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Experimental Economic Approaches to International Marketing Research

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9. Experimental economic approaches to international marketing research

Nancy R. Buchan

INTRODUCTION

One possible way of figuring out economic laws...is by controlled experiments. ... Economists [unfortunately]...cannot perform the controlled experiments of chemists or biologists because they cannot easily control other important factors. Like astronomers or meteorologists, they generally must be content largely to observe. (From the economics text of Samuelson and Nordhaus, 1985, p. 8, edited out in later editions)

Unlike traditional economists, who were hesitant to accept experimentation as a valid methodology, marketers have long understood its value. As is evidenced by the recent proliferation of experimental economic work, economists now also recognize that 'it is indeed possible to generate economic data under controlled conditions, and that by doing so economists are better able to understand existing theories and develop new ones' (Hey 1991, p. 2). The goal of this chapter is to discuss the unique value experimental economics offers researchers in marketing, and the potential this methodology provides in understanding and developing international marketing theories.

Many marketing phenomena are addressed by economic theory: an antique buyer's decision to take a dealer's offer rather than leave it, a premium wine-maker holding its high prices constant in a competitive market, an e-commerce auction company learning which features to add to its web site through trial and error, competing firms deciding on timing of market entry, or channel partners deciding to invest in innovation to increase joint profit and how that profit will be distributed.

Not surprisingly, many of these issues have been studied directly or indirectly by experimental economists and behavioral game theorists. These examples illustrate the following topics, respectively: ultimatum games (antique buyers and sellers), signaling (wine pricing), learning (e-commerce), mixed strategy equilibria (competitors), and coordination games, trust games or gift giving (channel relationships).
Given that all the marketing phenomena just mentioned increasingly occur in the global arena with multinational players, experimental economic methodology provides an additional theory-based tool for international marketers to deepen our understanding of global marketing transactions and relationships. The remainder of this chapter is an introduction to experimental economics and a discussion of the value it has in advancing international marketing research. Specifically, the following sections define economics experiments and how they are conducted. Next, three categories of economics experiments are introduced with a discussion of the avenues for inquiry each provides for international marketing researchers. Finally, the potential and limitations of the methodology are offered.

A BRIEF REVIEW OF EXPERIMENTAL ECONOMICS

In the *Handbook of Experimental Economics* Alvin Roth identifies three streams of experimental economic research beginning in the 1930s as having initiated more formal streams of experimental investigation that continue today (1995). These experiments all rely on the predictions of expected utility theory (EUT) and its concern with precisely specified ‘rules of the game’ to provide focus to experiments.

The first stream of experiments concerns those designed to test theories of individual choice. The most famous of these is the ‘Allais paradox.’ Allais asked subjects to make two hypothetical choices. The first choice was between alternatives A and B defined as:

- **A**: Certainty of receiving 100 million (francs)
- **B**: Probability 0.10 of receiving 500 million
- Probability 0.89 of receiving 100 million
- Probability 0.01 of receiving zero

and the second choice was between alternatives C and D defined as:

- **C**: Probability 0.11 of earning 100 million (francs)
- Probability 0.89 of earning zero
- **D**: Probability 0.10 of receiving 500 million
- Probability 0.90 of receiving zero
An expected utility maximizer who prefers A to B, should also prefer C to D. Allais demonstrated that most people prefer A to B, but then D to C. In the first situation people are unwilling to give up the certainty of winning 100 million francs for the risk (however small) of receiving nothing. In the second situation, the difference in the probabilities is so small, people are often willing to try for the much larger amount.

The choices people make in the Allais paradox are consistent with a more general theory introduced 25 years later by Kahneman and Tversky (1979). Prospect theory, like EUT, has spawned a whole generation of experimental research on individual behaviors – focusing on how people interpret probabilities (e.g. exhibiting a tendency to overweight very small probabilities and underweight large ones), and how we value losses and gains (e.g. feeling more pain from a loss than pleasure from an equal amount of gain).

The second stream of research concerns tests of game-theoretic hypotheses. In 1950, Dresher and Flood conducted an experiment that continues to have far-reaching influence in economics, business, psychology, sociology, biology, and political science. Their game, the prisoner’s dilemma, provided a test of Nash’s prediction (1950) of how rational players would behave in a situation in which one’s outcome was vulnerable to the play of another. A 100-fold repetition of the matrix below was conducted between a fixed pair of subjects who communicated only their choices of row (A or B) or column (1 or 2). The first number in each cell is the earnings of the row player and the second number is the earnings of the column player.

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Subjects were awarded earnings (in pennies) over the 100 repetitions of the game. The unique Nash equilibrium is for players to choose (2, 1), the second row and the first column, in each of the 100 plays (yielding US$0.00 earnings for the row player, and 50 cents for the column player over the hundred rounds). For the row player, (B) is better than (A) no matter what the column player chooses (0 > -1, 1 > 1/2). For the column player, (1) is better than (2), no matter what the row player does (2 > 1, 1/2 > -1). However, this outcome is inefficient. If players would instead play (1, 2) in every period, their earnings over the 100 rounds would be 50 cents for the row player, and US$1.00 for the column player. Thus, equilibrium play is less profitable than cooperative play. The Dresher and Flood results have been replicated time and again; people tend to choose strategies that leave them with payoffs far from equilibrium, but also that fall short of complete cooperation.

The prisoner’s dilemma has been used to test how the level of cooperation affects the level of cooperation. One key finding of relevance today is that even in repeated games in which cooperation may occur at the end of repeated sessions as the type of player who incurs the costs of coordination failure (Kreps et al. 1982).

These early game theoretic studies on experimental design and theory were followed by experimental design and theory that affect behavior; for example, focusing on how people interpret probabilities (e.g. exhibiting a tendency to overweight very small probabilities and underweight large ones), and how we value losses and gains (e.g. feeling more pain from a loss than pleasure from an equal amount of gain).

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The prisoner's dilemma has motivated hundreds of experiments testing how the level of cooperation responds to various kinds of manipulation. One key finding of relevance to researchers studying channels relationships is that even in repeated games in which cooperation usually unravels, cooperation may occur at the end due to players' motivations to build reputations as the type of player who will cooperate when faced with cooperation (Kreps et al. 1982).

These early game theoretic experiments illustrated important issues in experimental design and theory testing. Experimenters came to understand factors that affect behavior; for example, playing the game repeatedly or only once, possessing knowledge of one's own and the partner's payoffs or inclinations, providing incentives proportional to payoffs in the games, and designing payoffs such that one becomes more prominent than another (Roth 1995). Regarding this last point, Schelling demonstrated that in many situations the problem facing economic agents is one of coordination, and thus, by focusing on outcomes that might be 'prominent' some of the costs of coordination failure may be avoided. As Roth notes, Schelling's findings are a lesson to experimenters to be acutely aware of the details of how the experiment is being conducted and the influence they might have on behavior, even if those details do not directly concern the theory being tested (1995).

The third stream of research in experimental economics concerns the organization and functioning of markets. In 1948, Chamberlin designed an experimental market with known supply and demand curves. Chamberlin devised a method of inducing the aggregate supply and demand curves of a market by providing each buyer or seller with a reservation price for each unit they demand or supply. This method of induced valuation continues to be widely used to study various forms of market organization, and has been described as 'the crux move in the development of experimental economics' (Camerer forthcoming).

Building on this work, Smith embarked on a fruitful series of experiments intending to produce environments in which competitive equilibrium would be observed (1962). His double auction market is such an environment; results show convergence of auction prices toward competitive equilibrium within a few rounds. Importantly, in a later experiment Smith reproduced his results (involving hypothetical payments) with results involving real monetary payments. Research on double auction markets continues today – having evolved from demonstrating that competitive equilibrium can occur, to greater investigation of the causes and conditions under which it does occur.

These three streams of early experimental economic work precipitated a steady growth of the field in the 1960s and 1970s and explosive growth in
the 1980s and 1990s, bringing experimentation into the ‘mainstream’ of traditional economics (Roth 1995). Importantly, this work set a foundation for the research that followed it. First, this early research elevated the concern for testing general theories in specific, controlled environments. Second, it began the evolution in methodological protocols – providing guidelines regarding how to conduct economic experiments, and what factors need be controlled to yield the clearest interpretation of how the results address theory.

CONDUCTING ECONOMIC EXPERIMENTS

The discussion in the previous section was an introduction to experimental economics – meant to provide a rough understanding of its history and the issues investigated. This section will present a brief ‘how to’ guide to conducting economic experiments internationally. In the next section three ‘uses’ of experimental economics will be presented accompanied by a discussion of how international marketers also might employ this methodology.

Experimental Design

For experimental economists, the beauty of their method lies in the simplicity of their (experimental) games. Camerer (forthcoming) states, ‘Simple games are particularly useful because only one or two basic principles are needed to make a prediction. If the prediction is wrong, we know which principles are at fault, and the results usually suggest an alternative principle which predicts more accurately’ (p. 7).

Because economic theory rarely specifies how adding realistic details will affect behavior in a given situation, these details are left out of the experimental design. Essentially, what experimental subjects face is a very bare-bones context, where behaviors (such as cooperation, trust, or fairness) are measured by a common metric, and differences in these behaviors are starkly revealed through statistical analysis and control.

As an example of such a game, a standard experimental approach used to demonstrate the role of fairness in bargaining is the ultimatum game. This game allows us to quantifiably measure the extent to which bargaining behavior deviates from the purely self-interested (subgame) perfect equilibrium; this deviation is attributed to concerns for fairness (Thaler 1988). By comparing deviations from the equilibrium across subject pools, for example, we can determine the extent to which concerns for fairness enter into bargaining behaviors across contexts, cultures, or countries.

In an ultimatum game the ‘buyer’ is given an amount, say, US$10, and is told to divide it in any way she chooses. The seller is told to list the number of dollars she accepts. If the buyer’s offer equals the offer (or is rejected, and neither player receives any money, the seller (the buyer). If the buyer’s offer is better than no money, the seller receives a share (and the seller should choose the amount n is the equilibrium. The temptation to add costs to strong, especially when conducing this temptation is the no scenario across cultures, and regarding theories of off-equilibria concept of salary negotiations that context would have dif American subjects. Any differences confounded by differences in other.

Instructions

Each economics experiment should enable precise replication; the across subject pools that vary subjects understand the game and how and where they should respond (forthcoming).

A common convention is that the subjects understand the game in view of all participants subject to assumptions that are usually made in economic design. This test asymmetric is designed to be explicitly told that some participants should be explicitly told that some not.
told to divide it in any way she chooses with the ‘seller’. At the same time, the seller is told to list the minimum amount he would accept from the buyer. If the buyer’s offer equals or exceeds the seller’s minimum demand, the offer is accepted, and the two players divide the money as proposed by the buyer. If the buyer’s offer is less than the seller’s demand, the offer is rejected, and neither player receives anything. Since any amount of money is better than no money, the self-interested utility-maximizing buyer should offer (and the seller should demand) the smallest amount over zero; this amount \( \varepsilon \), is the equilibrium.⁵

The temptation to add contextual details to such a game scenario is strong, especially when conducting cross-cultural research. However, balancing this temptation is the need to preserve consistency in meaning of the scenario across cultures, and preserving the clarity our results provide regarding theories of off-equilibrium behavior. For example, while the concept of salary negotiations might provide a rich and relevant context, that context would have different meanings among say, Japanese and American subjects. Any differences in behavior that result would likely be confounded by differences in contextual salience across the subject pools.

**Instructions**

Each economics experiment should have a clear instructional script, which enables precise replication; this is crucial when running an experiment across subject pools that vary in language. These instructions ensure that subjects know what decision they will be making, how they will make it, how and where they should record it, and the possible outcomes (Croson forthcoming).

A common convention is that the instructions include a quiz with hypothetical examples of decisions. Providing this quiz not only ensures that subjects understand the game they are about to play, but also provides the researcher with confidence that the results are not influenced by subject misunderstanding.

Additionally, instructions should be read aloud in the experimental room in view of all subjects, thereby operationalizing ‘common knowledge’ (all subjects know that all other subjects have received the same information) usually assumed in economic theory. Of course, some experiments are designed to test asymmetric information conditions. Here, all subjects should be explicitly told that some participants are informed, and some are not.
Anonymity

If subjects know the identity of the person with whom they interact, this knowledge is likely to influence their behavior. Furthermore, these social effects of knowledge of the partner's identity are exacerbated in cultures where 'face saving' behaviors — or the need or desire to behave in socially acceptable ways — are prominent (throughout most of East Asia, for example) (Bond and Hwang 1995). To reduce the likelihood of such demand effects (pleasing others in the experiment or pleasing the experimenter) many researchers take the precaution of running experiments with double-blind procedures; subjects are anonymous to other subjects, and subjects are anonymous to the experimenter.

Incentives

It is rare today to see an experiment published in an economics journal that does not use monetary, non-hypothetical payments. Yet, the evidence remains mixed as to whether payment, and how much, significantly influences behavior in economic games — and the debate involving the relative efficacy (and cost) of using performance-based incentives in experiments remains lively. Thaler (1987) reviews many studies in which the differences between real and hypothetical payments did not yield important differences in results. He states, 'Asking purely hypothetical questions is inexpensive, fast, and convenient. This means that many more experiments can be run with much larger samples than is possible in a monetary-incentives methodology' (p. 120).

Despite this, the strong tradition and preference for performance-based incentives continues in economics, likely prompted by deeper philosophical concerns as stated by Croson (forthcoming), 'In economics, the validity of the experiment rests on the link between behavior and payoffs. If subjects are deceived about that link, the validity of their decisions is called into doubt' (p. 31).

Cross-country Controls

The international character of our research warrants that we control specific variables that could influence results for country or culture. Within economics, these controls were first addressed by Roth et al. (1991) in their multi-country comparison of bargaining behavior.
Controlling for Subject Pool Equivalency

Ensuring that subjects are as similar as possible is a daunting task. For example, the demographics of a ‘typical’ college junior in each country are likely to be influenced by gender (one experiment I ran had a 90 per cent male subject pool in Korea versus a 50 per cent male pool in the USA), age (in many countries students complete military service before beginning college), intelligence or wealth (in many developing countries only a minute percentage of people attend college, versus 40–50 per cent in the USA), or courses taken in college (many countries do not have business schools as in the USA, leaving one to decide if an economics major, for example, is equivalent to a marketing major). However, the researcher must try to promote maximum equivalency by, for example, selecting students from similarly tiered universities in each country. If the researcher believes that these other demographic factors, such as gender or income, may influence behavior, these variables should be added to the analysis as covariates.

Controlling for Currency Effects

Purchasing power parity can be controlled for by choosing denominations such that the monetary incentives relative to subject income and living standards are approximately equal. Camerer (forthcoming) provides three suggestions: (1) converting a baseline sum into local currency, (2) controlling for stakes in terms of labor supply by equalizing number of hours of work required to earn the stake amount, and (3) in less developed cultures, constructing a cost-of-living index by measuring local prices of commonly used items.

Controlling for Language Effects

Controlling for any nuances in language is crucial lest these nuances influence consistency in meaning of instructions across countries. The standard method is to have all experimental materials translated and back-translated using separate external translators.

Controlling for Experimenter Effects

As mentioned previously, the identity and the behavior of the experimenter may influence subjects’ behavior. The worst option for an experimenter is to have separate experimenters in each country—thus confounding whether any significant results are due to real culture differences or to differences in the manner in which the experimenter behaved or was perceived in each
country. A better option is to have each experimenter conduct experiments in different cultures, thereby allowing estimation of an experimenter main effect. When running multi-country experiments, I have done the following. First, I was present when each experiment was being run to ensure equivalency of procedures (room layout, presentation of instructions, etc.). Second, an extremely thorough protocol was designed (and translated and back-translated) based upon the procedure used in the USA and used to train experimenters in each country. The protocol included information such as the positioning of the experimenter in the room, and the method to be used in answering subject questions. Third, I trained all experimenters and conducted a pilot session with them.

THREE CATEGORIES OF ECONOMIC EXPERIMENTS

Addressing the question of what is the purpose of economic experiments, Roth suggested a categorization based on how the experiments are motivated and their audience (1995). Although most experiments contain elements of more than one category, roughly, the uses of experimentation divide into three. First are experiments that ‘Speak to Theorists’—that are designed to address economic theory. Second are experiments that ‘Search for Facts’—that are designed to study the effects of variables (the anomalies) about which theory has little to say. Third are experiments that ‘Whisper in the Ears of Princes’—that are designed to inform public policy.

These categories are helpful in that they point out areas where international marketers too can address theory and speak to specific audiences—theorists in our field, economists, and policy makers. Given that relatively little work has been conducted internationally in experimental economics, and almost no work has appeared in international marketing using the methodology, these three categories provide ample opportunity for consumer researchers interested in individual decision making, channels and strategy researchers interested in game theory, and public policy researchers interested in market structure, to study and increase our understanding of important economic phenomena. In this section I present some international work from economics and other fields that has been conducted within each of these categories, and discuss potential areas research for marketers.

Experiments Addressing Theory

One body of theory-addressing research that has attracted attention from international researchers concerns risk aversion. Camerer (1995) describes
Experimental economic approaches

In contrast to formal economic models of thirty years ago, today's models assume that decision makers make choices under risk and uncertainty, over time. However, as the models grow more complex, decision makers are assumed to have more rationality—making it more likely that the models will be violated. It is in this way that individual decision-making research can speak to economic theory—providing the how and why of rationality violations.

A fascinating stream of such research initiated by Weber and Hsee (1998, 1999) uses different methods of risk-taking assessment (e.g., pairwise choices between gambles and sure amounts or willingness-to-pay for risky options) to compare behaviors internationally. They show that respondents from China are less risk-averse in risky financial decisions than their counterparts in the United States. To account for these robust results, Weber and Hsee propose the 'cushion hypothesis' (1999): 'members of socially collectivist cultures, such as the Chinese culture, can afford to take greater financial risks because their social networks insure them against catastrophic outcomes. The social network serves as a “cushion” which could protect the person if she took risks and fell “ill”' (p. 14).

The cushion hypothesis yields a number of predictions, tested by Weber and Hsee. They demonstrate first, that the size and quality of a respondent's social network serves as a mediating factor between nationality and risk preference. (Not surprisingly, Chinese have much larger and stronger social networks than Americans.) Second, that Chinese are significantly more risk-seeking than Americans in financial domains, but not in other domains such as academic or medical decisions. In these other domains, they suggest, it would be more difficult for a social network to provide a remedy should something go wrong (Hsee and Weber 1999).

In addition to the work by Weber and Hsee, there have also been rich streams of research investigating cultural influence on probability judgments (e.g., Yates 1989) and on culture and risk perception (e.g., Bontempo et al. 1997), which also shed light on economic decision-making internationally.

Avenues for International Marketing Research

This research demonstrates the value and contribution that a careful and motivated international researcher can make to our understanding of economic behavior. All of this research informs the how and why of 'irrational' decision making. Yet, importantly, it also expands boundaries in that it looks at factors, such as risk aversion, which may have been assumed to be hard-wired to the human race (based mainly on studies conducted in the West), and demonstrates that there are significant differences in these
processes across cultures. Therein lies the opportunity for international marketing researchers.

The area of behavioral decision research has become prominent in marketing in the last decade, phenomena such as mental accounting, intertemporal choice, framing effects, the endowment effect, and risk aversion, to name a few, are common currency in the language of consumer researchers. Yet, there are few, if any, published studies that have examined these phenomena on a cross-cultural basis. As shown by the work of Weber and Hsee, making such an examination, and providing a deeper explanation for any differences (or similarities) in cross-cultural effects greatly enhances our understanding of such phenomena, and of how they operate across cultures. This allows us to think more specifically about the implications of these cultural differences for how consumers buy, sellers sell, and agents in firms interact on a global basis.

EXPERIMENTS ADDRESSING ANOMALIES

A second category of economic experiment demonstrates the influence of factors—anomalies—not captured by theoretical models. 'An experimental result qualifies as an anomaly if it is difficult to “rationalize” or if implausible assumptions are necessary to explain it within the (self-interested, rational) paradigm' (Camerer and Thaler 1995, p. 209). The anomalies I concentrate on in this section focus on norms.

In 1991, Roth et al. compared behavior in a two-person bargaining situation (the ultimatum game) with behavior in a multiple person market environment in Japan, Israel, the Slovak Republic and the United States. Each game was repeated for ten rounds with different anonymous partners in each round. In the bargaining and market environments, the unique (subgame) perfect equilibrium was that one player would receive all the wealth (or almost all when payoffs were discrete). The authors demonstrated that outcomes in the market environment converged very quickly to equilibrium everywhere, with no relevant payoff differences across countries. Outcomes from the bargaining environment however remained different from the equilibrium across all rounds, and substantial differences in offers and rejection rates were revealed across countries (with the differences increasing as the rounds progressed). Specifically, offers in the USA and Slovenia (mean = 45 per cent of the pie) tended to be more generous than those in Japan and Israel (10 per cent lower). Despite the lower offers, rejection rates in Japan and Israel were no higher than rates in the other two countries. Roth et al. conclude, 'the subject–pool differences observed in this experiment are related to different expectations about what constitutes an acceptable offer, rather than a shared notion of what constitutes fair behavior.' They propose that people in Japan and Israel were less likely to accept offers below certain thresholds, suggesting that while fairness is a component of what is acceptable, there are clearly other motivations, such as strategic
an acceptable offer, rather than different propensities to trespass on a shared notion of what constitutes an acceptable offer' (1991, p. 1092). To suggest why behavior converged to equilibrium in the market game but did not in the ultimatum game, they state 'The observed bargaining behavior is dominated by concerns about fairness which are context dependent and do not arise in the market environment' (Roth et al. 1991, p. 1093).

This question of what is fair, what contextual factors influence fairness, and the relationship between fair beliefs and actual behavior, prompted a study by Buchan et al. looking again at a repeated ultimatum game in Japan and the USA (2002). Our experiment differed from the Roth et al. (1991) experiment in key ways. First, we manipulated the balance of power between the players in the experiment. Second, in addition to observing behavior, we asked subjects what they believed was the fair offer or demand. Third, we ran the ultimatum game using a different method from Roth et al. We conducted the experiment using the 'strategy method'; buyers and sellers submit their offers and demands, the two are matched and if the demand is equal to or less than the offer, the division is made as proposed by the buyer. Roth et al. ran their ultimatum experiment using the 'game method'; the buyer’s offer is presented to the seller, and the seller accepts or rejects it.

We suggested that collectivists would behave differently in the strategy method ultimatum game than would individually oriented subjects. Specifically, we proposed that subjects from Japan, a relatively more collectivist culture, would prefer divisions that were closer to an even split of the pie, than would the more individualist American subjects. This hypothesis was supported, with offers and demands about 12 per cent higher in Japan than in the USA. We also suggested that power would have a more differential influence in Japan than in the USA. In the USA, people relate to power as a means to an end in a negotiation; Japanese people tend to view power as much more relational. Sociologist Doi (1971) explains that in Japan, societal norms dictate that the more powerful party is responsible, in part, for the well-being of the less powerful. Thus, we hypothesized that whereas offers by a more powerful partner in the USA would decrease (relative to the condition where power was equal between the partners), offers by a more powerful partner in Japan would actually increase. Interestingly, this hypothesis was not supported in Japan by actual behavior data, but was supported by data showing what subjects believed to be the fair behavior. These results highlight the relationship between behavior and fairness beliefs in the ultimatum game. In regression analyses, fairness beliefs accounted for only 16 per cent of the variance in offers or demands, suggesting that while fairness is a component motivating behavior in the game, clearly other motivations, such as strategy, are salient as well.
One noteworthy result is our failure to replicate Roth et al.’s results: although American offers and demands were not significantly different across the two experiments, in our experiment Japanese offers were more generous, and the rejection rate was higher in Japan than in the USA. This difference is interesting in that its roots may lie in the differing experimental methods used, thus highlighting the value of using various methods to tap into different cultural tendencies. Prior research on cross-cultural negotiation styles demonstrates that the divergence between intended action and action taken is larger among Japanese negotiators than among American negotiators (Ohbuchi and Takahashi 1994). This implies that in the Roth et al. game method, Japanese sellers may have accepted lower offers as they were presented them (not wanting to say ‘no’), although if given a chance beforehand, their stated minimum acceptable offer may have been higher.

The results of these two studies suggest cultural and methodological explanations for the differences in ‘fair’ behavior observed in Japan and the USA. From an anthropologist’s view, however, these two cultures are actually very similar. A much more dramatic anthropologist-led bargaining study examined behavior in 12 small-scale cultures (including Peru’s Machiguenga farmers, Paraguay’s Ache headhunters, and Indonesia’s Lamelara whalers). This study reveals startling differences in behavior across cultures and addresses the influence of market development on off-equilibrium behavior (Henrich et al. 2001). For example, Machiguengas, a culture which is extremely isolated socially and economically, offered much less in the ultimatum game than has been observed in any other subject pool – with a mode at 15 per cent, and only one rejected offer. At the other extreme, the Ache headhunters and Lamelara whalers, cultures where pot-latch is common, exhibited more generosity than seen with any other subject pool – offering more than half on average.

In regression analyses two variables account for the variance in offers across the 12 cultures ($R^2 = 0.68$). Cultures with more cooperative activity (e.g. collective hunting of whales) and market integration (an index combining the existence of a national language, a labor market for cash wages, and farming of crops for cash) have sharing norms closer to equal splits.

This research very quickly caught the attention of economists. After all, it was Adam Smith who observed that markets are effective because of the baker’s pursuit of self-interest rather than his generosity. This research suggests something different: that a great deal of real world, ‘enculturated’ market experience tempers rather than amplifies the pursuit of self-interest.

Avenues for International Marketing

The increased interest among economists in the topic of fairness has been reflected in the increased interest among marketing researchers in the importance of trust, especially in the present day culture (Weitz and Park 1992). The existence of these norms of trust and control (Weitz and Park 1992) has been shown to increase the performance of channel members (Lusch and Wehr 1989). If norms, experimental economics, and culture influence behavior, the Roth et al. studies demonstrate the possibility of such a strong impact on behavior in the presence of trust norms, which may influence the level of fairness observed in other studies.

The norm of trust, also, has implications for marketing, perhaps in demonstrating the role of trust in culture (Hall 1981). Using experimental economics, Croson and Buchan (2001) have demonstrated experimental economics across cultures of group bound to much, while Buchan et al. (2001a) found that trust in the presence of monitors is the trusting behavior of others. Finally, Croson and Buchan (2001a) examined the trusting behavior of others in the presence of monitors. As with the work on fairness, initial economic experiments provide a foundation for the study of cultural and contextual factors that have important ramifications for marketing practice.

Given that international experience there are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored. There are many topics yet to be explored.
Avenues for International Marketing Research

The increased interest among economists in behaviors prompted by norms such as fairness has been concurrent with the increased recognition in marketing of the importance of shared norms within the channel relationship. The existence of these norms, if shared, provides a means of communication and control (Weitz and Jap 1995; Heide and John 1992), and has been shown to increase the performance of both the channel and individual channel members (Lusch and Brown 1996). Given this converging interest in norms, experimental economics may offer a different and interesting new lease to the study of the influence of norms on international trading agreements and behavior. The Roth et al. (1991) and Buchan et al. (2001a) studies demonstrate the possibilities of measuring the strength of a norm such as fairness across cultures, and of manipulating contextual factors, such as power, that may influence fair beliefs or behavior.

The norm of trust, also, has gained much attention among researchers in economics and marketing, prompted by the important work of Williamson in demonstrating the role of trust as a lubricant in market transactions (1981). Using experimental economic games, Buchan et al. (forthcoming), have demonstrated experimentally the strong (and differing) influence across cultures of group boundaries in determining who is trusted and how much, while Buchan et al. (2001b) show that cultures are similar in their trusting response to different types of non-strategic communication. Buchan et al. (2001a) examined trust in a prisoner’s dilemma setting and found the trusting behavior of Japanese participants, specifically, to increase in the presence of monitoring or sanctioning mechanisms in the game. Finally, Croson and Buchan (1999) crossed gender with country in their analysis and demonstrate that while men and women trust equally, women tend to be more reciprocal (which encourages future trust and cooperation.)

As with the work on fairness, this research on trust demonstrates the potential economic experiments provide for examining the influence and possible interaction of cultural and contextual factors on norms and strategic behaviors that have important ramifications on international marketing research and practice.

Given that international experimental economic research is in its infancy, there are many topics yet to be explored. As just two examples, one might apply Hall’s work on high and low context cultures (1959) to the implementation of contracts and the role of trust in a strategic setting, or one might examine whether the differing attitudes and acceptance of collusion displayed across cultures by Hampden-Turner and Trompenaars (1993) influences the demonstration of fair behavior in international markets.

The anthropological research by Henrich et al. (2001) is also provocative
for marketers in that it alerts us to the need to better understand the role of market development in influencing (possibly dynamic) norms and subsequent economic behavior.

**Experiments That Testbed Policies**

When new policies are being considered, an experiment can be run to testbed the policy, investigate and hopefully illuminate any unintended consequences, and to suggest parameters that policy makers might consider in their final implementation (Croson forthcoming).

The greatest triumph of this line of inquiry is evidenced in the application of game theory to the auctions of airwaves to telecommunications companies. In several different countries, regulatory agencies decided to put airwave spectrum up for auction. Ideally, the auctions would raise government revenue, and ensure that a public resource is awarded to the firms who are most able to create value from it. In most countries, the auctions were designed in collaboration with game theorists whose testbeding helped detect any unanticipated weaknesses in proposed designs (Camerer, forthcoming).

**Avenues for International Marketing Research**

Interestingly, two articles have appeared in marketing journals in the past five years urging greater game theoretic exploration of the method by which products are sold, and how efficiency might be increased (McAfee and McMillan 1996; Bazerman 2001). The advent of global electronic markets (in B2B, B2C, and C2C) provides an exciting forum for international researchers to better understand the implications of various market structures for buyers and sellers (e.g. differences in behavior in auction markets). Additionally, marketing researchers could make a valuable contribution to understanding and prompting efficient market development internationally. In discussing various testbed experiments involving markets for computer resources, gas, and electrical power grids, Friedman and Sunder state, 'Given the accelerating pace of transformation in the formerly centrally planned economies and given continuing deregulation in Western countries, the scope for institutional engineering of this sort is large and increasing' (1994, p. 9).

**THE LIMITATIONS, ECONOMIC EXPERIMENT**

In this final section I will address the limitations of this methodology (as discussed above), and indicate its potential for advancing research in marketing.

One common objection of the subject pool: specification may not be representative of that of the population. As a defense is that students are people of today and the experiments of tomorrow. A more serious objection is that experiments have been conducted in laboratory settings (McAfee and McMillan 1989) and in the field (Camerer 1994) and have not found no significant differences in behavior between students and business executives in consumers. Bontempo et al. (1997) also note that sample size is too small.

A second objection is that the stakes are typically small. That is, they are not optimal behavior. Interestingly, two articles have appeared in marketing journals in the past five years urging greater exploration of the method by which products are sold, and how efficiency might be increased (McAfee and McMillan 1996; Bazerman 2001). The advent of global electronic markets (in B2B, B2C, and C2C) provides an exciting forum for international researchers to better understand the implications of various market structures for buyers and sellers (e.g. differences in behavior in auction markets). Additionally, marketing researchers could make a valuable contribution to understanding and prompting efficient market development internationally. In discussing various testbed experiments involving markets for computer resources, gas, and electrical power grids, Friedman and Sunder state, 'Given the accelerating pace of transformation in the formerly centrally planned economies and given continuing deregulation in Western countries, the scope for institutional engineering of this sort is large and increasing' (1994, p. 9).
THE LIMITATIONS AND POTENTIAL OF ECONOMIC EXPERIMENTS

In this final section I will address the most commonly mentioned limitations of this methodology (as discussed by Croson forthcoming), but also reiterate its potential for advancing our knowledge of marketing phenomena.

One common objection of this methodology has to do with the nature of the subject pool; specifically questioning whether the behavior of college undergraduates represents what real business people would do. A first defense is that students are people too, and in fact, represent the professionals of tomorrow. A more scientific defense lies in the fact that multiple experiments have been conducted using student and professional demonstrating no significant differences in behavior. For example, Dyer et al. (1989) found no significant differences in bidding behavior of experienced business executives in construction compared to that of students and Bontempo et al. (1997) also found no differences in risk aversion among students versus security analysts.

A second objection deals with the size of the monetary payoffs; specifically, that stakes commonly used in experiments are too small to induce optimal behavior. Interestingly, a number of international experiments (at least two dozen in fact) address this argument. Experiments have been conducted in developing countries where purchasing power is so low that modest sums (by developed-country standards), amount to several weeks' or months' of pay. For example, Cameron (1999) conducted the ultimatum in Indonesia, manipulating a 40-fold change in stakes from 5000 to 200 000 rupiah - allowing some subjects to leave with the equivalent of three months expenditures. A robust conclusion of these experiments is that results under higher stakes conditions are generally very close to those with lower stakes.

A final objection to this methodology usually involves external validity: what can these simple games tell us about transactions in the real world? The strategic situation can be scaled down to their barest elements – players, information, actions, outcomes – in order to best teach readers what to look for, what behaviors to expect, and how they might behave in response. In essence that is the value of this methodology as well; it allows us to map social situations onto simple games in order to best understand the implications of behavior (Camerer forthcoming). However, once we have that initial understanding, we have every reason to build upon it to better model and understand the more complex situation we actually face. As Camerer states, "Doubts about generalizability are a demand for more elaborate experiments, not a dismissal of the experimental method . . . More ambitious experiments with teams of players, complex environment, communication,
overlapping generations, would enhance generalizability and should be the wave of the future' (forthcoming, p. 4).

The methodology of experimental economics presents international marketing researchers with a challenge. We are particularly well-equipped to understand the variables in the international environment that need be controlled when running basic games; additionally, we have developed a deep understanding of the nature of global marketing transactions. Using this new tool of controlled economic experiments, we can now build upon basic games, adding layers of contextual realism. The value of this method is that as we add on each layer of context – developing eventually into a systematic stream of research – we will be able to clearly discern its influence on individual-level behaviors, strategic interactions, and transactions in a given market structure. In this way we will lend the clearest interpretation of how our results speak to theory in economics and in marketing.

NOTES

1. Among the earliest examples of experimental work is Haire’s shopping list study published in the Journal of Marketing in 1950.
2. Roth actually credits Bernoulli’s work on the St Petersburg paradox in 1738 as being the first economic experiment. Bernoulli asked people to name the price at which they would buy a chance in a lottery with an infinite expected value. In showing that most people would pay only a modest sum, Bernoulli suggested that the value of an addition to a person’s wealth decreases the more wealthy they become. The resulting concave utility curve explains the reluctance of people to buy into this lottery; the extra utility of high earnings from unlikely outcomes is no longer high enough to compensate for its low probability. This desire to avoid taking risks – even the reluctance to gamble on even bets – is called risk aversion.
4. Whether these concerns are motivated by a real desire to ‘be fair’ or by the desire to appear fair is a subject of debate and is addressed in Buchan et al. 2002.

REFERENCES

Experimental economic approaches


Hampden-Turner, Charles and Alfonso Trompenaars (1993), The Seven Cultures of Capitalism, New York: Doubleday.


Cross-cultural research issues


