*Journal of Economic Literature*
*Vol. XLI (December 2003) pp. 1188–1239*

# Which Is the Fairest One of All? A Positive Analysis of Justice Theories

James Konow[1]

*No man during, either the whole of his life, or that of any considerable part of it, ever trod steadily and uniformly in the path … of justice, … whose conduct was not principally directed by a regard to the sentiments of the supposed impartial spectator, of the great inmate of the breast, the great judge and arbiter of conduct.*
*– Adam Smith (1759) p. 357*

## 1. *Introduction*

Justice arguments are now widely invoked to improve theoretical and empirical analysis in nearly every field of economics. Incorporated into game theory (e.g., Matthew Rabin 1993), fairness predicts the deviations from pure self-interest observed in many laboratory experiments (e.g., Werner Güth and Reinhard Tietz 1990). Its impact has also been cited in many real-world contexts, including the intermittent failure of product markets to clear (Daniel Kahneman, Jack Knetsch, and Richard Thaler 1986); resolution of social choice problems such as locating nuclear-waste facilities (Felix Oberholzer-Gee, Iris Bohnet, and Bruno Frey 1997); public-utility regulation (Edward Zajac 1985); and labor unemployment due to efficiency wages (e.g., George Akerloff and Janet Yellen 1990). The view that "By now we have substantial evidence suggesting that fairness motives affect the behavior of many people" (Ernst Fehr and Klaus Schmidt 1999) is expressed in mainstream economics. This contrasts with the traditional belief of many economists that justice is chimerical or amorphous. A more sympathetic stance placed it outside the domain of economics, better left to philosophers, political scientists, or sociologists. There has been a steady trend, however, of increasing interest in and acceptance of justice in the economics profession, even partially displacing efficiency.[2] This is not to say, of course, that economists are or should be abandoning their traditional

[1] Loyola Marymount University. I thank the editor and three anonymous referees of the *Journal of Economic Literature*; Alison Alter, Gary Bolton, John Coleman, Gary Charness, James Devine, Jon Elster, Duncan Foley, Simon Gächter, Wulf Gaertner, Guillermina Jasso, Serge-Christophe Kolm, Alexander Kritikos, Axel Ockenfels, Joe Oppenheimer, Richard Posner, Matthew Rabin, Erik Schokkaert, John T. Scott, Alois Stutzer, Peyton Young, Ed Zajac, and participants at the meetings of the Public Choice Society, Social Choice and Welfare Society, and International Society for Justice Research for many helpful suggestions and comments. Any remaining errors or shortcomings are, of course, my own. I also thank Jack Knetsch for permission to use questions from Kahneman, Knetsch, and Thaler (1986).

[2] This is suggested, for example, by an examination of studies documented on *EconLit*. The number of entries for the 1970s under the keyword "efficiency" outnumber those under "justice" or "fairness" (not counting those under the equivocal term "equity") by sixteen to one. For the 1980s this ratio falls to about nine to one, and for the 1990s this gap further narrows to 4.4 to one. In fact, if one considers entries under the *JEL* classification system in operation since 1991 through the present, hits under the code closest to justice (D63: Equity, Justice, Inequality, and Other Normative Criteria and Measurement) outnumber those under that closest to efficiency (D61: Allocative Efficiency; Cost-Benefit Analysis) almost two to one.

interest in efficiency. Instead, stimulated by empirical evidence and, perhaps, the perception of increasing economic inequality, they are expanding their studies to encompass a wider set of distributive concerns. Despite the emerging consensus in economics over the relevance of fairness, though, no such agreement yet exists among economists or, for that matter, among psychologists, political scientists, sociologists, or philosophers, about the proper theory of justice.

### 1.1 *Two Goals of the Study*

One goal of this paper is to conduct a *positive analysis* of leading positive and normative theories of justice, where a remarkable lacuna exists in the literature.[3] By positive analysis I mean that each theory, whether originally conceived for this purpose or not, will be evaluated in terms of how accurately it describes the fairness preferences of people. In this paper, the terms fairness, justice, and equity always refer to the view of Adam Smith's impartial spectator whose judgment is not biased by any personal stake. The discussion includes both *distributive justice*, which concerns fair outcomes, as well as *procedural justice*, which addresses fair processes, whereby the more extensive treatment of the former reflects the relative emphasis in the justice literature. Justice is operationalized here mostly in relation to material wealth, the chief concern of most economists, even though it is clear that the forces discussed often impact noneconomic domains. Other factors that affect allocations include altruism, reciprocity, spite, kinship, and friendship. These are significant but distinct phenomena, which nevertheless underscore the import and timeliness of studying justice, given growing evidence that some behavior previously attributed to these forces (especially reciprocity) is likely due to distributive preferences.

A second, closely related goal of the paper is to propose and defend an *integrated* justice theory that synthesizes previous approaches and explains actual values as the conflation of four distinct forces or *elements*. These elements of justice inspire four corresponding theoretical categories (or families) into which each of the theories is placed and analyzed. The category *equality and need* covers theories that incorporate a concern for the well-being of the least well-off members of society including egalitarianism, social contract theories (chiefly Rawls), and Marxism. They inspire the Need Principle, which calls for the equal satisfaction of basic needs. The *utilitarianism and welfare economics* family comprises utilitarianism, Pareto Principles, and the absence of envy concept, which have grown out of consequentialist ethics, or the tradition in philosophy and economics that emphasizes consequences and end-states. They are most closely associated with the Efficiency Principle, which advocates maximizing surplus. The category *equity and desert* includes equity theory, desert theory, and Robert Nozick's theory. Together they inform the Equity Principle, which is based on proportionality and individual responsibility. The *context* family discusses the ideas of Kahneman, Knetsch, and Thaler; Michael Walzer; Jon Elster; H. Peyton Young; and Bruno Frey and Alois Stutzer, among others. This fourth family does not generate a distributive principle but rather deals with the dependence of justice evaluation on the context, such as the choice of persons and variables, framing effects, and issues of process.[4]

[3] There are, however, excellent surveys on more narrow topics from which this paper has also profited, e.g., Bernard Cullen (1994) reviews *normative philosophical theories* and Erik Schokkaert (1994) *normative economic theories*.

[4] When dealing with such an extensive literature, even a wide-ranging review cannot be comprehensive. Although I have striven to include the most influential theories of justice, some theories are omitted because they are not primarily theories of justice (e.g., game theories), or because their focus is more remote from the subject matter of economics (e.g., juridical theories), or because their incorporation into the four elements that frame the study seems forced (rights theories). Actually, the paper seeks to represent the breadth of the literature in a relatively concise manner by treating many theories while focusing on those aspects of each that contribute to the integrated theory.

While proceeding through the sometimes intricate analysis that follows, the reader can better maintain a sense of unity if he or she keeps in mind the dual goals of this paper and the framework that structures them. On the one hand, the specific theories discussed offer very different, and sometimes contradictory, perspectives on the meaning of justice. On the other hand, I argue for a general theory of justice as a unifying framework for the specific theories. These ostensibly dissonant objectives are reconciled by the following two facts. First, the general theory guides the classification of a specific theory into the category (i.e., element of the general theory) that is judged as most helpful for distilling the specific theory's most salient contribution to understanding actual justice views. Nevertheless, the evidence, taken as a whole, does not confirm any single theory in toto and sometimes even refutes central suppositions or conclusions. Both favorable and unfavorable evidence on the specific theories, however, produces lessons for the general theory. Second, it should be emphasized that the general framework around which the analysis is organized is an *integrated theory*, but not a *composite theory*: justice is more than the sum of its parts. The three principles of justice must be weighted, and context provides the weighting scheme in specific cases. The argument is that each category captures an element that is important to crafting a positive theory of justice but that no single family or theory within a family suffices to this end. Instead, fairness views are best explained by an integrated approach that acknowledges the influence of the three principles of justice, whereby the weight on each is determined by the context. This method enables one to treat justice rigorously and to reconcile results that often appear contradictory or at odds with alternative theories.

### 1.2 *Reasons for this Research Agenda*

People justify their positions and behavior in a wide range of situations based on justice, for example, in connection with affirmative action, global warming, labor-management conflicts, "fair" trade negotiations, and debates on the taxation of income, inheritances, and corporate dividends. The frequency and vehemence of such claims, often accompanied by sacrifices, attest to a conviction on the part of the advocates regarding both their normative value and their power to persuade and, thereby, to alter outcomes. These observations are significant because they indicate that fairness, in fact, appeals to a common moral sense, which, when applied to specific cases, is subject to some interpretation. In particular, biases often emerge when stakes are involved; e.g., Kenneth Binmore (1994) reports a strong tendency by subjects, when debriefed following bargaining experiments, to describe their self-serving decisions during the experiments as "fair." Various studies, including those of Linda Babcock et al. (1995), Tore Ellingsen and Magnus Johannesson (2003), and myself (Konow 2000), trace this bias in large part to deception, both of others and of oneself, regarding what is fair. These studies also indicate that, although biases sometimes widen the range of predicted outcomes, behavior is still constrained by fairness. Thus, justice is not amorphous or arbitrarily malleable, and, as I seek to show in this paper, fairness preferences usually converge when stakes are removed.

These facts suggest at least two important reasons for seeking a descriptively accurate theory of impartial justice. First, social scientists must consider how justice, alone or in tandem with other goals (such as self-interest or reciprocity), affects the phenomena they study. Although stakeholders often subject justice to biased and differing interpretations, in order to have moral force, their claims cannot be capricious but must be constructed around impartial standards. Whereas observed behavior typically results from multiple motives, a study of impartial justice consciously aims at separating the effects of unbiased justice, biased justice, and other motives.

A second important motivation for a study of impartial justice concerns normative and policy analysis in philosophy, law, and the social sciences. One specific purpose is in the area of conflict resolution: given the aforementioned fairness biases that often insinuate themselves into legal, economic, and political debates, impartial justice provides a standard against which to evaluate and reconcile conflicting interests. In more general terms, the appropriate role of such a study for normative analysis depends on one's stance on certain questions of moral epistemology (i.e., how one knows what is moral). Some scholars find the impartial values of real people to be a compelling foundation for an ethical theory. As Tibor Scitovsky puts it, "An important part of the economist's task is to find out how well the production and distribution of goods and services conform to the public's wishes. The first thing to ascertain in this connection is what the public's wishes are" (1986, p. 3). Philosophers, including Mill, Rawls, Nozick, and Walzer, tacitly acknowledge the merit of this approach by asserting that crucial premises of their theories are consonant with generally accepted values. Even those who would derive prescriptive theories in another manner cannot ignore the actual preferences their own theories will confront. As the bromide "ought implies can" suggests, any normative theory with a claim to relevance must direct actions that are sustainable in the real world of real values.

### 1.3 *Empirical Method*

Fairness is widely regarded as a motive behind much behavior observed in the real world (or the "field"), a view substantiated by results of quasi-field studies that actually ask implicated parties about their motives, such as Babcock, Xianghong Wang, and George Loewenstein (1996); Alan S. Blinder and Don H. Choi (1996); and David I. Levine (1993). Fairness, however, is often offset or reinforced by other motives, such as self-interest, public spirit, friendship, and reciprocal altruism (see Frey, Oberholzer-Gee, and Reiner Eichenberger 1996 for an interesting example of how several such concerns interact in the area of social choice). Unfortunately, field studies, though often useful for *demonstrating the impact* of fairness, are usually not designed for *evaluating theories* of fairness. Ones that elicit motives, such as those mentioned above, are few, and competing forces always threaten to undermine clear inferences about fairness.

The evidence brought here to bear on the justice theories is marshaled from numerous studies spanning different disciplines and employing various methods. Because of the afore-mentioned difficulties with inferring ethical intent from behavior in the field, however, the results cited are largely from studies that utilize experimental and survey designs. In moral contexts, these methods permit better control over confounding factors and stronger statements about causality. In particular, the primary goal is to track the values of the impartial spectator rather than the implicated stakeholder.[5] Much of the evidence presented, therefore, comes from studies that encourage participants to prescind and abstract from personal stakes. The survey method, in particular, exhibits low self-interest bias in general *attitude surveys* (e.g., of support for income redistribution as in Christina Fong 2001) as well as in *vignettes*, or questions that present hypothetical scenarios and elicit preferences over them (e.g., Menahem Yaari and Maya Bar-Hillel 1984). An advantage of experiments, on the other hand, is that they provide behavioral measures of preferences and demonstrate the willingness to act on them when stakes are involved. One drawback of this method for the current purpose, however, is that the stakes in most experiments are

[5] Numerous studies have exposed a self-serving bias in fairness judgments by stakeholders in the field, e.g., Babcock, Wang, and Loewenstein (1996), as well as in the laboratory, e.g., John Kagel et al. (1996) and Konow (2000). David Messick and Keith Sentis (1979) have found this stakeholder bias even when payments are hypothetical.

personal and contribute to a self-serving bias. Another is that even clear departures from self-interest cannot necessarily be attributed to justice as opposed to other preferences since motives are usually not elicited. This paper attempts to balance these concerns by establishing corroborative patterns across evidence from both experiments and surveys.

Since many surveys and all experiments cited here use student subjects, the question arises as to whether this group is representative of the general population. In the most comprehensive examination of subject pool effects in economics experiments, Sheryl Ball and Paula-Ann Cech (1996) report the results of various studies, including ones relevant to justice such as bargaining and public goods experiments, which compare student and non-student populations. With one exception, they "find little evidence of subject pool effects" between different populations. The available evidence on such effects from fairness surveys points in the same direction. For instance, many of the Kahneman, Knetsch, and Thaler (1986) results from telephone interviews with Canadian adults have been substantially replicated, including with adult populations in Germany and Switzerland (Frey and Werner Pommerehne 1993) and with U.S. adults and college students (Konow 2001, and the current study). Erik Schokkaert and Bart Capeau (1991) relate judgments of Belgian respondents about fair distributions of gains and losses in diverse scenarios to subject pool choice and to the socio-economic characteristics of subjects. They compare results from Schokkaert and Bert Overlaet (1989) with 243 college students enrolled in an introductory economics course, Overlaet (1991) with 234 parents of a different group of economics students, and their own survey with a representative sample of 810 adults from the general population. The authors find that the three groups exhibit generally the same pattern of choices and conclude that "there is no need to worry" about the use of convenience samples. After biasing their representative sample study in favor of subject pool effects by selecting the *most controversial* questions from the student/parent survey, Schokkaert and Capeau relate the responses from the general population to socio-economic variables including income, sex, age, education, and profession. Based on logit estimations, they conclude that the "most striking fact is the extremely small amount of variance which can be explained using these equations. This is not completely surprising … It is even rather comforting in this case: if the answers to our cases really are ethically inspired, one would not a priori expect the socio-economic variables in our equations to have much explanatory power" (p. 337). Moreover, I will argue that, even when significant differences across samples surface, they are best explained not by different values but by patterned variations in subject interpretation of a shared set of justice principles based on differences in subject information, experiences, or interests, which is entirely consistent with, indeed is predicted by, the theory proposed here (see especially sections 4.2 and 5.2).

Many results cited here, including some previously unpublished ones, make use of vignettes. Numerous significant economic studies have employed this method (e.g., Gordon B. Dahl and Michael R. Ransom 1999; Kahneman and Amos Tversky 1979), and it has proven especially useful for justice research (e.g., Blinder and Choi 1990; Kahneman, Knetsch, and Thaler 1986; Levine 1993). Still, this method is less common in economics than, say, psychology, so I will briefly review it and its application in the present study. A characteristic feature of vignettes is their contextual richness, which has been shown to aid reasoning; e.g., William M. Goldstein and Elke U. Weber (1995) report that when a problem is presented to people in abstract form, "they do spectacularly bad at it," whereas when it "is fleshed out with understandable content, there is remarkable improvement." In

addition, vignettes are less prone to the misunderstandings, caused by ambiguities about relevant details, that often plague other instruments. In fact, vignettes have been used to improve surveys about "objective" variables such as employment data (Elizabeth Martin and Anne Polivka 1992). Moreover, Marilyn Lewis Lanza et al. (1997) report evidence that responses to vignettes closely reflect reactions to events in the real world. An important strength of this method for justice research is that it offers a flexible and easily controlled means to provide information that can prove relevant to fairness, for example, details about effort or needs. The answer formats may be qualitative or quantitative, but most studies cited here used the former except where otherwise indicated. Of course, a legitimate concern is that the content specificity of vignettes might limit the generality of their results.[6] A common approach to this question is to examine the robustness of claims through different questions or versions of questions that vary contextual elements. In fact, this also enables one to establish evidence on the issue of whether justice is context specific or whether common principles apply across different contexts. Another strategy is to compare results across studies that employ other methods and data. Both techniques are employed in this study: for the new as well as previously published results, claims are evaluated, where possible, using multiple sources and methods.

Although there exists much evidence on justice, some theories considered here have not heretofore been examined as representations of *impartial* justice. For that reason, this evidence is supplemented by previously unpublished results drawn from a database containing the responses of 3178 subjects to numerous vignettes of the author. These comprise telephone interviews with a general adult population and written questionnaires completed by college students. The surveys were designed and conducted to produce meaningful results and to avoid subject pool and response biases in line with sound practices for survey research (e.g., Floyd J. Fowler 2002, and Jon A. Krosnick 1991). Fairness wording was explicitly used for purposes of validity, i.e., to ensure the instrument measures what it claims to measure, an important issue given evidence that what is "fair" may differ from what is "good" or what people prefer (see section 6).[7]

[6] A counterargument is that, given the abovementioned misgivings about decision-making in abstract form, even a single vignette is more general by establishing compelling findings in one, as opposed to no, context. Indeed, in this author's experience, conclusions based on this method seem no less general when tested in different contexts and with different methods than those derived from abstract questions or experimental tasks.

[7] Other measures included the following. Different versions that comprised different subsets of the master list and that varied the order of questions aimed at avoiding systematic order effects. When there were contrasting versions of a scenario, each subject faced at most one version of a scenario in order not to encourage any tendency toward overly similar or dissimilar responses across versions. A number of steps helped to minimize satisficing, i.e., suboptimal cognitive processing: scenarios were formulated briefly and clearly to reduce task difficulty, and answer formats were qualitative and simple, which has also been shown to improve reliability (i.e., consistency on retests). Relative to personal interviews, the telephone and self-administered surveys we used afford greater anonymity and are associated with more candid responses. The telephone interviews were conducted on a random sample of adults in Los Angeles, a city that, given its culturally diverse and large immigrant population, is probably more representative of the world population than most samples. Random digit dialing addressed issues of sample selection, and, to promote attentiveness, each telephone interview posed no more than five questions and lasted no longer than five minutes. The response rate of 47 percent, considered good for telephone interviews, was achieved by brief interviews, up to twelve attempts to contact respondents and interviewing non-English speakers in their native tongue. Written questionnaires were presented to students in a wide range of undergraduate classes at Loyola Marymount University and lasted no more than ten minutes. This written format was preferred for more intricate scenarios, which telephone respondents tend to process poorly. Although the telephone interviews drew from a more general population, there were several other advantages of the written surveys. The questionnaires achieved virtually a 100 percent-response rate and, by being self-administered, reduced if not eliminated possible interviewer-induced bias. More educated respondents, such as these college students, are also less susceptible to various types of satisficing. Finally, several of the same or similar questions were posed to both the adult and college respondents without large differences across samples, consistent with the findings of Schokkaert and Capeau (1991) on this matter.

### 1.4 *Organization of the Paper*

Section 2 addresses equality and need, section 3 covers utilitarianism and welfare economics, section 4 is devoted to equity and desert, and section 5 deals with context. The paper's development resembles a Hegelian dialectic in which a theory is presented as a *thesis*, often supported by evidence, only to be confronted by its *antithesis* in the form of counter-arguments and evidence contrary to the theory. Ultimately, however, the goal is to reach a *synthesis* of the theories at the end of each section in the form of a principle or lesson. Section 6 concludes with an even broader approach that seeks to synthesize the four elements of justice.

## 2. *Equality and Need*

Theories of equality and of need are usually characterized by a concern for the welfare of those in society who are the least advantaged. Interpreted as a preference on the part of real people for equally satisfying basic human needs, they form a principle of justice.

### 2.1. *Egalitarianism*

The most primitive, and probably oldest, notion of justice associates equity with equality. Justice has been construed as equality of original positions, opportunity, proportions and rights. Our discussion begins with *egalitarianism*, by which I mean the equality of outcomes. This simplest and strongest notion of equality has often been declared to be one of several principles of justice (e.g., Morton Deutsch 1985). Equality is also sometimes taken as a point of departure for studies of inequality (e.g., Yoram Amiel and Frank A. Cowell 1999). Kai Nielsen's "radical egalitarian" concept of distributive justice (1985) advocates the abolition of material inequalities.

Some social psychologists (e.g., Deutsch 1985; Gerold Mikula 1980) propose that equality is the principle in a multi-criterion system that is favored in cooperative as opposed to competitive relationships. Mikula and Thomas Schwinger (1973), for example, study allocation decisions among 36 pairs of soldiers in the same unit who perform a task that generates joint earnings. They find that many subjects who perform well relative to their partners act against their own interests and allocate earnings equally, an effect that is stronger when subjects are paired with partners they like. This result, which Mikula and his colleagues have identified elsewhere (see Mikula 1980), stands in stark contrast, however, to the "self-interest" bias that almost all other researchers find in allocation experiments (e.g., Robert Forsythe et al. 1994; Elizabeth Hoffman et al. 1994). The fact that each group in Mikula's experiments favors a rule that is to its disadvantage, equality by high performers and proportionality by low performers, suggests that his experimental design is not capturing a distributive preference for equality, which should be shared by all, but rather something closer to a "generosity bias" on the part of both groups. The additional fact that this effect is stronger when subjects like their partners reinforces the impression that an interpersonal affinity distinct from fairness is at work.

Numerous studies employing survey designs are unfavorable to the descriptive value of egalitarianism. One source of data is from vignette studies of *micro-justice*, or of fairness to and among individuals, such as Konow (1996) and Schokkaert and Capeau (1991). These indicate a frequent preference for unequal allocations and that equal outcomes are only fair as a special case, e.g., when variables subjects consider relevant to fairness happen to be equal across individuals. Survey studies of *macro-justice*, or of justice at the societal level, uniformly show strong opposition to equal outcomes. When the U.S. general public is asked about the just distribution of income, only 7 percent of 938 respondents to the survey reported in Herbert McCloskey and John Zaller (1984) and 3 percent of the 1415 respondents in

James Kluegel and Eliot Smith (1986) support complete or near equality of income. In fact, Guillermina Jasso (1999) reports, based on probability samples (N=8810), that if people received what they consider just, the distribution of income would be less, not more, equal than the actual distribution in eight of thirteen countries studied.

Despite widespread evidence of support for departures from equal outcomes, equality can, as stated above, emerge as a special case within a more general system, i.e., the uncontroversial concept of "treating equals equally." In other cases, equality appears to be invoked, not as a general principle, but as a convenient approximation when the context renders "first-best" justice too complex or thorny (see section 6). If the evidence casts doubt on equality as one of several principles, it topples egalitarianism as the single concern. Although complications can arise implementing even this simple rule (e.g., does one equalize goods, income, or utility?), the plethora of disputes over justice suggests it is not as straightforward as equal outcomes.

### 2.2. *Rawls and the Social Contract*

The publication of John Rawls's major work, *A Theory of Justice*, in 1971 was a landmark event in several respects. It provided the principal impetus to the resurgence of interest in justice among philosophers, and even many social scientists, during the twentieth century. In addition, the authors of nearly every subsequent normative treatment of justice have felt obliged to formulate their theories within Rawls's framework, or at least to define their positions with reference to his contribution. In part a critique of utilitarianism, *A Theory of Justice* builds upon the theory of the social contract associated with Locke, Rousseau, and Kant. Equality plays a central role in Rawls's theory, as does duty, including the duty to help those in need.

Rawls is concerned with social justice, or "a standard whereby the distributive aspects of the basic structure of society are to be assessed" (p. 9). The principles of justice are those "that free and rational persons concerned to further their own interests would accept in an initial position of equality" (p. 11). They are manifested as part of a *social contract*, or an original agreement for the basic structure of society. This agreement is chosen in the *original position*, a hypothetical situation in which people are behind a "veil of ignorance" of their places in society, i.e., their social status, wealth, abilities, strength, etc. Rawls argues that, since personal differences are unknown and everyone is rational and similarly situated, this "veil of ignorance makes possible a unanimous choice of a particular conception of justice" (p. 140).

Competing contractarian theories of justice have framed the question somewhat differently. Binmore (1994) and David Gauthier (1985) employ game theory to examine the emergence of justice through bargaining. In his *Treatise of Social Justice* (1989), Brian Barry rejects both the Rawlsian and game-theoretic approaches and suggests that principles of justice result, not from individual choice or bargaining, but rather from debate in which others are convinced of the reasonableness of principles, even if they run counter to their interests. Serge-Christophe Kolm's theory of the "liberal social contract" (1985) departs from other contractarian theories in several respects. Kolm's contract is an agreement between real parties aware of their positions and not between fictitious individuals behind a veil of ignorance, agreements may be reached for subsets such that not all decisions require unanimity, and people are motivated not only by self-interest but also by altruism. As in the case of the present study, the goal of Brian Skyrms's *Evolution of the Social Contract* (1996) is descriptive rather than normative. Specifically, Skyrms employs evolutionary dynamics to explore the development of the existing implicit social contract.

Returning to Rawls, on whom we will focus here, he claims two justice principles would be chosen in the original position. The first emphasizes equality, including

equal rights, liberties, and opportunities. The second principle (later called the *difference principle*) has been the subject of greater commentary. Rawls himself states this second principle as the general conception of his theory: "All social primary goods—liberty and opportunity, income and wealth and the bases of self-respect—are to be distributed equally unless an unequal distribution of any or all of these goods is to the advantage of the least favored" (p. 303). The difference principle, then, is a maximin rule for the distribution of the goods, material and other, that Rawls regards as primary.

The difference principle is the part of Rawls's theory that has generated the greatest volume of hostile reaction and on which he is generally considered most vulnerable. Kenneth Arrow (1973) and John Harsanyi (1975) raise objections from the perspective of welfare economics. Perhaps the most damaging criticism, however, is of the psychological assumption that people in the original position prefer to maximize minimum outcomes to the complete exclusion of any other goals. Norman Frohlich and Joe Oppenheimer (1992; 1987 with Cheryl Eavey) have conducted various laboratory experiments aimed at inducing the original position. University students, assigned to groups of five subjects, are introduced to and tested on their understanding of four distributive rules (including maximum expected value and the difference principle). The subjects then discuss the rules. If they arrive at a unanimous agreement, they are randomly assigned to different income classes and are paid according to income class and group choice of rule. Subjects almost always reach a consensus, and the vast majority agree to a mixed rule: maximum expected value subject to a constraint on the minimum income. Rawls's difference principle is the least favorite rule, being chosen by only one of 81 groups. Similar results emerge in experiments conducted in Australia, Canada, Poland, Japan, and the United States and in a replication that purges the procedures of any explicit mention of justice or fairness (Paul Oleson 2001).

The experimental evidence on Rawlsian justice seems to constitute a near-categorical rejection of its crucial premise. Nevertheless, legitimate questions can be raised about the efficacy of the experimental design. Passing through the laboratory door is not necessarily equivalent to passing through a veil of ignorance, and previously formed knowledge and expectations might taint subjects' reasoning. In addition, the structured discussion of the Frohlich and Oppenheimer experiments resembles more Barry's debate leading to consensus than Rawls's perfect coincidence of individual choices. On the other hand, this aspect does seems to err in Rawls's favor by allowing his principle to be chosen even without identical individual preferences. If the difference principle really represents shared values, it is difficult to grasp why, even behind an imperfect veil, it does not emerge with greater frequency.

The question both Rawls and this study ask is premised on a kind of impartiality. Rawls's thought experiment, however, involves individuals who are presumed to have a stake in the outcome and who, by assumption, are motivated in their choice of principles solely by self-interest. Our question, by contrast, concerns the choices of impartial spectators who are not stakeholders and who are assumed to be motivated by social preferences.[8] In addition, we do not presume that they deliberate over or even have any explicit awareness of ethical theory, but only that their preferences be guided by general principles that can be deduced from their decisions.

The failure, therefore, of the Frohlich and Oppenheimer experiments to confirm Rawls's hypothesis does not necessarily rule

[8] This might seem like a difference without a distinction, but that is not so. For example, an egalitarian who is risk-loving over his own allocations would prefer rules that generate equal splits as impartial spectator but might favor a very disperse distribution of outcomes in the original position.

TABLE 1. Questions *1A*, *1B* and *1C*

*1A.* The owner of a small office supply store has two employees, Mike and Bill. They are equally productive and hardworking and are both currently earning $7 per hour. The owner decides to move his store to a new location nearby where he knows business will be better. He lets his workers know that if they wish to continue at the new location he will be able to raise their wage. He explains that they will continue to have the same responsibilities but that one worker will earn $8 per hour and the other $12 per hour. He also explains that which worker gets the higher wage will be determined later on the basis of a coin toss. The workers can choose to go with the owner to the new location under these terms or to find similar work elsewhere for their current $7 per hour. They both choose to go with the owner. Please rate the store ownerís terms for the new wages as:

Fair 14% Unfair 86% $N = 142$

*1B.* Suppose Mike and Bill begin working for a computer software company at the same time and in the same capacity. Initially they both earn a salary of $50,000 per year. After a trial period Mike demonstrates that he is hard working, productive and performs far beyond initial expectations. Bill, on the other hand, is lazy, unproductive and performs far below initial expectations. Their supervisor decides to give Mike a $10,000 per year raise and to cut Billís salary by $1000. Please rate the supervisor's decision to raise Mike's salary and to cut Bill's as:

Fair 80% Unfair 20% $N = 177$

*1C.* Mike and Bill are identical twins who were reared in an identical family and educational environment. They are the same in terms of physical and mental abilities, but Mike is more industrious than Bill. For that reason, after they begin their careers Mike ends up earning more than Bill. Please indicate whether you view such a difference in their earnings as:

Fair 99% Unfair 1% $N = 150$

it out as a theory of justice in this other sense. A different instrument, which purposely seeks to elicit views of impartial spectators, is better suited to this objective. In this vein, the opposition cited to equal outcomes in the previous section is generally unfavorable to Rawlsian justice. More specific evidence is provided by the vignettes in table 1.[9] Question *1A* incorporates several characteristics of Rawls's thought experiment. Two individuals find themselves initially in a situation of equality, which is followed by a randomly determined state in which their lots differ. Additionally, the proposed contract permits allocations that satisfy the difference principle: By accepting the owner's offer, they will both be better off than initially (including the least advantaged person), and they both even demonstrate their preference for this unequal but improved state by choosing it over an opportunity to duplicate the conditions of the initial state. Nevertheless, 86 percent of the 142 ($N$) respondents judge this contract unfair.

A possible shortcoming of question *1A* is that respondents might reason that the owner's terms are unfair because they conjecture that the owner could also choose ex post equality by raising the wages of both to the same level (e.g., $10 per hour). One can approach this problem differently. Rawlsian respondents, in keeping with the difference principle, should oppose any change that leaves the least advantaged person worse off. A corollary of this is that, beginning from a position of equality, any change that makes one person better off while making another worse off is not fair. Question *1B* tests this corollary and finds that, in this context, 80 percent of the 177 respondents do, in fact, support such a change, in opposition to equality and to the difference principle. Here the two parties appear similar, except

[9] In this study, questions assigned the same number but different letters (e.g., *1A*, *1B*, *1C*) were always put to different groups of respondents. Questions from the written questionnaires are identified by italicized question numbers (e.g., *1A*), whereas ones from the telephone interviews are identified by question numbers set in bold (e.g., **8A**).

with regard to effort and productivity. Question *1C* accentuates the equality of starting positions of two individuals while focusing on the role of differential effort, and respondents almost unanimously view unequal rewards as fair. The latter two questions highlight the fact that the drawbacks of Rawls's theory are not limited to what it contains but also to what it lacks. His framework denies, or at least fails to assign any role to, factors not due to the vagaries of "Nature." Question *1C*, in particular, demonstrates that inequalities can be fair even when Nature bestows on individuals identical abilities and positions.

In defense of Rawls, his goal is to describe the principles that govern the general structure of society, which, he claims, might differ from those that apply in more specific cases (p. 8), such as, perhaps, those above. On the other hand, if they are genuinely general, these principles must apply to a substantial number of specific cases, a point he also makes (p. 9), yet one is hard pressed to find evidence of significant support for the difference principle. Nevertheless, other aspects of Rawls's theory resonate with popular values. In the context of duty, he stresses the importance of helping the needy, although he grounds this rule on the self-interested desire to insure oneself against being a victim of misfortune (pp. 338–39). Rawls's attention to need and a kind of impartiality probably represent his two most significant contributions to justice theory.

### 2.3. *Marxism*

Justice is a highly controversial concept among scholars of Marxism and has been subject to very divergent interpretations. Marx's own treatment of justice is sparse, and commentators have often read it as rejecting justice, indeed the whole of morality, as a bourgeois construct that is specific to context and history, and for which socialism no longer has any use. Engels writes that "justice is but the ideologised, glorified expression of the existing economic relationships" (Karl Marx and Friedrich Engels 1958, vol. 2, p. 128). Marx seems to associate justice with rights and proportionality, which lead to inequalities. Instead, he endorses the communist distributive principle, "From each according to his ability, to each according to his needs!" (1875, p. 531).

Standing in contrast to these scant canonical writings is an extensive literature on Marxian justice. Scholars of Marx have interpreted his view of justice as, in Marx's words, "obsolete verbal rubbish" of capitalism (Allen Buchanan 1981), a critique of capitalism (Gary Young 1981), a juridical rather than moral concept (Robert Tucker 1969; Allen Wood 1981), and a set of historically dependent principles that always reflect a concern for equality and need (Jeffrey H. Reiman 1981). Whether or not Marx thought of justice in terms of need, this seems the most promising approach for a Marxian theory (as opposed to a Marxian critique) of justice. There is no denying the centrality of need as a principle of distribution for Marx. Agnes Heller (1974), for example, writes "We can see, then, that in the new economic discoveries which Marx regarded as his own, the concept of need plays one of the main roles, if not actually *the* main role" (p. 25).

Experiments provide both implicit and explicit evidence of need as a general distributive concern. In the dictator experiment, one subject (the dictator) is given a fixed sum of money, any amount of which he may share with an anonymous counterpart, who has no recourse. Catherine Eckel and Philip Grossman (1996) conduct a dictator experiment in which some subjects allocate to anonymous student counterparts and others to an established charity. They find donations to the presumably more needy charities to be significantly greater than those to fellow students. In the ultimatum game experiment, a proposer selects an offer to make to a responder, who can choose to accept, in which case the pie is divided as proposed, or to reject, in which no one gets anything. In the ultimatum games of David Kravitz and Samuel

Gunto (1992), responders are more likely to accept low offers from (unknown to them, fictitious) proposers who appeal to their own need. Wulf Gaertner, Jochen Jungeilges, and Reinhard Neck (2001) find between 66 percent and 93 percent of 340 college students surveyed prefer funding to satisfy the needs of a handicapped child over educating an intelligent child. It is unclear, however, from these studies whether need is a justice principle or some other distributive motive. Moreover, studies of macro-justice paint a different picture. McCloskey and Zaller (1984) report that only 20 percent in the United States think a person's wages should depend on his needs versus the importance of his job ($N$=938), and only 6 percent think it would be fairer to pay people's wages according to economic need rather than based on how hard they work ($N$=967). Similarly, Kluegel and Smith (1986) find that only 13 percent of 1468 U.S. respondents think a person's income should be based on family needs rather than skills, although a large minority of 41 percent agrees that it would be fairer to pay people based on what they needed to live rather than the kind of work they do ($N$=669). These studies indicate that need affects distributive choices and preferences but do not resolve whether that fact is related to fairness.

### 2.4. *The Need Principle*

Basic needs often factored into the writings of political economists who lived during much earlier stages of economic development (e.g., Thomas Malthus 1798; Henry George 1879). Today whole nations are protected from dire need. Nevertheless, one out of every seven people in the world still lives in hunger, according to a United Nations agency (www.wfp.org). The philosopher D. D. Raphael (1980) appeals for the primacy of equality and basic needs and claims that justice demands there be "a basic minimum for all even if some of those affected could not achieve it by their own efforts" (p. 56). Basic needs are the material means considered "as essential for tolerable living" and should be satisfied equally for all. Nevertheless, Raphael argues one must consider not only need but also utilitarian concerns, i.e., the effects on incentives for efficiency: "Justice, then, is thought to require a basic minimum of equal satisfactions … Above that line, room is left for individuals to do as they think fit" (p. 54).

Raphael's comments imply, similar to Rawls', a lexicographic ordering of goals: basic needs take priority over other concerns but, once satisfied, attention turns to efficiency. The evidence cited above does suggest that people care not only about need but also about adverse incentive effects of basing allocations solely on need, which is why they oppose it as the foundation for a system of distribution. In addition, a scenario involving a grant to an impoverished nation (Konow 2001) provides specific evidence that satisfaction of basic needs for food, shelter, and clothing is considered "fair." Moreover, as efficiency is increasingly jeopardized in that scenario, the concern for basic needs diminishes and is eventually overruled by efficiency, implying a tradeoff. Finally, in a survey study by Helmut Lamm and Schwinger (1980), respondents allocate earnings between two students who require different amounts of money to purchase their books. Most divisions are unequal, with average allocations usually satisfying the differing needs.

The following conclusions seem consistent with the evidence presented here. Empirical studies provide almost no support for egalitarianism, understood as equality of outcomes, or for Rawls's difference principle, although they do reveal a concern for the least advantaged, in line with core ideas of Marx, Rawls, and their followers. The themes of equality and need can be found in a more defensible rule I will call the Need Principle: just allocations provide for basic needs equally across individuals. Specifically, the evidence can be reconciled with a multi-criterion justice theory in which, as suggested by Raphael, this concern tends to dominate when basic

TABLE 2. Question 2

| 2. Jane has baked 6 pies to give to her two friends, Ann and Betty, who do not know each other. Betty enjoys pie twice as much as Ann. In distributing the pies, what is fairer: | |
|---|---|
| A. 2 pies to Ann and 4 to Betty, or | 40% |
| B. 4 pies to Ann and 2 to Betty, or | 4% |
| C. 3 pies to each? | 56% |
| $N = 211$ | |

needs are endangered. Nevertheless, when needs differ across individuals, satisfying needs at an equal level implies unequal material allocations. In addition, this principle is not absolute: preferences over it are not lexicographic but are instead consistent with a trade-off between need and other distributive goals.

### 3. *Utilitarianism and Welfare Economics*

Much evidence, such as that cited in the previous section regarding efficiency, indicates that people care about outcomes at the social, and not just individual, levels. The theories discussed in this section share the property that they reflect a concern for the overall consequences of allocations or allocation schemes. In moral philosophy, these belong to the school of *consequentialist* theories, which judge the rightness of an act based on its consequences. These are contrasted, for example, with *deontological* theories, which stress the relevance of other factors, such as the Kantian concern with intentions, in evaluating the morality of an act. Most of normative economics is firmly rooted in consequentialist ethics, having grown philosophically out of the Utilitarian traditions of Bentham and Mill. This is apparent in the prominent place welfare economics assigns to efficiency, a concern we will consider as a principle of justice.

#### 3.1. *Utilitarianism*

Utilitarianism is the leading consequentialist theory of ethics and the chief forebear in the lineage of welfare economics. It is the moral doctrine that one should act so as to produce the greatest possible balance of good over bad, where good is understood to mean happiness or pleasure. Jeremy Bentham, who is responsible for the first precise formulation of this theory (1789), advocated what is sometimes called *act utilitarianism*. According to Bentham, one should at every moment act so as to promote the greatest aggregate happiness. This is contrasted with the views of another famous utilitarian philosopher and political economist, John Stuart Mill, who championed a version now usually called *rule utilitarianism* (1861). Mill proposed that one act according to the general rules of conduct that produce the greatest happiness (e.g., never lie, never steal), even if the rules do not maximize aggregate happiness in every instance. For Mill, justice is the most important and binding subset of these moral rules.

Welfare economics is derived from act utilitarianism. Economic acts, i.e., choices, are evaluated in terms of their consequences for social welfare. This, in turn, typically depends on a composite evaluation of individual welfare or utility, an approach Amartya Sen calls *welfarism* (1979). Classical economists, keeping with Bentham, assumed individual utility to be cardinally measurable and interpersonally comparable and aggregated individual utilities additively to derive social welfare. Utilitarianism implies that resources be allocated first to the person who derives the greater marginal utility. Consider question 2 in table 2. According to utilitarianism, *A* is the preferred choice among these three

because the largest amount goes to the person who derives the greatest pleasure. In fact, a large minority of respondents (40 percent) identifies this as fairest. Alternative *B*, which is chosen by only 4 percent, suggests equality across individuals, not at the margin, but in total levels of utility, a concept of justice implied by Sen's Weak Equity Axiom (1973, p. 18). Nevertheless, a small majority (56 percent) selects an equal split of the resource.

Utilitarianism proposes that welfare comparisons be made, not on the basis of goods or money, but rather using the subjective values derived from goods, money, etc. This raises the question of the appropriate *metric of justice*, that is, of the unit of account for justice evaluation, and whether it should be allocable variables such as goods and money, or derived values such as health, satisfaction, pleasure and happiness. The results to question 2 seem mixed: the majority choice of *C* suggests a preference for equality in goods, but the relatively strong showing for *A* implies that pleasure has significant pull. Another possibility is that utilitarianism correctly emphasizes subjective values but that *C* strikes a compromise between maximizing total utility and equalizing utility across individuals along the lines Sen suggests.

The close split on question 2 is not typical of survey findings on this issue or on fairness preferences, in general.[10] Most evidence favors Sen's thesis. Yaari and Bar-Hillel (1984) present college applicants in Israel with a scenario in which two individuals metabolize the nutritional value of two foods differently. Different versions of the question vary the benefit to one of the individuals and ask subjects to choose the fairest of five quantitative allocations. In two versions (Q1 and Q2), an identical 82 percent of the respondents (N=163 and N=146, respectively) choose unequal quantities of the foods to each person in order to equalize the total derived health benefit to them.[11] Other studies provide support for the use of subjective values. 69 percent of 81 college respondents to question *1D* in Konow (1996) regard as fair an unequal distribution of food that produces an equal level of satisfaction. Similarly, Gerald Leventhal, Jurgis Karuza, and William Fry (1980) conclude based on survey studies that "The emphasis is on equalizing the members' psychic gratification rather than actual outcomes" (pp. 182–83). Overall, the evidence suggests that derived values are important for justice evaluation and that maximization of these values holds some sway, but that fairness is associated more with the equalization of derived totals.

### 3.2. *Pareto Principles*

Around the turn of the twentieth century, Vilfredo Pareto (1906) defined a means for analyzing social welfare that does not rest on the strong cardinality and comparability assumptions of utilitarianism. Although utilitarianism continues to find its defenders (e.g., see Harsanyi 1955, 1975), the *Pareto Principle* has been more widely embraced by

[10] A clear and significant majority response emerges for almost all questions in our survey. The evidence indicates that more evenly divided responses are due, not to major divisions of opinion among respondents, but rather to the fact that the views of most are close to indifference between the response categories (e.g., see the results of question 8 in Konow 2001; see footnote 11 for other reasons). The close splits found in question 2 and versions of question 3 are less typical but are reported here to demonstrate with brevity the effects of multiple goals or principles.

[11] The other questions in this study, however, generate disperse responses, and no single category garners the support of a significant majority. Yaari and Bar-Hillel conclude that "The only general conclusion which we are prepared to draw from our work so far is that a satisfactory theory of distributive justice would have to be endowed with considerable detail and finesse" (p. 22). Their seminal study makes important contributions by employing survey techniques for the comparison of justice concepts, by approaching fairness research as an ongoing process of discovery and revision and by establishing some important findings in this area. I believe that the inability to draw clearer conclusions from many of their questions is probably due to the facts that the theories they set out to test are not specifically justice theories, and that many of the scenarios are too complex for most respondents to evaluate with reference to their moral intuition, indeed perhaps for many to evaluate by any standard.

economists as embodying an ostensibly innocuous value judgment, namely, it endorses any change that makes someone better off without making anyone else worse off. Despite the fact that this concept is touted as relying on weaker informational and ethical conditions than utilitarianism, certain of its deficiencies have also been noted, among others, that it does not produce a complete ordering of allocations. In (not entirely successful) attempts to overcome this shortcoming, variations and refinements, generically known as the Compensation Principle, have been proposed by Nicholas Kaldor (1939), John Hicks (1940), Scitovsky (1941), and Paul Samuelson (1950). The Compensation Principle endorses any change in which the gains of some are more than sufficient to compensate any losses of others, even if the prescribed compensation does not actually occur.[12] In a further step away from the Pareto Principle, all measurable gains and losses are often treated equally, in which case the Pareto Principle reduces to the maximization of allocable variables such as surplus or wealth. Pareto himself did not portray his principle as a justice theory, but this version of his principle has been interpreted as such, e.g., by Richard Posner in his book *The Economics of Justice* (1981). Although careful to set his views apart from utilitarianism, Posner defends the claim that justice be equated with economic efficiency, specifically, with wealth maximization.

Certain experimental results intimate a concern for Pareto efficiency. In prisoner's dilemma experiments subjects make a discrete decision about whether to cooperate with one another, whereas in the more continuous public goods analogues subjects choose a level of cooperation through amounts contributed to a public good. In either case, the equilibrium of rational, self-interested subjects is Pareto dominated by a cooperative outcome. Alvin Roth (1995) reports that prisoner's dilemma experiments usually yield cooperation bounded well away from both zero and 100 percent. John Ledyard (1995) finds that total contributions in public goods experiments typically lie between 40 and 60 percent of the group optimum. These results are favorable to the Pareto Criterion, although, of course, cooperation in these studies might also be motivated by altruism or equity. Comparing, say, public goods experiments to dictator experiments, however, a distinguishing feature of the former is the size of total surplus, a concern that is reinforced by (the possibility of) partial compensation for cooperation. Moreover, public goods contributions tend to run higher than the usual average dictator contributions of about 5 to 25 percent.

Bargaining experiments provide more compelling evidence of an efficiency motive. In Hoffman and Matthew Spitzer (1985) two subjects are presented with sets of allocations that generate different individual and joint payoffs. One of the subjects is the *controller*, the person who can choose unilaterally the payoffs. The controller is selected by winning a preliminary game or randomly by a coin flip, depending on the treatment. In face-to-face negotiations, however, the other subject can attempt to persuade the controller to choose specific payoffs and to agree to transfers of payoffs between the parties. Although the controller is essentially a dictator, 91 percent of Hoffman and Spitzer's 86 pairs reach agreements that maximize joint surplus, and about one-half of the transfer decisions result in equal or near equal splits, meaning that efficiency was often achieved at some sacrifice to controllers. Prompted by the Hoffman and Spitzer experiment, Paul Burrows and Graham Loomes (1994) explore a variation that allows pairs of

[12] The basic Pareto construct is the strong Pareto Criterion, which states that an allocation, $X$, is Pareto preferred to (or Pareto dominates) another, $Y$, if at least one person is better off, and no one is worse off, with $X$ than with $Y$. The simple version of the Compensation Principle states that an allocation, $X$, is preferred to another, $Y$, if it is *potentially Pareto preferred*, that is, if it is hypothetically possible to undertake lump-sum redistribution from $X$ to achieve an allocation that Pareto dominates $Y$.

subjects ($N = 104$) to engage in mutually beneficial trades from guaranteed initial earnings. They find that 97 percent of their 584 negotiations maximize joint payoffs.

These experiments with direct negotiation support surplus maximization under conditions that, through the availability of transfers, permit, not only potential, but actual Pareto improvements. How is this goal affected in the absence of transfers and direct negotiation? Gary Charness and Brit Grosskopf (2001) conduct dictator-like experiments in which the "dictators" face anonymous counterparts and select between two allocations: one gives equal payoffs to both and the other involves unequal payoffs, usually favoring the counterpart, that sum to more than the equal payoffs. Between 66 percent and 88 percent of dictators ($N = 61$) choose allocations that maximize total surplus, giving their counterparts up to twice as much as themselves, sometimes even at a small sacrifice. Charness and Rabin (2002) find a similar willingness to sacrifice in order to increase the total, although in the games they study this willingness varies with relative payoffs and with the previous choices of counterparts. Alexander Kritikos and Friedel Bolle (2001) similarly find that 58–100 percent of dictators ($N = 80$) in a binary choice dictator game prefer allocations that maximize earnings over ones that are more equal or even that favor themselves.

Perhaps the most thorough study related to the efficiency motive is that of James Andreoni and John Miller (2002). In their variation on the dictator game, dictators select gifts under conditions that differ according to budget size and price of giving money to counterparts. The latter is manipulated in the sense that one dollar foregone by the dictator increases the counterpart's payoff by \$0.25, \$0.33, \$0.50, \$1, \$2, \$3, or \$4. Andreoni and Miller find that the vast majority of subjects ($N = 176$) have well-behaved preferences for giving, falling into one of three categories: about 47 percent act selfishly, keeping nearly all for themselves, 30 percent tend to allocate so as to achieve equal splits, and around 22 percent act efficiently, tending to maximize total surplus. On average, though, dictators give themselves a larger payoff than their counterparts when giving lowers or does not change the total (at four of four such prices) and give their counterparts a larger payoff than themselves when giving increases the total (at two of three such prices).

These experiments suggest that many subjects are motivated to maximize surplus, but they do not resolve whether people regard this motive as fair. In table 3, question *3*, which appears in different versions, seeks to address this. Question *3A* asks subjects to decide whether it is fair to adopt the more efficient policy *X*, which produces a total of 240 but creates unequal benefits, over policy *Y*, which produces a smaller total of only 200 but divides the benefits equally. Sixty-two percent of respondents deem the choice of the efficient policy fair. Nevertheless, this support is quite labile, as revealed by two other versions of the question. These versions are identical to *A* except for variations in the size of the total benefits from policy *X*, which are identified by italicized passages. In version *B* the total under *X* decreases to 210, whereas in *C* the total under *X* rises to 290, and in both cases support for *X* slips versus version *A*.[13] Although these shifts are not significant, stronger results have been reported for a similar scenario. Four versions of question *5* in Konow (2001) identify solid support for the strong Pareto Criterion but weaker backing for the Compensation Principle. Moreover, the fragility of efficiency as it conflicts with other principles of justice is demonstrated there by statistically significant shifts in support across versions.

At the macro level, efficiency appears to figure more prominently in views of fairness. McCloskey and Zaller (1984) report that 78

[13] The weakened support in version B reflects perhaps the view that the efficiency benefit is insufficient to justify the inequality, whereas the increased inequality in version *C* is perhaps seen as intolerably large.

TABLE 3. Question *3*

*3A.* Suppose, as used to be the case, that the US government makes land available to farmers at no cost provided they reside on their claim and cultivate it. Each farmer may sell whatever he produces. Suppose as well that there are just two applicants, Farmer Adams and Farmer Brown, interested in two tracts of land, 1 and 2. Tract 1 is more productive than tract 2 and the tracts are located too far apart for one applicant to work both. The government may choose among one of the following two policies, *X* or *Y*:

*X.* *Farmer Adams gets tract 1 and produces 150 bushels of wheat and Farmer Brown gets tract 2 and produces 90 bushels for a total of 240.*

*Y.* Farmer Adams and Farmer Brown share tract 1 evenly whereby each then produces 100 bushels for a total of 200.

The government chooses policy X. Please rate this as fair or unfair:

Fair 62% Unfair 38% $N = 104$

*3B. …*

*X.* *Farmer Adams gets tract 1 and produces 120 bushels of wheat and Farmer Brown gets tract 2 and produces 90 bushels for a total of 210. …*

Fair 52% Unfair 48% $N = 105$

*3C. …*

*X.* *Farmer Adams gets tract 1 and produces 200 bushels of wheat and Farmer Brown gets tract 2 and produces 90 bushels for a total of 290. …*

Fair 55% Unfair 45% $N = 109$

percent of 938 respondents find that "Under a fair economic system people with more ability would earn higher salaries." This is presumably because, as 85 percent of 967 persons surveyed agree, "Giving everyone about the same income regardless of the type of work they do would destroy the desire to work hard and do a better job."

### 3.3. *Absence of Envy*

The theory of fairness with the purest economic pedigree, and the usual definition of equity in welfare economics, is the absence of envy criterion. The concept was first formally stated by Duncan Foley (1967) and was further developed by Hal Varian (1974), Elisha Pazner and David Schmeidler (1978), William J. Baumol (1986), and others. Part of the motivation for this research agenda is as a way to narrow the set of permissible Pareto optima, thereby identifying allocations that are both efficient and equitable. In the simplest form, an allocation is envy-free if no agent prefers (i.e., envies) the bundle of another. The no envy criterion has been generalized to include considerations of number of agents, groups of agents, common choice sets, envy-free trades, leisure, output and labor ability and has spawned the concept of egalitarian equivalence.

Absence of envy is an appealing construct and seems like a reasonable goal. The question asked in this study, however, is whether it describes allocations people call fair, or whether it is distinct. Robin Boadway and Neil Bruce (1984) are skeptical about equating the two: "I might envy a friend's lucky find in an antique store yet perceive no 'unfairness' that he, not I, owns it" (p. 175). This inspired question *4* in table 4, which tests the simple envy-free concept that applies to final allocations only. Even though respondents are encouraged in this scenario to "envy" the other's allocation, a sizable 87 percent judge it fair. It is possible, though, that respondents would be envy-free if one interpreted the bundle more broadly, e.g., to include the time spent searching for the

TABLE 4. Questions *4* and *5*

*4.* You and an acquaintance would both like to have a rare record album. Your acquaintance spends several hours a week looking in used record stores whereas you never bother to look. The acquaintance finds the album.
Fair 87% Unfair 13% $N = 299$

*5.* Chris, who is blind, does not like TV and Pat, who is a vegetarian, does not like hamburger. Suppose that Chris and Pat work for the same company in the same capacity and earn the same base salary. The time comes for the end of the year bonus. Chris, who works much harder than Pat, receives a $2 coupon for a hamburger. The less productive Pat, on the other hand, receives as a bonus a $2000 wide screen television.
Fair 10% Unfair 90% $N = 260$

album.[14] Question 5, also in table 4, however, is free of this concern. In this scenario, although one person works harder, both individuals receive as bonuses goods that the other could not possibly desire regardless of work effort, but 90 percent of respondents find this unfair.

Absence of envy is questionable not only as a description of justice but also of what is meant by envy in common parlance: it seems quite possible that I would like to have another person's allocation, but that I do not experience the resentful feeling about his advantage that the word envy typically connotes. Randall Holcombe (1997) similarly rejects equating fairness with absence of envy. He faults the envy-free criterion for examining only outcomes and argues that justice requires that one look at the process by which the outcome obtains. This seems consistent with the results of questions *4* and *5*, in which rewards conflict with individual contributions. These results support the claim that justice requires consideration of relative merits associated with the process by which outcomes are generated as well as of the magnitude of the outcomes.

### 3.4. *The Efficiency Principle*

Various studies have demonstrated that people often seek to maximize surplus, sometimes at a personal cost, and that this goal is regarded as "fair." These findings suggest that efficiency in this sense is not necessarily at odds with justice but instead is itself a type of justice. Results reported in McCloskey and Zaller (1984) show that efficiency figures prominently in popular conceptions of a fair economic system. At the micro-justice level, however, support for the Pareto Principles is sensitive to the size of benefits, and other results (Konow 2001) indicate that efficiency can be overturned by competing justice principles. Utilitarianism challenges us to think of efficiency, and justice, not only in terms of goods or wealth but, where possible, of the subjective values derived from them. The metric, or the unit of account, of justice turns out to be an important issue and one to which we will return in section 5. The evidence in this section also indicates that the maximization of derived values does exercise some pull on views of justice, although the mixed results suggest that, as with goods or wealth, the maximization of these values is not the single goal of fairness. Many of the counterexamples to efficiency point toward equalizing values, which seems to contradict the rejection of egalitarianism in section 2. As we will see in the following sections, however, equality can be relegated to a special case within justice principles that generally call for inequality. The evidence on the absence of envy criterion underscores the main conclusion of this section: although justice requires consideration of the consequences of acts, specifically, of the size of total surplus, the efficiency criterion is too austere to serve as a general theory of justice. One

[14] I am indebted to a referee for this point.

must also attend to the process by which outcomes obtain, and this is central to the theories discussed in the following section.

## 4. *Equity and Desert*

The common thread in this class of theories is the presumed dependence of fair allocations on individual actions. This contrasts with the motive investigated in section 2 to satisfy needs or in section 3 to maximize surplus, with no *necessary* dependence on individual actions. Theories of equity and desert are the intellectual progeny of two philosophical traditions: the distributive justice theory of Aristotle and the natural law/desert theory of John Locke. This section presents theories and explores evidence on the questions of desert, i.e., which individual characteristics are relevant to justice, and of equity, i.e., what, exactly, the functional relationship is of individual characteristics to just allocations.

### 4.1. *Nozick*

The political philosopher Robert Nozick occupies a position at one extreme in this class of theories. In *Anarchy, State and Utopia* (1974), Nozick argues that justice is exclusively concerned with rights that are determined by the historical acquisition by and transfer of property among individuals. Thus, he argues that justice has nothing to do with Rawls's original position, in which history does not yet exist, or with end-state theories, such as utilitarianism, which ignore history. Each approach is, in a sense, either too early or too late. Moreover, Nozick is a fervent advocate of individually based fairness over attempts to promote the social good. Individual choice is paramount, as demonstrated in his modification of the Marxian maxim "From each as they choose, to each as they are chosen" (p. 160).

Nozick's "entitlement" theory of justice concerns the rights of individuals to their possessions or "holdings." The core of his theory is two principles: the *principle of justice in acquisition*, or how things originally became owned, and the *principle of justice in transfer*, which addresses the transfer of holdings from one person to another. Nozick cites as violations of these principles holdings that result from theft, fraud, enslavement and forcible exclusion from competing in exchange. Nevertheless, he fails to spell out details of how his theory applies to specific situations or social systems. What is emphasized and exposited with some specificity, however, is the asserted justice of holdings that result from free choices, best illustrated by Nozick's often cited "Wilt Chamberlain" example. In this thought experiment, the reader is first asked to suppose that the initial distribution, call it $D_1$, perfectly satisfies whatever justice principle the reader favors. Then fans drop a separate admission price into a special box for Chamberlain, which results in his receiving much larger income than anyone else. Nozick challenges the reader to find the new distribution, $D_2$, unjust since people voluntarily moved to it. Note there is no conflict in this example with just acquisition because the reader is free to presuppose any original distribution, $D_1$. Instead, this example addresses justice in transfer.

I know of no previous empirical tests of the entitlement theory, even of the celebrated Chamberlain case, so I asked a somewhat updated variation on this scenario. Question *6* in table 5 considers the case of Michael Jordan, who in a similar manner receives $25 million (actually modest, in comparison to his actual earnings) from one million fans who drop $25 each into his box during one season. In version *A*, this follows a redistribution of wealth according to the respondent's favorite distribution, along the lines of Nozick's $D_1$. Nevertheless, 59 percent of respondents judge the post-season distribution, $D_2$, unfair, in contradiction to the principle of justice in transfer. In version *B* of this question, the assumed redistribution to fair levels follows, rather than proceeds, the basketball season, and there is a significant increase in the proportion of respondents

TABLE 5. Question *6*

*6A. Suppose that you are able to change the wealth of everyone in the world to the levels that you consider most fair. Let us say that you do so. Now suppose that Michael Jordan,* being greatly in demand, signs the following contract with a team: in each home game, $25 from the price of each ticket of admission goes to him. The season starts, and as people buy their tickets, they drop a separate $25 of their admission price into a special box with Jordan's name on it. At the end of the season, 1 million people attend his home games, and Michael Jordan winds up with $25 million. *Please rate Jordan's earnings as:*

Fair 41% Unfair 59% $N = 137$

*6B. Suppose that Michael Jordan, … Now suppose that you are able to change the wealth of everyone in the world to the levels that you consider most fair. Let us say that you do so. Would Jordan still earn $25 million?*

Yes 24% No 76% $N = 83$

(76 percent) who deem Jordan's salary unfair ($P = .01$).[15] One reading of this increased opposition to $D_2$ in version *B* versus *A* is that respondents also expect the initial distribution, $D_1$, to be unfair, i.e., the final distribution in *B* results not only from the current unfair transfers but, presumably, from previous unfair acquisitions and transfers. That is, people mistrust not only historical transfers but perhaps also original acquisitions. These results cast doubt on broad support for Nozick's minimal role for wealth redistribution.[16]

Nozick has a very broad conception of the individual choices that may be construed as just. The minimal role he foresees for the state suggests the view that allocations resulting from unencumbered processes do not, except to a minor degree, diverge from those prescribed by justice. As a description of actual justice views, Nozick's theory has merit for highlighting the individual and the role of choice. Its focus on process makes it an early treatment of *procedural justice* (see section 5.2). The entitlement theory, however, says that all allocations resulting from freely chosen transfers are fair, a claim that is not supported by the evidence. The following section attempts to clarify *desert*, i.e., the quality that makes certain variables relevant to justice, and to demonstrate that justice is related to choice, but not in the broad sense implied by Nozick.

### 4.2. *Theories of Desert*

A good point of departure for a discussion of desert is the justice theory of James Buchanan (1986). Of the theories discussed in this section, Buchanan's is closest to Nozick's in terms of the wide berth given to individual action and the limited role envisioned for state intervention. Nevertheless, Buchanan, in contrast to Nozick but similar to Rawls, formulates a contractarian theory, although his builds upon a very different set of claims about individual preferences from Rawls's. Justice is chiefly relevant in the constitutional phase in which people establish a contract for the rules of the game. Buchanan identifies four factors that determine the distribution of claims on economic income and wealth: luck, choice, effort, and birth. He considers the relevance of effort least controversial but believes that the only inequalities that conflict with common views of justice are ones caused only by the fourth factor, birth (pp. 129–30).

At the opposite extreme, a common view is that differences owing to birth, luck and choice are all unfair and that only differences attributable to effort are fair. A frequent finding (and claim) of social scientists

[15] In this paper, *P*-values refer to significance levels from two-tailed tests of differences in cited proportions.

[16] Another interpretation of the difference in the magnitude of opposition to the entitlement theory between these two versions of question *6* is that version *A* makes the ostensible justice of the voluntary transfer process more salient. But then its failure to find strong support when it comes under closer scrutiny is even more significant.

is that individual effort affects the perceived fairness of allocations. This is consistent with the results to Questions *1B*, *1C*, *4*, and *5* of this paper. Some argue that those who expend greater effort are more deserving but that other characteristics, such as talent, intelligence, physical skill, educational opportunities, etc., are irrelevant and should not affect rewards. A corollary is that for each "type," i.e., set of irrelevant characteristics, rewards should vary positively with effort and be equal for those who expend the same effort. Indeed, John Roemer (1998) argues for taking this one step further: he sees effort partially as a characteristic of type and one for which a person should not be held entirely accountable.

Most evidence casts doubt on birth and emphasizes effort as a determinant of justice.[17] For example, Leventhal and James Michaels (1971) conduct an experiment with 32 college students who are paid a fixed fee to evaluate rewards to different hypothetical individuals. In this study, subjects are told (erroneously) that their responses will determine the payments that will be given to participants in a later study of physical performance (a vertical jump test), and that the goal is to devise the fairest schedule of payments. The hypothetical individuals differ along four dimensions: body height, training, effort and performance. The results of Leventhal and Harold Whiteside (1973) suggest that performance is rewarded as a distinct concern from desert, as a kind of efficiency motive. For a given level of performance, though, Leventhal and Michaels find that desert varies directly with effort and inversely with height, which is mostly a characteristic of birth, and training, which is chosen for and not by the hypothetical individuals.

Numerous studies have examined the role of effort versus luck in fair allocations. For example, in the Hoffman and Spitzer (1985) experiment discussed in section 3.2, one person from each of the 86 bargaining pairs (the controller) is in an advantaged position because of either winning a game of skill or because of the toss of a coin, depending on the treatment. In the coin toss treatment, most subjects agree to equal or near equal splits, whereas in the game treatment, there is a significant tendency for the controller to receive a larger fraction, a tendency that is reinforced if subjects are told that the controllers "earned" that right. Hoffman and Spitzer conclude that subjects care about expenditure of effort but not about luck. Burrows and Loomes (1994) come to similar conclusions based on a two-stage bargaining experiment. Specifically, in Stage 1, 104 subjects are assigned random endowments after which they engage pairwise in face-to-face bargaining over trades designed to generate mutual benefits. In Stage 2, 47 subjects who had participated in Stage 1 earn their endowment based on their performance in a

[17] One finding that is anomalous in several respects is reported in Schokkaert and Capeau (1991). A scenario there calls for respondents to select the most fair division of a bonus between two salesmen. In one version of this question, one of the salesmen brings in more orders than the other, which is attributed to differences in effort, and 85 percent of students ($N = 40$) and 90 percent of parents (of a different group of students, $N = 50$) distribute most of the bonus to the salesman who exerts greater effort. The results for another variation on this question, though, suggest a role for innate traits, which even Buchanan considers irrelevant: in this version the difference in orders is due to the fact that one of the salesmen has greater "natural charm." Interestingly, a majority of both students and parents support an unequal division favoring the more charming salesman. As previously mentioned, Schokkaert and Capeau conclude that subject pool effects are not serious, but here we see that this support is significantly stronger ($P = .02$) among parents (76 percent, $N = 55$) than among students (56 percent, $N = 39$), where most of the remaining students (41 percent) favor equality. These results are based on small samples, but, assuming they are robust, a plausible explanation for them, and for the difference between the two populations, is the presence of an efficiency concern: rewarding the more talented individual promotes productivity by giving the person with the greater marginal product an incentive to work harder and by encouraging an efficient allocation of labor, perhaps by prompting the less talented individual to switch to a job in which his comparative talents are greater. This seems more likely to be a concern of parents than of students since the former typically have more work experience and are more sensitized to such issues (section 5 discusses how justice preferences can be both based on general principles but context- and, therefore, experience-dependent).

word search task before bargaining over trades. After Stage 1 bargaining, 64 percent of trades generate equal final payoffs. After Stage 2 bargaining, however, 72 percent of final payoffs are unequal and favor the subject with the better performance in the task. Burrows and Loomes conclude "that many people believe that when different individuals have a *similar ability and opportunity* to put in effort, those that put in more effort should get a greater reward because they are relatively deserving. … By contrast, when initial endowments were determined by chance, the majority of participants did not attempt to sustain the differentials in the bargaining that followed" (pp. 220–21). Finally, Bradley Ruffle (1998) conducts dictator and ultimatum experiments ($N = 108$ and $N = 102$, respectively) involving a coin toss in one set of treatments and relative performance on a general knowledge and skill-testing quiz in another set of treatments. He also concludes that giving is motivated mostly by a concern for fairness that is based on effort, not luck.

Thus far, desert appears to be related to effort but not to birth or luck. What of Buchanan's fourth characteristic, choice? Ronald Dworkin proposes a political theory that emphasizes equality but that tolerates the limited measure of inequality that he argues would follow by allowing the effects of choice alone to operate. He states that "individuals should be relieved of consequential responsibility for those unfortunate features of their situation that are brute bad luck, but not from those that should be seen as flowing from their own choices" (2000, p. 287). He makes a helpful distinction between two types of luck: "Option luck is a matter of how deliberate and calculated gambles turn out—whether someone gains or loses through accepting an isolated risk he or she should have anticipated and might have declined. Brute luck is a matter of how risks fall out that are not in that sense deliberate gambles" (1981, p. 293). Option luck, then, is a matter of choice, whereas brute luck is not, such that the consequences of the former are fair whereas those of the latter are not.

The fact that option luck and brute luck are often intertwined complicates the task of finding clear measures of each. The level and quality of one's education, for example, are affected partly by the hazards of birth, e.g., parents' education, local schools, etc. On the other hand, education also reflects individual choices that involve calculated gambles, e.g., effort expended, years of schooling, and degree programs selected, which in turn affect one's productivity. Schokkaert and Leo Lagrou (1983) asked 180 adult professional active men to estimate the actual average income as well as the fair income for twelve well-known occupations. With few exceptions, individuals whose occupations require greater training or education are generally seen as deserving higher incomes. In addition, the rankings of fair and actual incomes are strikingly similar, although the distribution of fair incomes is much more compressed than that of estimated actual incomes.

A conjecture suggested by this and similar studies is that fair incomes roughly preserve the ranking of actual incomes because the latter reflect fairly well the value (mediated by markets) that society places on individual contributions, i.e., a more temperate version of Nozick's idea that rewards should depend on being chosen. Moreover, incomes correlate positively with education because of the usual increased productivity. Education does not confer higher fair income, however, if it is not accompanied by greater productivity, consistent with the findings that 83 percent ($N = 670$) agree to pay workers more for producing more, but that 74 percent ($N = 668$) disagree with paying more to the person with more education when two people are doing the same type of work (Kluegel and Smith 1986). In Overlaet (1991) respondents choose the fairest distribution of a bonus between two workers who perform the same job and work equally hard. Equal splits are chosen by 68 percent

of respondents ($N = 50$) when the workers differ by education and by 88 percent ($N = 52$) when they differ by position. In another variant, however, 86 percent ($N = 52$) give more to the worker who exerts greater effort. Thus, equal splits are preferred when the descriptions of education and position suggest they do not impact productivity, but a greater contribution, and therefore reward, is implied when one worker exerts greater effort.[18]

These results indicate that desert incorporates effort and choices that affect an individual's contribution, but it disregards birth, (brute) luck, and choices that do not affect productivity. This suggests a general characteristic for distinguishing variables relevant to justice along the lines of *attribution theory* (e.g., Fritz Heider 1958, Julian Rotter 1966; and Bernard Weiner and Andy Kukla 1970). Attribution theory is a social psychology theory that purports to explain behavior based on causal attributions of responsibility. That is, attribution theorists say that people infer causes of events and are motivated to assign responsibility to agents for those events. When so doing, people evaluate the extent to which an agent has contributed to the outcome, specifically, they hold an agent accountable only for those factors that the agent can influence. Although its creators envisioned attribution theory as a general behavioral theory, its application in the current context to justice is obvious: desert is directly related to individual responsibility for contributions to outcomes. Those who contribute more are more deserving if their contribution is due to factors for which they are responsible, but not if it is due to factors outside their control.[19]

This concept of desert helps explain various experimental results. For instance, responders in the ultimatum games of Kagel, Chung Kim, and Donald Moser (1996) are significantly more likely to reject low offers when proposers make deliberately low and unfair offers than when proposers are not aware of, and therefore not responsible for, the meager offers. The design of Sally Blount's (1995) ultimatum experiments on 231 MBA students is explicitly informed by attribution theory. In different treatments, responders are told that the proposed split was made by a random number generator, a neutral third party or a proposer. Responders are significantly more willing to accept unfair offers that are random than ones that come from the proposer or a third party, consistent with attribution of responsibility. Using results of attitude surveys from a random national sample of 3626 labor-force participants, Fong (2001) finds a strong positive relationship between support for income redistribution and beliefs that one's fortune is determined by forces outside one's control. Advocates of redistribution, for example, believe that wealth is caused by external circumstances and that bad luck as opposed to lack of effort causes poverty. In this spirit, Samuel Bowles and Herbert Gintis (1998) propose a system of asset-based redistribution that tends toward equality while compensating agents for their actions.

Studies that explicitly elicit fairness preferences have come to similar conclusions,

[18] The result that 68 percent ($N = 50$) believe seniority warrants greater pay is less clear-cut as respondents might infer several factors. For instance, the more senior worker might be more productive because of experience. Rewarding this worker's choice to remain with the employer could also promote efficiency because it helps the employer avoid search and training costs. In addition, respondents might assume that the more senior worker's needs are greater than those of a presumed newcomer to the labor market, i.e., that she is more likely to have children, a mortgage, etc.

[19] The nomenclature of this school implies that the motivation of interest resides with the individual assessing the outcome rather than the agent, and that it is not solely or even mostly an ethical theory. The desert concept we are investigating here, on the other hand, focuses on the responsibility of the agent, rather than another's attribution of the agent's responsibility, and views this primarily as a moral issue. Regardless of these different points of view, however, attribution theory offers a promising criterion for distinguishing the variables that determine desert.

much of which is summarized in Ronald Cohen (1982) and Weiner et al. (1971). More recently, Lisa Farwell and Weiner (1996) conduct six survey studies with 948 undergraduates that examine the effect of perceived responsibility on fair rewards and punishments in a variety of contexts. Their scenarios include poor class performance because of low effort versus low aptitude, spilling a drink at a party because of gesturing carelessly versus being bumped, and acquiring AIDS because of promiscuous sex versus from a blood transfusion. They find that "a responsibility-based equity rule was considered an appropriate basis for allocations even in the case of AIDS" (p. 878). The Schokkaert and Lagrou (1983) study asks 180 adults to evaluate the fairness of fifteen possible justifications for income differences. The majority responses are generally consistent with rewarding choices that are more highly valued and for which agents may be held accountable, e.g., for responsibility, carrying risks, effort, and education, but not for intellectual versus manual labor, private versus public employment, or white-collar versus blue-collar. Some other results are more ambiguous, such as the support for income differences based on family size or being a scarce specialist. These probably reflect the impact of non-desert justice concerns such as need, in the case of family size, and efficiency, in the case of scarce specialists. This is consistent with the findings of Jasso and Peter Rossi (1977) whose survey indicates that fair earnings increase not only with education but also with number of children and for being married.

To summarize, the evidence from experiments and surveys generally indicates that someone whose contribution is more highly valued is more deserving if that person bears responsibility for the contribution but not if it is due to factors outside his or her control. What still remains unanswered is how, exactly, relevant factors are related to fair allocations. We turn to this question in the following section.

### 4.3. *Equity Theory*

Equity theory originated with the work of sociologists and social psychologists including George Homans (1958); J. Stacy Adams (1965); and Elaine Walster, G. William Walster, and Ellen Berscheid (1973). Similar to attribution theory, proponents of equity theory had ambitions for developing a general theory of social interaction. Unlike attribution theory, however, equity theory was, from its inception, designed with the intent to elucidate the role of justice in social interaction. It has also informed the work of economists, including Reinhard Selten (1978) and Güth (1994). Equity theorists typically trace the origins of their approach to Aristotle's *Nicomachean Ethics* (1925). In the fourth century B.C., Aristotle explicated a theory of justice based on proportionality. In equity theory, Aristotle's proposition is usually expressed for two persons, $A$ and $B$, in terms of outcomes, denoted $O$, and inputs, denoted $I$, as the *equity formula*:

$$\frac{O_A}{I_A} = \frac{O_B}{I_B}.$$

Inputs are usually thought of as a participant's contributions to an exchange and outcomes as the consequences, potentially positive or negative, that a participant has incurred in this connection. Equity theorists posit that people are motivated in their social interactions not only by self-interest but also by a desire to establish or restore perceived equity and to reward or punish others for behavior they perceive as just or unjust, respectively.

Despite the clarity of its theoretical formulation, the predictions of equity theory have rarely been tested with equal rigor. Most studies of equity theory have been theoretical or have attempted to confirm the hypothesized relationship between inputs and outcomes in general terms without specifically establishing the strict proportionality mandated by the equity formula (see, for example, Walster, Walster, and Berscheid 1978). One piece of evidence that

is indicative of the proportionality rule for micro-justice is reported in table 5 of Schokkaert and Overlaet (1989). There one finds different versions of a vignette in which two salesmen are working at a fair, and respondents are to select the fairest division of a premium among them. When the two make equal contributions to the success of the fair, 69 percent to 73 percent of respondents ($N = 39$ and $N = 41$, respectively) split the premium equally or nearly equally (i.e., within $\pm 4$ percent of the total premium). When, on the other hand, one salesman (Peters) has been at the stand twice as much as the other (Johnson), 60 percent to 63 percent of respondents ($N = 40$ and $N = 38$, respectively) give Peters approximately twice the amount of Johnson, i.e., they distribute in proportion to work time (within $\pm$ 4 percent of the total premium). Proportionality emerges even though Johnson normally earns more than Peters and despite the fact that, in one version of this question, Peters is Johnson's assistant and, in the other version, Peters is described as "unqualified" and Johnson as having a "university degree." Along similar lines, Question 5 in Konow (1996) asks 295 respondents to divide \$1200 between two grocery store managers, one of whom works twice as many hours as the other. Here 85 percent choose an exact \$800/\$400 proportional split over a \$600/\$600 equal split or a \$700/\$500 intermediate division. In a macro-justice context, Lisa Ordó ez and Barbara Mellers (1993) find survey respondents prefer income distributions with stronger work-salary correlations.

Economics experiments have also addressed proportionality. In Jeremy Clark's study (1998), 120 subjects vote for one of two plans that generate different distributions of payoffs. In some treatments initial incomes are "earned" based on relative performance on a multiple choice general knowledge quiz. Final payoffs result from initial incomes that are adjusted for costs and benefits that differ within and across plans. Clark concludes that equality is the standard when initial incomes are random but that proportionality can matter when benefit levels are earned. In an experiment with a total of 360 students (Konow 2000), subjects first generate earnings by performing a task, viz., by preparing letters for mailing. Each subject is paired with an anonymous counterpart with whom their joint earnings are divided in the next phase. In one treatment, each subject is credited with 50 cents per letter prepared, and a third party, the so-called "benevolent dictator," is paid a fixed fee to decide how much of the joint earnings to allocate to each of the subjects. Because of substantial differences in task performance, the percentage of joint earnings attributable to one of the paired subjects ranges from 29 percent to 73 percent of the total. The allocations by the benevolent dictators are, on average, in proportion to subject earnings. In fact, depending on the version of this treatment, the fraction of benevolent dictators allocating *exactly*, and not merely *approximately*, in proportion to earnings runs as high as 79 percent.

Other evidence, however, strongly contradicts proportionality. In a different treatment of the Konow (2000) study, one of the paired subjects earns from 25 percent to 75 percent of the joint total. Nevertheless, 87 percent of benevolent dictators choose equal splits, and the mean division of earnings does not significantly differ from one-half. The difference in this treatment compared to the one described above is that all subjects have time to prepare an equal number of envelopes (viz., ten), and their earnings differ solely because of arbitrary differences in the per-letter credits (e.g., one subject in a pair is credited with, say, 65 cents per letter whereas the other is credited with, say, 35 cents per letter). This contradicts the proportionality of allocations to earnings found in the treatment discussed earlier (although note that it is consistent with proportionality of allocations to letters prepared). Thus,

results of economics experiments suggest that proportionality can be found, but that its applicability in different contexts requires further specification.

That the evidence on proportionality from psychology and sociology is not more decisive is probably due, in part, to the fact that those disciplines are primarily concerned with behavior that does not easily yield to quantification, e.g., the quality of marital, race, or workplace relations. In part, though, the challenge to equity theory across all disciplines and the reason, I believe, for its failure to prosper after its initial popularity in the 1960s and 1970s, is the difficulty in identifying a criterion for determining what may serve as an "input." As originally formulated, equity theory permits people to avail themselves of any variables they perceive as relevant to justice. This version is able to explain everything but then, of course, it also explains nothing, since it does not generate refutable propositions. In subsequent work, equity theory has often been interpreted as stating that outcomes be proportional to actual, as opposed to perceived, contributions (e.g., Güth 1994). This rendering, however, runs counter to evidence that not all contributions count for purposes of justice (e.g., Burrows and Loomes 1994; Konow 2000). A growing number of social scientists, however, have merged equity theory with the attribution theory discussed in the previous section as a means to solving this problem, an approach we examine below.

### 4.4. *The Equity Principle*

Leventhal and Michaels (1971) were perhaps the first equity theorists to recognize the need to narrow the class of inputs relevant to fair outcomes and to propose that this distinction be based on the control an agent exercises over inputs. Although equity theorists and attribution theorists have generally gone their separate ways, the suggestion of Leventhal and Michaels is precisely what a synthesis of these two schools implies. Brenda Major and Kay Deaux (1982) report that the fairness of using inputs to determine allocations depends on whether observers view those differences in inputs as within the control of agents. Jerald Greenberg (1979) asks 72 students to choose fair compensation for four workers who differ according to work duration and productivity. He finds that respondents pay more for greater duration and greater productivity, generally proportionately. The strength with which they employ the proportionality rule varies, however, in a patterned way. Previous to the study, subjects completed a so-called Protestant Ethic Scale that measures the degree of agreement or disagreement with various statements about the causal relationship between hard work and success or productivity. Those who scored in the lower quarter on this scale (i.e., see this causal link as weak) tend, in the subsequent survey, to choose significantly more equal payments regardless of productivity, although they still pay proportionately for work duration. These results suggest that fair allocations are in proportion to the inputs an agent is perceived as controlling, but that the classification of manipulable inputs is open to some individual interpretation. Nevertheless, the fact that subject interpretation of relevant inputs varies consistently with their beliefs about individual control over productivity supports the claim that it is the perceived degree of control that governs the choice of inputs.

The *accountability principle* is a precept of justice based on the distinction between factors one can influence, or *discretionary variables*, and those one cannot, or *exogenous variables*.[20] This leads to a generalization of the equity formula, the *entitlement formula*, which expresses the fair allocation, or entitlement, of an individual in terms of outputs, inputs, endowments and costs. Simply put, it calls for an agent's allocation to be in direct proportion to his or her relevant discretionary variables but to be free of any effects of exogenous variables. The results of

[20] This is a principle I proposed in my 1996 paper.

written questionnaires and telephone interviews support this principle. The accountability principle can also be advanced as an explanation for the aforementioned dictator experiment results (Konow 2000). In that study, benevolent dictators allocate in proportion to subject earnings when differences in those earnings are due to discretionary variables, i.e., the number of letters subjects prepare, but allocate equal splits when earnings differences are due solely to exogenous variables, i.e., arbitrary differences in per letter credits.

Extension of this thinking to bargaining and markets suggests a theory of the "just price." Robert Frank (1988) proposes that a fair transaction is one that produces an equal distribution of the surplus from the transaction. This definition has much explanatory power, although I would modify "equal" to "fair," i.e., a fair distribution of surplus is in proportion to each person's discretionary inputs to the transaction. Moreover, one must specify that fair costs are determined by each individual's responsibility for those costs and not necessarily according to opportunity costs or even incurred costs. This interpretation is consistent with survey results reported by Frey and Pommerehne (1993). They ask German and Swiss households to judge the fairness of a price increase for bottled water at a sightseeing point on a particularly hot day when the number of hikers demanding water outstrips the available supply. 78 percent of respondents ($N = 452$) find such a price increase unfair (Question 2), but 64 percent ($N = 148$) consider the increase more acceptable when a hot day normally occurs during the season considered than when it is unforeseeable (implied by Question 5). When the heat is unexpected, the hikers cannot be held responsible, and since the suppliers have not taken any relevant discretionary action, a price increase is not fair. When the heat is to be expected, however, the hikers have the option of bringing their own beverage, and the suppliers could increase their stock of water, possibly at a higher cost that justifies the price increase and results in a fairer distribution of surplus. The results to survey question 2*A* in Konow (2001) indicate that the fair price adjusts for fair costs and creates a fair distribution of surplus. Similar evidence about the just price comes from the ultimatum game experiments of Marc Knez and Colin Camerer (1995) who conclude that subjects determine fair terms of transaction based on fair costs plus a fair division of surplus (which, in their study, subjects appear to interpret egocentrically exacerbated by ambiguity about the value of surplus).

The studies discussed in this section examine the dependence of justice on individual actions. In Nozick's theory, individual choice determines both fair and, in unconstrained exchange, actual allocations. For Buchanan, the chief adversary of justice in free markets is birth, whereas the influences of choice, luck and effort are just. Sorting through the forces that have some claim to relevance, we find that attribution theory provides a powerful criterion for describing desert according to the views of most people. Combined with equity theory, it implies the Equity Principle, i.e., fair allocations across individuals are proportionate only to the inputs they control, a claim that also finds support from surveys and experiments. Therefore, when we refer in our further discussion to equity, it will be in this specific sense. Nevertheless, the results of various studies (e.g., Schokkaert and Capeau 1991; Leventhal and Michaels 1971) indicate that people do not value this precept to the exclusion of other distributive goals but rather weigh this concern against a desire for efficiency and need. The conclusion of the previous three sections is that a descriptive theory of justice should incorporate the three corresponding distribute motives we have discussed. So far we have neglected, however, to tackle certain crucial and difficult questions that have to be answered by anyone evaluating justice in the real world.

For example, among what group of persons should one make the comparisons, how does one judge when relevant information is missing, and what determines the relative importance of each of the principles? These are some of the issues addressed in the following section.

## 5. *Context*

Many investigations into justice have emphasized how views of fairness vary with contextual elements such as the historical terms of transactions, the group of individuals being compared, the type of good being distributed and the framing of information. This section examines the impact of these and other aspects of context on the interpretation of just allocations. A concept defended here is that justice is *context dependent*, i.e., impartial justice obeys general principles, but these principles require a set of people and variables that the context provides.

### 5.1. *Kahneman, Knetsch, and Thaler*

Probably the most widely cited descriptive study of justice in economics is that of Kahneman, Knetsch, and Thaler, hereafter KKT, (1986). This paper is significant for a number of reasons, including its original use of rich vignettes, inductive method, and many findings. In this section I will outline KKT's theory, examine evidence on it, and suggest lessons from their research that, in a broader framework, prove crucial in understanding views of fairness.

KKT propose a theory of fair transactions that depends on the roles of economic agents, the history of transaction terms and framing effects. In particular, their approach deals with the case of *firms* (merchants, landlords or employers) and *transactors* (customers, tenants or employees). From their examples, in which a firm often consists of a single person, it appears that firm means price setter and transactor means price taker. An important construct in their analysis is the *reference transaction*, "a relevant precedent that is characterized by a reference price or wage, and by a positive reference profit to the firm" (p. 729). They propose a principle of *dual entitlement* that governs community standards of fairness:

> Transactors have an entitlement to the terms of the reference transaction and firms are entitled to their reference profit. A firm is not allowed to increase its profits by arbitrarily violating the entitlement of its transactors to the reference price, rent or wage. When the reference profit of a firm is threatened, however, it may set new terms that protect its profit at transactors' expense (pp. 729–30).

KKT offer results from Canadian telephone interviews in support of the dual entitlement principle. Two of their questions appear in table 6 along with results from my survey, whereby KKT's questions have been renumbered to maintain proper sequencing here and their results are indicated in parentheses to distinguish them from mine. Question **7** (KKT's question 14) illustrates the unfairness, according to 91 percent of respondents, of a firm's arbitrary violation of a transactor's reference rent. Question **8A** (KKT's question 8) is a similar scenario, which I replicated ($P = .56$), that differs significantly from **7** ($P < .01$). This provides an example of a firm's right, in the view of 72 percent (75 percent) of my (KKT's) telephone respondents, to change transaction terms at the transactor's expense in order to protect the firm's reference profit.[21]

These and other results from KKT's study (e.g., questions 1, 2A, 2B, 3, 7, 9A, 9B, 10, and 12) are consistent with their claims that firms are entitled to receive a positive surplus but not to change historical terms of transaction arbitrarily, or even due to changes in opportunity costs or demand shifts. More specifically, though, the dual entitlement principle implies a lexicographic

[21] Actually, KKT used four, rather than two, response categories (Completely Fair, Acceptable, Unfair, and Very Unfair) in their study, which they reported in condensed form as Acceptable and Unfair in their paper.

TABLE 6. Questions **7** (KKT 14) and **8A** (KKT 8), *8B* and **8C**

**7.** A landlord rents out a small house. When the lease is due for renewal, the landlord learns that the tenant has taken a job very close to the house and is therefore unlikely to move. The landlord raises the rent $40 per month more than he was planning to do.

Fair (9)% Unfair (91)% $N = (157)$

**8A.** A landlord owns and rents out a single small house to a tenant who is living on a fixed income. A higher rent would mean the tenant would have to move. Other small rental houses are available. The landlord's costs have increased substantially over the past year and the landlord raises the rent to cover the cost increases when the tenantís lease is due for renewal.

Fair 72 (75)% Unfair 28 (25)% $N = 131$ (151)

*8B.* A landlord owns and rents out apartments to tenants who are living on fixed incomes. Higher rents would mean the tenants would have to move. Other apartments are not available. The landlord's costs have increased over the past year. The landlord raises the rent to cover the cost increases when the tenant's leases are due for renewal, even though he could cover his costs with a positive but reduced profit without raising rents.

Fair 38% Unfair 62% $N = 126$

**8C.** A well-to-do landlord owns numerous buildings, one of which is a small retirement home whose tenants are all living on small fixed incomes. A higher rent would mean significant sacrifice to the retirees, and most are too ill to move elsewhere. Nevertheless, the landlord raises their rent to reflect recent cost increases, even though he could still cover his costs and enjoy a healthy profit on the retirement home without raising rent.

Fair 12% Unfair 88% $N = 100$

ordering of the firm's reference profit over the transactor's reference transaction when the two conflict, as opposed, for example, to a tradeoff between firm and transactor surplus. My question *8B* from written questionnaires explores this aspect of the theory: several tenants are affected by the rent increase, other apartments are not available and it is explicitly stated that the landlord could receive a positive but reduced profit without raising rents. Now only 38 percent find it fair for the firm to raise the rent in order to protect its reference profit, a significant 34 percent point drop from **8A** ($P < .01$). Question **8C** from telephone interviews pushes this point further by stating that the landlord is the well-to-do owner of numerous buildings, that some of the tenants are too ill to move, and that the landlord could still enjoy a healthy profit without raising the rent, and only 12 percent now judge a rent increase fair, significantly below both **8A** and *8B* ($P < .01$). These findings suggest that the firm/transactor distinction does not drive these results.

A crucial issue for dual entitlement theory is the determination of reference transactions. KKT argue that, where there is a history of transactions between a firm and transactor, recent transactions are adopted, unless the terms were explicitly temporary. For new transactions, competitive prices are used. Their question 2 illustrates this distinction between established and new transactions with the case of a shop owner who lowers the wage he pays to an employee from $9 per hour to $7 per hour in response to a decrease in the labor market wage. In version A of this question, the employee has worked in the shop for six months, and 83 percent of 98 respondents judge the wage decrease unfair. In version B, the current employee leaves, the employer offers the lowered wage only to the replacement, and only 27 percent of the 125 surveyed find this unfair.

Nevertheless, they find that this rule is not always straightforward. KKT's question 3, which I report in table 7 as question **9A**, involves the same decrease vis-à-vis a reference wage for the same reason as in KKT's

TABLE 7. Questions **9A** (KKT 3), *9B* and *9C*; *10A* and *10B*

**9A**. A house painter employs two assistants and pays them \$9 per hour. The painter decides to quit house painting and go into the business of providing *landscape services*, *where the going wage is lower. He reduces* the workers' wages to \$7 per hour for the landscaping work.
Fair (63)% Unfair (37)% $N = (94)$

*9B. … landscape services. With about the same time and effort, the former house painter's profits fall significantly in his new business. In landscape services the going wage is lower so he reduces …*
Fair 67% Unfair 33% $N = 220$

*9C. … landscape services. With about the same time and effort, the former house painter's profits rise significantly in his new business. Nevertheless, in landscape services the going wage is lower so he reduces …*
Fair 34% Unfair 66% $N = 213$

*10A.* An independently owned *fast food restaurant faces competition from a number of other local fast food restaurants.* The restaurant's prices have been stable for some time. Would you expect the restaurant's prices to its customers to be fair or unfair?
Fair 91% Unfair 9% $N = 259$

*10B. … fast food restaurant is located in an airport where there are limited dining opportunities. …*
Fair 29% Unfair 71% $N = 227$

2A, but now a 63 percent majority finds this fair. They conclude that "the entitlement of an employee to a reference wage does not carry over to a new labor transaction, even with the same employer" (p. 730). Questions *9B* and *9C*, which were posed in my written questionnaires, examine the robustness of this interpretation by stating explicitly the effect on the employer's profit of his changing businesses. Compared to *9A*, the wage decrease is viewed as *fair* by 67 percent of respondents if the employer's profits fall ($P = .49$) but as *unfair* by an almost identical 66 percent if his profits rise ($P < .01$). These results refute KKT's explanation and suggest that this approach can only be saved by amending it with exceptions that seem increasingly ad hoc.

Another more parsimonious statement of the reference transaction is this: "It should perhaps be emphasized that the reference transaction provides a basis for fairness judgments because it is normal, not necessarily because it is just. Psychological studies of adaptation suggest that any stable state of affairs tends to become accepted eventually, at least in the sense that alternatives to it no longer readily come to mind" (KKT, pp. 730–31). I think the relationship between adaptation of fairness judgments, stability and information that KKT identify is an important one, and I will return to it below. Let us ask, however, whether normality is all that is needed for fairness. In table 7, 91 percent of respondents to version *A* of question *10* from my survey expect stable prices to be fair if they persist in the face of competition, whereas version *B* demonstrates that only 29 percent expect stable prices to be fair if they emerge under conditions of limited competition ($P < .01$). Thus, stability or normality *per se* does not confer fairness.

The most significant contribution of KKT's study, I believe, is to our understanding of what one might call *contextual effects*. These are the ways in which information about context affects fairness judgments. Specifically, their research contains astute observations about justice and established versus new transactions, the duration of transactions, competitive prices, stability and adaptation. Indeed, given the seemingly capricious nature of some results and the disagreements sometimes observed, one

might conclude that justice is itself merely a kind of contextual effect. An alternative view is that justice is guided by general principles that are impacted by contextual effects. As KKT point out, "Agreement on general principles of fairness … does not preclude disputes about specific cases" (p. 730). In any case, as evidence presented in this paper suggests, justice is also a phenomenon outside the domain originally addressed by KKT of price changes between firms and transactors: patterned values are observed in levels (e.g., income, wealth, output) and not just changes, in non-market distributions (e.g., gifts, sharing of joint production, government grants) as well as market transactions, and among agents in other roles (colleagues, friends, students). This does not in itself represent a flaw in KKT's theory, but it does indicate the need for a more general approach to account for many findings about justice.

The discussion that follows presents what I think are the main lessons from KKT's study and the research it spawned. This is organized around three groups of issues. First, we consider fairness in *transactions* including fair costs, fair prices and the role of competition. Second, we examine *information effects*, or how people process information about variables relevant to justice in forming their views. Third, we look at how justice views are determined when the metric, or standard of measurement, is the derived *subjective value*.

• *Transactions.* The results to questions 8 and 9 above cast doubt on the lexicographic rule protecting firm profit that is embedded in dual entitlement theory: the fairness of a change in transaction terms is sensitive to the relative benefits to and burdens on the buyers and sellers. An explanation for these results was proposed in section 4.4 of this paper: the just price produces a fair division of the surplus from a transaction. Thus, prices should be adjusted, in questions 8 and 9, in order to share more fairly the lesser or greater surplus associated with the new circumstances. The fair division of surplus, in turn, is governed by the same considerations as other distributions, i.e., one must consider prices in relation to need, efficiency and equity. This interpretation is also consistent with additional KKT results. For example, they find in their (not my) questions 9A and 9B that it is fair for a firm to lower workers' wages to market levels if the firm is making a loss but not if it is making a profit. Also, it is unfair to auction a popular Christmas gift to the highest bidder (question 15), which presumably distributes the surplus disproportionately (and, therefore, inequitably) to the seller, unless the proceeds go to UNICEF, which benefits the needy.

An important question is whether just prices have any impact on actual prices. KKT answer in the affirmative, citing several additional survey results (to questions 17A, 17B, 18A, and 18B). Aiming to test KKT's theory, Steven Kachelmeier, Stephen Limberg, and Michael Schadewald (1991) employ a multiperiod market experiment using 64 subjects with posted bid pricing, i.e., buyers post bids and sellers choose whether to sell. In the first ten periods, the competitive equilibrium results in an equal split between buyers and sellers of total surplus. In the following ten periods, a sales tax increases both the equilibrium price as well as sellers' share of profit in equilibrium. Three treatments are conducted with different subjects under different information conditions. In one treatment, all subjects are informed of the sellers' share of total surplus, in another they are informed of the increased marginal cost and in a control they are informed of neither. Based on KKT, they argue that in the second ten periods buyers will resist price increases under profit disclosure more than under marginal cost disclosure. The former reveals that profit now exceeds the reference profit, whereas the latter provides a rationale for fair price increases based on cost increases. Their predictions are confirmed: although market prices eventually approach the higher equilibrium level for all conditions, the adjustment under profit disclosure is more

gradual and the average price remains lower even in the final period than under marginal cost disclosure. Robert Franciosi et al. (1995) replicate this experiment with 144 subjects and a few alterations, notably posted offer pricing, i.e., sellers, not buyers, post prices and buyers choose whether to purchase. Their results are mostly consistent with those of Kachelmeier et al. except that Franciosi et al. find that the fairness effect dissipates over time as prices converge to the competitive equilibrium. Thus, these studies imply that fairness influences market prices in the short run, but this impact is more likely to be sustained when buyers set prices (e.g., typical labor markets) than when sellers set prices (e.g., usual product markets).

Nothing in the procedures of the Kachelmeier et al. and Franciosi et al. experiments suggests any moral asymmetry between buyers and sellers, i.e., there is no obvious basis for unequal shares of surplus because of, say, need or desert. In the initial periods, price quickly converges to the equilibrium level, which coincidentally produces an equal split of the surplus. In the second set of periods, subjects resist the movement toward an equilibrium that generates unequal shares, when they are aware of this inequality. These findings are consistent with the notion of a fair division of surplus from transactions. In addition, the results suggest a lesson about competition and fairness: in the absence of any explicit information to the contrary, subjects have no basis for resisting competitive prices on fairness grounds. In fact, KKT observe that prices in competitive markets tend to be regarded as fair, according to versions of their questions 2, 3, 4, 9, 13, and of my question 10. We will return to these points below.

• *Information Effects.* As KKT point out, fairness judgments are sensitive to the information provided in a scenario. When information is incomplete, historical, market or stable prices can influence the assumptions people make about factors relevant to justice principles. Here we will consider *information effects*, or how the explicit information in a context affects the evaluation of justice through its impact on the implicit assumptions of the evaluator.

One response to sparse information is simply to assume away any differences across persons relating to justice. This *ceteris paribus assumption* seems most appropriate when the available information provides no basis for such differences. There are many examples from written and telephone surveys of ceteris paribus assumptions about need, efficiency, equity and surplus from transactions.[22] Further evidence is implied by the Roth and Keith Murnighan (1982) experiment, in which pairs of subjects bargain over "lottery tickets" or opportunities to win prizes that differ in value to each player. When the prize values are common knowledge to both players, they tend to allocate lottery tickets unequally so as to equalize expected dollar payoffs. On the other hand, when neither knows the value of the other player's prize, they tend to equalize the lottery tickets, consistent with their making the ceteris paribus assumption about the values of the prizes. The results of the Kachelmeier et al. and Franciosi et al. experiments suggest that subjects make the ceteris paribus assumption about shares of surplus until explicit information to the contrary is revealed. Similarly, one probable reason competition is commonly regarded as fair is because it lacks the disproportionate power explicitly present in non-competitive markets.

At other times, information, although incomplete, can provide a basis for *extrapolation*. That is, the context may contain information from which people can extrapolate to form reasonable assumptions about relevant differences. For example, Weiner and Kukla (1970) find that subjects, using a quantitative scale, infer effort from relative performance. Survey respondents have also been found to extrapolate from a seller's profession to its profitability (Konow 2001). In the current

[22] For instance, see Konow (2001).

study, the results to question 9 in table 7 suggest that respondents use information about the new industry, and perhaps the lower wage rate there, to form the assumption that the employer's profits would fall in his new business were he not to lower his employees' wages. Such extrapolation also provides one explanation for the relevance of historical terms for current transactions: current payments can be based on past ones if the latter are assumed to be fair. This effect is implied by the bargaining experiment of Simon Gächter and Arno Riedl (2001). Their ninety subjects take a general knowledge quiz and are told that past pay was according to performance, where "winner" earnings were double those of the "loser." They then bargain over a fixed sum from positions of strategic equality in which these historical claims are sunk. Nevertheless, both winners and losers largely accept historical payments as the standard for fair and actual compensation (although the two groups also exhibit a self-serving bias).

Finally, KKT note that fairness is often associated with *stability*. If people adapt to stable values because, as they state, "alternatives to it no longer readily come to mind" (pp. 730–31), this represents an information effect. As the results to question *10* in table 7 indicate, however, stable outcomes can also be unfair. Only under a regime of competition is stability associated with fairness in that scenario. One factor that probably contributes to the perceived fairness of stable outcomes is the implicit assumption that they usually obtain because they can withstand or have actually survived competitive threats. At a minimum, stable prices are opposed to expedient pricing policies that respond to unexpected shifts in supply or demand and that, as several KKT examples demonstrate, tend to be viewed as opportunistic and unfair. The mail surveys of a representative sample of 407 Swiss households by Frey and Beat Gygi (1988) lead to similar conclusions. Their results show raising price in response to a demand increase is perceived as less unfair if the demand shift occurs at predictable intervals, alternative supplies exist, buyers are previously informed of and able to prepare themselves against the price increase, and sellers do not profit from the price increase. These results suggest that people oppose price changes that are suspected of forcing an unfair redistribution of surplus to the benefit of the price setter.

• *Subjective Values.* As discussed in section 3.1, people prefer to use derived values as the metric, or unit of account, for justice evaluation. Where possible, then, fairness will be measured in terms of *subjective values* such as pleasure, happiness or utility rather than objective values such as income, wealth or goods. What is the correspondence between the former and the latter? I will discuss three possibilities.

First, as illustrated in examples in section 3.1, people often use levels of satisfaction, pleasure or happiness to form judgments about fair allocations. In economics this is commonly modeled using a function that represents *endstate utility*, whereby subjective values are a function of the final allocations of objective variables. In this case, fair allocations measured in subjective terms may differ from those measured in objective terms because of differences across individuals in utility. As suggested by the discussion of information effects above, however, unless such differences are explicit, people tend to make the ceteris paribus assumption about total and marginal utility such that subjective and objective values lead to the same allocations.

KKT offer evidence of a different avenue of influence for subjective values: the fairness of a change in transaction terms sometimes depends on features that seem inconsequential for final allocations. One instance of this is the difference in fair wages between an established and a new employee in KKT's question 2. Another is their question 4 where a company's 7 percent real salary reduction is unfair according to 62 percent of those surveyed when there is no

inflation (version A, $N = 125$) but fair according to 78 percent when accomplished through salary increases that fail to keep up with inflation (version B, $N = 129$), a significant shift ($P < .01$). Yet another case is based on whether transaction terms are framed as normal or as temporary. For example, in their question 5, a car dealer responds to a shortage of a popular model. In version A, the dealer sells the car at $200 above the list price, which 71 percent of respondents ($N = 130$) consider unfair, whereas in version B the dealer eliminates a previous $200 discount, which only 42 percent ($N = 123$) judge unfair ($P < .01$). In their question 6, the business of a small company has recently not increased as before, and in version A it reduces workers' wages by 10 percent, which 61 percent ($N = 100$) deem unfair, whereas in B it eliminates a previous 10 percent annual bonus, which only 20 percent ($N = 98$) find unfair ($P < .01$). KKT characterize these as framing effects and incorporate this last case into their fairness theory by excluding explicitly temporary transactions from serving as reference transactions.

Consider the following explanations for these effects (i.e., money illusion, established versus new transactions, and normal versus temporary transaction terms) within a framework of justice principles. Various studies (e.g., Kahneman and Amos Tversky 1979) suggest that preferences are determined by gains or losses relative to some reference value as opposed to endstates, whereby losses are coded more heavily than gains of equal magnitude. Survey respondents evaluate the fairness of these changes anticipating their subjective effects on the implicated parties. Specifically, they may incorporate an *endowment effect* (Thaler 1980), that is, they take as the reference value the transaction terms to which the parties have adapted based on agreements or understandings about relevant values. Thus, since the established employee in KKT's question 2 has an endowed wage but the newcomer does not, it is unfair to reduce the wage of the former, since it unjustly imposes a loss on him and provides a gain to the employer. Similarly, workers are typically endowed with a nominal, not real, salary, so the salient reference point for gains and losses in KKT's question 4 is nominal. Finally, it is fair to eliminate a discount (KKT 5) or a bonus (KKT 6), since they are explicitly temporary and not endowed, whereas it is unfair to impose unfavorable terms on another that deviate from the norm. Max Bazerman (1985) reports evidence suggesting that such an endowment effect influences the wage decisions of real arbitrators. Sixty-nine experienced arbitrators are asked to evaluate 25 hypothetical wage cases and to assign subjective weights to various criteria. Although arbitrators differ among themselves about the significance of each factor, the most common decision is to maintain the status quo in levels by adjusting wages by the average negotiated increase in the industry. This policy distributes the changes fairly across wage earners. Casual empiricism, I believe, also supports the endowment effect as a persuasive explanation for many rules that are defended as fair. For example, certain rights and benefits are often "grandfathered," or available to previous recipients but not to newcomers. Such clauses, frequently codified in law, protect the endowment of established beneficiaries without imposing a subjective loss on unendowed newcomers.

These two approaches, endstate utility and endowment effect, offer different, and often conflicting, subjective values for judging fairness. Evidence has been presented in favor of both effects. Which will serve as the metric of justice seems to be resolved in the same manner as the choice of objective versus subjective values: it depends on the information provided by the context. If the stated context emphasizes levels rather than changes, justice evaluators tend to focus on endstate utility. If, on the other hand, changes and endowments are salient, people will be sensitive to endowment effects. A

third possibility is that people form a composite judgment involving both effects, each weighted according to its salience in the context. This is exactly the conclusion at which Eldar Shafir, Peter Diamond, and Tversky (1997) arrive in their study of money illusion: people tend to adopt the frame that is presented but, when confronted with multiple representations, they form an average that is weighted by the salience of each. Thus, the wage cut in KKT's question 2A is unfair because the worker's explicit tenure with the employer stresses the endowment effect, whereas it is fair to offer the reduced wage to the newcomer in version 2B since he will not experience that as a loss, and the employer can achieve fair levels by complying with the more salient (presumably competitive) market wage. Although Bazerman finds that arbitrators focus on the fairness of wage changes, consistent with an endowment effect, he also finds that the financial health of the firm figures prominently in their considerations, suggesting a concern about fairness in *levels* of surplus between firms and workers.

This subsection sought to illustrate how the empirical work of Kahneman, Knetsch, and Thaler helps to clarify important contextual effects. These involve the interpretation of fairness when transactions are salient, information effects, including the ceteris paribus assumption, extrapolation and stability, and subjective values, including endstate utility, the endowment effect and a weighted average of these two.

### 5.2. *Theories of Local Justice*

Some researchers have concluded that justice does not yield to the level of abstraction that is associated with "general" or "global" theories. Instead, they argue that, at best, one can uncover an array of principles that are "local," or specific to individual contexts. These advocates of what are sometimes dubbed "phenomenological" theories of justice point to the wide variation in rules, arguments, legislation, court rulings, practices and customs pertaining to the distribution of socially valued goods. They claim the principles of justice differ according to the set of persons, good, institution, culture, country, region, historical context and precedents. Carried to the extreme, this approach views justice as atomistic and precludes any theory of it. The usual more moderate version entails many unrelated principles, each confined to its own specific context.

We begin by examining briefly the work of three scholars of local justice: Jon Elster (1992), Michael Walzer (1983), and H. Peyton Young (1994). These authors share certain common interests, goals and conclusions. They all articulate a context specific view of justice. They also define justice as in very broad terms, encompassing a very wide range of issues including the distribution of not only material wealth but also political power, family privileges and public duties. In particular, they tend to focus on fair rules of distribution, especially for goods the allocation of which is problematic. For example, all three deal with military service (conscription and/or demobilization) and access to higher education, Elster and Young examine kidney transplants and allocation of building space, and Walzer and Elster treat immigration.

On the other hand, there are certain differences among the three, if only in their method and emphasis. To some extent, they vary in the degree of context specificity they argue, where Walzer challenges most vigorously the applicability of any theory. In terms of approach and method, Elster views justice more from the perspective of sociology, Walzer from political philosophy and history, and Young from economics and mathematics. Finally, although applications of justice are highlighted in the work of all three, I think it is fair to say that Walzer's emphasis *relative to the others* is normative, Elster's descriptive and Young's policy-oriented. Taken together, the major works of these three authors on justice form an excellent and wide-ranging case for local justice. I will

begin by summarizing briefly the arguments of each.

Michael Walzer begins his book, *Spheres of Justice* (1983), by defining the subject matter of distributive justice very broadly: "Nothing can be omitted" (p. 3). He rejects the possibility of a theory of justice and argues "that to search for unity is to misunderstand the subject matter of distributive justice" (p. 4). Instead he advances the radical claim that "the principles of justice are themselves pluralistic in form; that different social goods ought to be distributed for different reasons, … and that all these differences derive from different understandings of the social goods themselves—the inevitable product of historical and cultural particularism" (p. 6).

In terms of identifying what justice is (as opposed to what it is not), Walzer distinguishes "simple equality," or equal allocations of a social good across all individuals, from "complex equality." Under complex equality, given the socially understood autonomy of each sphere, it is not necessarily unjust that some in the sphere of politics are more powerful or that some in the sphere of money are more wealthy, but it is unjust, for example, for politicians to use their power outside their sphere to acquire money, or for the rich to use their wealth to secure political influence. The most important distributive issue is membership, i.e., who belongs to a sphere, including family, industry, neighborhood, and, first and foremost, the political community.

Within each sphere, justice might require simple equality, e.g., equal basic education, or inequality, e.g., unequal professional training, which he also calls complex equality. Walzer seems to use complex equality in at least two senses: to denote the autonomy of spheres and to connote a deviation from simple equality within a sphere. It is unclear where the equality is in this second type of complex equality. Perhaps it means the further subdivision of spheres into members who are then equal within each sphere, but what guides this division and delineation? Presumably these questions are determined, as with social goods, by the understandings or meanings people attach to them. But from whence do these meanings derive, and, if from history and culture, how? It seems they are given wide berth: although Walzer downplays such cases, he notes that one can think of a society with a moral right to haircuts (p. 88 n.) and even the Indian caste system can be just (pp. 313–15). Ultimately, it is unclear what qualifies here as first principles and, consequently, what, if anything, is generated in the way of refutable propositions.

In his book *Local Justice* (1992), Jon Elster's goal is more descriptive and narrow than Walzer's: "I consider the conceptions of justice held by actors who are in a position to influence the selection of specific procedures or criteria to allocate scarce resources" (p. 5). Although he also expresses skepticism about the prospects for a robust theory of justice, he is more optimistic than Walzer. Elster favors a list of allocative principles over global theories. In his book *Equity: In Theory and Practice* (1994), H. Peyton Young's goal is closer to Elster's than Walzer's: "The aim of this book, then, is to examine how societies solve 'everyday' distributive problems" (p. *xii*). Although Elster and Young emphasize justice principles as mechanisms, Young in particular concentrates on the technical difficulties of putting justice into practice. Much of the motivation behind Young's work (and, to some extent, Elster's) are problems of indivisibility and heterogeneity that crop up in designing policies for the distribution of scarce resources such as kidneys, apportionment of congressional seats, real assets in inheritances and child custody. They note the large assortment of mechanisms that have been used to regulate the allocation of such resources including proportionality, queuing, rotation, lottery, seniority and precedent.

The rich description and incisive analysis of Elster and Young instill a profound appreciation of the challenges facing allocators. The problems and their solutions are not transparent, and the consequences are often not trivial. There are many situations,

however, in which such problems are not insurmountable or even significant. For example, many goods are, for all intents and purposes, arbitrarily divisible, e.g., food, energy, money denominated assets. Other goods are convertible into a divisible and homogeneous form, e.g., the assets of an estate may be sold and divided among the beneficiaries. Nevertheless, it is quite correct that attributes such as indivisibility (or lumpiness) and heterogeneity may require special measures. In fact, these problems might obstruct any solution that most people would consider genuinely fair.

A lack of uniformity and exactitude in practical rules for achieving justice does not, however, imply that the values that underlie and motivate those rules are equally diverse and ambiguous. There are really two distinct questions. An analogy may be drawn to efficiency. The Pareto and Compensation Principles, for example, are conceptually clear standards even if, say, institutional constraints prevent their full implementation. Similarly, if context precludes a "first-best" justice solution, principles of justice may guide one to a "second-best" justice solution. Elster and Young seek rules or mechanisms for implementing just outcomes. The concern of the present paper, on the other hand, is with the shared views of justice, even if its realization is problematic or impossible. The former topic is crucial if justice is to be more than merely an abstract concept. The latter question, however, is also important, not only because of the frequent consensus on what measures justice requires, but also as a means of evaluating alternative mechanisms precisely when there are practical obstacles, discord or uncertainty.

I believe that there are at least four important lessons about contextual effects that can be gleaned from these theories of local justice. Views of justice are affected by how the context affects or produces *scope effects*, which pertain to the choice of which individuals and allocations to compare, *competing forces* such as self-interest, the *weighting of justice principles*, or the relative importance of different justice principles in a given context, and *procedural justice*, or process fairness, which includes the study of mechanisms aimed at implementing the justice principles. Below I will explore these themes as well as evidence that bears on each.

• *Scope Effects.* When making fairness judgments, people must choose the set of individuals and allocations to compare. Scope effects refer to how context affects perceived fairness through its impact on these choices. Walzer treats the choice of persons, which he calls membership, extensively. His concern is with how membership influences and is influenced by distributive decision-making. He argues that no aspects of justice, including membership, are immutable, but boundaries will emerge, which will be regarded for some time by implicated parties as fair. Moreover, he claims that there is a moral asymmetry between members and non-members: for example, citizens of a country have certain rights and privileges that are not accorded non-citizens. Walzer asks how the boundaries between individuals should be constituted, whereas the current paper asks how the choice of individuals being compared affects views of justice.

Although this paper promotes a general theory of justice, empirical results and everyday observations suggest that, in a particular sense, people solve justice problems in a "local" way. Specifically, membership, or the "reference group" as it is known in social psychology, is handled as other contextual issues: people take the group that seems most proximate in terms of comparability and salience and then apply general principles. Thus, workers make comparisons to co-workers, children to their siblings or peers, residents to neighbors and experimental subjects to other subjects. This bolsters Walzer's claim about the importance of membership. On the other hand, I am unaware of any evidence on the putative fairness of the privileged status of members. So far as Walzer's examples accord with intuition, however, one need not appeal to a

separate principle of justice. The maintenance of boundaries around nations, firms, labor unions, families, etc., can be traced to a practical requirement for efficient social planning and coordination as well as to the endowment effect.[23]

Is membership, as Walzer suggests, usually well-defined, or is it sensitive to the information available? The results to survey question 9 of Konow (2001) suggest the latter. Here the CEO of a multinational corporation earns $9 million per year, which is described in version A as "around that of CEOs at comparable corporations" and in version B as "around 300 times that of the average worker at his corporation." The same salary is judged fair by 70 percent of 137 respondents in version A but by only 43 percent of 150 respondents in version B ($P < .01$). It appears that the salient reference group in version A is the CEO's professional cohorts whereas in version B it is his fellow employees. Dictator experiments by Eckel and Grossman (1996) and myself (2002) have also demonstrated that the generosity of decision makers depends on the identity of counterparts. In those studies, dictators contribute significantly more when their counterparts are charities than when they are student cohorts. Thus, casual empiricism, surveys and experiments suggest that membership is important for justice, that people typically resolve it locally, relying on the available context, but that membership is neither uniquely defined nor necessarily stable.

The second issue is the scope of comparison for allocations. For example, scope effects can materialize in determining whether a family's income is relevant to the price it should pay for telephone services or electricity. Here the just price might be a function not only of the surplus from this transaction but also of the distribution of income or profit external to it. The set of relevant allocations might also vary intertemporally and include past or future allocations, e.g., should income taxes be based on lifetime income or be adjusted by income averaging? The scope of both allocations and individuals can be involved, e.g., should descendents of slaves be compensated for the unfairly appropriated product of their ancestors' labor?

Survey and experimental studies help address such matters. In question 8 of Konow (2001), a furniture manufacturer sells chairs to a retailer subject to price controls that allow the furniture manufacturer only a very small and unfair profit on the chairs. This is judged unfair by 79 percent of 88 respondents when chairs are the only item the furniture manufacturer produces but as unfair by only 35 percent of 85 respondents when chair sales represent a small fraction of the furniture producer's otherwise profitable business ($P < .01$). Thus, the fairness of this transaction is sensitive to information about the parties' allocations from other transactions. Håkan Holm and Peter Engseld (2001) conduct ultimatum and dictator experiments in which responders (recipients) are identified as low income (having annual incomes below about $10,000) or high income (having incomes above about $30,000). Similar to the dictator experiments with charities and students reported previously, they find that proposers (dictators) make significantly greater proposals to low-income responders than to high-income responders and, in treatments that permit this choice, are significantly more likely to choose as their responders low income subjects. Here again, the fairness of one allocation, viz., the division of the experimental earnings, is affected by information about other allocations, viz., income from non-experimental sources. These results support a type of locality, not in the sense of context specific, but rather as general principles that are interpreted in the context. In

[23] That is, as previously explained, current disparities in levels across different groups may be justified on fairness grounds if the levels are endowed. Opening up membership to unequal groups in order to equalize levels causes gains and losses that generate unequal subjective values that are dependent on changes rather than levels.

particular, scope effects indicate that people evaluate fairness using both the individuals and the allocations suggested by the context.

• *Competing Forces.* By definition, the only general proposition about justice that phenomenological theories produce is that none exists. One way, therefore, to test them is to examine differences and similarities in justice values across different "boundaries." One boundary that Walzer, Elster, and Young all identify as relevant to justice is that of nations. Various studies have drawn conclusions about justice based on surveys or bargaining experiments conducted in different countries. Here I will review evidence from several such studies and examine whether the pattern of behavior and attitudes they uncover is best explained by culture specific conceptions of justice or, alternately, by the influence of goals that compete with universal justice principles.

Roth et al. (1991) run a multi-round ultimatum game in the United States, Slovenia, Japan, and Israel, and find significant differences in offers and that tend to increase over rounds. Nevertheless, modal offers are still all in the range of 50 percent to 40 percent by the final round. Offers in the same range emerge from a replication by Robert Slonim and Roth (1998) in the Slovak Republic and from a two-round ultimatum experiment by Lisa Cameron (1999) in Indonesia with stakes that vary by factors of 25 and 40, respectively. Probably the most dramatic cross-cultural study of this sort is Joseph Henrich's (2000) single round ultimatum experiment with 21 pairs of the Machiguenga, a people of the Peruvian Amazon, and fifteen pairs of UCLA graduate students using stakes equivalent to a little more than two days labor. Comparing his results to those of Roth et al., Cameron (1999), and Hoffman et al. (1994), Henrich finds small and sometimes significant differences across subject pools, but the Machiguenga are the most notable outliers where the modal offer is 15 percent, the mean offer is 26 percent, and low offers are rarely rejected. In a subsequent paper that expands this experiment to 15 small-scale societies, Henrich et al. (2001) find that offers vary widely but the mean offers of the Machiguenga remain the lowest of any society studied.

Several explanations are possible for observed differences across cultures. Roth and his colleagues consider the hypothesis that subjects share the same fairness values but differ in degrees of bargaining aggressiveness. If that were the case, though, one would expect higher rates of disagreement in countries where offers tend to be low, which they do not find. Thus, they conjecture that "the observed subject-pool differences are cultural in character" (p. 1092). Similarly, Henrich concludes that the Machiguenga do not possess the same sense of fairness as Westerners, indeed, perhaps no such sense at all.

An alternate hypothesis is that subjects share a common concept of fairness but that they differ in their willingness to act on it. Even within countries there is wide variation in levels of generosity, so why should there not be similar differences across countries? This simply suggests that the tradeoff between self-interest and justice differs *on average* across cultures, but not that self-interest and justice mean something different in different places. Moreover, a greater role for self-interest, as opposed to the bargaining aggressiveness Roth et al. mention, does not imply higher rates of disagreement in the ultimatum game: in the case of extreme self-interest, the proposer always offers the smallest unit, the responder always accepts, and disagreement never occurs. This is a close description of the Machiguenga where only one of 21 offers was rejected, even though their average offers were much lower than among other cultures. In fact, Henrich et al. seem to move in this direction, attributing the observed experimental differences to the effects of social institutions on incentives to act on self-interest, fairness or reciprocity, and noting how the experiment, therefore, is likely construed by subjects given the contexts familiar to them.

Bargaining experiments might prompt a distinct motive, usually called reciprocity, that leads agents to reward or punish others for their compliance with or deviation from social norms such as fairness (see Rabin 1993 for a formal model of this). Numerous experimental and theoretical studies have examined reciprocity as a force separate from distributive motives such as fairness, e.g., Fehr, Gächter, and Georg Kirchsteiger (1997); Joyce Berg, John Dickhaut, and Kevin McCabe (1995); James Cox (2003); Armin Falk and Urs Fischbacher (1998); Gary Bolton and Axel Ockenfels (2000); Fehr and Gächter (2000) and references therein. Although reciprocity experiments have been replicated in several countries, there is still little in the way of cross-cultural studies. But the central question of the current study is not whether there are variations in the willingness to reciprocate fair behavior in different societies, or in the relative importance of self-interest versus fairness, or even in expectations of fairness, but rather whether the justice concepts themselves differ across cultures. Unfortunately, these studies on bargaining and reciprocity, while shedding light on important behavioral phenomena, do not provide an answer to this question.[24] The Frohlich and Oppenheimer (1992) experiments and replications discussed in section 2.2, which seek to reveal distributive preferences by inducing objectivity, bring us closer to this question. The similarity of results across five countries suggests that, when subjects are distanced from their self-interest, cross-cultural differences diminish, although there is no uniform evidence on whether fairness motivates their decisions. The bargaining study of Nancy Buchan, Eric Johnson, and Rachel Croson (2003), on the other hand, also elicits fairness attitudes from U.S. and Japanese students, but since subjects express their views following the bargaining phase, these judgments are likely biased by rationalization (see Babcock et al. 1995 on this).

Survey studies of justice attitudes further separate subjects from their self-interest by removing any material stake. In addition, they can address what objective parties consider fair for others, not what they would choose for themselves, not what they consider fair for themselves, and not even what they think should be done (which is potentially distinct). The results of such studies across different countries are remarkably similar, often identical. For example, several of the hypothetical scenarios Kahneman, Knetsch, and Thaler ask in Canada have been presented to diverse populations in other countries. When asked about an increase in the price of snow shovels after a snowstorm, 82 percent of 107 Canadian respondents view it as unfair (KKT 1986) versus a virtually identical 83 percent of 215 in Germany and Switzerland (Frey and Pommerehne 1993). Cutting an established worker's wage because of increased unemployment is seen as unfair by 83 percent of KKT's 98 Canadian respondents and also by an identical 83 percent of 258 U.S. respondents (Konow 2001; question 8A in the current paper provides another example of similar responses with these two subject pools). Robert Shiller, Maxim Boycko, and Vladimir Korobov (1991) pose several questions

[24] I believe there are a number of additional reasons to be skeptical of the Machiguenga results as they bear on this question. There is not only the possibility that the Machiguenga are more self-interested, but also several other explanations. For instance, the goal of the experiment was explicitly presented to the Machiguenga as "playing a fun game for money." Presumably familiar with games but not laboratory experiments, they (more than U.S. college students) might have understood this to be a game of luck, the goal of which was to win the jackpot, not to distribute earnings. In fact, responders indicated they viewed their random selection into that role simply as bad luck, and those few proposers who did offer 50 percent later explained it based on fairness. Moreover, as Henrich reports, the Machiguenga are self-sufficient: they produce mostly for their own needs, and "anonymous transactions are almost unknown." They have little need for money and rarely work for it. Consequently, even though they live in a developing country, the stakes of less than $7 they played for might not have presented them with as significant a moral decision as that faced by UCLA students who played for $160.

inspired by KKT in telephone interviews with U.S. and Russian respondents. Even in countries with such disparate economic and political histories and before the implementation of fundamental market reforms in Russia (interviews were administered in May 1990), people express strikingly similar views of fairness. Sixty-six percent of 131 Russians and 68 percent of 119 Americans find it unfair to raise the price of flowers because of a holiday ($P = .78$), 66 percent of 131 Russians and 70 percent of 120 Americans deem it unfair to raise the price of tables without a change in costs ($P = .46$), and 57 percent of 98 Russians and 61 percent of 115 Americans judge it fair to raise rents on summer homes that are now more conveniently located because of a new railway line ($P = .58$). Not all such studies have revealed such a high level of international agreement (I will consider some others below). But the increased coincidence of results usually found when justice values are more specifically targeted is noteworthy. It lends credence to the view that whatever variation in generosity one observes in experiments is due more to differences across cultures in the willingness to act on justice than to differences in the concept of justice itself.

Justice is one part of the whole—it does not exhaust the forces that impact allocations. The danger, if one construes justice too broadly, is of failing to see the trees for the forest. Fairness often competes with self-interest, and Fehr and Schmidt (1999) suggest how the strategic environment can affect which motive dominates. In other social interactions, such as parenting, other motives such as love and unconditional altruism might figure more prominently. Similarly, kind and harmful acts among colleagues or neighbors are probably motivated less by love or fairness than by opportunities for reciprocity. As this subsection has attempted to demonstrate, it is important to be vigilant about identifying the distinct role of justice among distributive forces.

• *Weighting of Justice Principles.* In contrast to the evidence presented above, some survey studies suggest significant cultural differences in justice attitudes. For example, Gaertner et al. (2001) construct a scenario in which a small society can fund the basic training of a handicapped person, which evokes a concern for need, or finance the more advanced education of an intelligent child, which implies a greater economic benefit and, hence, a concern for efficiency. A majority of university students in all countries studied prefers helping the handicapped person but the strength of support differs by up to 27 percent, being weakest in two newly liberalized Eastern European economies. Conclusions about fairness from this study, however, must be tempered by the fact respondents are asked to choose the alternative they think should be realized, not the one they consider most fair. This opens the door for the competing forces mentioned above. Virginia Murphy-Berman et al. (1984), on the other hand, explicitly elicit fairness judgments about the distribution of a bonus between a needy worker and a deserving worker. They find college students in India were significantly more inclined than their U.S. counterparts to favor the needy worker.

Although the authors of these two studies lean toward the view that justice norms are culturally relative, this does not follow if justice is a multi-criterion concept. By analogy, the assumption of self-interest does not imply that everyone derives the same utility from the same set of goods. There are national differences in commodity preferences—why should the same not be true of preferences for justice principles? This does not mean that justice is idiosyncratically valued (in fact, there is probably less cultural variation in preferences for justice than for goods). Instead, it merely implies that the information, experiences and expectations given by the context determine the interpretation of the principles and the weight attached to each. The national differences

observed in the Gaertner et al. study could be due, not only to differences in forces other than justice, but also to the greater wishes and expectations of inhabitants of economies in transition for efficiency and growth. Similarly, the greater emphasis of Indian students on need presumably reflects the greater awareness and reality of substantial material need in that society.

In a survey study of the general public in thirteen countries that include the United States, Japan, and Western and Eastern European countries, Duane Alwin, Galin Gornev, and Ludmila Khakhulina (1995) predict variations in fairness judgments based both on justice principles as well as on culturally determined perceptions. They find significant differences, including with respect to equal opportunity and need satisfaction. Nevertheless, a majority in each country agrees that equal shares of income and wealth are not fair and that those who work harder deserve to earn more. Yoshihisa Kashima et al. (1988) report that Japanese and Australian university students exhibit preferences for equality, equity, and need, but that there is a weakly significant difference in the emphasis each places on the first two goals. These and previously discussed results seem more convincingly explained by culturally dependent weights on justice principles than by ad hoc assumptions about culture specific norms, because the former provides a more plausible account of the pattern both of similarities as well as of differences across countries. Indeed, the greatest challenge with cross-cultural studies is typically to explain, not the differences, but the striking preponderance of similarities between people in different countries. These similarities surface, not only in views expressed in surveys (responses to questions in the Fair/Unfair format reported here are no more than 4 percent apart), but also in behavior from experiments (in six of seven countries Henrich 2000 cites, modal offers in the ultimatum game are 40 percent to 50 percent).

We have examined some evidence on the claim of local justice of culture specificity, but the strongest argument against phenomenological theories is probably a persuasive general theory. It is interesting that, when pressed to generalize, advocates of local justice often come up with rules that resemble the same three principles we have identified here. Walzer, for example, lists three distributive principles: need, desert, and free exchange (pp. 21–26). In his scheme, free exchange replaces efficiency, but this substitution makes sense if one considers Walzer's emphasis on mechanisms and the putative strength of free markets as the usual mechanism for achieving efficient outcomes. Elster states four lexicographic propositions (p. 240), which I paraphrase as follows: (1) maximize total welfare, (2) deviate from (1) if necessary to ensure a minimum level of welfare, (3) deviate from (2) if people fall below the minimum level because of their own choices, and (4) deviate from (3) if the failed choices are due to conditions beyond their control. Although our principles are not ranked, Elster's proposition (1) is a clear call for efficiency, and (2) is a statement of basic needs. Propositions (3) and (4) are reminiscent of desert, whereby individuals are rewarded or punished for the choices they control but not for the ones they do not. Young's list is more a set of policy rules than values, but it is interesting that he supports the notion of trade-offs among a few principles and that he cites the use of rules that reflect the three principles of this study (p. 28). He notes that the point system for allocating kidneys in the United States is based on three criteria: (1) efficacy, or the likelihood the transplant will be a success, (2) need, or the lack of alternatives such as dialysis, and (3) disadvantage, which compensates for the bad luck of having a kidney that is hard to match. Efficacy is an obvious counterpart for efficiency in this context: a higher probability of success, ceteris paribus, means a greater expected benefit. Need is even more obvious. Disadvantage

reflects the desert norm: individuals with difficult to match kidneys are compensated because they are not responsible for that unfortunate fact.

• *Procedural Justice.* Studies of local justice frequently treat not only *distributive justice*, or fair outcomes, but also *procedural justice*, or fair processes. In fact, one of the most significant dividends from this school is what it teaches about fair practices, customs, rules, policies and laws. Procedural justice can be viewed in two ways: as the application of distributive justice or as something distinct.

On the one hand, just procedures can help realize just outcomes. The procedures are then means for fulfilling distributions prescribed by the principles of distributive justice. It should be noted that, as a matter of terminology, principle and procedure are sometimes used in different senses in the justice literature. For example, many advocates of local justice refer to lotteries, rotation and queuing as principles, whereas I call them procedures or mechanisms and reserve the term principle for a higher level of abstraction, both for distributive and procedural justice. Local justice theorists do, however, distinguish levels of generality. Elster and Young note that, when an item is indivisible, a lottery gives equally deserving individuals an equal chance. This can be seen as a second best solution: when the context complicates or precludes ex post justice, this mechanism at least creates ex ante justice. Rotation might similarly help with indivisible or imperfectly divisible benefits or burdens. Young points out that rotation also eliminates the tension between the ex ante and ex post justice of a lottery. Viewed as means to an end, the desirability of a procedure depends on how well it satisfies potentially conflicting distributive principles in the context. For example, shared custody might be a practical solution in the case of divorce, whereas it could simply be too costly in efficiency terms to train all draft-age men for, say, a few months of service rather than simply selecting at random the needed number to serve for several years. Elster traces queuing to desert and need. The relationship to desert seems correct in situations in which purchasing power depends mostly on variables for which people are not responsible (e.g., luck, birth) and willingness to wait depends more on variables for which they are responsible (e.g., effort, choices). Queuing probably also improves allocations to more needy persons. Even efficiency might be served to some degree (although presumably less than with price rationing) as higher valued buyers, ceteris paribus, will be more willing to wait. Thus, fair processes may be grounded, in part, on these principles of distributive justice.

On the other hand, some argue that procedural justice is valued for itself, independent of outcomes. Indeed, Nozick's approach (section 4.1) has been characterized as the extreme case of procedural justice since allocations are judged (almost) entirely based on the processes by which they obtained. Juridical applications have figured prominently in much of this literature from the pioneering work of John Thibaut and Laurens Walker (1978) to that of Tom R. Tyler and E. Allan Lind (2000). The growing significance of process over outcome is also observed in the arena of political philosophy and theory, where the theme of discourse looms large. Philosopher and social theorist Jürgen Habermas (1984) proposes a theory of *communicative action*, which introduces a process of inclusive and rational discourse aimed at attaining agreement among parties. Habermas and political scientists, such as John S. Dryzek (1990), advocate an application of this to the public sphere called "deliberative democracy." This design has been associated with justice, and morality in general. In fact, political scientists Tracy Sulkin and Adam Simon (2001) conduct ultimatum games the results of which indicate that deliberative opportunities create both more just outcomes as well as enhanced perceptions of fairness.

In economics, Sen has been an important contributor to clarifying the distinction between process and outcome and to stressing the importance of process for social choice theory (1995). Frey and Stutzer (2001a,b) distinguish outcome utility from process utility and propose measuring the latter using reported "satisfaction with life." Specifically, in support of claims regarding deliberative democracy, they offer evidence that people derive procedural utility from the ability to participate more directly in the political decision making process. Using data from Swiss cantons, they report that in jurisdictions with higher degrees of direct democracy, the population is more satisfied, both because of more satisfactory outcomes as well as enjoyment of greater participation rights. One outcome they cite (2001b) concerns compensation of public employees: more directly democratic institutions restrict the ability of politicians to "buy" the support of low-ranked public employees, resulting in lower compensation to them. High-ranked public employees, on the other hand, must be compensated with higher pay for their reduced power under direct democracy. A second outcome they note is that inhabitants of more directly democratic cantons are more satisfied, controlling for demographic variables, income and population size. As evidence of procedural utility, Frey and Stutzer (2001a) point to the greater benefit to Swiss nationals in comparison to foreign residents. In particular, they attribute this difference to the *existence*, rather than the *activation*, of participation rights of the nationals.

Do people not only value procedures above and beyond their outcomes but also specifically value them as being *fair*? A frequent refrain in this paper is that social behavior and social preferences do not necessarily signify a concern for justice but instead could be motivated by reciprocal altruism, familial responsibility, friendship or even self-interest. Paul Anand (2001) offers evidence from a survey of 130 British voters that both outcomes and procedures matter to perceptions of justice. Using scenarios from politics, healthcare, the market and the workplace, he concludes that people view as more fair procedures that permit them greater participation, freedom and information. The empirical study of procedural justice by economists is in its infancy, but it represents an exciting and important direction of research.

### 5.3. *Context Dependence*

We have examined contextual approaches to justice and some lessons derived from evidence on them. The work of Kahneman, Knetsch, and Thaler contributes to our understanding of fair transactions, information effects and subjective values. The studies of Elster, Walzer, Young, and Frey and Stutzer, among others, help to clarify issues of membership, competing forces, the weighting of justice principles and process. Social scientists, and economists in particular, are relative newcomers to the study of justice. It should not be surprising, then, if time and effort are needed to sort through these so-called contextual effects and to identify the general forces at work. This is not unlike past experience where, in the early stages of developing theories of markets or efficiency, general principles were obscured by indivisibilities, discontinuities, heterogeneity, informational imperfections and institutional constraints. Nevertheless, as Walzer acknowledges, the existence and validity of a general theory of justice can only be determined by means of empirical work: "It may be the case … that certain internal principles, certain conceptions of social goods, are reiterated in many, perhaps in all, human societies. That is an empirical matter. It cannot be determined by philosophical argument among ourselves—nor even by philosophical argument among some ideal version of ourselves" (p. 314, n.).

The idea running through this section is that justice is a *context dependent*, but not *context specific*, phenomenon. That is, its principles do not change according to

context. Instead, justice is a general phenomenon, and it is a potential, if not always realized, force across many contexts. The effects of context should also not be seen as contamination of some ideal, because no such pristine context-free justice exists. Justice evaluation, for example, requires a reference group, or choice of relevant individuals, to which to apply the principles, whether it be one's friends, colleagues, neighbors, citizens or all the people of the world, and justice principles provide no guidance on such questions. Context is the indispensable element that supplies the people, variables, time framework and weighting of principles that result in justice preferences. Because individuals may interpret context differently, unanimity is rarely found, but the high level of agreement usually observed and the patterned variations consistent with the contextual effects discussed here indicate that justice is not arbitrary, idiosyncratic or capricious. Nevertheless, the study of justice requires an acute awareness of the important but often subtle role of context.

### 6. *Pluralistic Justice*

Previous sections have classified and aimed to synthesize theories of justice within four distinct elements of an integrated theory. We conclude with an even broader attempt at synthesis that places the proposed theory in the context of multi-criterion, or pluralistic, justice theories, and considers evidence on preferences over the multiple principles.

In social psychology, one of the leading pluralistic approaches is that of Morton Deutsch (1985), who proposes three principles, viz., equality, equity (or proportionality) and need, which in his scheme are specific to different contexts. David Miller (1976) advocates a system based on desert and need in which, similar to the current paper, social context affects in a systematic manner the weight attached to each justice principle as well as the importance of justice relative to other goals (he also names rights as a principle but argues that it mostly falls away in modern market economies). To my knowledge, the first statement of three principles resembling those here is due to Frohlich and Oppenheimer. Based on their experimental study of preferences for distribution mechanisms, they speculate that "distributive justice involves the competing claims of entitlements, need, and the desirability of preserving incentives" (1992, p. 176), which they later call just deserts, need and efficiency (1994, p. 152). Moreover, they conclude that "If an ethically problematic situation involves a conflict between competing values, then the strength and weight of those values have to be taken into consideration in the determination of what is fair" (1992, p. 176). Frohlich and Oppenheimer do not formally state the three motives in detail or test them empirically, but such a formulation has been proposed and tested using surveys (Konow 2001). Dictator experiments designed to test equity and need (Konow 2000, 2002) establish the relevance of those principles when monetary stakes are involved.

John T. Scott et al. (2001) propose a theory based on four principles that form the union of the sets listed above, i.e., equality, equity/merit, efficiency and need. As equality has played such a prominent role in justice research, let us consider briefly whether its omission from the three principle theory defended here is justified. To clarify, I acknowledge that equality is a common *rule* of fairness, i.e., a frequently used mechanism. Indeed, Skyrms (1996; 1999 with James Alexander) demonstrates the attractive properties of replicator dynamics for explaining the emergence of equality when agents have no special claim based, say, on need or desert. What is in dispute is whether equality is a *principle* of fairness, i.e., a distinct goal that holds generally and not merely as a special case of general principles. Equality is obviously fair when individuals are equal based on the salient justice principle(s), i.e., equal desert, need or efficiency.

As discussed in section 2, equality is probably most often associated with need as people's basic needs are usually assumed equal, consistent with the Murphy-Berman et al. finding that Indian subjects tend more toward equality than Americans. Echoing Leventhal (1976), they conjecture "that when the level of resources is low, need may become more salient as an allocation strategy. In such situations, maintaining minimal standards for all recipients may become more important than increasing the standards for a few meritorious individuals" (p. 1270).

The more significant hindrance to determining whether equality is a general principle or merely a special case is the presence of contextual effects that complicate these efforts. As Miller writes, "In the case of equality, on the other hand, there is potentially always an ambiguity: is equality being valued as positively the right thing in the circumstances, or is it being chosen by default, as it were, in the absence of reliable information about desert or need?" (1992, pp. 559–60). The latter is consistent with the evidence cited in section 5.1 of this paper about the ceteris paribus assumption: survey and experimental evidence suggest that people, when they lack information about factors relevant to evaluating justice based on its principles (e.g., effort, choices, costs, luck, basic needs, productivity), assume that such factors are equal across individuals. In that case, the best possible estimate of fair allocations is equal splits.

Güth (1988) notes that equality sometimes emerges as a rule when contributions or rewards are not very important. This could be explained by efforts to avoid costly information search or, consistent with the motives if not outcomes of the Orley Ashenfelter et al. (1992) experiment, costly disputes. Deutsch argues that equality is the justice principle that applies in the context of solidarity relationships such as friendships. If equality is chosen to avoid information and dispute costs, however, it seems likely that this claim about equality and solidarity is apocryphal.[25] Even if equality were accorded status as a general principle in solidarity relationships, however, that would still not make it a general principle of *justice*. Habitual use of equality among friends, for example, does not necessarily imply that it is *just*, but only that it is *friendly*.

A final point about equality pertains to the frequent pleas for equality of opportunity based on appeals to fairness. Note, though, that the stated goal in this case is not to equalize allocations but only opportunities, whereby no final outcome, let alone an equal one, is guaranteed. Indeed, such arguments are often accompanied by proposals to allocate resources unequally in favor of the disadvantaged in order to "level the playing field" (e.g., Roemer 1998). This concern figures prominently in the discussion of allocations to minors, especially of general education. Equality of opportunity is easily reconciled with the Equity Principle: the goal is to compensate people for factors not under their control such that those who contribute more will benefit more, but two persons who bear equal responsibility will experience equal outcomes. This explains why equal opportunity policies are so persuasively argued with respect to basic education. Children are in a formative phase in which they are acquiring important skills that will favorably or unfavorably impact their future welfare in dramatic ways. Both because of their developmental level and their constrained freedom of choice, we typically do not hold children accountable for relevant circumstances such

[25] For example, consider a group of friends settling the bill after dinner together in a restaurant. The frequent choice of equal splits is probably due in no small part to a desire by the parties not to incur the cost of calculating each diner's individual responsibility including tax and tip as well as the (perhaps more significant) cost to friendships in the form of potential disputes and the appearance of pettiness. Indeed, if more were at stake, e.g., if one party had ordered a small salad with a glass of water whereas the other party had ordered a four-course meal with wine, the friends would probably discard the equality rule and agree to a more accurate tallying of accounts.

as family income, school district, exposure to educational resources at home, etc. Adjustments for these morally arbitrary factors are consistent with the Equity Principle. This and the other cases above, however, require no appeal to a separate principle of equality.

A final matter for a multi-criterion theory of justice is the precise relationship between the various principles in the preferences of individuals. Does the salient principle reign absolute or do people entertain several principles contemporaneously? If the latter, are preferences over principles, for example, lexicographic or do they reflect trade-offs? Evidence previously presented in this paper, as well as the comments of Miller, and Frohlich and Oppenheimer, point toward the second answer to each of these questions. Here we will specifically consider studies that examine preferences when the degree of conflict between the three principles is varied.

A vignette study (Konow 2001) examines pair-wise trade-offs between the three principles of equity, efficiency and need.[26] The results are consistent with the simple model of convex preferences proposed there in which agents are averse to allocations that deviate from the levels prescribed by the principles. Regarding their relevance to micro-justice, Linda Skitka and Philip Tetlock (1992) find trade-offs among 235 student subjects who quantitatively rate allocations to hypothetical recipients who differ with respect to their responsibility for or control over their circumstances, the efficiency of providing resources to each, and the severity of the need of each. Ordó ez and Mellers (1993) corroborate these trade-offs for macro-justice. Although they motivate their study with reference to the equality-efficiency trade-off, the income distributions their 150 student respondents evaluate quantitatively reflect different degrees of concurrence with the three motives discussed here. Subjects compare societies that differ with regard to mean salary, which reflects an efficiency concern, the correlation between work (which includes merit, effort, etc.) and salary, which corresponds roughly to the Equity Principle, and the height of the minimum salary, which may be below or at the poverty level, evoking a concern for basic needs. The results indicate subjects value each of these goals and weigh one against the other.

Ordó ez and Mellers elicit two sets of responses: one for the "more fair" society and the other for the society in which the respondents would "prefer to live." They find that fair and preferred income distributions do not necessarily coincide. Specifically, fair distributions correlate most strongly with the work-salary correlation, reflecting a concern for the Equity Principle. Preferred distributions, on the other hand, correlate most strongly with minimum salary and mean salary, in that order, pointing toward the Need and Efficiency Principles, respectively. This implies that people value equity but prefer to live in societies that sacrifice some equity in order to provide for higher minimum and mean earnings.

This finding dovetails with a subtle but important property of justice that has been traced to Aristotle. The argument is that justice terminology is used in different senses, the more specific sense corresponding to the Equity (or Accountability) Principle and the most general sense connoting the whole of morality. Thus, in one sense, "fair" refers only to equity, and, in another sense, means "good" and also includes need and efficiency. Typically, the terms fair and just connote

[26] The study by Gaertner, Jungeilges, and Neck (2001) provides especially thorough evidence on the trade-off between two of these principles: need and efficiency. Subjects in five countries face two hypothetical situations involving the allocation of scarce resources to one of two policies. One policy addresses basic needs while the level of benefits from the other policy are varied across four different versions of each scenario. Depending on the question and country, between 26 percent and 79 percent of respondents who initially chose the first policy switch to the second as the benefits of the second rise, consistent with a trade-off between need and efficiency.

a mixture of these two senses.[27] By comparing preferences for "fair" versus "right" allocations when equity, need and efficiency conflict, one finds support for these claims (Konow 2001). The implication of these studies is that equity (i.e., justice in the specific sense) guides but does not monopolize distributive preferences: people care about equity, but the allocations they prefer for themselves and consider right are also influenced by concerns for efficiency and need.

This paper has examined the descriptive power of many influential positive and normative theories of justice employing numerous results that have now been collected by social scientists. The theories, as well as the empirical evidence on them, contribute to an understanding of shared concepts of justice, although no single theory suffices to that end. A multi-criterion theory of justice is proposed in which three justice principles are interpreted, weighted and applied in a manner that depends on the context. This integrated theory purports to offer a broad and systematic account of popular views of justice. Probably the most significant challenge to this or any theory, however, is to incorporate the impact of context on justice evaluation, and much work remains in this regard. If these issues can be resolved, the resulting theory of justice would provide immeasurable assistance in many ways: it could help to explain phenomena impacted by it, to distinguish distributive preferences from other motives such as self-interest, reciprocity and altruism, and to guide social policies.

## References


Adams, J. Stacy. 1965. "Inequality in Social Exchange," in *Advances in Experimental Social Psychology*, vol. 2. Leonard Berkowitz, ed. NY, London: Academic Press Inc, pp. 267–99.

Akerlof, George A. and Janet Yellen. 1990. "The Fair Wage-Effort Hypothesis and Unemployment," *Quart. J. Econ*. 105:2, pp. 255–83.

Alexander, James, and Brian Skyrms. 1999. "Bargaining with Neighbors: Is Justice Contagious?" *J. Philosophy* 96:1, pp. 588–98.

Alwin, Duane F.; Galin Gornev and Ludmila Khakhulina. 1995. "Comparative Referential Structures, System Legitimacy, and Justice Sentiments: An International Comparison," in *Social Justice and Political Change*. James R. Kluegel, David S. Mason and Bernd Wegener, eds. NY: Walter de Gruyter, Inc, pp. 109–31

Amiel, Yoram, and Frank A. Cowell. 1999. *Thinking About Inequality: Personal Judgment and Income Distributions*. Cambridge: Cambridge U. Press.

Anand, Paul. 2001. "Procedural Fairness in Economic and Social Choice: Evidence from a Survey of Voters," *J. Econ. Psych*. 22, pp. 247–70.

Andreoni, James, and John H. Miller. 2002. "Giving According to GARP: An Experimental Test of the Consistency of Preferences for Altruism," *Econometrica* 70:2, pp. 737–53.

Aristotle. 1925. *Ethica Nicomachea*. Trans. W. D. Ross. London: Oxford U. Press.

Arrow, K.J. 1973. "Some Ordinalist-Utilitarian Notes on Rawls's Theory of Justice," *J. Philosophy* 70:9, pp. 245–63.

Ashenfelter, Orley; Janet Currie, Henry S. Farber and Matthew Spiegel. 1992. "An Experimental Comparison of Dispute Rates in Alternative Arbitration Systems," *Econometrica* 60:6, pp. 1407–33.

Babcock, Linda; George Loewenstein, Samuel Issacharoff and Colin Camerer. 1995. "Biased Judgments of Fairness in Bargaining," *Amer. Econ. Rev*. 85:5, pp. 1337–43.

Babcock, Linda; Xianghong Wang and George Loewenstein. 1996. "Choosing the Wrong Pond: Social Comparisons in Negotiations that Reflect a Self-Serving Bias," *Quart. J. Econ*. 111:1, pp. 1–19.

Ball, Sheryl B. and Paula-Ann Cech. 1996. "Subject Pool Choice and Treatment Effects in Economic Laboratory Research," *Research Experiment. Econ*. 6, pp. 239–92.

Barry, Brian M. 1989. *Democracy, Power, and Justice: Essays in Political Theory*. NY, Oxford: Clarendon Press and Oxford U. Press.

Baumol, William J. 1986. *Superfairness: Applications and Theory*. Cambridge, MA: MIT Press.

Bazerman, Max H. 1985. "Norms of Distributive Justice in Interest Arbitration," *Ind. Lab. Relat. Rev*. 38, pp. 558–70.

Bentham, J. 1789. *An Introduction to the Principles of Morals and Legislation*. London: Payne.

Berg, Joyce; John Dickhaut and Kevin McCabe. 1995. "Trust, Reciprocity, and Social History," *Games Econ. Behav*. 10:1, pp. 122–42.

Binmore, Ken. 1994. *Game Theory and the Social Contract, Vol 2: Just Playing*. Cambridge, MA: MIT Press.


[27] Actually, fair in the general sense can include any moral criterion, e.g., familial duty, friendship, love, reciprocity, etc. The current paper adopts an intermediate approach: justice encompasses preferences over allocations but not over behavior. This might conflict with some uses of justice terminology, but my sense is that this level of specificity comes closest to common usage while making a useful distinction from that which is merely "good."

Blinder, Alan S. and Don H. Choi. 1990. "A Shred of Evidence on Theories of Wage Stickiness," *Quart. J. Econ*. 105:4, pp. 1003–15.

Blount, Sally. 1995. "When Social Outcomes Aren't Fair: The Effect of Casual Attributions on Preferences," *Org. Behav. Human Decision Processes* 63:2, pp. 131–44.

Boadway, Robin and Neil Bruce. 1984. *Welfare Economics*. Oxford, NY: Basil Blackwell.

Bolton, Gary E. and Axel Ockenfels. 2000. "ERC: A Theory of Equity, Reciprocity, and Competition," *Amer. Econ. Rev*. 90:1, pp. 166–93.

Bowles, Samuel and Herbert Gintis. 1998. *Recasting Egalitarianism: New Rules for Communities, States and Markets. The Real Utopias Project*, vol. 3. Erik Olin Wright, ed. NY: Verso.

Buchan, Nancy R.; Rachel T.A. Croson and Eric J. Johnson. 2003. "When Do Fairness Beliefs Influence Bargaining Behavior: Experimental Evidence from Japan and the United States," forthcoming, *J. Consumer Res.*

Buchanan, Allen E. 1981. "The Marxian Critique of Justice and Rights," *Canadian J. Philosophy* 7:Supp., pp. 269–306.

Buchanan, James M. 1986. *Liberty, Market and State: Political Economy in the 1980s*. NY: NYU. Press, Columbia U. Press.

Burrows, Paul, and Graham Loomes. 1994. "The Impact of Fairness on Bargaining Behavior," *Empir. Econ*. 19, pp. 201–21.

Cameron, Lisa A. 1999. "Raising the Stakes in the Ultimatum Game: Experimental Evidence from Indonesia," *Econ. Inquiry* 37:1, pp. 47–59.

Charness, Gary and Brit Grosskopf. 2001. "Relative Payoffs and Happiness: An Experimental Study," *J. Econ. Behav. Org*. 45:3, pp. 301–28.

Charness, Gary and Matthew Rabin. 2002. "Understanding Social Preferences with Simple Tests," *Quart. J. Econ*. 117:3, pp. 817–69.

Clark, Jeremy. 1998. "Fairness in Public Good Provision: An Investigation of Preferences for Equality and Proportionality," *Canadian J. Econ*. 31:3, pp. 708–29.

Cohen, Ronald L. 1982. "Perceiving Justice: An Attributional Perspective," in *Equity and Justice in Social Behavior*. Jerald Greenberg and Ronald L. Cohen, eds. NY: Academic Press, pp. 119–60.

Cox, James C. 2003. "How to Identify Trust and Reciprocity," forthcoming, *Games, Econ. Behav.*

Cullen, Bernard. 1994. "Philosophical Theories of Justice," in *Justice: Interdisciplinary Perspectives*. Klaus R. Scherer, ed. Chippenham, Wiltshire, UK: Antony Rowe Ltd, pp. 15–64.

Dahl, Gordon B. and Michael R. Ransom. 1999. "Does Where You Stand Depend on Where You Sit? Tithing Donations and Self-Serving Beliefs," *Amer. Econ. Rev*. 89:4, pp. 703–27.

Deutsch, Morton. 1985. *Distributive Justice*. Binghamton, NY: Vail-Ballou Press.

Dryzek, John S. 1990. *Discursive Democracy: Politics, Policy, and Political Science*. Cambridge and NY: Cambridge U. Press.

Dworkin, Ronald. 1981. "What Is Equality? Part 2: Equality of Resources," *Philosophy Public Affairs* 10:1, pp. 283–345.

———. 2000. *Sovereign Virtue: The Theory and Practice of Equality*. Cambridge, MA: Harvard U. Press.

Eckel, Catherine C. and Philip J. Grossman. 1996. "Altruism in Anonymous Dictator Games," *Games Econ. Behav*. 16, pp. 181–91.

Ellingsen, Tore and Magnus Johannesson. 2003. "Sunk Costs, Fairness, and Disagreement," Stockholm School Econ.

Elster, Jon. 1992. *Local Justice: How Institutions Allocate Scarce Goods and Necessary Burdens*. NY: Russell Sage Foundation.

Falk, Armin and Urs Fischbacher. 1998. "A Theory of Reciprocity," U. Zurich manuscript.

Farwell, Lisa, and Bernard Weiner. 1996. "Self-Perceptions of Fairness in Individual and Group Contexts," *Personality Social Psych. Bull*. 22:9, pp. 867–991.

Fehr, Ernst and Simon Gächter. 2000. "Fairness and Retaliation: The Economics of Reciprocity," *J. Econ. Perspect*. 14:3, pp. 159–81.

Fehr, Ernst; Simon Gächter and Georg Kirchsteiger. 1997. "Reciprocity as a Contract Enforcement Device: Experimental Evidence," *Econometrica* 65:4, pp. 833–60.

Fehr, Ernst and Klaus M. Schmidt. 1999. "A Theory of Fairness, Competition and Cooperation," *Quart. J. Econ*. 114:3, pp. 817–68.

Foley, Duncan K. 1967. "Resource Allocation and the Public Sector," Yale Econ. Essays 7, pp. 45–98.

Fong, Christina. 2001. "Social Preferences, Self-Interest, and the Demand for Redistribution," *J. Public Econ*. 82:2, pp. 225–46.

Forsythe, Robert; Joel L. Horowitz, N.E. Savin and Martin Sefton. 1994. "Fairness in Simple Bargaining Experiments," *Games Econ. Behav*. 6, pp. 347–69.

Franciosi, Robert; Praveen Kujal, Roland Michelitsch, Vernon Smith and Gang Deng. 1995. "Fairness: Effect on Temporary and Equilibrium Prices in Post-Offer Markets," *Econ. J*. 105:431, pp. 938–50.

Frank, Robert H. 1988. *Passions within Reason*. NY: W.W. Norton Co.

Frey, Bruno S. and Beat Gygi. 1988. "Die Fairness von Preisen," *Schweizerische Zeitschrift Volkswirtschaft Statistik* 124:4, pp. 519–41.

Frey, Bruno S.; Felix Oberholzer-Gee and Reiner Eichenberger. 1996. "The Old Lady Visits Your Backyard: A Tale of Morals and Markets," *J. Polit. Econ*. 104:6, pp. 1297–313.

Frey, Bruno S. and Werner W. Pommerehne. 1993. "On the Fairness of Pricing–an Empirical Survey Among the General Population," *J. Econ. Behav. Org*. 20, pp. 295–307.

Frey, Bruno S. and Alois Stutzer. 2001a. "Beyond Bentham—Measuring Procedural Utility," CESifo work. paper 492, Center Econ. Studies and Institute for Econ. Research, Munich.

———. 2001b. "Outcome, Process and Power in Direct Democracy," *Public Choice* 107, pp. 271–293.

Frohlich, Norman and Joe A. Oppenheimer. 1992.

*Choosing Justice: An Experimental Approach to Ethical Theory*. Berkeley and LA: U. California Press.
———. 1994. "Preferences for Income Distribution and Distributive Justice: A Window on the Problems of Using Experimental Data in Economics and Ethics," *Eastern Econ. J.* 20:2, pp. 147–55.
Frohlich, Norman; Joe A. Oppenheimer, and Cheryl L. Eavey. 1987. "Laboratory Results on Rawls's Distributive Justice," *Brit. J. Polit. Sci.* 17, pp. 1–21.
Gaertner, Wulf; Jochen Jungeilges and Reinhard Neck. 2001. "Cross-Cultural Equity Evaluations: A Questionnaire-Experimental Approach," *Europ. Econ. Rev.* 45, pp. 953–63.
Gauthier, David. 1985. "Bargaining and Justice," in *Ethics and Economics*. Ellen Frankel Paul, Jeffrey Paul, and Fred D. Miller, Jr., eds. Oxford: Basil Blackwell, pp. 29–47.
Gächter, Simon and Arno Riedl. 2001. "Moral Property Rights in Bargaining," dept. econ. and econometrics, Amsterdam, The Netherlands; St. Gallen, Switzerland. U. Amsterdam, U. St. Gallen.
George, Henry. 1879 [1914]. *Progress and Poverty*. San Francisco, NY: Random House.
Goldstein, William M. and Elke U. Weber. 1995. "Content and Discontent: Indication and Implications of Domain Specificity in Preferential Decision Making," *Psych. Learning Motivation* 32, pp. 83–136.
Greenberg, Jerald. 1979. "Protestant Ethic Endorsement and the Fairness of Equity Inputs," *J. Research Personality* 13, pp. 81–90.
Güth, Werner. 1988. "On the Behavioral Approach to Distributive Justice: A Theoretical and Experimental Investigation," in *Aspects of Distributive Justice*. Shlomo Maital, ed. NY: NYU Press, pp. 703–17.
———. 1994. "Distributive Justice: A Behavioral Theory and Empirical Evidence," in *Essays on Economic Psychology*. H. Brandstätter and Werner Güth, eds. pp. 153–75.
Güth, Werner and Reinhard Tietz. 1990. "Ultimatum Bargaining Behavior: A Survey and Comparison of Experimental Results," *J. Econ. Psych.* 11, pp. 417–49.
Habermas, Jürgen. 1984. *The Theory of Communicative Action*. (Theorie des kommunikativen Handelns) Trans. Thomas McCarthy. Boston: Beacon Press.
Harsanyi, John C. 1955. "Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparisons of Utility," *J. Polit. Econ.* 63, pp. 309–21.
Harsanyi, John C. 1975. "Can the Maximin Principle Serve as a Basis for Morality? A Critique of John Rawls's Theory," *Amer. Polit. Sci. Rev.* 69, pp. 594–606.
Heider, Fritz. 1958. *The Psychology of Interpersonal Relations*. NY: John Wiley & Sons.
Heller, Agnes. 1974. *The Theory of Need in Marx*. London: Allison & Busby Limited.
Henrich, Joseph. 2000. "Does Culture Matter in Economic Behavior? Ultimatum Game Bargaining among the Machiguenga of the Peruvian Amazon," *Amer. Econ. Rev.* 90:4, pp. 973–79.
Henrich, Joseph; Robert Boyd, Samuel Bowles, Colin Camerer, Ernst Fehr, Herbert Gintis and Richard McElreath. 2001. "In Search of Homo Economicus: Behavioral Experiments in 15 Small-Scale Societies," *Amer. Econ. Rev.* 91:2, pp. 73–78.
Hicks, John R. 1940. "The Valuation of Social Income," *Economica* 7, pp. 105–24.
Hoffman, Elizabeth; Kevin McCabe, Keith Shachat and Vernon Smith. 1994. "Preferences, Property Rights, and Anonymity in Bargaining Games," *Games Econ. Behav.* 7, pp. 346–80.
Hoffman, Elizabeth and Matthew L. Spitzer. 1985. "Entitlements, Rights, and Fairness: An Experimental Examination of Subjects' Concepts of Distributive Justice," *J. Legal Stud.* 14, pp. 259–97.
Holcombe, Randall G. 1997. "Communications: Absence of Envy Does Not Imply Fairness," *South. Econ. J.* 63:3, pp. 797–802.
Holm, Håkan and Peter Engseld. 2001. "Choosing Bargaining Partners: An Experimental Study on the Impact of Information About Income and Gender," econ. dept. Lund U. Sweden.
Homans, George C. 1958. "Social Behavior as Exchange," *Amer. J. Sociology* 63, pp. 597–606.
Jasso, Guillermina. 1999. "How Much Injustice Is There in the World? Two New Justice Indexes," *Amer. Sociol. Rev.* 64:1, pp. 133–68.
Jasso, Guillermina and Peter H. Rossi. 1977. "Distibutive Justice and Earned Income," *Amer. Sociol. Rev.* 42, pp. 639–51.
Kachelmeier, Steven J.; Stephen T. Limberg and Michael S. Schadewald. 1991. "A Laboratory Market Examination of the Consumer Price Response to Information About Producers' Costs and Profits," *Account. Rev.* 66:4, pp. 694–717.
Kagel, John H.; Chung Kim and Donald Moser. 1996. "Fairness in Ultimatum Games with Asymmetric Information and Asymmetric Payoffs," *Games Econ. Behav.* 13:1, pp. 100–10.
Kahneman, Daniel; Jack L. Knetsch and Richard Thaler. 1986. "Fairness as a Constraint on Profit Seeking: Entitlements in the Market," *Amer. Econ. Rev.* 76, pp. 728–41.
Kahneman, Daniel and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision Under Risk," *Econometrica* 47:2, pp. 273, 277–78.
Kaldor, Nicholas. 1939. "Welfare Propositions of Economics and Interpersonal Comparisons of Utility," *Econ. J.* 49, pp. 549–51.
Kashima, Yoshihisa; Michael Siegal, Kenichiro Tanaka and Hiroko Isaka. 1988. "Universalism in Lay Conceptions of Distributive Justice: A Cross-Cultural Examination," *Int. J. Psych.* 23, pp. 51–64.
Kluegel, James R. and Eliot R. Smith. 1986. *Beliefs About Inequality: Americans' Views of What Is and What Ought To Be*. NY: Aldine De Gruyter.
Knez, Marc J. and Colin F. Camerer. 1995. "Outside Options and Social Comparison in Three-Player Ultimatum Game Experiments," *Games Econ. Behav.* 10:1, pp. 65–94.
Kolm, Serge-Christophe. 1985. *Le Contrat Social Libéral: Philosophie et Pratique du Libéralisme*. Paris: Presses Universitaires de France.
Konow, James. 1996. "A Positive Theory of Economic Fairness," *J. Econ. Behav. Org.* 31:1, pp. 13–35.
———. 2000. "Fair Shares: Accountability and Cognitive Dissonance in Allocation Decisions,"

*Amer. Econ. Rev.* 90:4, pp. 1072–92.
———. 2001. "Fair and Square: The Four Sides of Distributive Justice," *J. Econ. Behav. Org.* 46:2, pp. 137–64.
———. 2002. "Mixed Feelings: Theories and Evidence of Warm Glow and Altruism," econ. dept., Loyola Marymount U.
Kravitz, David A. and Samuel Gunto. 1992. "Decisions and Perceptions of Recipients in Ultimatum Bargaining Games," *J. Socio-Econ.* 21:1, pp. 65–84.
Kritikos, Alexander and Friedel Bolle. 2001. "Distributional Concerns: Equity- or Efficiency-Oriented?" *Econ. Letters* 73:3, pp. 333–38.
Krosnick, Jon A. 1991. "Response Strategies for Coping with the Cognitive Demands of an Attitude Measure in Surveys," *Applied Cognitive Psych.* 5, pp. 213–36.
Lamm, Helmut and Thomas Schwinger. 1980. "Norms Concerning Distributive Justice: Are Needs Taken Into Consideration in Allocation Decisions?" *Social Psych. Quart.* 43:4, pp. 425–29.
Lanza, Marilyn Lewis; James Carifio, Ivor Pattison and Carol Hicks. 1997. "Validation of a Vignette Simulation of Assault on Nurses by Patients," *J. Nursing Scholarship* 29:2, pp. 151–54
Ledyard, John O. 1995. "Public Goods: A Survey of Experimental Research," in *The Handbook of Experimental Economics*. John H. Kagel and Alvin E. Roth, eds. Princeton: Princeton U. Press, pp. 111–94.
Leventhal, Gerald S. 1976. "The Distribution of Rewards and Resources in Groups and Organizations," in *Advances in Experimental Social Psychology*, Vol. 9. Leonard Berkowitz and Elaine Walster, eds. NY: Academic Press, pp. 92–131.
Leventhal, Gerald S.; Jurgis Karuza and William Rick Fry. 1980. "Beyond Fairness: A Theory of Allocation Preferences," in *Justice and Social Interaction: Experimental and Theoretical Contributions from Psychological Research*. Gerold Mikula, ed. NY: Springer Verlag, pp. 167–218.
Leventhal, Gerald S. and James W. Michaels. 1971. "Locus of Cause and Equity Motivation as Determinants of Reward Allocation," *J. Personality Social Psych.* 17:3, pp. 229–35.
Leventhal, Gerald S. and Harold D. Whiteside. 1973. "Equity and the Use of Reward to Elicit High Performance," *J. Personal. Social Psych.* 25:1, pp. 75–83.
Levine, David I. 1993. "Fairness, Markets, and Ability to Pay: Evidence from Compensation Executives," *Amer. Econ. Rev.* 83:5, pp. 1241–59.
Major, Brenda and Kay Deaux. 1982. "Individual Differences in Justice Behavior," in *Equity and Justice in Social Behavior*. Jerald Greenberg and Ronald L. Cohen, eds. NY: Academic Press, pp. 43–76.
Malthus, Thomas R. 1798 [1914]. *An Essay on the Principle of Population*. London: J.M. Dent & Sons.
Martin, Elizabeth and Anne Polivka. 1992. "The Effect of Questionnaire Redesign on Conceptual Problems in the Current Population Survey," *Proceedings of Amer. Statist. Assoc. Section on Survey Methods*, Aug., pp. 655–60.
Marx, Karl. 1875 [1993]. "Critique of the Gotha Programme," in *Justice*. Alan Ryan, ed. Oxford: Oxford U. Press, pp. 159–63.
Marx, Karl and Friedrich Engels. 1958. *Selected Works*. London: Lawrence and Wishart.
McCloskey, Herbert and John Zaller. 1984. *The American Ethos: Public Attitudes Toward Capitalism and Democracy*. Cambridge, MA: Harvard U. Press.
Messick, David M. and Keith P. Sentis. 1979. "Fairness and Preference," *J. Exper. Social Psych.* 15:4, pp. 418–34.
———. 1983. "Fairness, Preference, and Fairness Biases," in *Equity Theory: Psychological and Sociological Perspectives*. David M. Messick and Karen Cook, eds. NY: Praeger Publishers, pp. 61–94.
Mikula, Gerold, ed. 1980. *Justice and Social Interaction: Experimental and Theoretical Contributions from Psychological Research*. NY: Springer-Verlag.
Mikula, Gerold and Thomas Schwinger. 1973. "Sympathie zum Partner und Bedürfnis nach sozialer Anerkennung als Determinanten der Aufteilung gemeinsam erzielter Gewinne," *Psychologische Beiträge* 15:3, pp. 396–407.
Mill, John Stuart. 1861 [1979]. *Utilitarianism*. Indianapolis and Cambridge, MA: Hackett Pub. Co.
Miller, David. 1976 [1979]. *Social Justice*. Oxford: Clarendon Press.
———. 1992. "Distributive Justice: What the People Think," *Ethics* 102, pp. 555–93.
Murphy-Berman, Virginia; John J. Berman, Purnima Singh, Anju Pachauri and Pramod Kumar. 1984. "Factors Affecting Allocation to Needy and Meritorious Recipients: A Cross-Cultural Comparison," *J. Personal. Social Psych.* 46: 6, pp. 1267–72.
Nielsen, Kai. 1985. *Equality and Liberty*. Totowa, NJ: Rowman and Allanheld.
Nozick, Robert. 1974. *Anarchy, State, and Utopia*. NY: Basic Books.
Oberholzer-Gee, Felix; Iris Bohnet and Bruno Frey. 1997. "Fairness and Competence in Democratic Decisions," *Public Choice* 91:1, pp. 89–105.
Oleson, Paul E. 2001. "An Experimental Examination of Alternative Theories of Distributive Justice and Economic Fairness," unpub. dissertation, U. Arizona.
Ordó ez, Lisa D. and Barbara A. Mellers. 1993. "Trade-Offs in Fairness and Preference Judgments," in *Psychological Perspectives on Justice*. Barbara A. Mellers and Jonathan Baron, eds. Cambridge, UK: Cambridge U. Press, pp. 138–54.
Overlaet, Bert. 1991. "Merit Criteria as Justification for Differences in Earnings," *J. Econ. Psych.* 12:4, pp. 689–706.
Pareto, Vilfredo. 1906 [1971]. *Manual of Political Economy*. NY: Augustus M. Kelley.
Pazner, Elisha A., and David Schmeidler. 1978. "Egalitarian Equivalent Allocations: A New Concept of Economic Equity," *Quart. J. Econ.* 92, pp. 671–87.
Posner, Richard A. 1981. *The Economics of Justice*. Cambridge: Harvard U. Press.
Rabin, Matthew. 1993. "Incorporating Fairness into Game Theory and Economics," *Amer. Econ. Rev.* 83:5, pp. 1281–302.
Raphael, D.D. 1980. *Justice and Liberty*. London: Athlone Press.
Rawls, John. 1971. *A Theory of Justice*. Cambridge: Belknap Press of Harvard U. Press.
Reiman, Jeffrey H. 1981. "The Possibility of a Marxian

Theory of Justice," *Canadian J. Philosophy* 7: Supp., pp. 307–22.
Roemer, John E. 1998. *Equality of Opportunity*. Cambridge: Harvard U. Press.
Roth, Alvin E. 1995. "Introduction to Experimental Economics," in *The Handbook of Experimental Economics*. John H. Kagel and Alvin E. Roth, eds. Princeton: Princeton U. Press, pp. 3–109.
Roth, Alvin E. and J. Keith Murnighan. 1982. "The Role of Information in Bargaining: An Experimental Study," *Econometrica* 50:5, pp. 1123–42.
Roth, Alvin E.; Vesna Prasnikar, Masahiro Okuno-Fujiwara and Shmuel Zamir. 1991. "Bargaining and Market Behavior in Jerusalem, Ljubljana, Pittsburgh, and Tokyo: An Experimental Study," *Amer. Econ. Rev*. 81:5, pp. 1068–95.
Rotter, Julian B. 1966. "Generalized Expectancies for Internal versus External Control of Reinforcement," *Psychological Monographs* 80:1, p. 609.
Ruffle, Bradley J. 1998. "More Is Better, but Fair is Fair: Tipping in Dictator and Ultimatum Games," *Games Econ. Behav*. 23, pp. 247–65.
Samuelson, Paul A. 1950. "Evaluation of Real National Income," *Oxford Econ. Papers* 2, pp. 1–29.
Schokkaert, Erik. 1994. "The Economics of Distributive Justice, Welfare and Freedom," in *Justice: Interdisciplinary Perspectives*. Klaus R. Scherer, ed. Chippenham, Wiltshire, UK: Antony Rowe Ltd, pp. 65–113.
Schokkaert, Erik and Bart Capeau. 1991. "Interindividual Differences in Opinions about Distributive Justice," *Kyklos* 44:3, pp. 25–45.
Schokkaert, Erik and Leo Lagrou. 1983. "An Empirical Approach to Distributive Justice," *J. Public Econ*. 21, pp. 33–52.
Schokkaert, Erik and Bert Overlaet. 1989. "Moral Intuitions and Economic Models," *Social Choice Welfare* 6, pp. 19–31.
Scitovsky, Tibor. 1941. "A Note on Welfare Propositions in Economics," *Rev. Econ. Stud*. 9, pp. 77–88.
Scitovsky, Tibor. 1986. *Human Desire and Economic Satisfaction: Essays on the Frontiers of Economics*. NY: NYU Press.
Scott, John T.; Richard Matland, Philip Michelbach and Brian Bornstein. 2001. "Just Deserts: An Experimental Study of Distributive Justice Norms," *Amer. J. Polit. Sci*. 45:4, pp. 749–67.
Selten, Reinhard. 1978. "The Equity Principle in Economic Behavior," in *Decision Theory and Social Ethics; Issues in Social Choice*. H. Gottinger and W. Leinfellner, eds. Dordrecht: Reifel Pub., pp. 289–301.
Sen, Amartya. 1973 [1997]. *On Economic Inequality*, Expanded Edition with a Substantial Annexe by James E. Foster and Amartya Sen. Oxford: Clarendon Press.
———. 1979. "The Welfare Basis of Real Income Comparisons: A Survey," *J. Econ. Lit*. 17:1, pp. 1–45.
———. 1995. "Rationality and Social Choice," *Amer. Econ. Rev*. 85:1, pp. 1–24.
Shafir, Eldar, Peter Diamond, and Amos Tversky. 1997. "Money Illusion," *Quart. J. Econ*. 112:2, pp. 341–74.
Shiller, Robert J.; Maxim Boycko and Vladimir Korobov. 1991. "Popular Attitudes toward Free Markets: The Soviet Union and the United States Compared," *Amer. Econ. Rev*. 81:3, pp. 385–400.
Skitka, Linda J. and Philip E. Tetlock. 1992. "Allocating Scarce Resources: A Contingency Model of Distributive Justice," *J. Exper. Social Psych*. 28:6, pp. 491–522.
Skyrms, Brian. 1996. *Evolution of the Social Contract*. NY: Cambridge U. Press.
Slonim, Robert, and Alvin E. Roth. 1998. "Learning in High Stakes Ultimatum Games: An Experiment in the Slovak Republic," *Econometrica* 66:3, pp. 569–96.
Smith, Adam. 1759 [1809]. *The Theory of Moral Sentiments*. Glasgow: R. Chapman.
Sulkin, Tracy and Adam Simon. 2001. "Habermas in the Lab: A Study of Deliberation in an Experimental Setting," *Polit. Psych*. 22:4, pp. 809–26.
Thaler, Richard H. 1980. "Toward a Positive Theory of Consumer Choice," *J. Econ. Behav. Org*. 1, pp. 39–60.
Thibaut, John and Laurens Walker. 1978. "A Theory of Procedure," *California Law Rev*. 66, pp. 541–66.
Tucker, Robert C. 1969. *The Marxian Revolutionary Idea*. NY: W.W. Norton.
Tyler, Tom R. and E. Allan Lind. 2000. "Procedural Justice," in *Handbook of Justice Research in Law*. Joseph Sanders and V. Lee Hamilton, eds. NY: Kluwer Academic/Plenum Pub., pp. 65–92.
Varian, Hal R. 1974. "Equity, Envy and Efficiency," *J. Econ. Theory* 9, pp. 63–91.
Walster, Elaine; G. William Walster and Ellen Berscheid. 1973. "New Directions in Equity Research," *J. Personal. Social Psych*. 25:2, pp. 151–76.
———. 1978. *Equity: Theory and Research*. Boston, London, Sydney, Toronto: Allyn and Bacon, Inc.
Walzer, Michael. 1983. *Spheres of Justice: A Defense of Pluralism and Equality*. NY: Basic Books, Inc.
Weiner, Bernard; Irene Frieze, Andy Kukla, Linda Reed, Stanley Rest and Robert M. Rosenbaum. 1971. "Perceiving the Causes of Success and Failure," in *Attribution: Perceiving the Causes of Behavior*. Edward E. Jones, David E. Kanouse, Richard E. Nisbett, Stuart Valins, and Barbara Weiner, eds. Morristown, NJ: General Learning Press, pp. 95–120.
Weiner, Bernard and Andy Kukla. 1970. "An Attributional Analysis of Achievement Motivation," *J. Personal. Social Psych*. 15:1, pp. 1–20.
Wood, Allen. 1981. *Karl Marx*. London: Routledge & Kegan Paul.
Yaari, Menahem E. and Maya Bar-Hillel. 1984. "On Dividing Justly," *Social Choice Welfare* 1:1, pp. 1–24.
Young, Gary. 1981. "Doing Marx Justice," *Canadian J. Philosophy* 7:Supp., pp. 251–68.
Young, H. Peyton. 1994. *Equity in Theory and Practice*. Princeton: Princeton U. Press.
Zajac, Edward E. 1985. "Perceived Economic Justice: The Example of Public Utility Regulation," in *Cost Allocation: Methods, Principles, Applications*. H. Peyton Young, ed. North-Holland: Elsevier Science Pub. B.V, pp. 119–53.