Sentiments, Conduct, and Trust in the Laboratory[*]

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BEHAVIOUR.

1. Manner of behaving one's self, whether good or bad; manners.

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5. Conduct; general practice; course of life.

CONDUCT.

6. Behaviour; regular life.

–Samuel Johnson, *Dictionary of the English Language*, 1755

Background and Motivation

Current interest in trust games by experimental economists originated in the 1990's (Berg et al., 1995) following upon earlier studies of simple two-person ultimatum and dictator games (Guth et al., 1982; Kahneman et al., 1986). The finding that decisions in these games collided with the predictions of game theory subsequently ignited a large literature on trust games.[1,2] This literature has extensively replicated and explored the robustness of the original

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[1] Yet equilibrium theory had performed well in a great variety of experimental markets in which subjects traded using the institutions (language) of message exchange and contracting that had been observed in business and financial practice such as bid-ask double auctions, posted pricing, and call markets (Smith, 1982). It is important to observe, however, that when trust games are conducted under the same conditions as the experimental markets—repeat play and private information on payoffs—convergence is to equilibrium predicted outcomes. (McCabe et al., 1998, pp. 16-19). Since private information forecloses any prospect of the players reading or signaling conduct in their actions, this condition removes all social content from trust games much as in our representations of the extended order of markets. But in market experiments that provide complete information, convergence to equilibrium is still observed, even if that convergence is less rapid than with private information (Smith, 1982).

[2] Experimentalists long have asked whether their replicable findings in student subject population are special to that group or can be extended to other populations. One answer is to go to the field for subjects; examples include the bilateral bargaining experiments reported in Siegel and Harnett (1964) comparing undergraduates with General Electric executives, and the asset trading experiments reported in Porter and Smith (1994) comparing undergraduates with corporation executives and over-the-counter traders; neither of these studies report any differences in the qualitative patterns of behavior, but results vary and investigations should proceed case by case. In the tradition of Siegel and Harnett (1964), forty years later, Fehr and List (2004) report a comparison of CEOs and university students, both in Costa Rica, using the Berg et al. (1995) trust game. In this particular comparison

findings and launched a search for explanations and models, and the testing of their predictive implications in an effort to better account for the original discordant empirical findings.

Much of the subsequent research was motivated by the original reciprocity or exchange interpretation of these results and the costly punishment and reward strategies that characterized subject behavior (Berg et al., 1995, pp. 138-9):

> In conclusion, experiments on ultimatum game, repeated prisoners' dilemma games, and other extensive form games provide strong evidence that people do punish inappropriate behavior even though this is personally costly. Furthermore, subjects take this into account when they make their decisions. The investment game provides evidence that people are also willing to reward appropriate behavior and this too is taken into account. Taken together these results suggest that both positive and negative forms of reciprocity exist and must be taken into account in order to explain the development of institutional forms which reinforce the propensity to reciprocate.[3]

The reciprocity narrative as an explanation of trust/trustworthiness derived much of its weight from concepts in evolutionary theory and in particular the developing field of evolutionary psychology theory that involved social exchange algorithms for 'mind reading,' 'intentionality,' and 'cheater detection' (Hoffman et al., 1998). Following upon Berg et al. (1995) many experiments established that intentions ("appropriate behavior") mattered; moreover, treatments that manipulated intentions or context had a greater impact on choices than treatments that varied payoffs.[4] In this paper we return to Adam Smith (1759) who provided a rich non-utilitarian model of conduct in human intercourse.

The growing empirical evidence in support of the original findings led to a second more formal response in which the traditional game-theoretic assumption of strictly self-interested agents was replaced by a utility function defined over both 'own' and 'other' reward payoffs, while retaining all the other assumptions.[5] Reciprocity was thereby interpreted as a form of revealed other-regarding behavior, and this could be rationalized within the game-theoretic framework by simply postulating that agents were driven by an 'other-regarding' utility

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the "CEOs exhibit considerably more trustful and trustworthy behavior than students; as a consequence, CEOs reach substantially higher efficiency levels" (Fehr and List, 2004, p. 764).

[3] Before his death, John Dickhaut helped to instigate an extension of these original experiments to the study of three-person trust games in which person A could transfer money which was tripled, to person B, who could transfer money that was tripled again to person C. Person C could then return money to B, and B could return money to A. The original qualitative patterns of trust and trustworthiness continued to be represented in the three-person case (see Rietz et al., 2013).

[4] For discussions of stakes and context, see Camerer (2003, pp. 60-61) and Smith (2008, Chapter 10); for intentions see McCabe et al. (2000) and Fehr and Rockenbach (2003).

[5] These assumptions were: backward induction (players look ahead and apply reason to the analysis of other and own decisions); decisions are independent of the players' history or future (the game is played exactly once by anonymously paired players) and complete information on payoffs (fully displayed to both players). For further discussion, see Smith (2010, pp. 5-9).

criterion. We wish to emphasize, however, that *when a key prediction of a theory fails, all of its assumptions must be on the table for reconsideration, and the search for a resolution must not exclude consideration of entirely different ways of thinking, representing, and modeling the phenomena.*

Cox et al. (2007) supply a concise summary of models that enrich utility by the inclusion of 'other' rewards. Their model is particularly noteworthy in prefacing the experiments we report below because they parameterize utility to include postulated emotional responses—such as status, gratitude, and resentment—to the intentions conveyed by the first mover in two person games. They model only second-mover responses, but that is the obvious first step in a program to reform and redirect the theory exercise and in itself is not the source of the problem with this approach as we shall address it in this paper.

In his first book, *The Theory of Moral Sentiments*, Adam Smith (1759; hereafter *Sentiments*, or *TMS* for specific reference citation) articulated a theory of human sociality devoted to understanding moral human action; i.e., the "practice of the duties of life" (C.J. Smith, 1894, p. 574). He and his intellectual cohorts in the Scottish enlightenment were astute observers of their respective worlds of primary interest as they searched for the hidden rules that ordered the complex phenomena they studied.[6] In this paper we (1) provide a brief account and interpretation of *Sentiments* showing that it (2) departs fundamentally from contemporary patterns of thought in economics[7] that are believed to govern individual behavior in small groups, and (3) contains strong testable propositions governing the expression of that behavior; we then (4) apply the propositions to the prediction of actions in trust games, and (5) report experiments testing these predictions. In short, we argue that the system of sociability developed in *Sentiments* provides a coherent non-utilitarian model that is consistent with the pattern of results in trust games, and leads to testable new predictions, some of which we test in what follows.

'Pleasure' and the Mainsprings of Human Action in *Sentiments*

In contemporary representations by economists and cognitive psychologists 'pleasure' gives rise to 'utility' whose measure is related functionally to a desirable (or undesirable, where utility is negative) outcome resulting from the action. Given a choice among alternatives, an individual is postulated to choose the action that maximizes measured utility (hereafter, Max-U).[8] Utility preference functions perform heavy duty work in modeling a vast range of human

[6] For a broader perspective on Adam Smith and his cohorts in Scotland's intellectual community, see Buchan (2003) and Phillipson (2010).

[7] We recognize that *Sentiments* may have important connections to psychology, social psychology, philosophy, sociology, and anthropology, but any such discussion is well beyond the scope of what we attempt here.

[8] So abbreviated and further discussed by McCloskey (2006).

decisions: isolated individuals in psychophysical measurements, individuals choosing among uncertain probabilistic prospects, interactive agents in supply-and-demand auction and asset markets, and individuals interacting through choices in two-person (e.g., trust) games or in small groups (public good and common property games).[9]

These utilitarian interpretations constitute fundamental departures from the intellectual modeling framework of *Sentiments*, but in our view Adam Smith's systematic account of human action better illuminates the processes that govern action in small groupings of which trust games are an excellent example. Many experimentalists, in the process of coming to terms with the predictive failures of the game-theoretic framework, have already designed and reported various experiments showing that intentions matter, and that the focus on outcomes needs to be re-examined. Since Adam Smith's model eschews outcomes and their utility (including social preference) and begins with actions as indicators of conduct, it seems particularly appropriate to probe the substance and implications of that model.[10] In *Sentiments* the individual is painted as inseparably connected with overlapping social groupings based in family, extended family, friends and neighbors; these groupings in turn prepare and enable the individual to reach much beyond these narrow circles into daily life experiences. As Smith saw it, this is the world that first and originally defines the content and meaning of sociability, defines the individual within that social context, and out of which the civil order of society emerged based on property, defined as rights to undertake (or not) certain actions, conditional on circumstances.

The world of *Sentiments* envisions a pre-civil law community as a proving ground for fashioning the rules of social order in an environment disciplined by propriety, and bereft of any external enforcement of property. But of course it was a world in which individuals continued to engage and thrive long after the emergence of civil government, national economies, and the extended order of specialization and markets;[11] the latter is the world Smith sought to understand in his better-known and phenomenally successful second book, *An Inquiry Into the Nature and Causes of the Wealth of Nations* (Smith, 1776; hereafter *Wealth*). But *Wealth* was a systematic treatment of economic development in civil society based on third party enforcement of property right rules—justice. The two worlds were distinct but

[9] Kahneman et al. (1997) provide a particularly clarifying and thoughtful distinction between the concept of Bentham's (also Jevons' and Edgeworth's) intensity of experienced utility, and the writings of later and contemporary economists based on decision utility. These utilitarian concepts, however, deflect modeling attention away from the foundation of social action in conduct as we find it developed in *Sentiments*.

[10] Recall that the motivation for new models, beginning in the 1980's and 1990's, grew out of a body of replicable and replicated experimental data that contradicted the traditional game-theoretic (Max-U) framework for the individual who was postulated to expect that others would do the same. That failure experience jump-started the search for alternatives, and one consequence was that the enterprise settled upon modifying the arguments of the utility function to which the maximization calculus was applied.

[11] Indeed, today the multibillion dollar demand for "sociability" has become global in Facebook and other social media enterprises.

complementary, and *Sentiments* articulated the critical preconditions for the emergence of justice and the enabling of civil society.

In *Sentiments* Adam Smith frequently makes reference to the 'pleasure' associated with an action chosen by an individual. What did 'pleasure' mean in *Sentiments*? The title of Part I, Section I, Chapter II, provides the key definition: "Of the Pleasure of mutual Sympathy" (*TMS*, p. 13). It refers to the fellow-feeling which Smith saw as the critical common feature of human sociability that governs individual conduct:

> But whatever may be the cause of sympathy, or however it may be excited, nothing pleases us more than to observe in other men a fellow-feeling with all the emotions of our own breast; nor are we ever so much shocked as by the appearance of the contrary. Those who are fond of deducing all our sentiments from certain refinements of self-love, think themselves at no loss to account, according to their own principles, both for this pleasure and this pain. (*TMS*, p. 13)

> As the person who is principally interested in any event is pleased with our sympathy, and hurt by the want of it, so we, too, seem to be pleased when we are able to sympathize with him, and to be hurt when we are unable. (*TMS*, p. 15)

Since the modern reader may think that this framework surely must only be about intimate friends, we hasten to add Smith's dictum that such sentiments, "...when expressed in the countenance or behavior, even towards those not peculiarly connected with ourselves, please the indifferent spectator upon almost every occasion" (*TMS*, p. 38). Provisionally, therefore, *Sentiments* should be viewed as articulating a theory for all occasions.

Quite evidently, Smith was not a utilitarian.[12] His system was not about outcomes, nor about equilibrium in outcomes, nor especially about "behavior" in its ordinary usage in the standard social science model. The first dictionary of the English language in 1755 did not even include the modern social scientific meaning of BEHAVIOR, which is definition 5 in the *Oxford English Dictionary* (*OED*): "the manner in which a thing acts under specified conditions or circumstances, or in relation to other things".[13] For Smith, behavior is about rules all the way down (see Samuel Johnson's definitions at the head of the paper). A person interfacing with others either acts within the rules, for which he is deemed to be "good" or at least "not bad", or he acts outside the rules, for which he is deemed to be "bad". Thus, in the course of life a person as a general practice either conducts himself well in a morally upstanding way, or regularly or on occasion ill falls short.

[12] And hence, *pace* Ashraf, Camerer, and Lowenstein (2005), he is not a "behavioral economist".

[13] The *OED* only traces this definition back to 1674, whereas definition 1, the manner of conducting oneself in the external relations of life, goes back to 1490. Examples for definition 2, which is word for word the same as Samuel Johnson's in 1755, are dated 1521 (perhaps) and 1535.

In contrast, modern positivistic economic interpretations of observations in the laboratory abstain from attributing moral judgments as a mainspring to human action, treating people as things acting in relation to other things under specified conditions.[14] There is no good or bad manner of behaving one's self, only strategy s_i's for $i = 1,\ldots,n$ and observed frequencies thereof. The sole basis for predicting which s_i that a person would take is the highest possible utilitarian payoff. So in the 1980's and 1990's when human beings, as opposed to mere things, regularly chose s_i's for actual payoffs that yielded lower payoffs than what were possible in laboratory experiments, economists rebalanced the discrepant utility function by padding run-of-the-mill self-loving preferences with so-called social preferences, and hence self-regarding behavior with other-regarding behavior (Wilson, 2010).[15]

For Smith, however, "self-regarding behavior" is an oxymoron and "other-regarding behavior" a pleonasm. When he says that "[m]en of virtue only can feel that entire confidence in the conduct and behaviour of one another, which can, at all times, assure them that they can never either offend or be offended by one another," the "behaviour", with no modifier, that he references already regards others because those regards are embedded in the rules that govern human intercourse (*TMS*, p. 225). As Charles John Smith in his *Synonyms Discriminated* (1894) explains, "BEHAVIOUR…refers to all those actions which are open to the observation of others as well as those which are specifically directed to others. As BEHAVIOUR refers more especially to actions, so DEMEANOUR…refers more directly to manners; or in other words, DEMEANOUR regards one's self, BEHAVIOUR regards others" (p. 159).

By using both CONDUCT and BEHAVIOUR, the meticulous Adam Smith intends to place the confidence of men of virtue in two distinct concepts. Chiefly though, his project throughout *Sentiments* is about conduct.[16] Charles John Smith discriminates the synonyms for us (p. 159):

> As BEHAVIOUR belongs to the minor morals of society, so CONDUCT to the graver questions of personal life…We speak of a man's behaviour in the social circle, of his conduct in his family, as a citizen, or in life. Good conduct is meritorious and virtuous. Good behaviour may be natural or artificial. The conduct has relation to the station of men's lives, or the circumstances in which they are placed. Good conduct will include right behaviour as part of it, and a proper demeanour will flow necessarily out of it.

[14] See Kurzban (2001) for an evolutionary psychologist's critique of experimental economics as an essentially behaviorist enterprise.

[15] Methodologically, both experimental and behavioral economists were continuing in the tradition of Bentham and Jevons.

[16] Adam Smith uses CONDUCT 309 times in the 338-page *Sentiments*, twice in a chapter title and once in the title of the very important Part III (Of the Foundation of our Judgments concerning our own Sentiments and Conduct, and of the Sense of Duty). BEHAVIOUR, on the other hand, never appears in a title and is used only 80 times. Moreover, the conjunction *X* AND BEHAVIOUR is used 17 times where *X* is CONDUCT, CHARACTER, SENTIMENTS or COUNTENANCE; again, he refers five times to WHOLE BEHAVIOUR. The substance of Smith's thought process—one to which we are not accustomed—is revealed in his careful diction.

An isolated individual *j* abstracted from society is but a counterfactual thought experiment to impress upon the reader the central role of sociability in (moral, rule-following) human action (*TMS*, p.110):

> Were it possible that a human creature could grow up to manhood in some solitary place, without any communication with his own species, he could no more think of his own character, of the propriety or demerit of his own sentiments and conduct, of the beauty or deformity of his own mind, than of the beauty or deformity of his own face…Bring him into society, and he is immediately provided with the mirror he wanted before. It is placed in the countenance and behavior of those he lives with, which always mark when they enter into, and when they disapprove of his sentiments;[17] and it is here that he first views the propriety and impropriety of his passions, the beauty and deformity of his own mind.

In ordinary human intercourse, we *feel* when we *experience* the mirror of life, the *sentiments* of which then lead us to *conduct* ourselves accordingly. We do not merely behave in the modern social scientific sense. Moreover, in the practice of virtues we direct our conduct in the circumstances in which we find ourselves "by a certain idea of propriety, by a certain taste for a particular tenor of conduct, [rather] than by any regard to a precise maxim or rule" (*TMS*, p. 175).[18]

Sense Perceptions and the Non-Specifiability of Human Conduct

What then is the disconnect between a utilitarian model of behavior (in the modern social science sense) and human conduct? The deficiency of an egoist utilitarian approach, as Pettit (1995) explains, stems from a confusion of equating the outcome of acting with the motivation for acting in a social situation (pp. 311-12):

> When I act on a desire to help an elderly person across the road, I act so as to satisfy that desire but I do not act for the sake of such satisfaction; I act for the sake of helping the elderly person. To think otherwise would be to confuse the sense in which I seek desire-satisfaction in an ordinary case like this and the sense in which I seek it when I relieve the longing for a cigarette by smoking or the yearning for a drink by going to the pub.

Rules of interpersonal conduct come into play when we see an elderly person attempting to cross a street and those supra- and subconscious rules generate the desire to help the elderly person, not some imaginary rush to the head for seeing the elderly person on the other side of

[17] Notice that the mirror of society is *in* the behavior of those with whom one lives, i.e., behavior regards others. Observe also the inference from Adam Smith's thought experiment that the concept of the individual, of one's own character, of self-knowledge, is ultimately derived from the idea of social mind or social psychology.

[18] The exception is the practice of the virtue of justice. This nontrivial distinction between the rules of justice and the rules of all other virtues separates Adam Smith from Bicchieri (2006) who treats the rules of all virtues as rules of grammar. For Adam Smith, "the rules of justice may be compared to the rules for grammar; the rules of the other virtues [however], to the rules which critics lay down for the attainment of what is sublime and elegant in composition. The one, are precise, accurate, and indispensable. The other, are loose, vague and indeterminate, and present us rather with a general idea of the perfection we ought to aim at, than afford us any certain and infallible directions for acquiring it" (*TMS*, pp. 175-176).

the street that somehow more than offsets the buzzkill of subsequently being five minutes late to a meeting.

We can clarify the confusion by noting its source. As Hayek (1963) explains, our ability to perceive a pattern in human conduct does not necessarily imply an ability to completely specify it. Our sensory perceptions of patterns fall into three categories: (1) those that we can sense and can explicitly describe, (2) those that we cannot sense but can explicitly specify, and (3) those that we can sense but not explicitly specify. For example, in the first category we can sense a pentagon, like this one ⌂, and discursively describe it as such. The description fully describes the perception of a shape. But in the case of second category, we cannot sense the 6-D pattern of the bee waggle dance, though mathematician Barbara Shipman can completely specify it as a flag manifold projected onto a perceivable 2-D plane (Frank, 1997).

Human conduct falls into the third category. We can obviously sense a pattern in conduct, but it is a non-specifiable pattern. We can recognize the actions and associated motivations of someone as being just, fair, or equitable, or beneficent, kind, or humane, but we cannot specify all of the perceptual elements that we treat as part of the same rule pattern (the sense of just as JUST but not FAIR, the sense beneficent as BENEFICENT but not HUMANE). Our perception of conduct contains shades and subtleties of ethics and aesthetics that cannot be precisely specified by a set of s_i's and concomitant $U_i(s_1,...,s_n)$'s for $i = 1,...,n$, which is why Frank Knight says "[i]t is not enlightening to be told that conduct consists in choosing between possible alternatives" (1922, p. 467). Human conduct is not explicitly specifiable like a perceivable pentagon or a bee waggle dance in unperceivable six dimensions. It is an entirely different kind of sensible pattern. *The error of utilitarian behavioral economics is to assume that because behavioral economists recognize a pattern of human conduct in their subjects' actions, that behavioral economists can then use their own perceptions as elements of their scientific explanation.*[19]

Denying that our own perceptions of conduct can be used as legitimate elements of scientific explanation, however, does not entail denying that our subjects are perceiving non-specifiable patterns in each other's conduct and acting upon them. That our subjects do so must form a datum for analysis, and moreover, it is the foundation of Smith's *The Theory of Moral Sentiments*. Unlike modern economics' fixation with precise Max-U over outcomes, Adam Smith is concerned with understanding conduct, the fair-play rules governing that conduct, and the trial-and-error processes through which those rules might have emerged. Thus,

[19]See also Knight (1924) who noted this problem with behavioral economics 80 years before there was a behavioral economics.

- On motivation:

  Man has a "love of praise and of praise-worthiness" and a "dread of blame and blame-worthiness", and "[t]he love of praise-worthiness is by no means derived altogether from the love of praise….though they resemble one another…[and]…are connected…, [they] are yet, in many respects, distinct and independent of one another" (*TMS*, pp. 113-114).

- On conduct and self-command (*TMS*, p. 83; italics added):

  > If he would act so as that the impartial spectator may enter into the principles of his conduct…he must…upon all…occasions, humble the arrogance of his self–love, and bring it down to something which other men can *go along with*…In the race for wealth, and honours, and preferments, he may run as hard as he can, and strain every nerve and every muscle, in order to outstrip all his competitors. But if he should justle, or throw down any of them, the indulgence of the spectators is entirely at an end. It is a violation of fair play, which they cannot admit of. This man is to them, in every respect, as good as he: they do not enter into that self-love by which he prefers himself so much to this other, and cannot go along with the motive from which he hurt him.

- On process:

  "…to attain this satisfaction (love and admiration), we must become the impartial spectators of our own character and conduct" (*TMS*, p. 114).

  "We endeavour to examine our own conduct as we imagine any other fair and impartial spectator would examine it. If, upon placing ourselves in his situation, we thoroughly enter into all the passions and motives which influenced it, we approve of it, by sympathy with the approbation of this supposed equitable judge. If otherwise, we enter into his disapprobation, and condemn it" (*TMS*, p. 110).

- On rules being derived from experience, not reason (*TMS*, p. 159):

  > Our continual observations upon the conduct of others, insensibly lead us to form to ourselves certain general rules concerning what is fit and proper either to be done or to be avoided….They are ultimately founded upon experience of what, in particular instances, our moral faculties, our natural sense of merit and propriety, approve, or disapprove of. We do not originally approve or condemn particular actions; because, upon examination, they appear to be agreeable or inconsistent with a certain general rule. The general rule, on the contrary, is formed, by finding from experience, that all actions of a certain kind, or circumstanced in a certain manner, are approved or disapproved of.[20]

Consequently, actions signal conduct or responses to the conduct inferred from the actions of others; and the general rules governing conduct become fixed through the discipline of their propriety; what others will "go along with" (by consensus, agreement from circumstanced experience) shapes the rule and determines its fitness. Only within the self-

[20] Hence general rules are not a product of reason, or rational construction; they are formed 'insensibly' out of experience and if efficient are ecologically rational, as in Smith (2008).

governing discipline of these general rules, is there scope for the individual to seek self-loving personal gain.

Propositions on Beneficence and Justice

Within this framework, Smith states three relational propositions on beneficence and justice. While the indispensable virtue of justice may be a familiar concept to the reader,[21] BENEFICENCE has an archaic ring to it, sounding more like an 18th century word than a 21st century one (when did you last use the word in conversation?). Beneficence is, literally from Latin, *well doing*, and according to the *OED* only entered the lexicon in the 16th century. Its older Latin relation, BENEVOLENCE, is used by Chaucer (that would be in 1384). Benevolence is, literally, *well willing*. Thus, BENEVOLENCE consists of the intention to do good for another, BENEFICENCE the action that does good for another. A niggardly, selfish, or mischievous man, as determined by the circumstances, cannot be beneficent even if what he does is good. Thus, beneficence always presupposes benevolence. Charles John Smith (1894) distinguishes BENEVOLENCE from BENIGNITY (another 18th century-sounding word), HUMANITY, and KINDNESS (pp. 165-166):

> Benignity is, as it were, dormant, or passive benevolence. It is a matter more of temperament than will…As benevolence is inherent, so benignity may be shown on special occasions only…Humanity expresses an impulse rather than a quality…[and] is not so much a virtue when exhibited as something the absence of which is positively disgraceful and evil…Kindness is very like benevolence, but is rather a social than a moral virtue. It applies to minor acts of courtesy and good will, for which benevolence would be too serious a term.

The conceptual distinction between kind intentions as applicable to minor acts and benevolence as applicable to more serious, and hence beneficent, acts reinforces Adam Smith's claim that the general rules of conduct are "loose, vague and indeterminate, and present us rather with a general idea of the perfection we ought to aim at, than afford us any certain and infallible directions for acquiring it" (pp. 175-176).[22] In other words, as a non-specifiable pattern there is room for disagreement within general rules of conduct for interpreting an act in context as connoting minor or major intentions of doing good (Wilson, 2010 & 2012).[23]

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[21] "Society…cannot subsist among those who are at all times ready to hurt and injure one another. The moment that injury begins, the moment that mutual resentment and animosity take place, all the bands of it are broke asunder…Beneficence, therefore, is less essential to the existence of society than justice. Society may subsist, though not in the most comfortable state, without beneficence; but the prevalence of injustice must utterly destroy it" (*TMS*, p. 86).

[22] Cf. Fn 18.

[23] Where in modern game theory is the assumption of agreement on the interpretation of the act? Hidden obscurely in the assumption that every individual j always chooses the largest possible pot of utilitarian pleasure $U_j(\cdot)$.

With this background, here then are three 'relational propositions' from *Sentiments* (Part II, Section ii, Chapter I):[24]

- *Beneficence Proposition 1*: *Properly motivated beneficent actions alone require reward.* Why? "…because such alone are the approved objects of gratitude, or excite the sympathetic gratitude of the spectator" (*TMS*, p. 78).
- *Beneficence Proposition 2*: *The want of beneficence cannot provoke resentment and punishment.*
  Why not? "Beneficence is always free, it cannot be extorted by force, the mere want of it exposes to no punishment; because the mere want of beneficence tends to do no real positive evil" (*TMS*, p. 78).[25]
- *Injustice Proposition*: *Improperly motivated hurtful actions alone deserve punishment.* Why? "…because such alone are the approved objects of resentment, or excite the sympathetic resentment of the spectator" (*TMS*, p. 78).

These are strong falsifiable propositions applying to choice behavior [*sic*, conduct; hereafter we will use the language of *Sentiments,* not the language of contemporary economics] in a wide range of games in which actions are voluntary, extortion free, and convey intentions likely to be unambiguously interpreted as 'beneficial' or 'hurtful'. Let's see how well *Sentiments* predicts conduct over 250 years after it was first offered.

Trust Game: Designs for the Reward and Punishment of Actions

Our starting point, displayed in Figure 1, is a slightly modified two-person trust game of McCabe and Smith (2000), which has been replicated by Cox and Deck (2005) and Gillies and Rigdon (2008). The first modification is that the payoffs are increased by 20%. If, as the first-mover, Person 1 ends the game by playing right, each person receives $12 instead of the original $10. Similarly, if Person 1 plays down and Person 2 plays right, Person 1 receives $18 and Person 2 $30 instead of the original $15 and 25, respectively. The second modification is that if Person 2 plays down, Person 1 receives, instead of nothing, the modest non-zero amount of $6, and Person 2 receives $42, as opposed to $40 in the original game. The non-zero amount for Person 1 is necessary to implement the test of two of our propositions in our two other

[24] We name and number them as propositions; *Sentiments* does not.

[25] In Smith and Wilson (2011), we use this proposition to interpret the standard ultimatum game context as projecting a form of involuntary extortion: the first player's choice is subject to veto by the second, the players' roles having been determined at random. Under this interpretation the proposition denies that ultimatum offers can be described as involving 'beneficence,' or that the responses involve 'gratitude' or 'punishment' independent of their perception as extortionist. It also suggests that the ultimatum game outcomes will be sensitive to changes in the context wherein procedures or narratives rationalize a process whereby subjects have reached the ultimatum stage game.

initial treatments (with all payoffs positive). Notice that this game, like that in McCabe and Smith (2000), seems quite hazardous for a Person 1 who plays down.

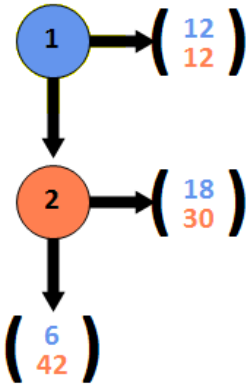


Figure 1. ***No Punish (NP) Game***

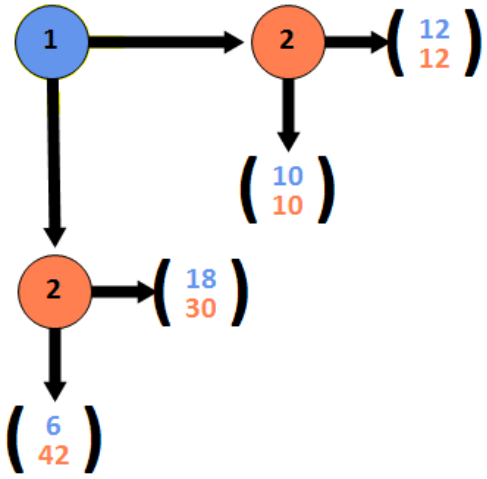


Figure 2. ***Punish Want of Beneficence (PWB) Game***

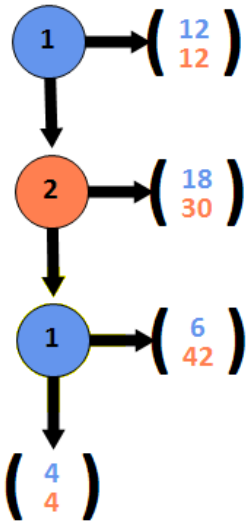


Figure 3. ***Punish Hurt (PH) Game***

Previous results combined from the three studies listed above indicate that 46 out of 98 first movers pass the play to the second mover, and consistent with *Beneficence Proposition 1*, 31 second movers reward the beneficent actions of the trusting first-mover by playing right. In what we will call the *No Punish Game* (hereafter *NP* Game) we will test whether our slight modification of Person 2's choices affects the conduct of our Person 2's. Notice that 15 of the 46 second movers (33%) do not agree with their corresponding 15 first movers (who misjudged this situation as one in which the second mover recognizes and rewards first mover for wishing

well and doing well). There is something about how this action is *re*-presented to the minds of these second-movers that they do not see beneficence in the first mover playing down.[26] Perhaps they perceive mere kindness or not even that. Only further experimental designs could flesh out the motivations of these second-movers and how they differ from the other 31. One take-away point—before we extend this basic extensive form game[27]—is that this problem is not nearly as simple as traditional game theory presumes it to be for its human subjects. All they have to cleave to are their past experiences in life and the bare structure of an unfamiliar, single play, extensive form game tree.

To test *Beneficence Proposition 2*, we construct the extensive form game in Figure 2, which we will call the *Punish Want of Beneficence Game* (hereafter, *PWB Game*). The difference between this game and the *NP Game* is that if Person 1 plays right, Person 2 can either punish the want of beneficence of Person 1 by playing down, yielding $10 to each person, or Person 2 can play right yielding $12 to each person. Playing down by Person 1 is an unambiguously beneficent action (at least we hypothesize so) towards Person 2 as Person 2's payoff increases by 250% or 350%.[28]

The *Punish Hurt* (hereafter, *PH Game*) in Figure 3 is designed to test the *Injustice Proposition*. Compared to the *NP Game* in Figure 1, if Person 2 plays down, Person 1 can either accept the ($6, $42) outcome as in Figure 1, or choose to punish hurt for not receiving $18. Punishing the hurt of Person 2 by playing down comes at the cost of $2 for Person 1, but it also reduces the payoff of Person 2 from $42 to $4.

Notice that the personal cost of punishment by Person 2 in the *PWB Game* and by Person 1 in the *PH Game* is $2 in both. *Sentiments* predicts that (a) Person 2 will not punish want of beneficence by playing right if Person 1 plays right in Figure 2, but that (b) Person 1 will punish hurt by playing down in response time if Person 2 plays down in Figure 3.

Procedures

We originally recruited 150 students with a variety of majors from the undergraduate population at a private university with approximately 5,000 undergraduates. Each of 5 sessions conducted over 3 weeks consisted of 30 students equally and randomly assigned to each of the

[26] See also Smith and Wilson (2011).

[27] Extensive form trust games yield results quite different than their strategic or normal game-theoretic form representations; in particular people are less trusting and less trustworthy in the latter, and we study only the former (see, e.g., McCabe et al., 2000).

[28] We note that because of these inequitable outcomes, models of inequity aversion (e.g., Fehr and Schmidt, 1999) also predict that Person 1 would not play down. But inequity aversion fails to predict that when Person 1 has no right play option, must play down, and Person 2 sees that nothing is given up, the results flip to strong support of the self-interested outcome. In the language of *Sentiments* no benefit can be intended by Person 1, and no gratitude felt by Person 2 (Smith and Wilson, 2011).

three games described above. No student had any prior experience in an extensive or normal form game though many had experience in a prior experiment interacting with more than one other person. To explicate these results, we recruited another 146 students from the same population and assigned them (nearly) equally and randomly to each of three games, one of which was the *NP Game* in Figure 1. The two new additional games in the second series in this study will be presented and discussed below. But first we will report the results for 49 total pairs in the *NP Game*, 25 total pairs in the *PWB Game*, and 25 total pairs in the *PH Game*.

Each subject was paid $7 for showing up on time and was seated in one of two adjacent computer laboratories. One laboratory contained 14 people seated in 14 carrels and the other 16 people were seated in the front portion of a 24-carrel room. The roles of Person 1 and Person 2 in all three games were distributed nearly proportionately between the two rooms. The subjects read at their own pace the interactive computerized instructions contained in the appendix. After playing one and only one of the extensive form games, the subjects were privately paid their earnings, which averaged $18.11, excluding the show up payment.[29] The experiment lasted well under the 60 minutes for which they were recruited.

Results

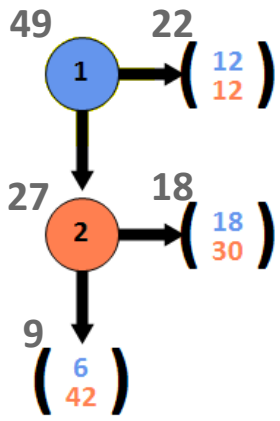
Figure 4 reports the number of decisions at each node and the number of outcomes reached in each of the three games. Our first finding establishes a baseline by comparing our *No Punish Game* to the previous trust game studied by McCabe and Smith (2000) and replicated by Cox and Deck (2005) and Gillies and Rigdon (2008).

Finding 1: *First movers in the* NP Game *beneficently play down, and second movers reward that action at frequencies consistent with those observed in the previous trust games.*

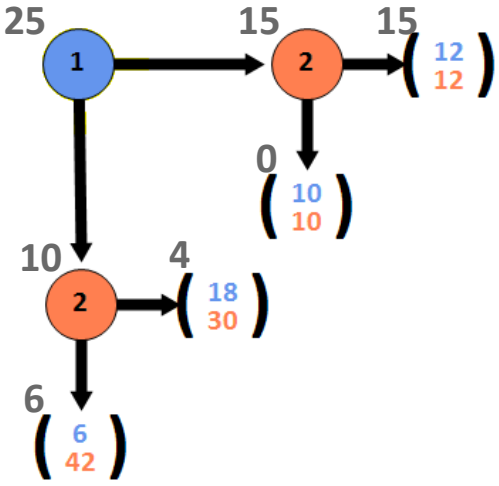
Of the 49 Person 1's in our sample, 27 (55%) move down. Previous studies combined have found that 46 out of 98 first movers (47%) trust their anonymous second mover. Using a two-sided two-proportion z-test, we fail to reject the null hypothesis of equal proportions (z = 0.93, *p*-value = 0.3507). Of the 27 Person 2's who have the opportunity to move, 18 (67%) play right. Previous studies have found that 31 out of 46 (67%) second movers honor the trust of the first mover. Again, we fail to reject the null hypothesis of equal proportions with a two-sided test (z = 0.06, *p*-value = 0.9493).

Having replicated the previous rate at which Person 2's reward the beneficent actions of Person 1, our next finding reports whether Adam Smith's *Beneficence Proposition 2* holds in the *PWB Game*.

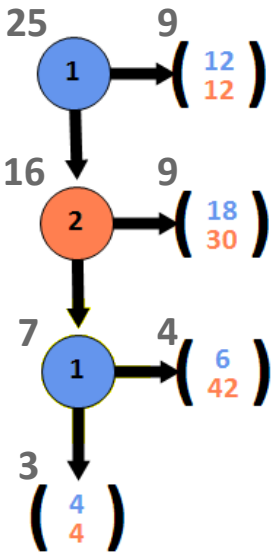
[29] Thus, the 296 subjects were paid a sum total of $7,432 for participating in this experiment.



(a) *No Punish (NP) Game*



(b) *Punish Want of Beneficence (PWB) Game*



(c) *Punish Hurt (PH) Game*

Figure 4. Number of Decisions by Node and Outcome

Finding 2: *Fifteen out of 15* (100%) *Person 2's do <u>not</u> punish Person 1 for failing to beneficently play down in the* PWB Game.

Empirically, comparing Figure 4 (b) with Figure 4 (a), the "simple" addition of a decision node for Person 2 when Person 1 plays right changes the frequency at which Person 2's play right to reward Person 1 when the latter beneficently plays down. (Consistent with *Sentiments*, circumstances matter.) Instead of 33% of the Person 2's playing down after Person 1 plays

down, 6 out of 10 (60%) fail to reward the beneficent action of Person 1. Pooling the second mover decisions across the four studies with the basic trust game, this difference is marginally significant with a two-sided test (z = 1.67, *p*-value = 0.0941, n_1 = 73, n_2 = 10). Interestingly, Person 1's appear to anticipate that Person 2's may be untrustworthy by only playing down in 10 out of 25 pairs (40%) as opposed to the 73 out of 147 (50%) who beneficently play down in the simple two-node trust game. [This result is statistically insignificant (z = 0.89, *p*-value = 0.3716, n_1 = 147, n_2 = 25).] Even though Adam Smith successfully predicts that Person 2 will not punish the want of beneficence 100% of the time when Person 1 fails to act beneficently, it appears that giving Person 2 the option to punish want of beneficence has the unintended consequence, in the counterfactual treatment, of changing the response to Person 1 beneficently playing down. We will flesh out this observation in the next section with a new game designed to explicate this result.

Our next finding reports a test of the *Injustice Proposition*:

Finding 3: *Seven Person 1's in the* PH Game *faced the decision of whether or not to punish the perfidy of Person 2 and 3* (*43%*) *do.*

Comparing the first-move decisions of Person 1, in the *PWB Game* (Figure 4b) with those in the *PH Game* (Figure 4c) the option to punish conditional on the hurt of Person 2 increases the frequency at which Person 1 plays down (10/25 = 40% in the *PWB Game* versus 16/25 = 64% in the *PH Game*, z = 1.70, *p*-value = 0.0894).[30]

Interestingly, the frequency at which Person 2's follow *Beneficence Proposition 1* in the *PH Game* falls slightly relative to our baseline *NP Game* (9/16 vs. 18/27). Similar declines in the cooperative response when Person 1's have the option to punish defection have been noted often (E.g., McCabe et al., 2002, Figures 3 and 4, also reported in Smith, 2008, pp. 269-270; Fehr and Rockenbach, 2003; Fehr and List, 2004). The interpretation was that "trust" as a signal of intentions by Person 1's loses credibility in the presence of the punishment option. In effect the offer no longer is an unambiguous signal of trust and hence this circumstance undermines trustworthiness.[31] All these follow as applications of Smith's general and deeply engrained principle that beneficent actions must be properly motivated, be freely given and cannot be extorted by force.

At this point practitioners of utilitarian social preferences might interpose that these findings can be rationalized with nearly every model of social preferences, as well as by simple

[30] Recall that the subjects are randomly assigned to one of the three treatments in each of 5 sessions.

[31] In Fehr and Rochenbach (2002) when the threat of punishment is conveyed in advance of the offer to cooperate, cooperation is reduced. Similarly, in Fehr and List (2004) the punishment option reduces the trustworthiness of both CEO and student subjects.

payoff maximization. But every single one of those social preference models was itself an ex post rationalization of observing outcomes in the laboratory. Because the motivations of the subjects cannot be *directly* observed (the pattern of actions is recognizable but not explicitly specifiable), reasoning by models of social preferences is inescapably circular (Wilson 2008, 2010, 2012):

> A: What is the inequality-averse outcome when Person 1 moves at the third node of the *PH Game*?
> B: Person 1 chooses ($4, $4) over ($6, $42).
> A: Why did Person 1 choose ($4, $4) over ($6, $42)?
> B: Because he or she is averse to inequality.[32]

Adam Smith's theory of moral sentiments, however, is not circular. His theory *explains* the conduct of Person 1 by separately specifying the motivations of both Person 1 and Person 2:

> A: What is the outcome by which Person 1 punishes Person 2 at the third node of the *PH Game*?
> B: Person 1 chooses ($4, $4) over ($6, $42).
> A: Why did Person 1 choose ($4, $4) over ($6, $42)?
> B: Because Person 2, with the improper motivation of an even higher payoff, took the hurtful action of playing down. Such an action by Person 2 is an approved object of resentment by Person 1 (*TMS*, p. 78).

Two Additional Games

The results of the *PWB Game* indicate that the opportunity to punish want of beneficence simultaneously (a) reduces the frequency of Person 1's beneficence to Person 2 and (b) reduces the frequency at which Person 2 rewards the properly motivated beneficent actions of Person 1. Is this because, vis-à-vis the *NP Game*, Person 1 does not directly choose ($12, $12)—a perceived "loss of control"—or because Person 2 has recourse to punishing the want of beneficence by choosing ($10, $10)? That is, the *PWB Game* introduces two alterations in the *NP Game*: (1) generically, regardless of the choice by Person 1, Person 2 is the controlling person who determines the final outcome and (2) Person 2 can now punish the want of beneficence by Person 1. To test the effects of the first change only, we conducted what we will call the *No Punish Pass Game* (hereafter the *NPP Game*) in Figure 5.

The *NPP Game* like the *NP Game*, provides no opportunity for Person 2 to punish the want of beneficence by choosing ($10, $10). The difference is that, if Person 1 fails to act beneficently toward Person 2 by playing down, Person 2 has the involuntary option of ending the game with payoffs ($12, $12). Like the *PWB Game*, Person 2 must take an action, albeit one inconsequential to the payoffs, if Person 1 fails to act beneficently. The question is, is the frequency of Person 1's who act beneficently and the frequency of Person 2's who reward that

[32] Furthermore, if Person 1 is inequality averse at the third node, why didn't he or she choose ($12, $12) to begin with?

beneficence closer to what we observe in the *NP Game* or in the *PWB Game*? Notice that there are four possible combinations of outcomes for the game in Figure 5:

(i) Person 1's may act beneficently with the same frequency that they do in Figure 4(a) and Person 2's may reward that beneficence with the same frequency as they do in Figure 4(a);

(ii) Person 1's may act (less) beneficently with the same frequency that they do in Figure 4(b) and Person 2's may (fail to) reward that beneficence with the same frequency as they do in Figure 4(b);

(iii) Person 1's may act beneficently with the same frequency that they do in Figure 4(a) and Person 2's may (fail to) reward that beneficence with the same frequency as they do in Figure 4(b); and

(iv) Person 1's may act (less) beneficently with the same frequency that they do in Figure 4(b) and Person 2's may reward that beneficence with the same frequency as they do in Figure 4(a).

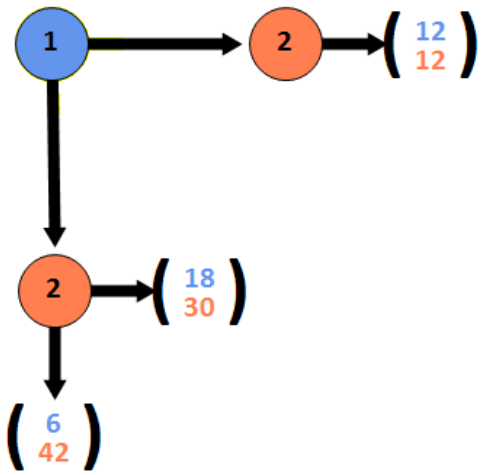


Figure 5. ***No Punish Pass (NPP) Game***

Which set of results would you, the reader, predict? And how confident are you in that prediction? Having been surprised by the results in Figure 4(b), we had no clearly reliable insight, which is why we conducted the explicating treatment.

We found in Figure 4 (b) and (c) that the set of sub-games available in the decision tree affect choice, although they do not change the analysis by self-loving players. In Figure 6 we combine the opportunities to punish in each of these into a single game in which either hurt or want of beneficence can be punished: the *Punish Either* (hereafter, *PE*) *Game*. In this form there is no imbalance in punishment opportunities as occurs in Figure 4 (b) and 4 (c). Again, we

recruited subjects to be randomly assigned within each session to the games in Figure 1, Figure 5, and Figure 6 in proportions nearly equal.

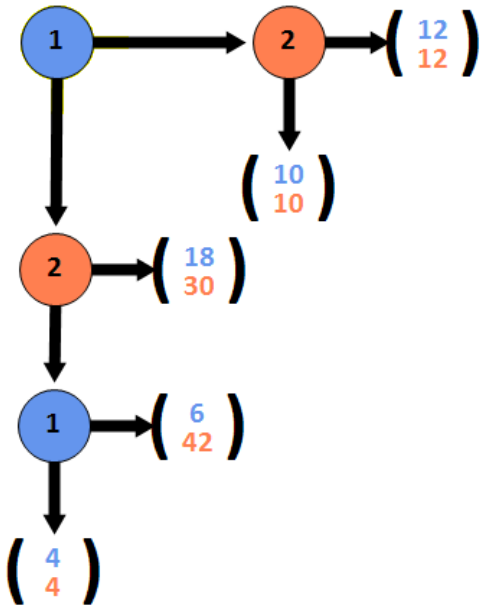


Figure 6. ***Punish Either (PE) Game***

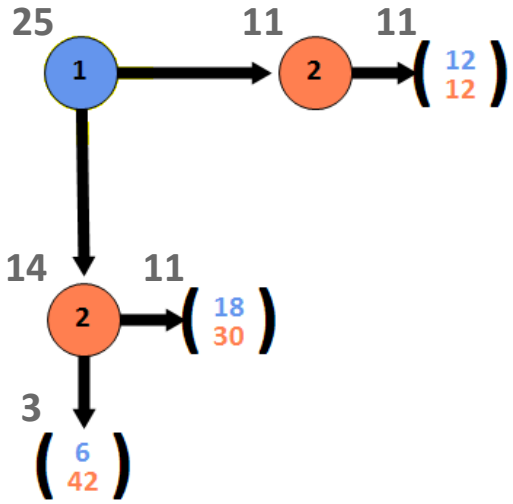
Figure 7 reports the number of decisions at each node and the number of outcomes reached in the *NPP Game* and the *PE Game*. We report first the results of the *NPP Game*.

Finding 4: *In the* NPP Game *Person 2's reward the beneficence of Person 1 at (a) a higher frequency than in the* PWB Game *and (b) the same frequency as in the* NP Game*.*

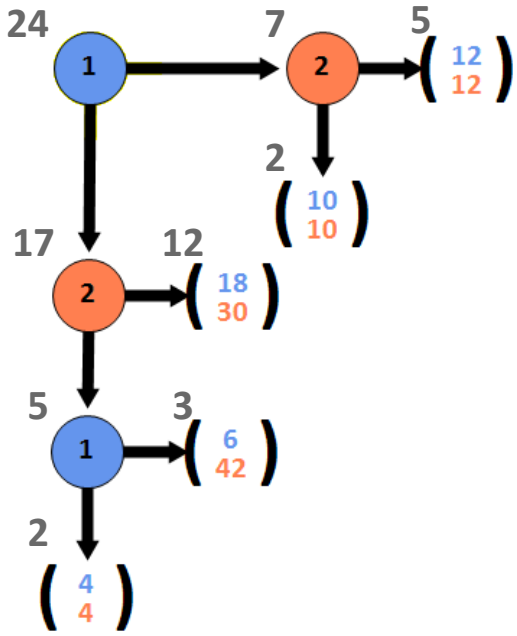
Fourteen out of 25 Person 2's in the *NPP Game* have the opportunity to reward the beneficence of Person 1, and 11 (79%) support Adam Smith's *Beneficence Proposition 1*. This observed frequency is nearly double that of what we observed in the *PWB Game*. Using a two-sided test, we reject the null hypothesis of equal proportions in the *NPP Game* and the *PWB Game* ($z = 1.92$, p-value = 0.0272). If anything, the involuntary option of Person 2 when Person 1 fails to act beneficently leads Person 2's to be more inclined to reward the beneficence of Person 1 (79% in the *NPP Game* versus 67% in the *NP Game*), though this difference is statistically insignificant ($z = 0.79$, p-value = 0.2135).

Thus, Person 1's in the *NPP Game* appear to correctly anticipate that Person 2's will properly reward their beneficence. Fourteen of 25 (56%) Person 1's act beneficently toward Person 2, which is closer to the observed frequency in the *NP Game* (55%) than the observed frequency of the *PWB Game* (40%). Having observed the combination (i) above, the results

confirm that our *NPP Game* replicates the *NP Game*. Thus, we conclude that it is the *opportunity* to punish the want of beneficence by Person 2 that leads Person 2's to be *less likely* to reward the realized beneficence of Person 1.



(a) *No Punish Pass (NPP) Game*



(b) *Punish Either (PE) Game*

Figure 7. Number of Decisions by Node and Outcome for the Two Additional Games

As a counterfactual experimental treatment, the *PWB Game* allows us to measure the effect of a hypothetical rule on observed conduct. Punishing the want of beneficence is a rule of "what is *not*" (Hayek, 1973, p. 17). It does not emerge as a community convention because,

as explained by Adam Smith, the want of beneficence does no real positive harm.[33] Thus, if *Beneficence Proposition 2* holds, introducing the opportunity to punish the want of beneficence interferes with, or "distorts," reading the motives of one's counterpart, particularly in a situation stripped of the normal contextual cues that we rely upon to make such assessments. Keep in mind that in *Sentiments* actions signal intentions and motivations, and are not just inert determiners of outcomes. So perhaps we should not be surprised at the sensitivity of conduct by both Person 1's and Person 2's in the *PWB Game*. This observation reminds and humbles the hypothesizing social scientist that the human taste for a particular tenor of conduct is a rather sensitive and complicated palate.

Finally, the results of the *PE Game* in Figure 7(b) indicate that any differences induced by including (asymmetrically) the option to punish the want of beneficence are offset by also adding the opportunity to punish hurt. Seventeen of 24 (71%) Person 1's act beneficently, which is quite close to the 16 of 25 (64%) who do so in the *PH Game*. Twelve of 17 (71%) Person 2's reward the act of beneficence, which is line with the 67% who do so in the *NP Game*. For the 5 Person 1's who were hurt by Person 2, two of them (40%) punish that hurt, which is consistent with the 43% that do so in the *PH Game*. Symmetry (*PE*) restores the original order (*NP*)! Lastly, we observe our first two (out of 7) Person 2's who punish a want of beneficence. As reported above in Finding 2, we previously found that zero out of 15 Person 2's were willing to punish the want of beneficence.

Conclusion

Modern (experimental) economics is endeavoring to understand moral human action in the laboratory and explain its associated sentiments by the calculated application of precise models of utility maximization, but to the extent that it has had any success the result no longer provides an understanding of moral human action. The error is compounded by the fact that because modern economics can never explain why this is so, it is wont to deny the fact. As Frank Knight recognized long ago, but whose methodological cautions have long since been forgotten, "the economist meets the problem of conduct and motive at every point and stage of his work" (1925, p. 374). If we want to understand how moral human beings act as they do in personal social situations we need to know more than what they have chosen amongst n possible outcomes.[34] We also need to know the values and rules of everyday human intercourse that shaped and ordered those possible alternatives at that time and place, i.e., we

[33] We can imagine all sorts of beneficence in our favor, but punishing the want of it invites resentment from those whose circumstances we do not fully know. They might not agree that their beneficence to us is appropriate given the context, or we might not know that they are incapable of being beneficent to us.

[34] That n is often simply 2 in the laboratory can deceive the observer into thinking that the conduct of a subject is easy to interpret and hence specifiable. The sociality of mind and meaning is not that simple.

need to know what they considered the appropriate conduct to be in the first place.[35] *Sentiments* is about the ethical rules that constitute the character of an inherently sociable person who strives for a better life. This great book is the foundation for lost insights into a quintessentially humanistic science of economics. "Life is not fundamentally a striving for ends, for satisfactions, but rather for bases for further striving" (Knight, 1922, p. 459).

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[35] Furthermore, to suppose, that as an explanatory premise the appropriate conduct is part of a utility function that explains observed actions as following an hypothesized rule of conduct, is to reason in a circle (Wilson, 2008, pp. 372-373 spells out the circular argument for modeling reciprocal intentions in a utility function and likewise Wilson, 2012, pp. 409-410 for modeling utilitarian concerns of "fairness").

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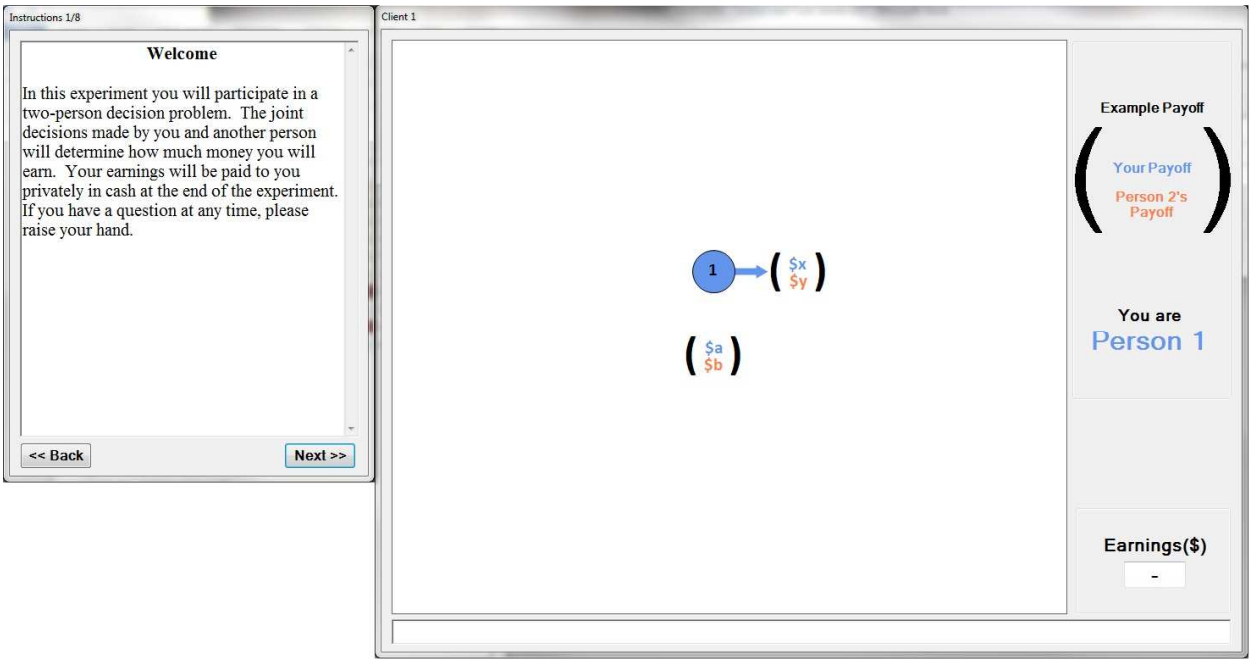
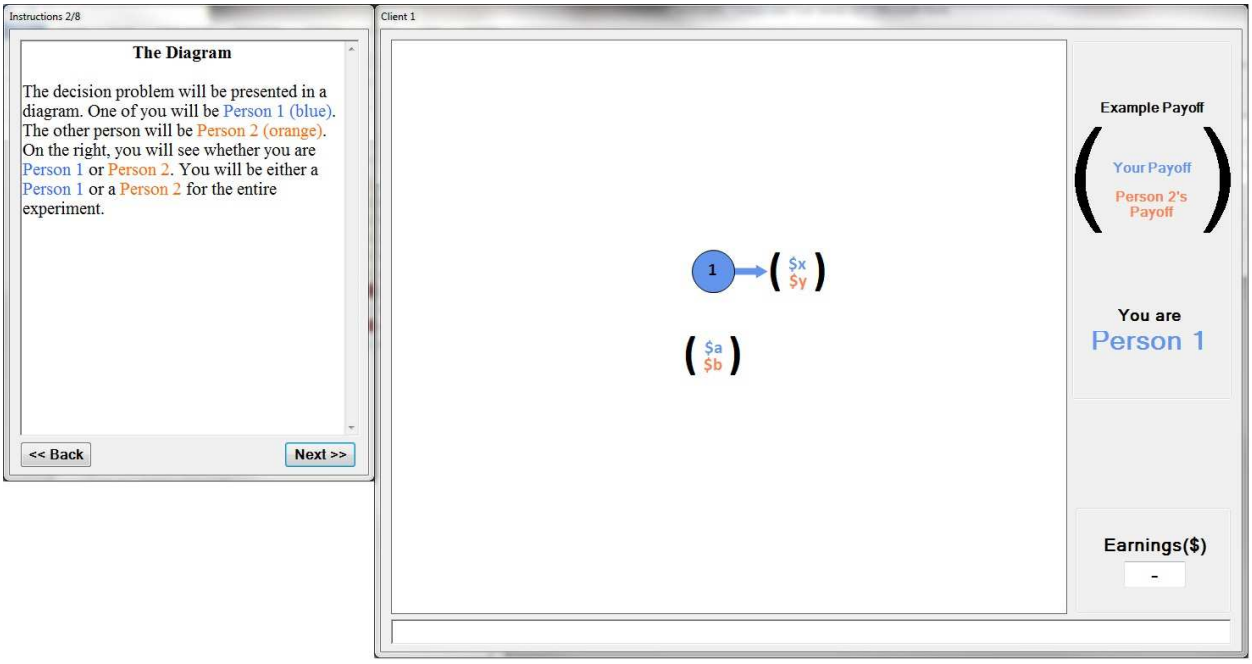
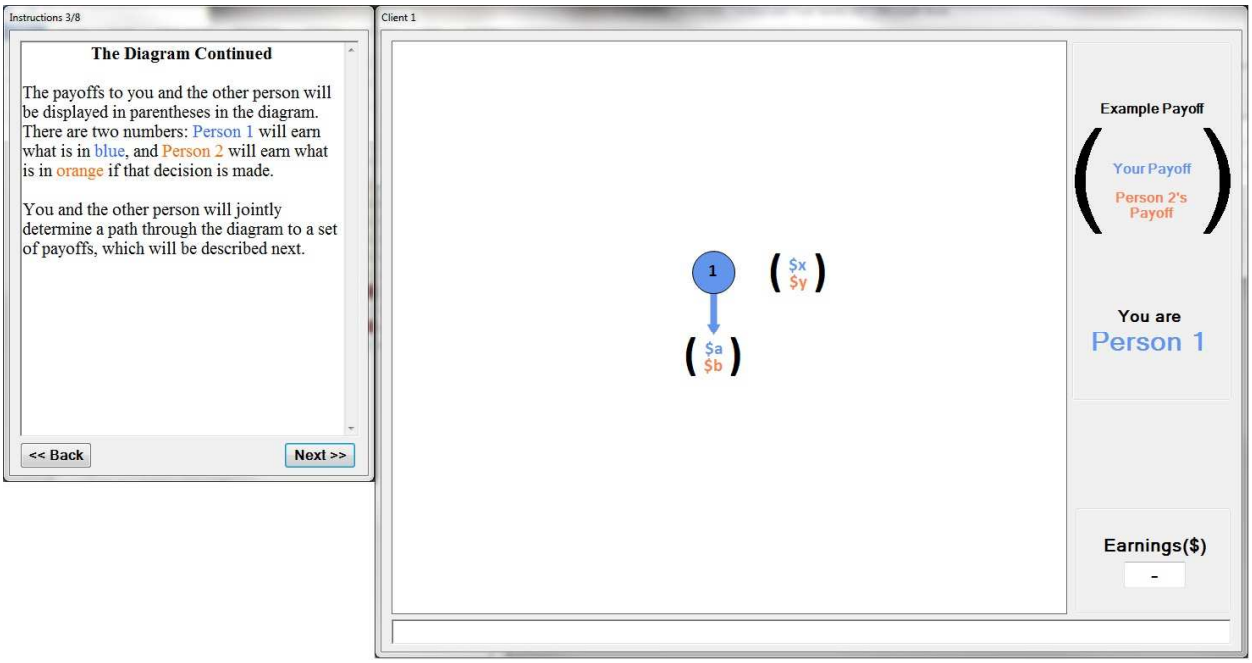
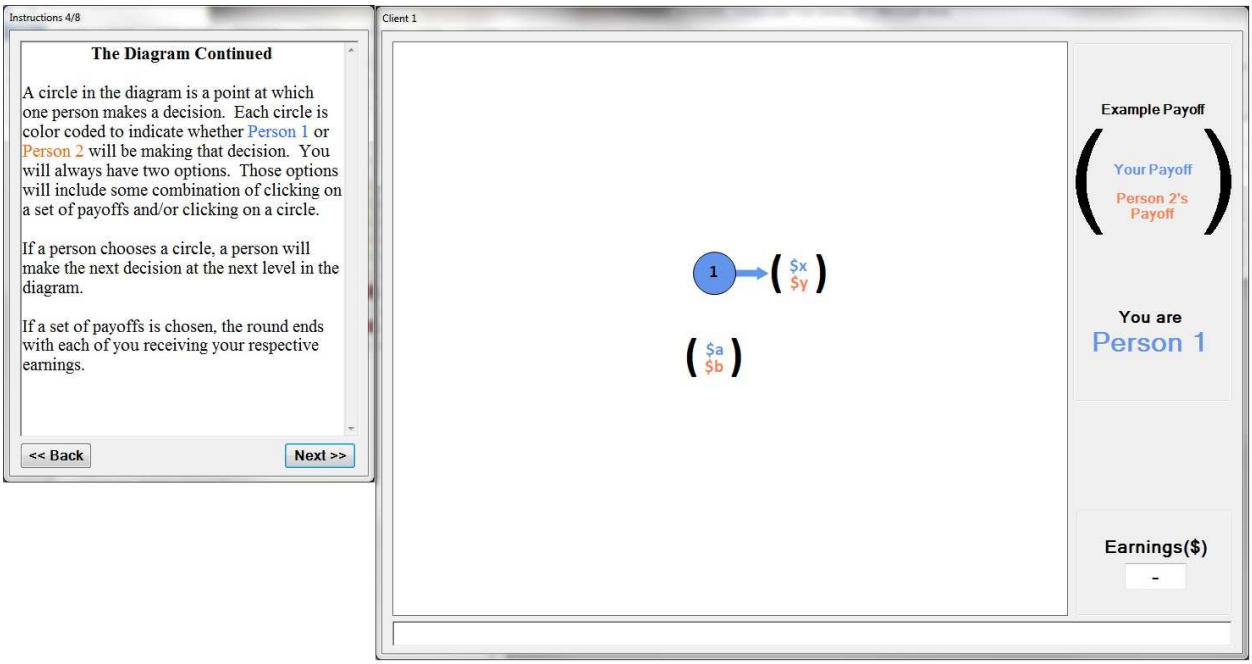
Appendix. Experiment Instructions

Please note that prior to making a decision, the colored arrows at the active decision node were flashing, alternating between the choices.

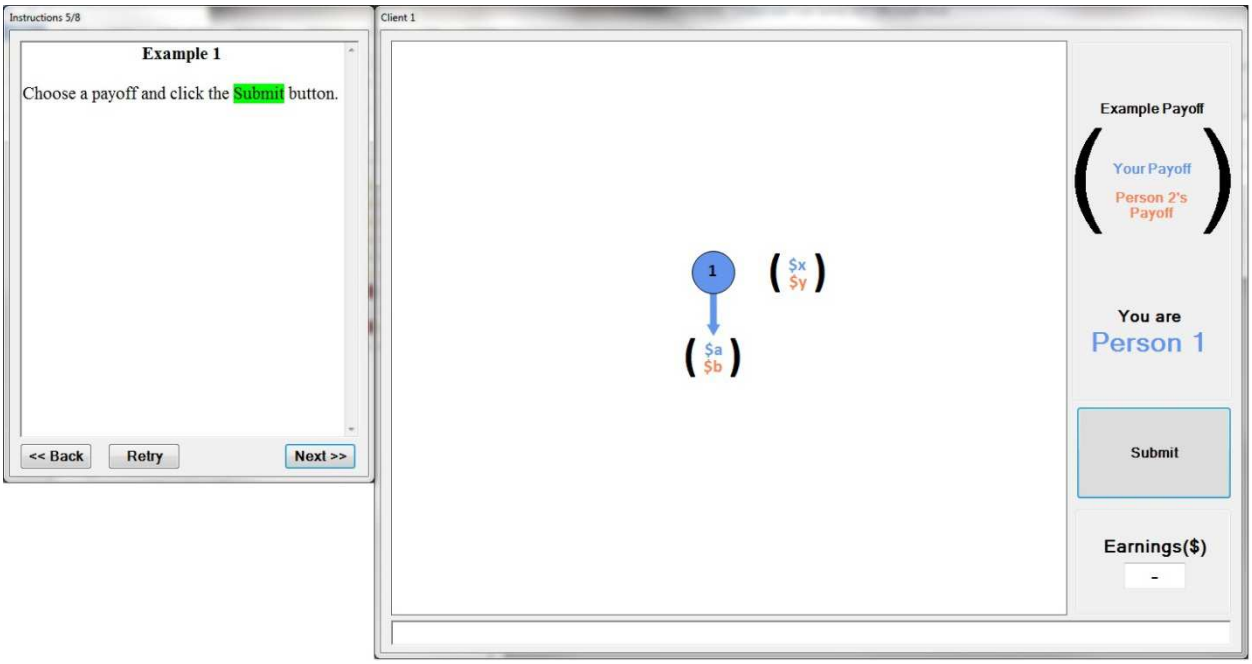


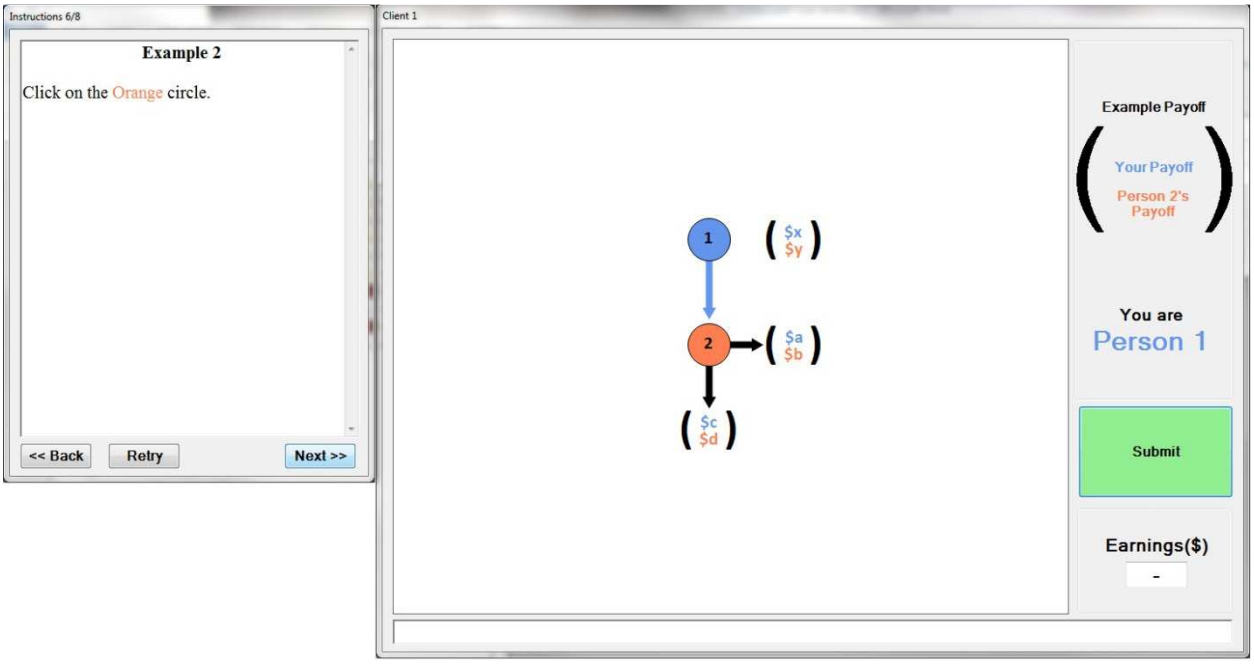


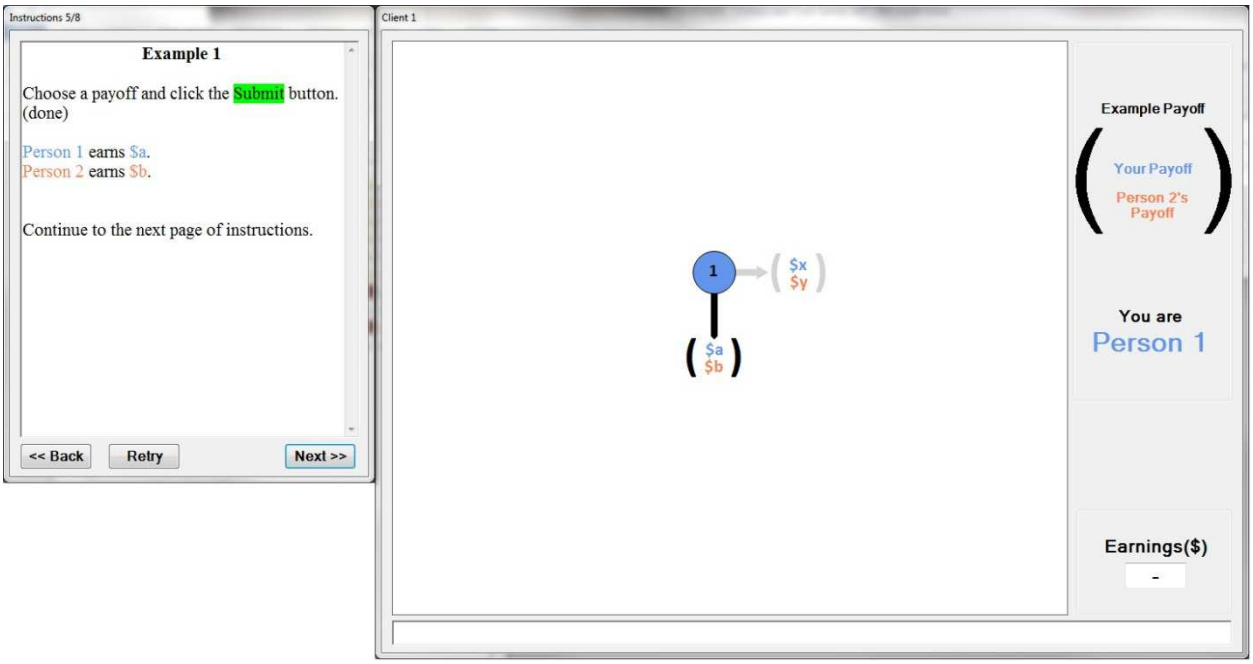


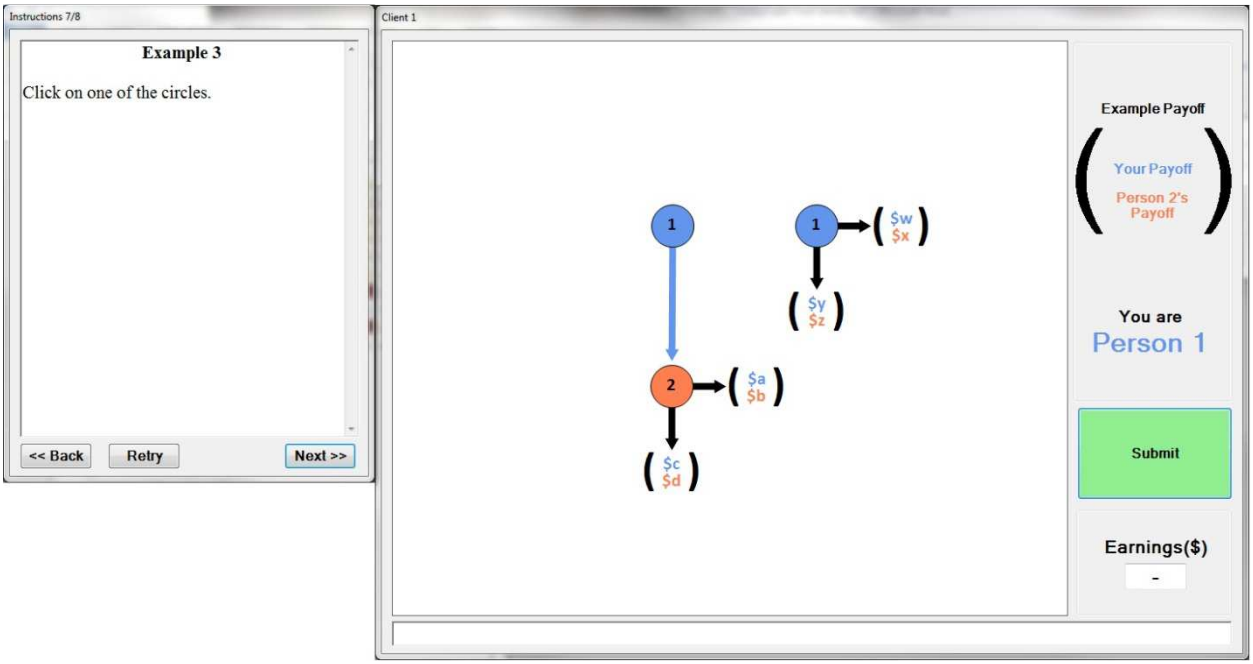


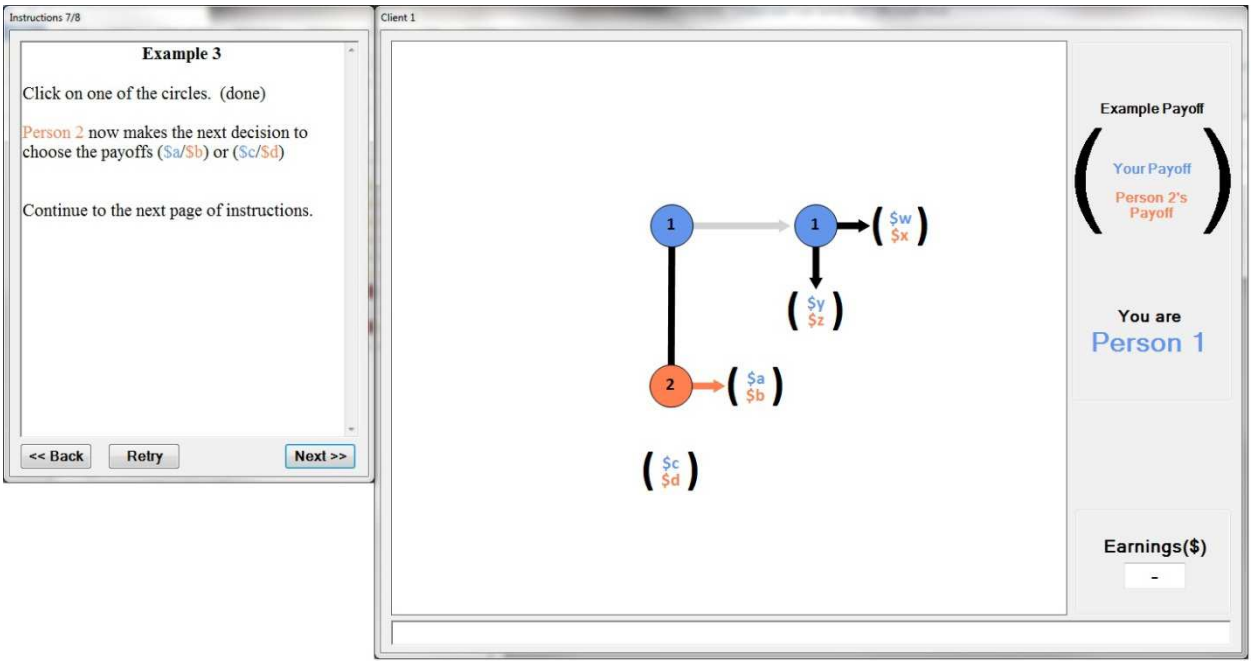
Please note that prior to making a decision, the Submit button flashed green until it was clicked.

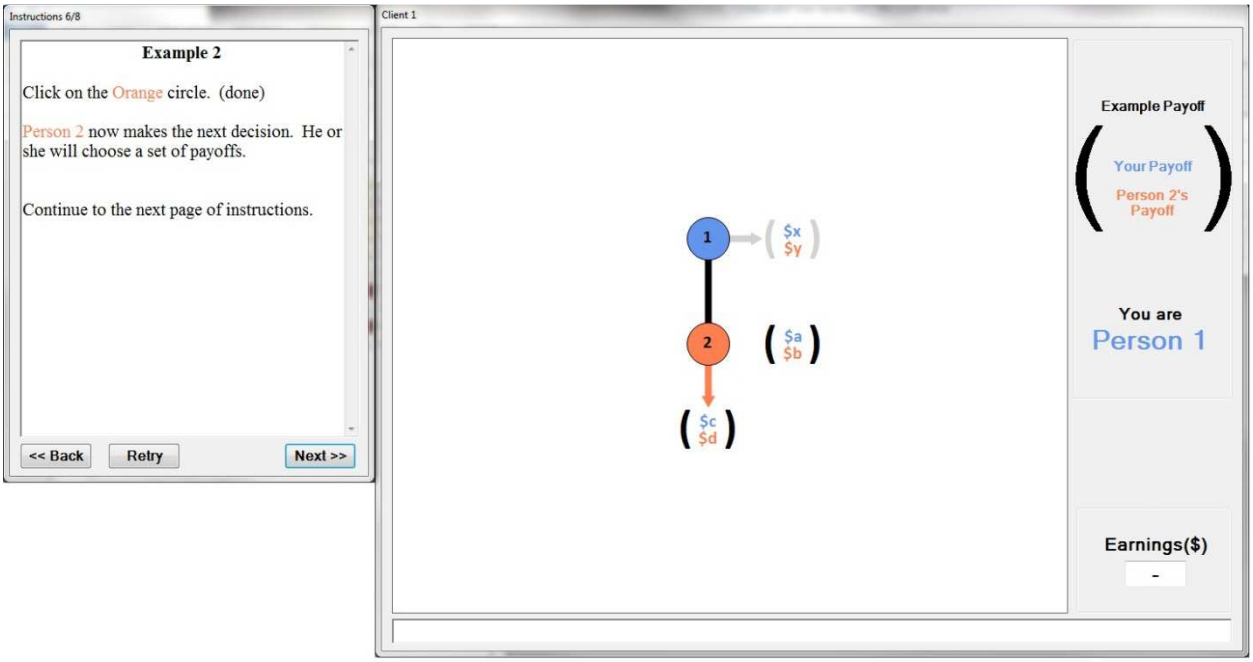

Instructions 5/8
Example 1
Choose a payoff and click the Submit button.
<< Back
Retry
Next >>
Client 1
1
$x
$y
$a
$b
Example Payoff
Your Payoff
Person 2's Payoff
You are
Person 1
Submit
Earnings($)
-

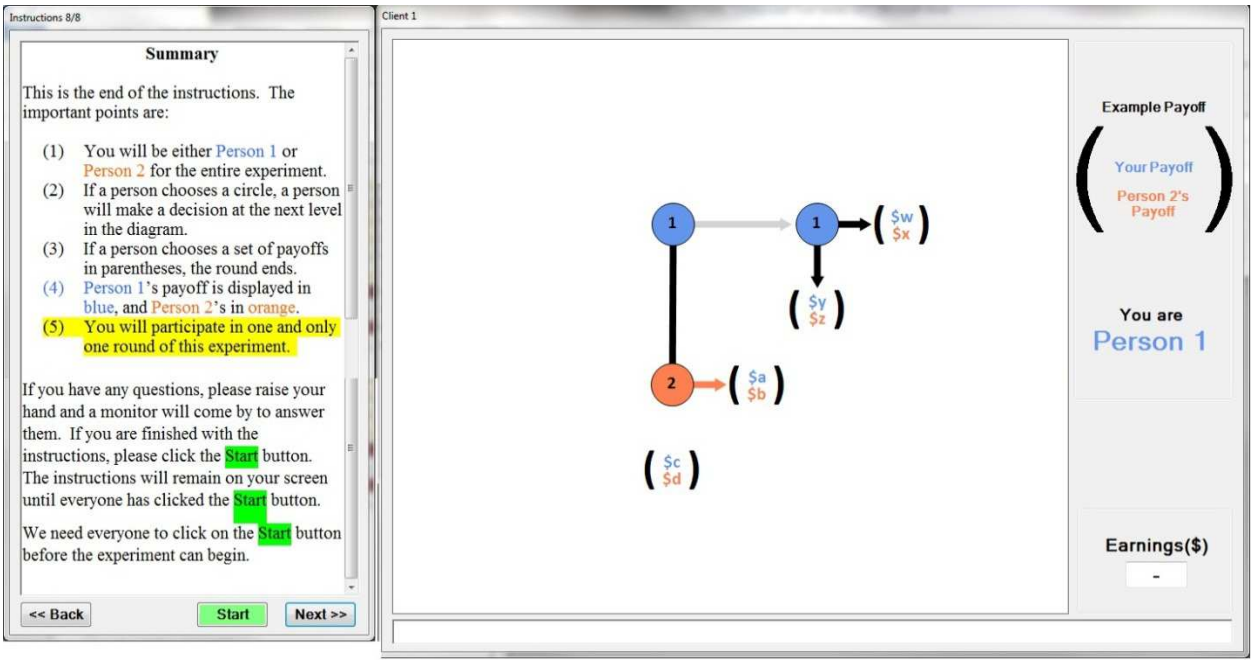

Instructions 6/8
Example 2
Click on the Orange circle.
<< Back
Retry
Next >>
Client 1
1
$x
$y
2
$a
$b
$c
$d
Example Payoff
Your Payoff
Person 2's Payoff
You are
Person 1
Submit
Earnings($)
-


Instructions 5/8
Example 1
Choose a payoff and click the Submit button. (done)
Person 1 earns $a.
Person 2 earns $b.
Continue to the next page of instructions.
<< Back
Retry
Next >>
Client 1
1
$x
$y
$a
$b
Example Payoff
Your Payoff
Person 2's Payoff
You are
Person 1
Earnings($)
-


Instructions 7/8
Example 3
Click on one of the circles.
<< Back
Retry
Next >>
Client 1
1
2
1
$a
$b
$c
$d
$w
$x
$y
$z
Example Payoff
Your Payoff
Person 2's Payoff
You are
Person 1
Submit
Earnings($)
-


Instructions 7/8
Example 3
Click on one of the circles. (done)
Person 2 now makes the next decision to choose the payoffs ($a/$b) or ($c/$d)
Continue to the next page of instructions.
<< Back
Retry
Next >>
Client 1
1
1
$w
$x
$y
$z
2
$a
$b
$c
$d
Example Payoff
Your Payoff
Person 2's Payoff
You are
Person 1
Earnings($)
-


Instructions 6/8
Example 2
Click on the Orange circle. (done)
Person 2 now makes the next decision. He or she will choose a set of payoffs.
Continue to the next page of instructions.
<< Back
Retry
Next >>
Client 1
1
$x
$y
2
$a
$b
$c
$d
Example Payoff
Your Payoff
Person 2's Payoff
You are
Person 1
Earnings($)
-


Instructions 8/8
Summary
This is the end of the instructions. The important points are:
(1) You will be either Person 1 or Person 2 for the entire experiment.
(2) If a person chooses a circle, a person will make a decision at the next level in the diagram.
(3) If a person chooses a set of payoffs in parentheses, the round ends.
(4) Person 1's payoff is displayed in blue, and Person 2's in orange.
(5) You will participate in one and only one round of this experiment.
If you have any questions, please raise your hand and a monitor will come by to answer them. If you are finished with the instructions, please click the Start button. The instructions will remain on your screen until everyone has clicked the Start button.
We need everyone to click on the Start button before the experiment can begin.
<< Back
Start
Next >>
Client 1
1
1
$w
$x
$y
$z
2
$a
$b
$c
$d
Example Payoff
Your Payoff
Person 2's Payoff
You are
Person 1
Earnings($)
-