found in *Grundrisse*. The value of a thing that can be exchanged, which he calls a commodity

> ...must have an existence which is qualitatively distinguishable from it; and in actual exchange this separability must become a real separation, because the natural distinctness of commodities must come into contradiction with their economic equivalence, and because both can exist together only if the commodity achieves a double existence, not only a natural but a purely economic existence, in which the latter is a mere symbol. ...[T]he measure of [a commodity's] exchangeability is determined by itself; its exchange value expresses precisely the relation in which it replaces other commodities.

Double existence? Replacement? Economic existence a mere symbol? How can this be legitimate? Exchangeability is the same as interchangeability? Perfidy!

> (In short, all properties which may be cited as the special qualities of money are the properties of the commodity as exchange value, of the product as value as distinct from the value as product.) (The exchange value of a commodity, as a separate form of existence accompanying the commodity itself, is *money*; the form in which all commodities equate, compare, measure themselves; into which all commodities dissolve themselves; that which dissolves itself into all commodities; the universal equivalent.)

Marx's demonization of money here is apparent: it dissolves the precious uniqueness of things, and not just things, but the unique labor and intelligence that went into them.

The above passages by Marx are from *Grundrisse*, transl. Martin Nicolaus (London: Penguin Books 1973 [1939]), pp. 143–144. Parentheses in the second passage are Marx's.

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[97] In the notation system we have been using, if

$$\begin{aligned} V_P(\text{keeping } i)_{t_0} &= V_P(i,j)_{t_1} \\ &= V_P(i\rightarrow Q)_{t_1} + V_P(j\leftarrow Q)_{t_1} + V_P(\varepsilon)_{t_1} \text{ and} \\ &= 0 \text{ otherwise,} \end{aligned}$$

then *i*, at time t_0, has only "exchange value" to P. Here, it is *j* that has use- or satisfaction value to Paul and *i* itself works like an obligation, a debt or credit. That is unless he plans to exchange it yet again, in which case the matter is deferred.

Symmetrically, when V_Q(keeping *j*) at time t_0 is equal to the value of its exchange for *i* in the future (t_1) and is zero otherwise, then *j* has only exchange value to Quentin while *i* has the use- or satisfaction value. In keeping *j*, Quentin *anticipates* $V_Q(i,j)$, which is why he keeps it.

Interestingly, as Karl Menger pointed out and as we discussed in Chapter Six, the value of (keeping) something one already has is often not fully revealed until one contemplates giving or trading it away, i.e. until one contemplates *not* having it. ("You don't know what you've got till its gone...") The mental exercise of imagining what one would accept in compensation for the loss of something one had can be enormously instructive.

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[98] To see why, let *x* be a positive integer. The number of ways, *N(x)*, of partitioning *x* into smaller integers such that the sum of those integers is equal to *x*, is given by the expression

$$N(x) \approx [1/(4x\sqrt{3})]e^{\pi\sqrt{(2x/3)}}$$

where "≈" means "is asymptotically equal to" for large *x*. An exact, closed expression for *N*(*x*) eludes mathematicians to this day.

Assuming that the extent of the market is large enough such that there is at least one article for sale at every price from $1 up to and including $*x* then you can see why a person with $*x* dollars to spend has so many options: she can potentially partition her money into *N(x)* separate purchases, a number which increases dramatically with *x*.

There are around 200 different ways to partition/spend \$15, and 6000 ways to partition/spend \$30. (We are ignoring the fact that many different goods can have the same price; but this only drives the size of *N(x)* up further and faster yet.)

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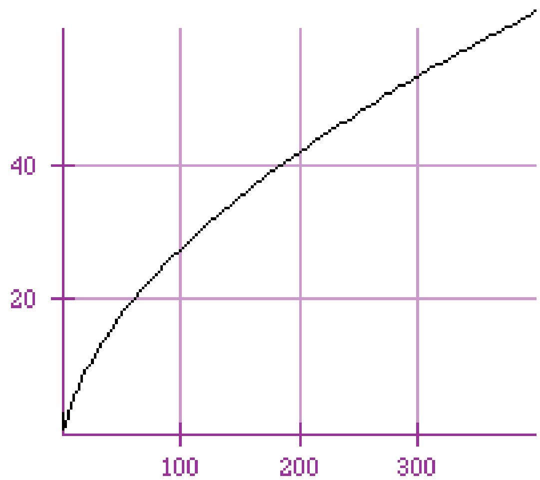
[99] The relationship looks like this:

$\log_2 N(x)$

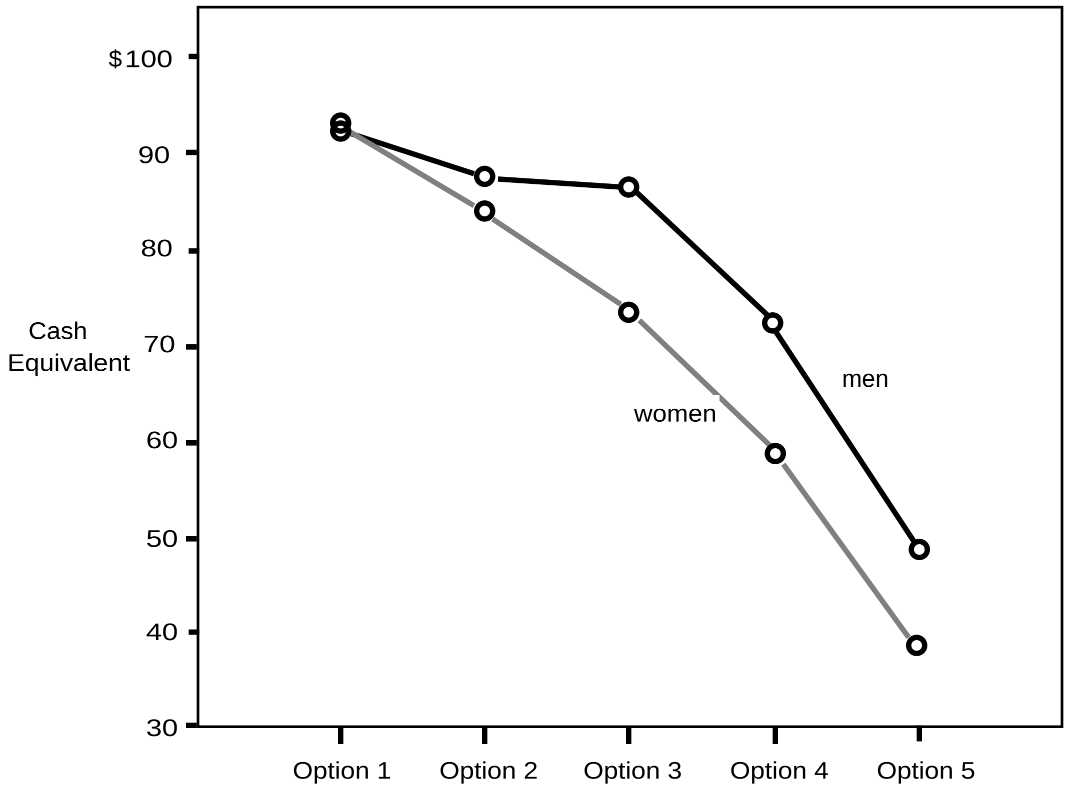


x

[100] I asked 19 undergraduate design students (12 men, 7 women): *"How much money, in cash, would be of the same value to you as:*

Option 1. A \$100 gift certificate at the Highland Mall? _______
Option 2. A \$100 gift certificate at any clothing store in the Highland Mall? _________
*Option 3. A \$100 gift certificate at The Gap?*___________
Option 4. Any \$100 jacket, of your choice, at The Gap?

The results looked like this:



I take these results to be a crude indicator of "the price of freedom," in small increments, to a largely satisfied group. Given their preferences and the extent of the market as they knew it for items of $100 and less, the Ω of having cash was higher than any of these options, each of which had the effect of increasing organization, R, by decreasing C.

To make the experiment more scientific would require a larger range of benchmark monies, option designs, and income- and age-groups as subjects. I am not sure what to make of the apparent sex difference indicated here; it would seem to imply that women are more sensitive to the loss of their shopping freedoms. Maybe men "could not care less."

Perhaps the most obvious indicator of the price of freedom conceived of along these lines is price difference between airline tickets for the same route. For example, a non-stop, round-trip, unrestricted, fully refundable coach class ticket from New York to San Francisco in June 1998 was $1869. The "same" trip with one stop, 21-day advance purchase, Saturday night stay over required, and no refunds ($75 charge for changes), cost $435. (This is an extreme. On average, and consistently since 1992, plan-ahead, restricted flights have run 30%–40% cheaper than unrestricted prices.)

Neoclassical economic theorists would explain all the above by suggesting that the utility of smaller choice-sets is likely to be lower than the utility of larger choice-sets. The thing you *most want* to buy may not be among the things you are *allowed* to buy, and that is what reduces the utility of having the hobbled money. Largely true, and I think still compatible with our idea that money is a token-type that delivers freedom. But I would maintain that if we studied a consumer's habits closely and then offered them chits for the things they have shown they most wanted, or even asked consumers what they now want and then gave them gift certificates for everything that they mentioned, the value of those chits and gift certificates would still be less than the value of cash in the amount of the combined price of all their purchases. A good experiment?

[101] This is not *always* the case: when confidence in a national currency is extremely low, or inflation is extremely high, or civil order is so broken down that survival is at question, or there simply is no money to be had, then tokens other than money will go into circulation—cigarettes, potatoes, diamonds, "points"—and fulfill some part of money's function.

It may be said that the freedom that holding money gives is no less a pleasure-in-contemplation than the pleasure, say, of holding a prize certificate for a horse, which is like pre-committed money. Either way, one actually *has* nothing but one's dreams of the future. But this is the strange thing about freedom: unlike the delights of actually riding a horse—the sun and wind, the rhythm, the smell, weight, and in-and-out-of-control of the animal—freedom is always and essentially a semi-inchoate feeling, an opinion of what is possible now. Freedom is a dream through and through, tested now and again for correspondence with reality, to be sure, but for the most part *rested* in, assured.

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[102] If, with regular tokens, $V_p(j \leftarrow Q) \neq V_p(j \leftarrow R) \neq V_p(j \leftarrow S)$, where *j* is the "same" token (say a compliment about one's hair), then with money, $V_p(\$x \leftarrow Q) = V_p(\$x \leftarrow R) = V_p(\$x \leftarrow S)$, or more nearly so. In fact, it depends, among other things, on whether the money has "strings," and on how much you know of the value it had to the one who gave it to you. More about this in Chapter Ten.

Much the same is true of the kinds of goods called *commodities*, that is, goods whose material qualities are so well known and so standardized that, price aside, it matters very little where, or from whom, one purchases them. Let us note, in advance of a discussion in the next chapter, that *for the complete connoisseur there are no commodities.* For her, all instances of a good are unique.

Note also that *gifts* share the property of most tokens: common or not, one associates them always with their sources, which goes a long way towards removing their commonness. Thus we are, most of us, connoisseurs of gifts. And of tokens. We need to become connoisseurs of money too.