

Is fairness in the eye of the beholder? An impartial spectator analysis of justice

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Abstract A popular sentiment is that fairness is inexorably subjective and incapable of being determined by objective standards. This study, on the other hand, seeks to establish evidence on unbiased justice and to propose and demonstrate a general approach for measuring impartial views empirically. Most normative justice theories associate impartiality with limited information and consensus. In both the normative and positive literature, information is usually seen as the raw material for self-serving bias and disagreement. In contrast, this paper proposes a type of impartiality that is associated with a high level of information and that results in consensus. The crucial distinction is the emphasis here on the views of impartial spectators, rather than implicated stakeholders. I describe the quasi-spectator method, i.e., an empirical means to approximate the views of impartial spectators. Results of a questionnaire provide evidence on quasi-spectator views and support this approach as a means to elicit moral preferences. By establishing a relationship between consensus and impartiality, this paper helps lay an empirical foundation for welfare analysis, social choice theory and practical policy applications.

“There is no objective standard of ‘fairness.’ ‘Fairness’ is strictly in the eye of the beholder... To a producer or seller, a ‘fair’ price is a high price. To the buyer or consumer, a ‘fair’ price is a low price. How is the conflict to be adjudicated?”
– Milton Friedman, *Newsweek*, July 4, 1977.

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1 Introduction

The central concern of most normative economics is the distribution of benefits and burdens among members of society, i.e., *distributive justice*. The large volume of relatively recent empirical research on justice (or fairness) has demonstrated the importance of this value for economic decision-making in both the laboratory and the field, e.g., Corneo and Fong (2008), Ellingsen and Johannesson (2004, 2005) and Faravelli (2007). Attempts to apply lessons from such research must, however, confront skeptical challenges that, at best, views of fairness are inexorably biased, or that, at worst, fairness is a vacuous construct employed opportunistically. The popular belief expressed in the quote above that “fairness is in the eye of the beholder” is one that justice researchers frequently encounter in dealing both with the general public and with some academic colleagues. The abandon with which people wield fairness arguments, often on opposite sides of the same issue, contributes, no doubt, to the impression reflected in this refrain. Indeed, researchers have also documented that biased views of fairness significantly impact not only words but decisions about the allocation of real economic resources, e.g., Babcock and Loewenstein (1997). Nevertheless, this sentiment typically fails to distinguish the fairness of the implicated stakeholder from that of the impartial spectator. Moreover, fairness bias implies its complement: unbiased fairness. If an impartial standard exists, the crucial question, which is both theoretical and at least potentially empirical, is how one can identify what is just and the principles, if any, that guide unbiased justice. This paper proposes an empirical approach to this question inspired by Adam Smith’s impartial spectator model (Smith 1759). The evidence presented here indicates the relevance of distributive preferences for economic policy across a wide range of real world contexts. It is also consistent with the conclusion that there exists an empirical means for identifying unbiased views that can inform social choice theory, welfare analysis and public policy.

This study employs a simple method to explore Smithian impartiality in the context of justice. The method of investigation is the one used in most studies of empirical social choice, viz., attitude surveys consisting of vignettes (i.e., hypothetical scenarios) that elicit preferences over the distribution of benefits or burdens. Nevertheless, no previous study, to my knowledge, has addressed the particular problem raised here. Different research questions require different methods, and there are advantages and disadvantages with any choice. Given the goals of this study, a survey method was chosen, because, among other reasons, it allows one better to target impartial preferences and to do so over allocations in a wide range of contextually rich circumstances like those encountered with real policy analysis.

The terms justice and fairness refer, in this paper, to impartial distributive preferences. Thus, the subject matter is defined quite generally, although it does not include certain considerations such as procedural issues and reciprocal preferences. Much justice research has focused on equality, but an important and growing empirical literature reveals widespread preferences for unequal allocations, e.g., Cappelen et al. (2007); Ellingsen and Johannesson (2005); Frohlich and Oppenheimer (1994), Gächter and Riedl (2005) and Schokkaert et al. (2003). The current study is in this vein, and the eight distinct vignettes in the questionnaire prompt more complex distributive preferences that usually produce unequal allocations. They describe a wide

variety of real world ethical concerns, including environmental protection, fair wages, welfare, job security, tort law, bioethics, globalization and media ethics. Four scenarios are not informed by any specific theory but rather concern issues in applied ethics, whereas the other four are designed with certain distributive concepts in mind, namely, efficiency, equity, need, and rectificatory justice. These cases represent an uncharacteristically broad set of real world applications for studies in this literature.

Another distinctive feature of this study concerns how “impartiality” is conceptualized. Rawls authored the most widely known approach to impartiality and justice: the ideal state for forming judgments about justice is an “original position” in which stakeholders are placed behind a veil of ignorance of any specifics associated with their roles or stakes. This normative approach suggests that information is associated with divergence of views, which is seemingly supported by studies indicating increased information contributes to biased moral views and higher rates of dispute. The current study explores an alternate approach to impartiality inspired by Adam Smith that seeks to elicit the judgments of impartial spectators, rather than implicated stakeholders, whom information is liberally provided, rather than denied. Actually, this is an incomplete description of the contrasting informational assumptions: Rawls also envisions plentiful information in order to enable moral judgment, as long as it is consistent with the veil of ignorance. But the version of Smith considered here does not restrict even personal information: agents are invited to reference their personal knowledge and experience-based intuitions, and impartiality is achieved instead through the absence of stakes. Nevertheless, this comparison serves primarily to provide background, since the purpose here is not to test Rawlsian impartiality or to evaluate empirically its merits relative to an alternative approach. Rather, the focus of this study is on properties of Smithian impartiality.

The hypothesis tested in this paper is that the impartial spectator can be approximated empirically. But if spectator views can be empirically derived, this provides a means for justice scholars to identify general principles of justice, a foundation for social choice theory, and a practical guide for evaluating policy and implementing the exigencies of justice in real situations. An empirically informed theory of unbiased justice offers an attractive basis for both normative and positive analysis. In particular, an impartial spectator theory of justice is a promising approach to the kinds of issues addressed by normative theorists and political economists. For instance, it can inform questions of voting, income distribution, wealth distribution and taxation. An understanding of “unbiased justice” can assist political discourse by helping to identify biased claims that are erroneously justified by manipulation of justice principles to unjust ends. It can also serve as a guide for economic policy in a variety of contexts, including in resolving labor-management conflicts, in the regulation of industries, and in the allocation of costs and benefits of public programs.

This paper considers evidence on properties that are commonly considered desirable for impartiality. The results of the study indicate that, for spectators, information results in a convergence of views, i.e., it significantly reduces variance, and that the effects of personal characteristics, which can be associated with personal bias, are neither large nor systematically significant. These patterns are favorable to the claim that the impartial spectator can be approximated in the real world and provide a different perspective from much previous theoretical and empirical work. The results

additionally illuminate factors that affect distributive preferences in a set of real world contexts.

Section 2 of this paper discusses different theories of impartiality and summarizes the “quasi-spectator” method for investigating impartiality. Section 3 motivates and presents the survey design chosen for the study. Section 4 summarizes the results on means and variances and presents the results of regression analyses of the possible effects of personal bias. Section 5 concludes.

2 Impartiality

This section describes different theoretical concepts of impartiality and the general empirical approach to impartiality proposed here, which is inspired by Smith.

2.1 Theoretical background

How should one conceptualize impartiality? Philosophers and social scientists have proposed various approaches, but two notions of impartiality have dominated most normative discourse in economics: the Rawlsian *original position* and the *impartial spectator* (or *impartial observer*) model. In *The Theory of Justice* (Rawls 1971), John Rawls explicated a thought experiment called the original position. This is a hypothetical state in which self-interested individuals initially choose the principles that guide the basic structure of society behind a “veil of ignorance” of any particulars related to themselves, including information about their future position in that society. Rawls maintained that, under such conditions, there would be a high level of agreement regarding the principles of justice, which, he claimed, would protect the interests of the least well off member of society. A different approach is the impartial spectator model, which can be traced to David Hume (1751 [1983]) and, especially, to Adam Smith in his *The Theory of Moral Sentiments* (1759 [1809]). Heirs to Smith’s legacy have stressed different aspects of his writings and have interpreted them in different ways. Many readers have focused on sympathy, whereby the impartial spectator assumes the positions of affected parties, both cognitively and affectively. Common to both Rawls and Smith, however, is the notion that impartiality creates consensus. Indeed, Rawls explicitly asserts that, behind a veil of ignorance, people would reach unanimous agreement on the principles of justice. The relationship between impartiality and consensus is an extremely important, but largely ignored, aspect of both normative and positive justice research. Consensus provides a compelling foundation for prescriptive claims of the superiority of one set of outcomes, principles or ethical theories over another. In addition, some degree of consensus is usually critical to the formulation and implementation of policies in most social and political institutions. This, therefore, is the primary focus of attention in this paper.

The chief impartial observer models known to economists are two that Harsanyi proposed (although Harsanyi rarely made any connection to Smith). Amiel et al. (2006) present an interesting empirical investigation of these two models. In the one model (Harsanyi 1978), Harsanyi proposes that individuals have internalized moral preferences, which they might express as third parties (indeed, he suggests they might

even express these as stakeholders trying to remain impartial). Nevertheless, Harsanyi allows that these moral preferences could differ across individuals. In the other model (Harsanyi 1953, 1955), he proposes that the impartial observer engages in a thought experiment. The observer considers the objective and subjective circumstances of every person and imagines himself having an equal probability of being each of those persons, ignoring his own actual station. This latter model entails judgments from a hypothetical state and, in this respect, resembles Rawls's original position. Both of Harsanyi's two models are formulated in terms of lotteries with von Neumann–Morgenstern utility, and in both cases he argues for utilitarian ethics.

The models of Rawls and Harsanyi are extremely important contributions to this literature. This study, however, is neither an empirical test of them nor a comparative empirical analysis of their strengths, important as that endeavor is.¹ Rather, it proposes and tests empirically a new interpretation of Smith's impartial spectator model that differs in several respects from these other models. Harsanyi considers choice under risk, and the observers have potentially conflicting moral preferences in the one model or engage in reasoning behind a veil of ignorance in the other, as with Rawls. In contrast, I propose and investigate the impartial spectator as one who exists contemporaneously, is present in real people, is informed of the relevant circumstances, embraces a common value system and whose judgments do not necessarily (and, in Smith's examples, usually do not explicitly) involve choice under risk. Some parts of this characterization are consistent with Rawls or one of the Harsanyi models, but none incorporates this particular configuration. Specifically, this impartial spectator is not now and has no expectation of ever being implicated in the situation being evaluated, that is, he has no stake, real or imagined, that might bias judgments of right and wrong. Moreover, the spectator seeks to be fully informed of the relevant particulars and processes this information rationally with respect to internalized values. Smith believes that sympathetic identification can help one to understand better the objective and subjective circumstances of others, so the spectator also engages in this exercise. This paper will focus on the incremental impact of information, an aspect of impartiality that has not only been largely neglected but that is often considered anathema to impartiality. Nevertheless, it is crucial to exploring the proposed concept of impartiality given the relationship it posits between impartiality, information and stakes.

Obviously, as with all models of impartiality, the impartial spectator is stated in idealized form. Nevertheless, I believe what is promising about this approach is not only its appeal to moral intuition but also its practical implications for empirical ethics research. Veil of ignorance approaches have extremely stringent informational requirements: agents must reason from self-interest but ignore any and every fact that could introduce a self-interested bias into their judgments. The impartial spectator, on the other hand, is not denied any information, including about his own station in life. Indeed, the spectator is encouraged to acquire all information that might be relevant to reaching moral decisions, including possibly from his own experiences and circumstances. Impartiality in this model is achieved by considering only evaluations of individuals who have no stake in the situation they are judging.

¹ Traub et al. (2005) report an interesting experiment that examines different types of impartiality, including versions of Rawls and Harsanyi, which focuses on choice behind different types of veils of ignorance.

Some critics have argued that the veil of ignorance is problematic on theoretical grounds: how much information is enough to evaluate allocations or institutions but not too much to bias judgments? Can such conditions exist even hypothetically? Rawls would disallow even information about risk preference, but it is difficult to imagine the thought experiment that obtains under such conditions. Nevertheless, one objection is that it is even more problematic to actualize the veil of ignorance in the real world. [Frohlich and Oppenheimer \(1994\)](#) have simulated Rawlsian conditions in the laboratory using subjects who in groups reason about and vote on redistribution prior to being informed about their individual income classes. Their studies generate fascinating and compelling results about group decision making and distributive preferences, which mostly contradict Rawls's claims about those preferences. Nevertheless, it is difficult to believe that people really leave their personal interests and experiences at the laboratory door, as the veil of ignorance would require them to do, or to imagine how this thought experiment could be extended to real world situations where stakes are high and knowledge of one's position cannot be denied. In contrast, the impartial spectator is an informed party situated in the real world, even as an ideal, so one can more readily conceive of empirical tests of this model.

Although this study is not a comparative empirical analysis of the veil of ignorance and spectator concepts of impartiality, the review of these concepts in this section provides background to the current study and highlights some potential theoretical and practical advantages of the spectator approach. The next section builds on the *spectator model* of this section, which is stated in theoretical terms, to formulate the *quasi-spectator method*, which represents an empirical means for testing the model.

2.2 Quasi-spectator method

One can recognize the ideal of the impartial spectator in many real social institutions. For example, judges, juries, independent arbitrators and regulators are all supposed to be third parties who seek all relevant information on the issues they are deciding without being tainted by any claim related to those same issues. Violations to this impartiality are often prohibited by law. In matters of jurisprudence, the rules of evidence are largely designed with the aim of liberally providing relevant information. Nevertheless, the ideal conditions of impartial spectatorship are probably never realized in the real world. For example, spectators with no material claim might still interject their interests into a situation by vicarious identification with the one stakeholder or the other. Even if self-interest plays no real or imagined role, spectator judgments can be biased by limited information or unrepresentative experiences. Given these facts, is there a means to identify to some degree of certainty spectator judgments under the less than ideal conditions that exist in the real world?

I propose to take seriously the sometimes implicit and other times explicit claim of most normative theory that impartiality results in unanimity. Since the conditions of perfect impartiality are presumably never obtained, however, one can at best observe the judgments of a "quasi-spectator." This is an observer who has no salient stakes in the matter at hand and possesses some, if not all, information relevant to his internalized moral values. The quasi-spectator method proposed here, therefore, refers to any

empirical method that elicits the moral judgments of such agents. Given incomplete information, quasi-spectators might still disagree based on their differing beliefs about the unknowns. The notion that “true” spectator views can at best be approximated is in keeping with the kind of statistical uncertainty with which empirical researchers routinely deal and with a distribution of measured views that is not degenerate. But what evidence is there that spectator judgments can even be approximated? The critical property that I propose to address this question is *consensus*. This is a convergent trend of opinion by quasi-spectators that accompanies the addition of relevant information. This approach operates from the assumption that spectators share a common set of values such that, as information related to their values is added, their views of what is just will, on average, converge. Thus, complete impartiality and, therefore, unanimity are probably never observed in the real world given the difficulties of both eradicating all stakes and providing all relevant information. But convergence, on average, toward a particular view by quasi-spectators as information is added is taken as favorable evidence of the impartial spectator. Consistent with normative theory (and empirical method), then, consensus is seen as central to an analysis of impartiality.

Against this background, the current study focuses on consensus as a test of spectator impartiality: the prediction is that increasing relevant information will, on average, increase convergence (i.e., reduce dispersion) of the moral views of quasi-spectators. Considering conflicting empirical findings as well as alternate theoretical considerations, the relationship between information and convergence is an open question. [Babcock and Loewenstein \(1997\)](#) report a series of experimental and field studies of bargaining with plentiful information. They find that informing subjects of their positions increases rates of bargaining disputes and impasse, which they trace to biased processing of information. Their claim finds support in the psychology literature indicating that biases increase with the number of criteria at one’s disposal ([Dunning et al. 1989](#)). Nevertheless, these studies involve stakeholders, i.e., implicated parties whose judgments are impacted by self-interest. It is not surprising that, when interests diverge, views are biased and disperse.

Other experimental evidence, however, suggests that information promotes consensus. [Konow \(2005\)](#) analyzes a series of studies, including bargaining experiments by Alvin Roth and his colleagues, in which information was varied. High information was generally found to decrease the variance of expected payoffs. Nevertheless, those experiments were not designed to address the question at hand and, therefore, limit the conclusions one can draw in this regard for at least two reasons. First, those experiments involved stakeholders bargaining over their own payoffs rather than spectators expressing unbiased preferences. Second, the procedures of the experiments provided little or no context for moral judgment, even in the high information conditions.

In contrast to these studies, the current one is concerned with the moral claims of third parties. Even with quasi-spectators, however, it is not clear on a priori grounds whether or how information would affect convergence. On the one hand, additional information could complicate moral reasoning, resulting in increased noise. Also, if individuals do not agree on moral principles or on their relative importance or residual interests corrupt their judgment, information could introduce elements that feed these tendencies toward divergent views. On the other hand, the quasi-spectator approach outlined above postulates that people operate from a common set of principles. If agents

entertain multiple principles, then this model posits that, at least as impartial spectators, they share a common sense of how to weigh the principles, i.e., there is a high level of agreement on trade-offs. Relevant information allows quasi-spectators to reduce the role of potentially differing implicit assumptions and to evaluate more accurately the implications of their principles, resulting in greater consensus. Thus, whether information contributes to convergent or divergent moral judgments by spectators is also an open question on theoretical grounds. Since the evidence and arguments on consensus seemingly cut both ways, the null hypothesis that is tested in the analysis that follows is that information has no effect on convergence.

Some experimental studies have compared the decisions of quasi-spectators and stakeholders: Konow (2000), Croson and Konow (2008), and Konow et al. (2008) find that the decisions of the former are significantly less disperse than those of the latter. Although these results are consistent with the impartial spectator approach, these studies do not vary information to subjects and do not, therefore, address the central prediction of spectatorship raised here. In addition, studies relating information and stakeholder consensus, while interesting, do not bear on the matter at hand: the quasi-spectator method has nothing to say about whether stakeholder views converge more or less than those of spectators. Moreover, the self-interested bias of stakeholder views renders their judgments inferior to those of spectators for purposes of inferring impartial views (Konow 2008). Some survey studies, on the other hand, have elicited moral views of quasi-spectators under different information conditions, e.g., the important and seminal survey study of fairness by Kahneman et al. (1986) presents alternate passages in different versions of scenarios. These interesting and informative results stimulated an impressive volume of subsequent research, but they are based on variation in informational content using *contrasting* versions. Similarly, Yaari and Bar-Hillel (1984) present contrasting versions of a question where information is stated as facts or as beliefs, but the basic information is not manipulated. In order to test the quasi-spectator method, however, contrasting versions do not suffice: one must observe the marginal effect of information, i.e., information must be varied incrementally.

Of the extant research, Faravelli (2007) is closest in several ways to the current project. In his study, students read two questions about a scenario involving Robinson and Friday and select the “just” distribution of a resource from among three or four choices. Different versions of the second question include additional information about the responsibility or need of the parties, which is often found to increase the frequency of certain choices. Faravelli’s design is clever and well suited to his purposes, which include studying the effects of economics training and adherence to specific theoretical principles. His findings are generally consistent with the quasi-spectator method proposed here. The current study, though, differs in several ways in its goals and, therefore, also in its method: subjects face eight different scenarios, they choose allocations that “should be” implemented from a continuous interval rather than discrete set, different versions of the same question are never presented to the same subjects, the scenarios reflect commonly confronted contexts that require policy decisions, and the subject pool includes a broad cross section of college majors and years. The following section describes the specific design, procedures and questions employed here.

3 Description of the questionnaire

3.1 Design and procedures

The quasi-spectator method can be applied using different empirical tools, e.g., one can elicit the decisions of informed third parties in experiments or the moral views of respondents to surveys. This study employs a written questionnaire consisting of vignettes administered to subjects who are university students. This approach has been widely employed in justice research, and, especially, in the empirical social choice literature, e.g., Gaertner et al. (2001) and Schokkaert and Capeau (1991). Specifically, this paper reports results for two versions of each question, the high information and low information treatments, involving different groups of subjects (i.e., a between subjects design). I begin by reviewing some reasons for these choices below.²

Experiments allow stricter controls, but we are interested here in judgments embedded in real social institutions, and vignettes provide a contextual richness that is better suited to that end. On the matter of the degree of realism, more abstract scenarios could perhaps be more directly related to theories of justice, but in this study that point was secondary to questions of consensus in real world contexts. Also, more hypothetical content might seem more general, but specific context has actually been shown to aid reasoning about abstract concepts. Moreover, generality is addressed here by the use of eight very different scenarios, a number that is large by the standards of such research. A survey was also a more practical choice, given the comparatively large number of scenarios, the between subjects design for the low and high information treatments, and the more than 100 observations that were collected for each information condition of each scenario.³ Material stakes have the advantage that subject decisions affect real outcomes, and the presence of stakes has sometimes been shown to produce significant differences in behavior (Forsythe et al. 1994). On the other hand, Rubinstein (1999) compares numerous studies with and without pay and concludes that the results are qualitatively the same. Moreover, for the purpose at hand, the justice concepts that inform four of the scenarios have been corroborated in experiments with monetary stakes, as summarized in the following section. In addition, stakes risk introducing a different bias that is troubling for this particular study, namely, a self-interested bias.

As just stated, the results reported here are based on two information conditions. In the *low information* treatment, one set of respondents reads a scenario involving the distribution of some variable of social or economic value, e.g., how much to reduce the discharge of a pulp mill's pollutants into a river given the environmental impact and the effect on employment at the mill. The participants are not cast in any stakeholder role in the scenario, indeed, the text of some scenarios in this study explicitly promotes a third party view, e.g., the pulp mill is portrayed as being located in a different part

² This review draws on Konow (2003), where the reader can find a more detailed discussion of the pros and cons of using different subject pools and empirical methods to investigate justice preferences.

³ This concern was amplified by the fact that the results analyzed in this paper were part of a larger study that involved not only the two versions of each question reported here but a total of twelve versions per scenario. Thus, it would have been prohibitively costly to investigate this many variations in paid experiments or in the field.

of the country so as to minimize any imagined concern by respondents for their own employment or hardship from the pollution. The response format is continuous on a closed interval, e.g., the pollutants can be reduced by any amount between 0 and 100%. In the *high information* treatment, a different group of respondents reads a scenario that is identical to the low information one, save the addition of a passage that contains supplemental information that was a priori considered relevant. Relevance was verified by an empirical criterion, namely, based on whether the information generated a statistically significant shift in the mean response of participants. In the case of two of the eight scenarios, content was revised to increase mean differences. In the pollution scenario, the additional passage provided more information about the consequences of different levels of pollution reduction for workers and neighbors of the mill. The between subjects design was chosen in order to avoid any tendency on the part of participants consciously to over-respond or under-respond to the different versions.

The questionnaire asked respondents to select how resources “should” be allocated. This might sometimes differ, however, from what they call “just,” e.g., they might think taxes should be lowered but believe higher taxes are more just.⁴ This issue arises from the subtle fact that justice terminology is commonly used in different senses, i.e., with different levels of specificity. As evidence in Konow (2001) suggests, survey respondents, on average, interpret the words “fair” and “just” in a manner that is intermediate to a quite specific sense (viz., accountability) and a very general sense, which encompasses all distributive preferences, including those that respect efficiency and need. Both the specific and intermediate senses are important to investigate, but in the current study I deliberately chose this phrasing with the aim of eliciting the more general distributive preferences that typically inform policy, as in the tax example above.

The content of the scenarios was informed by a stylized fact from various experiments. The highly controlled conditions of the laboratory can prove a powerful means of investigation, and it is often appropriate to restrict information about many variables, including subject contributions, abilities, choices, needs, and identity. The results of a number of experiments suggest, however, that subject decisions under such conditions are not always representative of the more complex distributive justice preferences typically encountered in real life. In particular, when the context is very lean, decisions appear to be made more frequently based on heuristics than is the case in more complex high stake situations in real life. For example, in many experiments there is no justice relevant information and equal splits often emerge as a modal choice, including in simple versions of the ultimatum game, the dictator game, and the trust game. Equal splits appear to arise here by default, not because of any general preference for equality.⁵ Under such conditions, increasing information about individuals and variables of interest might very well increase variance, ostensibly contrary to the

⁴ I thank a referee for this example and for pointing out the need to clarify this point.

⁵ Konow (2003) argues that equality of allocations is not a general principle of justice, i.e., one that most agents value in general terms under the ideal conditions of perfect information. Rather, it surfaces for a variety of other reasons, including as a special case of other general principles, due to negotiation or cognitive costs, or as a kind of “default” when no information is available about the variables needed for more careful justice evaluation.

claim of the quasi-spectator model. But the object of the current study, and the domain of the quasi-spectator model that motivates it, is moral judgment under conditions approximating the usually richer information set found in the real world. That is, this method proceeds from a base (the low information condition) in which decisions at least potentially reflect some degree of moral reflection and do not just reduce by default to equal splits, and it then explores the effect on variance of additional information (in the high information condition). For this reason, it employs surveys applied to a number of real allocation problems in a wide range of situations with some moral context, even in the low information conditions.

Consensus consistent with the spectator model is seen here as a reduction in the variance around the respective means in the high information versus the low information treatments. Since an empirical criterion was used to define and corroborate the relevance of the incremental information in the high information condition, statistically testing differences between the two treatments might seem circular. This, however, is not the case: a test of difference in means helped establish the independent variable (relevant information), but the dependent variable of interest is variance, which was not used as a criterion for selecting or verifying the relevance of any survey content. Moreover, as previously discussed, other studies on the effects of information suggest that it is an open question whether and how information might affect variance in spectator views. Demographic information was also collected and employed to evaluate the possible effects of bias in spectator judgments that might be related to personal characteristics.

The method described above is very simple, but, to my knowledge, no previous study has addressed this question or possessed a design consisting of these particular elements. Although it is a prominent feature of normative theory, consensus has remained relatively neglected in the empirical analysis of justice. In most research, treatment effects have focused on differences in means or categorical choices, rather than differences in variance. Thus, most survey studies in this area have employed categorical choice formats, e.g., as with [Faravelli \(2007\)](#) or the seminal contribution of [Yaari and Bar-Hillel \(1984\)](#) to empirical social choice (although [Gaertner \(1994\)](#), is one exception). There are advantages to the discrete choice format (including potentially simplifying the cognitive task), but given the interest here not only in means but variance, the continuous response format is a more natural choice.

Given the large number of total observations needed, a convenience sample of students was used. Specifically, 1383 undergraduate students from a wide range of majors signed up to participate in the survey to satisfy a course requirement for general psychology and economics classes at Loyola Marymount University from 2003 to 2006. Usually, most students in these classes complete the requirement by selecting several studies based on their schedules and nondescript summaries of the studies, minimizing possible selection biases. A comparison of student and non-student populations across a number of studies of fairness and moral judgment sometimes reveals differences but indicates no remarkable pattern of subject pool effects. Indeed, the findings reported in [Alatas et al. \(2006\)](#) suggest that any social preferences displayed by students are expressed even more strongly in a non-student population. Various measures were undertaken consistent with good survey design. In order not to tax respondent attention, no subject answered more than six questions, and on each

questionnaire form, long versions of scenarios were balanced with short versions of other scenarios so that the questionnaires could be completed in about 20 min. Simple and clear instructions prompted respondents to choose a single allocation for each question (instructions and the demographic questionnaire can be found in the Appendix). To deal with possible order effects, a randomized Latin square design was employed. That is, scenarios were randomly assigned to a variety of different orders. To facilitate comparison of results across scenarios, the response interval for all questions was from zero to a power of ten (i.e., 10, 100, 1,000, etc.). The author read the instructions and answered any questions for all sessions. Participants were seated at a distance from one another and turned in their forms so that no one, including the author, could trace a form to a given subject.

3.2 The vignettes

The complete questionnaire consists of eight vignettes (or hypothetical scenarios) that cover a wide range of social institutions and policy areas. Four are inspired by four different concepts of justice, viz., efficiency, need, accountability and rectificatory justice. In order both to examine the robustness of any findings to a wider range of contexts, and not just to theoretically informed scenarios, four additional questions are framed in the context of four different fields of applied ethics, viz., environmental ethics, media ethics, bioethics and business ethics. A word about the first three concepts of justice (efficiency, need and accountability) is in order: these are three principles that have previously been proposed as a part of a general theory of distributive justice, e.g., Konow (2003). In that theory, context (i.e., the set of salient variables and individuals) determines the relative importance of principles and the trade-offs among them. Actually, any set of principles or values that is associated with a significant shift in responses when information is added would have sufficed, but I chose ones that have been found in other studies to have substantial explanatory power. Here the principles are applied to new contexts, which permits additional tests of their generality.

Table 1 summarizes the eight questions according to which of the four justice concepts or four applied ethics fields they belong, the social institution in which they are framed and the specific policy area that is addressed. Tables 2 and 3 present the content of the vignettes. The passages in *both brackets and italic* did not appear in the low information condition but were added to the text in the high information condition. I will now discuss briefly each of the questions.

Question 1 is motivated by the efficiency principle, which advocates the maximization of aggregate surplus. A number of studies have found support for this goal, e.g., Charness and Rabin (2002); Kritikos and Bolle (2001) and Oxoby (2007). Specifically, this question addresses the matter of allocating firm resources to maximize consumer satisfaction and shareholder value in the context of an actual technological change we have observed in recent years. Question 2 addresses the need principle, which simply requires that allocations be sufficient to meet each individual's basic requirements for life, including for food, shelter and clothing. In this example, needs are met through state support. Evidence of a concern for needs is apparent, for example, in the studies of Gaertner et al. (2001) and Kravitz and Gunto (1992).

Table 1 Summary of questions

	Social institution	Policy area
<i>Justice concept</i>		
1. Efficiency principle	Firm	Resource allocation
2. Need principle	Government	Welfare
3. Accountability principle	Labor market	Wage setting
4. Rectificatory justice	Judiciary	Tort law
<i>Applied ethics</i>		
5. Environmental ethics	Regulatory agency	Environmental regulation
6. Media ethics	Media/entertainment industry	Mergers
7. Bioethics	Health care industry	Resource allocation
8. Business ethics	Firm	Globalization

Question 3 reflects the accountability principle. Whereas the efficiency and need principles deal with the absolute level of allocations, the accountability principle addresses the relative size of allocations across individuals. This principle allocates in proportion to the factors that affect contributions and that individuals can control. For example, a worker who is twice as productive as another should be paid twice as much, if his greater productivity is due entirely to factors he can control (e.g., hours worked) but not if it is due to factors outside his control (e.g., a physical disability). This principle finds support in the results of surveys and experiments (see [Konow 2000, 2003](#)). Since the only difference between the workers in question 3 is hours worked, one would expect a fair distribution of earnings to be in proportion to their fraction of total hours.

Question 4 is about rectificatory, or corrective, justice. Whereas the three principles outlined above deal with *distribution*, this concept has to do with *redistribution*. Rectificatory justice, which can be traced to Aristotle's *Nicomachean Ethics* (1925), addresses an initial injustice that must be rectified by the redistribution of benefits or burdens between individuals in order to establish or re-establish equity according to the reigning justice principle or principles in the particular context. In the case in which one party is wronged by another, Aristotle's claim is simply that the one should compensate the other for losses. The scenario in this question is inspired by a tort case based on a real trial that was employed in a series of studies of fairness bias reported in [Babcock and Loewenstein \(1997\)](#).⁶

The first four questions are informed by justice concepts. The next four questions, on the other hand, address distributive justice more generally, without any theoretical presuppositions about the underlying preferences for the distribution of benefits and burdens. These scenarios draw from applied ethics fields and help to establish that any pattern that emerges is not specific to the theoretical framework, while extending the analysis to a larger set of contemporary problems.

⁶ I wish to thank Linda Babcock for kindly sharing the materials they used in those studies.

Table 2 Justice concept questions

-
1. A large company has two divisions. The one division produces film for traditional cameras, which is the business the company was founded on. The other, newer division is focused on technologies for digital photography and printing. Due to changing consumer demand, the traditional film division is on the decline and its share of company revenues is falling. The company's budget for plant, machinery and equipment in the coming year totals \$10 billion, and its board must decide how much of this to devote to the film division and how much to the digital division. [*Company finance analysts expect revenues from the film division to fall from 60% currently to only 10% in 5 years. In order to protect the company's financial health and survival, they recommend focusing expenditures for plant, machinery and equipment on the digital division and devoting \$9 billion of next year's budget to the digital division and only \$1 billion to the film division.*] How much of this \$10 billion do you think the board should budget for the film division of the company (Enter a number in billions of dollars from 0 to 10)?
- \$ _____ billion
2. The state provides support to those in need for a limited period of time. For example, John, who needs 1 year to complete a high school diploma, is eligible to receive such support. [*The state has determined that the basic needs of a person living in this area for food, housing and clothing equal \$800 per month.*] How much do you think the state should provide in total support for John per month (Enter a number from \$0 to \$1,000)?
- \$ _____ per month
3. Suppose Adam and Bill worked last weekend stuffing envelopes for a mass mailing. This job took a total of 11 man hours, but Adam worked more hours than Bill. [*Specifically, Adam worked 8 h, whereas Bill worked 3 h.*] The total pay for this 11-h job is \$100. How much of this \$100 do you think Adam and Bill should each receive (Enter amounts for each person below and make sure the two amounts total \$100)?
- Adam \$ _____
- Bill \$ _____
- Total \$100
4. You are the judge deciding the outcome of a civil suit brought by a motorcyclist against the driver of a car that hit him. The suit demands \$100,000 in damages for medical expenses, loss of earnings and pain and suffering (vehicle repairs were covered by insurance), but the actual award could be anything between \$0 and \$100,000. In court testimony, the facts have been presented as follows. The motorcyclist pulled out of a parking lot into a street a few feet from a stop sign and was thrown from his motorcycle when the car struck him. [*As a result of the accident, the motorcyclist has lost earnings of about \$3,000 due to missed work time and has incurred medical expenses of around \$12,000.*] How much do you think the court should require driver of the car to pay the motorcyclist (Enter a number from \$0 to \$100,000)?
- \$ _____
-

Question 5 involves a classic case of a negative externality in which the benefits of pollution reduction must be weighed against the costs in terms of lost jobs. Question 6 portrays a scenario inspired by a widely publicized 1989 merger, where the private interests of corporations were balanced against the public good of providing information on matters of public interest. In many communities, emergency care has been threatened in recent years and is viewed by some as being at critically low levels. Question 7 addresses the provision of emergency care versus preventative services at a hospital that has insufficient resources to fund both fully. One of the important transformations associated with globalization is the movement of many manufacturing operations from developed countries to developing countries. Question 8 describes the situation of a US company that must decide how much of its operations to locate in a developing country.

Table 3 Applied ethics questions

5. The Environmental Protection Agency (or EPA) is responsible for regulating the discharge of degradable waste by a pulp mill into a river. The pulp mill involved is located in a different region of the country. The EPA must decide whether to require the pulp mill to reduce its waste discharges into the river and, if so, by how much. Doing so would reduce various adverse effects of the discharge, but complying with EPA requirements would also require the pulp mill to cut its labor force of 400 workers and, perhaps, to close down altogether. [*Cutting the waste by 30% would eliminate the noxious odors coming from the river but would result in the unemployment of 10 workers at the pulp mill. Cutting the waste by 60% would also make the river safe for drinking, swimming and fishing, but would cause a total of 20 workers to be laid off. Eliminating the waste altogether (that is, reducing it by 100%) would allow the return of an additional type of fish valued by some sports fishermen but would make the pulp mill unprofitable so that it would have to close down and lay off all 400 of its workers.*] By how much, if any, do you think the EPA should require the pulp mill to reduce its discharges (Enter a number from 0% for “no reduction” to 100% for “complete elimination” in the space below)?

_____ %

6. Newstime, Inc. is a financially sound corporation that publishes several long established and respected magazines. These magazines provide the sole source of its \$30 billion in annual revenue and represent about one-tenth of the magazine market nationwide. There are numerous smaller magazine publishers, but they generally specialize in niche markets and do not have sufficient resources or expertise to support general news reporting. Several companies in the movie industry are interested in merging with Newstime in order to take advantage of mutually beneficial business opportunities. The largest and most profitable merger would be with Entertainment Studios, which would generate estimated total annual revenues of \$100 billion from the combined magazine and movie operations. [*Opponents of this merger argue that similar mergers have resulted in higher magazine prices and have seriously compromised journalistic integrity. They give many examples, such as the case in which, after such a merger, a once venerable news magazine ignored news of wars and humanitarian disasters in favor of sensationalized coverage aimed at promoting second rate movies produced within its entertainment division.*] The possibilities for Newstime, then, are 1) to break up and become smaller and more specialized, 2) to maintain its operations at their current size (\$30 billion annual revenue), or 3) to become a larger corporation by merging with a film and TV corporation. In terms of annual revenue, how large a corporation do you think Newstime should be (Enter a number in billions of dollars from 0 to 100 in the space below)?

\$ _____ billion

7. A hospital budget committee must decide how much of the budget it controls to allocate to the hospital's emergency services versus to its preventive services for the community. [*At present, many patients in the community go to the emergency room for their non-emergency needs because they are uninsured. By increasing the budget to preventative services to 60%, the needs of these patients would be covered, and the reduced burden on emergency services would allow it to provide almost the same level of services as previously.*] What percentage of the budget do you think should be allocated to preventative services (Enter a number from 0% to 100% in the space below)?

_____ %

8. A medium sized manufacturing company has already moved 20% of its operations from the US to a developing country because of cost considerations. [*The company's Chief Financial Officer (CFO) has commissioned several studies and reports that the company must move 60% of its operations to the developing country or it will go bankrupt.*] What percentage of its operations do you think this company should locate in the developing country, whereby any remaining operations remain in the US (Enter a number from 0% to 100% in the space below)?

_____ %

Seeing the actual questions, the reader might have a sense of the direction in which the additional information could carry responses. Indeed, that is exactly what is hoped for, if the premise behind the quasi-spectator model is correct: the interpretation of

any convergence in the high versus low information conditions is precisely that the additional information allows respondents to evaluate the fairness of allocations more accurately based on their common values, which readers presumably also share, on average. Nevertheless, this could also raise the suspicion that convergence is specific to the wording of the questions. In particular, it is possible that the information produces responses that are chosen for their cognitive salience (i.e., as focal points) rather than their moral relevance. The following section presents the results of the survey as well as evidence on this question.

4 Results and analysis

Section 4.1 presents the results on means and variances for the high and low information conditions of each scenario, tests of differences in means and variances between the two treatments, and analysis of possible focal point effects. Section 4.2 uses multivariate regression analysis to examine potential effects of personal bias.

4.1 Analysis of means and variances

The mean, variance and number of observations are summarized by question and information condition in Table 4. Tests of differences in means and variances are also presented in this table. Note that the highly significant differences in mean views between high and low information treatments confirm the relevance of the information employed for all eight scenarios. Regarding the mean differences, no predictions were made for the four applied ethics questions. For the first four questions, however, the incremental information shifts judgments in the direction consistent with the proposed justice concepts. The additional information in question 1 on the consequences for consumers and stakeholders in the company results in a significant decrease in funding for the film division, in line with a concern for efficiency. In question 2, information on the high cost of meeting basic needs is associated with an increase in support for the needy individual. Explicit information about the larger than expected discrepancy in hours between the two workers in question 3 results in increase in pay to the one who worked longer and a proportional distribution of pay consistent with the accountability principle: Adam worked 72.7% of the total hours (8 out of 11), and respondents gave him, on average, 73.4% of the total pay, an insignificant difference ($t = 1.19$, two-tailed $p = 0.23$). In question 4, information about the costs associated with the accident causes a significant reduction in judgments in the direction of compensating that loss (perhaps with some compensation for pain and suffering). All of these results, therefore, tend to support roles for the three principles of distributive justice and rectificatory justice.

A comparison of variances across information conditions in Table 4 is striking: high information is associated with reduced variance in every instance. In addition, we can reject the null hypothesis of no change in variance at the 5% level of significance for seven of eight questions. The quasi-spectator approach predicts that increased relevant information will, *on average*, reduce variance, and these results are very supportive of this prediction.

Table 4 Effects of information on means and variances

Question	Information condition		Hypothesis tests	
	High	Low	Difference in means (<i>t</i> -statistic)	Difference in variances (<i>F</i> -statistic)
	Mean	Mean		
	<i>Variance</i>	<i>Variance</i>		
	Observs.	Observs.		
<i>Justice concept</i>				
1. Efficiency principle	2.53	3.81	-1.32**	
	2.32	3.96	(-4.70)	-1.64**
	111	114		(1.71)
2. Need principle	771	444	327**	
	43,759	68,736	(9.89)	-24,977*
	105	102		(1.57)
3. Accountability principle	73.4	60.2	13.2**	
	36.8	44.9	(15.43)	-8.1
	112	112		(1.22)
4. Rectificatory justice	33,245	55,157	-21,912**	
	0.41E9	1.19E9	(-5.96)	-0.78E9**
	108	122		(2.90)
<i>Applied ethics</i>				
5. Environmental ethics	60.1	42.1	18.0**	
	245.1	620.7	(6.23)	-375.5**
	104	103		(2.53)
6. Media ethics	46.4	58.6	-12.2**	
	515.9	1018.1	(-3.44)	-502.2**
	121	122		(1.97)
7. Bioethics	57.6	44.8	12.8**	
	78.7	286.8	(6.86)	-208.1**
	108	103		(3.64)
8. Business ethics	54.9	35.1	19.8**	
	405.4	603.2	(6.97)	-197.8*
	129	123		(1.49)

The tests of difference in means are based on two-tail *t*-tests. For question 4, variance is expressed in billions of dollars (i.e., *E*9)

* $p < 0.05$, ** $p < 0.01$

The quasi-spectator approach posits that variance falls with increased relevant information due to the improved capacity of agents to reason from a common set of values. As mentioned in the previous section, however, an alternate possibility is that the information is merely creating a focal point, i.e., respondents are cognitively attracted to a specific value provided. I call this the *focal point hypothesis* and address it first with some general observations about the method used in this study and then

with more formal analysis.⁷ I note that one stylized fact that emerged from this study and the larger project of which it was a part (Konow 2008) is that irrelevant information (i.e., information that does not significantly shift the mean) can be specific or general, but relevant (i.e., mean shifting) information is more specific. Actually, it is probably unsurprising on reflection that information that aids moral reasoning (i.e., is relevant) must also contain details. But if relevant information is necessarily specific, this does complicate the process of determining whether reduced variance results from the kind of consensus predicted by the quasi-spectator method or merely from a focal point.

One approach is to include multiple pieces of information that might serve as focal points, as done in questions 4 and 5. A more direct and compelling approach, however, uses that fact that the focal point hypothesis, by its very definition, implies a higher proportion of responses at a particular value in the high information than the low information condition. That is, the modal response with high information should systematically occur with a greater frequency than the modal response under low information. Another possible interpretation of the focal point is that the median response in the high information condition occurs with greater frequency than the median response in the low information condition. The former version probably has more intuitive appeal, but I include both in order to give this hypothesis its best shot. Note, however, that the focal point hypothesis implies systematically more frequent responses with high information but does not *necessarily* imply reduced variance, e.g., variance could be higher if there are multiple focal points or if non-focal point responses become more disperse. The quasi-spectator method, on the other hand, predicts systematically reduced variance, but is consistent with more or less frequent modal and median responses. In fact, given the overall tendency of respondents to make choices at discrete intervals, one might expect more frequent modal and median responses with any kind of reduced variance, but the quasi-spectator method does not systematically predict this outcome.

Table 5 reports the fraction of modal and median responses under the high and low information conditions for the eight scenarios. The focal point hypothesis implies that the difference between these values for high minus low should be positive, indicating a greater proportion of responses at certain values in the high information treatment. Nevertheless, we see that this difference is positive at conventional levels of significance according to a test of differences in proportions in only three of the eight scenarios (questions 5, 7 and 8). This difference is insignificant for four other scenarios and is even significantly negative for one (question 3). These results hold using both modal and median responses. Thus, there is some evidence consistent with focal points for three questions, but the results of Table 5 do not reveal a *systematic* pattern of focal points that would explain the *systematic* reduction in variance reported in Table 4. Moreover, if it is the presence of specific information rather than its moral relevance that attracts responses, scenarios that introduce multiple potential focal points in the high information condition, such as questions 4 and 5, might be expected to increase variance and/or decrease modal or median responses, but there is no significant evidence of any of that.

⁷ I wish to thank a referee for motivating a more detailed examination of this issue.

Table 5 Proportions of modal and median responses

Question	Mode			Median		
	High info	Low info	Difference (High-Low)	High info	Low info	Difference (High-Low)
1	0.31	0.25	0.06	0.31	0.25	0.06
2	0.31	0.25	0.06	0.31	0.25	0.06
3	0.32	0.66	-0.34**	0.09	0.66	-0.57**
4	0.15	0.20	-0.05	0.14	0.20	-0.06
5	0.62	0.26	0.36**	0.62	0.01	0.61**
6	0.40	0.30	0.10	0.07	0.09	-0.02
7	0.60	0.19	0.41**	0.60	0.19	0.41**
8	0.31	0.18	0.13*	0.31	0.12	0.19**

* $p < 0.05$, ** $p < 0.01$, two-tail t -tests of differences in proportions

Table 6 Determinants of dispersion in responses (SE)

Regressors	(1)	(2)
Information	-6.34** (1.56)	-6.56** (1.47)
Frequency of mode	-6.98 (6.57)	
Frequency of median		-4.92 (4.34)
Constant	22.70** (2.66)	22.23** (2.38)
Question 2 dummy	6.03 (2.88)	6.02 (2.85)
Question 3 dummy	-9.72* (3.20)	-10.72 (2.88)
Question 4 dummy	9.04* (2.96)	9.23* (2.89)
Question 5 dummy	3.85 (3.08)	2.89 (2.86)
Question 6 dummy	10.25* (2.92)	8.74* (2.98)
Question 7 dummy	-3.85 (2.99)	-4.09 (2.90)
Question 8 dummy	4.53 (2.89)	4.46 (2.87)
R-squared	0.95	0.95

The dependent variable is the standard deviation of responses in the question/information conditions; standard errors are in parentheses
* $p < 0.05$, ** $p < 0.01$.

Multivariate regression analysis permits a more formal comparison of the consensus versus focal point interpretations of the results. I normalized the responses to all questions to a 100 point scale and regressed the variance of responses in each of the sixteen question/information conditions on a dummy for high information (1 for High, 0 for Low), the frequency of the potential focal point (in two separate OLS regressions for the mode and median) in that condition, and dummies for the questions (with question 1 as the omitted category). I carried out the same two regressions with the standard deviation in each condition as the dependent variable and came to qualitatively the same conclusions regarding the significance of the variables of interest. Using the standard deviation as the measure of dispersion produced an overall better fit, however, so these results are reported in Table 6. The coefficients on the Information dummy indicate that, controlling for potential focal points and scenarios, the additional information produces a highly significant decrease in dispersion ($t = -4.07$, $p = 0.007$

for the mode, and $t = -4.46$, $p = 0.004$ for the median). The coefficients on the frequencies of potential focal points are negative but not significant, even at the 25% level ($t = -1.06$, $p = 0.329$ for the mode, and $t = -1.13$, $p = 0.301$ for the median). Thus, these results strongly support relevant information, and not focal points, as the reason for reduced variance.

4.2 Personal bias

The results reported above are consistent with the quasi-spectator approach to impartiality. Nevertheless, quasi-spectators are not ideal spectators, a fact that raises the question of whether they are, to some degree, subject to personal bias and, if so, what the magnitude of that bias is. In this section, therefore, we consider personal bias through the effects on responses of various personal characteristics, which might plausibly serve as proxies for self-interested influences on moral judgment. For example, low income respondents might support more redistribution in the welfare scenario because of a self-interested identification with that group (and, conversely, high income might support less redistribution). These results are also potentially interesting because of the possibility that justice evaluation varies systematically across gender, race, major, income class, etc.

Table 7 reports the results of OLS regressions of the pooled responses from the high and low information conditions on a set of explanatory variables for each of the eight questions. The first six regressors are dummy variables. The Information dummy equals 1 for the High Information condition and 0 for the Low Information condition. The Gender dummy equals 1 for female and 0 for male. The Nonwhite dummy equals 0 for white and 1 for all other categories – Nonwhite was collapsed into a single variable due to the low number of observations in certain more specific categories and because of the mostly similar patterns for nonwhites. The college dummies (Business, Communications/Fine Arts, Science/Engineering) identify which of the four colleges at this university the respondent's major is in, where Liberal Arts is the omitted category. Class is the year in school, followed by Age, Expenditures on all categories during the school year, Parents' annual income (estimated to intervals of \$25,000), Hours worked by the respondent per week and annual Earnings over the past year. The personal characteristic variables mostly had low or insignificant correlations with one another. Two exceptions were the relatively high Class/Age and Hours worked/Earnings correlations, respectively. Therefore, I ran four separate regressions for each question using only two variables from each of these categories (i.e., Class/Hours, Class/Earnings, Age/Hours, Age/Earnings). These revealed no differences in the signs of significant variables and almost no differences in levels of significance, so the regressions reported here use the complete set of explanatory variables.⁸

⁸ In the few cases where significance changes, most involve significant variables being more so using the complete set, contrary to expectations, which should allay any concern that the impact of any personal characteristic is being understated in the reported regressions. The one exception is question 6, where Expenditures generates a p -value slightly greater than 0.05 in the regression with all regressors and a p -value slightly less than 0.05 in three of the four regressions using only two of the four variables in question.

Table 7 Regression analysis of responses

Regressors	Question							
	1. Efficiency	2. Need	3. Account	4. Rectific.	5. Environ.	6. Media	7. Bioeths.	8. Busns.
Information	-1.174*** (0.239)	333.4*** (33.4)	13.35*** (0.81)	-21925*** (3907)	19.07*** (2.97)	-12.58*** (3.58)	13.84*** (1.90)	18.67*** (2.85)
Gender	0.057 (0.249)	-4.7 (35.8)	-0.50 (0.86)	4999 (4155)	4.47 (3.18)	1.54 (3.74)	1.25 (2.02)	-4.17 (3.00)
Nonwhite	0.364 (0.262)	82.1* (37.3)	-1.71 (0.90)	5018 (4130)	-2.12 (3.35)	2.73 (3.75)	-0.21 (2.05)	-3.70 (3.00)
Business	-0.277 (0.288)	-23.5 (42.1)	-1.98* (0.97)	-565 (4532)	0.94 (3.71)	0.92 (4.29)	-2.75 (2.27)	8.74* (3.41)
Communications/ Fine Arts	0.590 (0.358)	-2.7 (55.8)	-1.67 (1.29)	-2110 (6295)	-1.78 (4.94)	-16.61** (6.22)	-1.65 (2.65)	5.92 (4.43)
Science/Engineering	0.690 (0.424)	-4.95 (56.2)	0.07 (1.42)	-14888 (8042)	-2.81 (5.13)	3.66 (6.84)	-4.57 (3.97)	9.21 (5.47)
Class	0.055 (0.247)	-19.4 (30.1)	-0.34 (1.01)	4536 (3457)	1.44 (2.63)	2.94 (3.57)	1.36 (1.31)	2.44 (2.84)
Age	-0.203 (0.169)	18.7* (7.7)	-0.46 (0.82)	-573 (2811)	0.30 (0.68)	-2.09 (2.72)	0.63 (0.41)	-2.54 (2.10)
Expenditures (\$1,000/year)	-0.011 (0.009)	-1.3 (1.4)	0.00 (0.02)	275* (113)	-0.11 (0.13)	0.22* (0.10)	0.03 (0.05)	0.13 (0.08)
Parents income	0.005 (0.068)	9.1 (9.7)	-0.25 (0.23)	-738 (1101)	-0.35 (0.85)	1.50 (1.02)	-0.44 (0.54)	-0.42 (0.80)
Hours worked (per week)	-0.006 (0.013)	-0.9 (1.8)	0.00 (0.05)	-289 (225)	-0.16 (0.16)	-0.05 (0.20)	0.08 (0.11)	-0.08 (0.18)
Earnings (\$1,000/year)	0.034 (0.025)	1.7 (7.3)	-0.06 (0.14)	67 (415)	-0.59 (0.63)	-0.36 (0.45)	-0.10 (0.24)	0.12 (0.37)
Observations	217	204	217	222	203	238	202	247
R-squared	0.18	0.37	0.60	0.18	0.20	0.12	0.25	0.22

Standard errors are in parentheses. The omitted categories for the dummy variables are white, male and Liberal Arts College
 / denotes a *p*-value less than 0.05/0.01/0.001

In Table 7, the Information dummy controls for the effect of relevant information, and the signs and even the magnitudes of the information effects in Table 7 are very close to the differences in means in Table 4. Of the 88 remaining coefficients on the personal characteristic variables, only 8% (i.e., 7) are significant at the 5% level. Moreover, an F -test fails to reject the null hypothesis of no systematic variation in moral views due to personal characteristics for all eight questions. I will discuss the personal characteristic variables and suggest interpretations of the individually significant results.

Gender is not significantly related to moral judgments in these scenarios, contrary to some studies of social preferences, although probably consistent with most. The significant coefficient on the Nonwhite dummy in question 2 indicates that this group supports \$82 more welfare support per month than whites. This might reflect a stronger belief on their part in the value of government support for education and for addressing basic needs. Three results on major are significant, whereby no coefficient on Science and Engineering is significant. Business students support about \$2 less than the proportional pay (and less than Liberal Arts students) in question 3. One conjecture about this is that, as future managers, these students are more committed to equal treatment of workers within firms than to unequal rewards, consistent with Frank's (1988) story about greater wage equality within firms than across them. These future managers also back moving about 9% more of the company's operations overseas than liberal arts students in order to protect the company's finances. Communications students strongly support keeping Newstime smaller, against the forces of merging. The most plausible explanation seems to be that, by virtue of their professionally oriented training, they are more sensitive than other majors to the adverse impact on the journalistic mission of the magazine of merging with an entertainment company.

Class has no significant impact, but Age has one that seems reasonable. Older respondents appear to be more generous in supporting the completion of the student's education in question 2 (by about \$19 per year of age). Respondents in question 4 want to award the damaged party \$275 more for every \$1,000 more they spend each year, or \$4,599 for a one standard deviation difference in expenditures (\$16,722). The reason for this last result is unclear, but perhaps "big spenders" identify with the damaged party, which they otherwise see as being on the low end of possible settlements. Higher expenditures are also associated with a small preference for merging a news magazine with a movie company in question 6. Parents' income, Hours worked and Earnings have no significant effects.

These results suggest that personal characteristics might occasionally insinuate themselves into the moral decisions of quasi-spectators, but the evidence does not support them as systematic predictors of distributive preferences. A separate question, however, is how important a variable is, i.e., how much of the variance in the dependent variable a regressor explains. That is, a marginally significant variable might still explain a high fraction of the variance. The typical approach to this is to examine semi-partial correlations, i.e., the percentage of the variance in the dependent variable that a given regressor uniquely explains, and to compare these for different regressors. This is equivalent to the change in the value of the R -squared when a

Table 8 Importance of information versus personal characteristics

Question	Regressors (<i>R</i> -squared)	
	All personal characteristics	Information dummy
<i>Justice concept</i>		
1. Efficiency principle	0.08	0.09
2. Need principle	0.04	0.32
3. Accountability principle	0.07	0.52
4. Rectificatory justice	0.05	0.13
<i>Applied ethics</i>		
5. Environmental ethics	0.03	0.16
6. Media ethics	0.08	0.05
7. Bioethics	0.04	0.19
8. Business ethics	0.05	0.16

variable is added to the regression.⁹ Based on this, tests reported in Table 8 show that all personal characteristics combined account for only 3 to 8% of the variance in distributive preferences, compared to 13–60% for all regressors. Since the information in the questions was designed to produce differences, comparisons of the effects of information and personal characteristics must be taken with a grain of salt. But it is interesting to report that no single personal characteristic accounts for as much variance as information, indeed, all of the personal characteristics combined explain less variance than information for seven of the eight questions, according to Table 8.

5 Conclusions

This paper presents an empirical approach to impartiality inspired by the impartial spectator model of Adam Smith. The proposed quasi-spectator method postulates a direct relationship between relevant information and consensus, i.e., reduced variance in moral judgments. This is, in fact, opposed to important theoretical claims and empirical findings. First, normative approaches to impartiality, like Rawls's, typically associate impartiality with restrictions on certain kinds of information, whereas the spectator approach places no such limits on information. Second, some empirical studies of fairness bias suggest that information feeds self-serving biases and disagreements. Of course, the important distinction in the spectator model in comparison to these others is the focus on informed spectators, rather than informed stakeholders. But a third point is that it is not obvious on a priori grounds that increased information will favorably affect spectator convergence given practical considerations, e.g., information could complicate moral reasoning. In fact, a related study (Konow 2008) finds that

⁹ The sum of these semi-partial correlations will not, however, usually add up to the *R*-squared for the regression with all regressors because of correlations between the regressors and for the practical reason that the *R*-squared sometimes differs due to different numbers of observations in the regressions caused by missing data (as is the case with these data).

irrelevant information does not reliably affect spectator consensus: variance might increase or decrease, but it is usually not significantly affected.

The current study finds that relevant information is reliably related to convergence of moral views, in support of the quasi-spectator method. The contextually rich scenarios were designed to reflect a wide range of real world situations. The analysis of the pooled data indicates that convergence is driven by the increased ability of agents to reason from common moral principles, rather than by focal point effects. Evidence from personal characteristics suggests that the impact of personal bias on the moral judgments of spectators is neither systematically significant nor large in magnitude.

Normative work in economics and philosophy involves judgment under some conditions of impartiality, which, in turn, is usually associated with consensus. By establishing a relationship between consensus and conditions of impartiality, it is hoped that this paper helps to lay an empirical foundation for welfare analysis and social choice theory. That is, the aim is to identify views using a method that has normative appeal, which then establishes its validity for evaluating, and perhaps even informing, prescriptive theories. Empirical social choice has contributed in a significant way to the critical analysis of important normative theories. As this field moves ahead, perhaps the current of work running from empirical analysis to theory will also strengthen. In this study, the results for the first four questions, which are based on justice concepts, also add to the evidence in support of the efficiency, need and accountability principles of distributive justice and of rectificatory justice.

By embedding the empirical analysis in real world issues, I hope that this approach will ultimately also lead to practical policy applications, including to contexts such as those described in the scenarios here. These include questions of the fair restructuring of industries impacted by changing technology and demand, state support of the indigent, compensation for labor, the settlement of civil suits, environmental regulation, resources for the press, support for health care, and relocation of jobs in a globalized world. Developing and refining means for identifying impartial views about such contentious issues could prove helpful in designing solutions and resolving conflicts to important problems.

Appendix

Instructions

This questionnaire consists of several questions each describing a different scenario. Please read each question carefully, and then supply a numerical answer in the space provided. Please give exactly one answer to every question, as we cannot use forms with multiple or incomplete answers. This is not a test of knowledge or ability. Instead, we are interested in what you think should be done in each scenario given the information provided.

After you complete the questions, there is a final page requesting subject information. When you are finished, please put your form and pencil down and wait quietly. When everyone is finished you will individually and confidentially deposit your forms in the box in the front.

Demographic questionnaire

Please answer all questions, indicating just one answer per question, as we cannot use forms with incomplete or multiple answers.

1. What is your college?

- | | |
|--------------------------------|---------------------------|
| 1 Business | 3 Liberal Arts |
| 2 Communications and Fine Arts | 4 Science and Engineering |

2. What is your first major (if undeclared, write UD)?

3. What year in college are you?

- | | |
|-------------|------------|
| 1 Freshman | 3 Junior |
| 2 Sophomore | 4 Senior |
| | 5 Graduate |

4. What is your age?

_____ years

5. What is your gender?

- | | |
|--------|----------|
| 1 Male | 2 Female |
|--------|----------|

6. What is your ethnicity (if several apply, please choose the one that you consider most accurate)?

- | | |
|--------------------------|-----------------------------------|
| 1 Asian/Pacific-Islander | 4 Latino/Hispanic |
| 2 Black/African-American | 5 Middle-Eastern |
| 3 Caucasian | 6 Native-American/American Indian |

7. What is your best estimate of your total expenditures this school year (September through May)? Please consider all expenses including tuition, housing, food, clothing, transportation, entertainment, etc., even if some are covered by financial aid or grants.

\$ _____ for the current school year (September through May)

8. What is the total (gross) income last year of your parents or guardians (or spouse, if married)? Exclude your own earnings. Please choose a single response, even if it is a guess.

- | | |
|-----------------------------------|------------------------------------|
| 1 \$0 to less than \$25,000 | 5 \$100,000 to less than \$125,000 |
| 2 \$25,000 to less than \$50,000 | 6 \$125,000 to less than \$150,000 |
| 3 \$50,000 to less than \$75,000 | 7 \$150,000 or more |
| 4 \$75,000 to less than \$100,000 | |

9. How many hours per week do you usually work (Enter 0 if none)?

_____ hours per week

10. Approximately how much money have you earned total through your work over the past year (the past twelve months)?

\$ _____

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