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Wesley Mendes-Da-Silva

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Effects of Friendship in Transactions in an Emerging Market: Empirical Evidence from Brazil

Wesley Mendes-Da-Silva[1], Thaís Fernanda Salves de Brito[2], Rubens Famá[3] and Jonathan Liljegren[4]

This paper considers the inclusion of human behavioral aspects and implications of cognitive psychology and anthropology in decisions relating to the emerging field of behavioral finance. The formulated hypotheses were tested using 400 questionnaires, answered by students enrolled in MBA programs. The principal results suggest that individuals involved in transactions among friends or among strangers assume different behaviors—friends agree about the price attributed to an asset, while strangers show the propensity to bargain.

Introduction

Recent researches on behavioral finance and decision analysis have not considered the potential effects of social cognition (how people think about the way they interact with one another) in financial transactions. The classical economic approach considers that decisions would not be made by considering the other people involved. The cognition, based in the interaction with other people, would have the potential to influence the results of transactions. Nevertheless, following the notion of rationality assumed by the classical economic approach, these effects do not exist, or are at least controlled.

Few studies have considered the effects that another individual involved in the transaction has on decision making. As a consequence, there still does not exist literature that deals with the potential effects of friendship on transactions with other individuals, or on inherent pricing of transactions that occur in similar contexts. Some of the results obtained in this research suggest that the effects occur in a systematic and visible way.

Professional or personal decisions can assume various forms, such as: decisions about the financing of small projects, loans for the acquisition of equipment, purchases, service contracts, among others. Organizational processes related to a particular transaction can be affected by interpersonal interactions (i.e., friendship). In other words, this could occur in consequence of the utilization of cognitive models in transactions in which individuals that can have a relationship of friendship negotiate.

[1] Assistant Professor, Department of Finance, Mackenzie Presbyterian University, São Paulo, Brazil. E-mail: mr.mendesdasilva@gmail.com

[2] Assistant Professor, Department of Management, Accounting and Economics, Mackenzie Presbyterian University, São Paulo, Brazil. E-mail: tfsz@terra.com.br

[3] Professor, Department of Management, Accounting and Economics, Pontificial Catholic University, São Paulo, Brazil. E-mail: rfama@usp.br

[4] Ph.D. Candidate, Brigham Young University, Provo, Utah, United States. E-mail: liljegren@byu.edu

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The principal aim of this paper is to contribute basic literature to the emerging field of behavioral finance, which suggests that people employ mental models or 'cognitive structures,' also called scripts, which change the way in which friends and strangers trade information during a transaction. In this context, the objective of this study is to examine the effects of friendship on the expectations of price in certain business transactions.

The main conclusions suggest that individuals involved in transactions carried out between friends or strangers assume different behaviors—friends tend to agree to the price attributed to an asset, while strangers show the propensity to define the prices in a bargaining process, if they have not already agreed *a priori.* Moreover, it is seen that when individuals act as agents for others, they assume different behaviors in the protection of the principal's interest, conforming to the level of friendship between the principal and agent. This paper is organized into six parts, including the introduction. The section following introduction presents a review of the literature concerning the influence of friendship over the behavior of individuals in business transactions; the next section presents the arguments that support the tested hypotheses; the subsequent section presents a detailed description of the methodology adopted to perform the study; the next section presents the analysis and results, and final section presents the conclusions and implications of the results.

Literature Review

The Context of Transactions

Although transactions in which individuals take part are governed by the economic concept of utility maximization, social networks are also involved in many of these transactions in which negotiators adhere to a variety of functional rules of these same networks (Granovetter, 1974). These social norms are frequently implicit, however, those who share them are capable of recognizing them, that is if they represent an access code to the group.

Granovetter (1974), upon reflecting the maintenance of the social networks, opposed the traditional sociological perception by affirming that weak ties are more effective in maintaining the network than strong ties, which are formed by parents and close friends. Friends and close relatives with whom individuals construct stronger ties, by themselves, only guarantee the support of this nucleus/group. However, there are weak ties between colleagues from work, friends from school, even people that know each other, in whom in principle, do not deposit a genuine trust. According to Granovetter (1974), they are important because they function as a connecting link to a greater variety of others, thus amplifying the circle of influence and negotiations.

According to Granovetter (1974), social networks, besides being inclusive, are random and dynamic. Additionally, Latour (1994) understands the network as a system in which there is no prioritization or hierarchy in contacts, exchanges, or influence. We are talking about a multiple dimension in which the relationship between people is given in terms of processes that are constructed at the moment of the perception of reality (i.e., transactions), by way of cognition. The figure of the network (Latour, 1994) represents an epistemological model of distinction between the scientific objectivity (in this case of rationality following a classical economics perspective) and the social interest (involving personal relationships, the bonds of affection).

The notion of a network, to Latour (1994), is broadened beyond human relations, transformed through the conception of facts, players and objects. This leads Latour (1994) to understand that a network is composed of alliances between humans and non-humans (interests, money, power, multiple heterogeneous alliances, etc.). We have here, friends, colleagues, strangers that relate to one another from non-human, by way of preexistent scripts of reciprocity, creating the forms. Thus, in the notion of network, more than the tie and/or the alliance (independent of weak or strong ties) allows the approximation of scripts and the effects that impact social networks, and consequently, transactions.

Thus, we have an ontological construction, in the context of which, the behaviors are elaborated by way of human and non-human relations. The contribution to behavioral finance, therefore, consists in perceiving, by way of scripts, the behavior of the player, his/her relation to the other players, the fair behavior and the mode by which an individual affects a financial result in a transaction (Coleman, 1990). In addition, Fiske and Taylor's (1991) economic theory generally ignores the effects of cognitive structures that guide behavior. They suggest the concept of a script as a model of behavior in related-party transactions.

According to Fiske and Taylor (1991), the script refers to adequate behaviors in known situations, related to the purposes and inherent expectations of specific social positions in which individuals are placed (i.e., friends and strangers, father and son, boss and subordinate). In what is referred to as relationships of friendship, the object of this study, is to understand the characteristics, behaviors, and strategies carried out for the perpetuation of this relationship between individuals. The script is influenced by cultural norms or the shared experiences of the people. The area of finance has received contributions of research developed in other fields of knowledge that examine human behavior in trade situations. However, we can give prominence to the necessity of examining how social relations that involve friendship, affect the behavior of the players in commercial practice and in all other possible relations that are developed by way of friendship.

Malinowski (1926) dealt with issues related to the rules of trade. In this context, the notions of propriety and reciprocity among individuals were examined, emphasizing mutual obligations and the recognition of the necessity for cooperation. Malinowski (2002) transposes the classical economic vision when he discusses alternative forms of punishment by not fulfilling a financial obligation. In other words, the shame, along with the exclusion from social order, would be lesser forms of severe punishment for an individual. To Canary *et al.* (1995), the cognition of transactions with friends, can be investigated as a multivariate phenomenon that, in a complex form, presents the elements that constitute friendship, which establish the scripts to a mutual exchange: i) interaction by way of a joint history; ii) similarity of shared values; iii) mutual respect; iv) disposition to the truth; and v) affection.

It is supposed that there is decisive differentiation in the treatment with those who are friends and those who are not. Individuals, when negotiating with friends, behave differently than when doing transactions with others they do not know. Those differences are systematic and can be predicted, even when players are not necessarily under direct observation of one another, as noted in the results discussed previously. From the concept of script, the differences of behavior between friends and strangers, in business negotiations, can be understood by way of rules of behavior, formed of objects and expectations. In transactions with strangers, scripts are also used. However, trust in the commitment and honesty, in principal, are reduced, and consequently, the capacity of formatting the script is less than those that establish themselves as friends in transactions, in which context, those expectations are more explicit, which is supported by the arguments of Williamson (1985) and Husted (1990).

Friendship

A good part of adult relationships that involve friendship is formed by people who play many roles, i.e., family, work, friends from the same fraternity (Canary *et al.*, 1995). Kelley (1979) argues that daily interactions include negotiations with friends or colleagues and, in these situations, occur trades and favors, waiting reciprocity, even when there is no proximity as intense, as those that exist among relatives, or in the case of some type of interest of sexual order. The important thing, according to Pinker (1998, p. 529), is to recognize that if "there is an exchange of favors, both parties benefit, since that value that they obtain is greater than what they give."

Models of cooperation promote the continuity of relationships. A partnership is established when players perceive that they are involved in an interaction that is positive and that the person with whom they are negotiating demonstrated trust and reciprocity in another time. According to anthropology, negotiations and the share are governed "by a cost-benefit analysis and by a meticulous mental account book of retributions". However, Schuster and Copeland (1996) maintain that the relationship between players is not guided by interests of personal relationship, or even by ties of loyalty.

Mauss (1969) observed such behaviors in the ritual ceremony of Potlatch, in North America, that occurred in marked periods of life, the so-called rites of passage: birth, marriage, and funerals. In these ceremonies, after a grand banquet, the homaged delivered the presents that they had received to those invited. Thus, the offering of goods and riches among partners dealt with a political, economic, and social exchange, regulating the social order. In Potlatch, donation is considered a gift and a reward a spiritual obligation.

Pinker (1998) observes that in close relationships, especially when dealing with friends and spouses, there is a feeling of continual debt, nevertheless, the effort of settling the debt is pleasurable because it tends to exponentially, and not immediately, bring rewards, strengthening in the process the fraternal bonds.

Since the reasoning presented by Hirschman (1986), the context of friendship and the situations in which it is involved has not been substantially contemplated in economic models. Such models are essentially developed assuming an ideal market, with perfect competition, which functions without the necessity of prolonged social contact. From the classical economics point of view, the models based on the assumption of rationality, suggest that individuals could receive or pay similar prices in situations that involve the same good, independent of who is exchanging.

The notion of a contract, according to McNeil (1974), and Rousseau and McLean Parks (1992) offers a comprehensive model of the differences between the behavior of friends and strangers in a transactional situation. McNeil (1986) proposes that long-term contracts are distinct for: i) specificity, ii) scope, iii) flexibility, and iv) monitorability. In essence, transactional contract, on the one hand, can be seen as: monetary agreements characterized by limited involvement of the personal life of players, and on the other hand, relational contracts directed towards other purposes, considering socioemotional exchanges and monetary elements. Exchanges between strangers can be characterized as transactional and exchanges between friends can be considered relational. McNeil (1974) and Rousseau and McLean Parks (1992) even describe relational contract as a psychological contract. The description recognizes that parts of the same contract can interpret their content in different ways. That is, it seems that there exists a certain component of subjectivity in the interpretation of contracts.

In this study, like that conducted by Halpern (1997), we use a definition of friendship, based on prior consultation with the participants. In other words, the definition of 'friend' was used based on the interpretation of the study participants. The players were instructed regarding many recurrent terms in the relative literature on friendship, as illustrated in section dealing with experiments. The decision process has been a topic of concern in many diverse research areas (Tversky and Kahneman, 1974; Carroll *et al.,* 1988; and Loewenstein *et al.,* 1989). However, to our knowledge, there does not exist in the current literature a study regarding the effects of friendship in financial transactions in the context of Brazil. The main contribution of this study is how participants react in relation to those they consider as friends.

Friendship and Pricing Behavior

Although financial results are frequently are considered, in the classical economic theory which is immune to non-pecuniary considerations, there exists evidence that friendship exerts an effect on these results. In this context, Baker (1984) found results that support the idea that 'small panels of friends' who operate in the stock market, influence the volatility of the assets in which they transact. With respect to the impacts of friendship in financial transactions, Halpern (1992 and 1994) indicates that friendship affects the anticipated appraisal of goods. He found that friends agree to the price for a good, even without having talked with the partner on this price. However, strangers disagree: salesmen require more, while buyers offer less for a good, an indication of the propensity to bargain.

Scripts for Friendship in Transactions

Scripts help make judgments concerning situations, guiding the strategies of interactions that people use (Schank and Abelson, 1977). In these terms of processing of information, a script is a set of specific estimates, based on common understanding of how a person will interact with others in various situations (Schank and Abelson, 1977). As social actors, the individuals use these estimates to establish future behaviors.

As defined by Fiske and Taylor (1991), events of a script describe a sequence of steps in well-known situations, for example in restaurants (there exist subscripts for elegant establishments, which are not the same as those for the environment of fast food), or in the work environment. Rules of a script guide the understanding that people have of the set of expected behaviors of a person in a specific social status (i.e., a boss with an employee, a father with a son, or between friends and strangers). Scripts can also interact; an illustration would be dinner in a restaurant with friends versus one with business-oriented partners. In turn, the script of friendship is a function of numerous characteristics, strategies, and behaviors that generally need to be present for the friendship to exist.

In this context, the script of friendship that we describe in this paper includes universal agreements on maintenance of: i) friendship in the future; ii) voluntary nature of the relation; iii) links of association in the relation; as well as, acquisition and maintenance of fairness, reciprocal auto-disclosure and future interaction (Blau, 1964; Morgan and Sawyer, 1967; Boulding, 1973; Rubin, 1973; Shapiro, 1975; and Austin and McGinn, 1977). Some aspects of scripts of friendship can be influenced by cultural norms or shared experiences. For example, friends interact in a particular set of shared histories, similar values, mutual respect, confidence and previous affection for the other.

There are also scripts for interaction with strangers. Strangers are people whom you do not know, and with whom (at least in the context of this study) you do not expect to interact with again. The scripts of relationships with strangers suggest a more protective approach for a negotiation, rather than a relationship of confidence, more common between friends. Generally, in a relationship with a stranger larger interests do not exist larger. Similarly, it is anticipated that strangers will not place confidence in the attitudes of a person (even though it is not pleasant to recognize this aspect) and the person does not expect that strangers place priority on their interests.

Implications for the Area of Finance

Individuals frequently act in situations in which preexisting friendships could influence the management of a company. For example, the work of the members of the board of directors (that includes the compensation of executives and disciplining them when judged necessary) in public companies, could be compromised due to friendships that exist between board members and executives.

In discussing the subject of the corporate governance, based on the arguments shared by Mendes-Da-Silva and Moraes (2006) and Dutra and Saito (2002), the finance literature in the context of Brazil, has identified a certain difficulty in achieving the independence of the board of directors. Independence is a necessary condition for the preservation of the disciplinarian capacity of the board of directors with respect to the executives (agents), the preservation of the interests of the shareholders (principals) and the maximization of the value of the firm. Described from the economic point of view of Jensen and Meckling (1976), friendships could exert influence in a typical principal-agent relationship.

From an organizational view, aspects of the administration process (e.g., acquisition of materials) assume a form of transaction in which individuals interact to establish prices and conditions that satisfy the two sides. In the individual sphere, the purchase of an apartment or an automobile, for example, is also a transaction that requires a negotiation in which individuals can perceive themselves as friends or strangers. This aspect can impact the result of the transaction. Thus, friendship can influence the transactions by means of its components—confidence, anticipation of future interactions, empathy, interdependence, or expectation of 'fairness' (Williamson, 1985).

Based on this understanding, a purchaser may pay more for a product acquired from a friend than from a stranger; this may be due to the confidence in the honesty of the friend, who caused the purchaser to pay a premium for this confidence. These consequences were also evident in the studies of Baker (1984) and Greenhalgh and Chapman (1994), when they verified that the volatility of stock prices in the stock market is affected by friendship, which reflects the behavior of the investors in their propensity to pay or to accept prices proposed for a stock.

Hypotheses

Goodwill and Harmony

There is a tendency that in 'friendship', the individuals work to maintain the goodwill and harmony, perpetuating the bond and the voluntary nature of their relationships, including when discussing the negotiation of assets. This must occur in a reciprocal fashion. This understanding has been debated by Mauss (1969), Boulding (1973), Austin (1980), and Malinowski (2002).

Morgan and Sawyer (1967) defend that friends can divide a set of rewards in equal parts, when they are presented to them in a unified manner, despite possible asymmetries in individual merit. As indicated by Fry *et al.* (1983), friends generally prefer to maintain the goodwill and harmony in the long run, rather than getting an immediate pecuniary return in a transaction, as described in the literature review. In summary, some individuals, to the light of their bonds of friendship, could accept suboptimal agreements in order to prevent conflicts. This behavior is debated by Thaler (1985), where he refers to the behavior of 'players' in analogous situations as 'utility transactional'. This can be empirically tested by examining if the individuals are willing to offer more money for a specific good in a transaction involving friends than a transaction involving strangers; and similarly if the salesmen require less money of the friends than of strangers. From the idea that the people preserve goodwill and harmony with friends, the first hypothesis to be tested is:

H_1: *People offer more to friends than to strangers, and require less of friends than of strangers.*

The purchaser will be cautiously interested in the merchandise (of a stranger), assuming a defensive position. By extension, the purchaser will tend to appraise a good below its value based on the estimate that the salesman requires a greater value for the good, as a result of the salesman's perception of the purchaser's capacity to pay. In turn, the purchaser would like to avoid financial losses in the transaction. From this scenario, a bargain zone would be created (Raiffa, 1982). The bargain, inherent to the transaction, occurs as a process through which the 'players' (buying and selling) become related. As McNeil (1986) describes, when strangers negotiate in extreme cases, they use threats, ultimata or other related techniques. Intuitively, strangers are more inclined to offer and to perceive risk of each in relation to the other, different from the inclination of friends. However, a friend with an expectation of a price for a good, using the same bargaining processes used in transactions between strangers, could be perceived as inadequate in the 'script' of friendship. Then, from the premise that friends avoid damaging the mutual goodwill, harmony and confidence in which the script for friendship is based, the second hypothesis is:

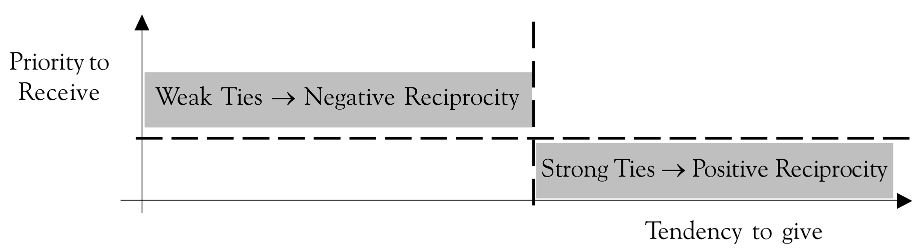
H_2: *Friends enter into agreement on the price of a good far more easily than strangers.*

Obligation of Reciprocity and Accountability

The basis of the notion of reciprocity is not imposed on market economies, but in the informal exchanges of goods, favors and work. In principle, it relates to sharing something with somebody without necessarily expecting something in exchange. Reciprocity according to Mauss (1969), tends to keep the social order, since it establishes bonds and it awakens the perception that an individual needs another. This vision is shared from the cultural 'script'. Sahlins (1972) suggests that reciprocity is responsible for establishing the balance of the relation between two close individuals characterized, at times, by the convenience of return.

Reciprocal actions between friends are not 'give-and-take' (Halpern, 1997, p. 842), but consist of a positive reciprocity. Also when one is discussing strong ties, immediate repayment can be viewed as an offense by players, as if it were a payment for the given services, rather than constituting an alliance. On the other hand, in discussing weak ties, in view of Sahlins (1972), the reciprocity is more easily controlled by a refusal, or the idea that players take more than they give. This argument is represented in a schematic form in Figure 1.

Figure 1: Behavior Matrix for Transactions Involving 'close' Individuals (Strong Ties) and 'distant' Individuals (Weak Ties)



Source: Developed by the authors based on the arguments proposed by Sahlins (1972) and Granovetter (1974).

One's own interest, instead of the interest of the other, is frequently considered as a motivation *a priori* in transactions involving distant individuals (strangers/*weak ties*), creating the possibility for egoistic contract breaking or other behaviors (Castanzias and Helfat, 1991). However, when motivational factors beyond one's own interests are considered, as is required for friendship for affinity, players can assume a behavior in which they prioritize the interests of the other (Seabright *et al*., 1992). A contribution to behavioral finance is that the notion of 'friendship', much like its script, differs from the rational perspective that assumes the maximization of the individual's own utility. In other words, the decisions in transactions would not necessarily be guided by the wellbeing of a friend. This is the argument of the traditional view of the economy, based on the rationality of the investor, contested initially by Tversky and Kahneman (1974).

In trade relations between friends, one component needs to be considered—the social construct of 'friend'. Despite the inherent difficulties to define the term, the expectations generated for the behavior of an individual perceived as a 'friend' include aspects that establish scripts of 'friendship' in transactions, enumerated by Halpern (1994, p. 3). In this context, Cummings and Anton (1990) argue that an individual (in the role of agent) is led to act to the benefit of friends (in the role of principals), even when the friends (principals) do not know that they are receiving this attention (of the agents). In this manner, the behavior of individuals is guided more by the role of 'friend' than by the role of player. Thus, friends in the role of agents are willing to do more for friends, in the role of principal, than they would for strangers.

H_3: *People act in a way to benefit their closest friends in relation to strangers; even without their friends' recognition of the favorable actions made in their behalf.*

Methodology

Sample and Data Collection

The collection of data was conducted in two distinct phases. In the first phase, we conducted an exploration of the social construct of 'friendship', which verified that friendship, as viewed by the participants, would include — i) who they like a great deal (without being romantically involved); ii) somebody in whom they trust; iii) somebody with whom they desire to maintain this relationship for an indefinite time. From this first phase, we designed two experiments to test the three proposed hypotheses. In the second phase, we administered the experiments to pupils registered in eight graduate courses in business administration at each of the three times (morning, afternoon and evening).

The experiments were conducted jointly during the second fortnight of the month of March in 2007. Of the 165 participants, 44.60% individuals were female and 55.40% were male; the average (median) age was of 21.15 (20.00) years, with standard deviation of 3.53 years. After a preliminary verification the 400 instruments used to collect the data from the experiments, we discovered that 30 had not been answered completely, and so were not included.

The gender of the players was not correlated with the answers given in relation to the experiments.

Experiments

Two experiments were conducted to test the hypotheses previously proposed. This study essentially follows the structure of the test used by Halpern (1994). The participants in Experiment 1 were randomly assigned the role of player based on two aspects: i) the role to be played in the transaction (buying/selling); and ii) the relationship between players (stranger/friend). In this manner, there were four possibilities of roles in the experiment: i) a buying friend, ii) a selling friend, iii) a buying stranger, or iv) a selling stranger of some hypothetical good with which the students were familiar. Moreover, players were instructed to assume that the business-oriented transaction was with someone of the same gender, that was described as a 'friend' (somebody who the individual likes a great deal, trusts and with whom he or she desires to maintain relations for indefinite time) or 'colleague' (somebody that they did not know very well, nor had the expectation to maintain a relationship for an extended period of time).

The players read the description of eight products and then indicated how much they were willing to offer (if buying) or require (if selling), for the good. The descriptions of each good also included a range for its expected market price, which was based on the available prices of goods similar to those offered to the players. This range was established by visiting retail stores and by consulting websites specialized in quotes for consumer products (<http://www.bondfaro.com.br> or <http://www.americanas.com.br>). The eight goods, with their respective price ranges were: English dictionary: R$23-R$85; ticket to a show: R$30-R$160; MP3 player: R$90-R$195; cellular telephone: R$169-R$629; financial calculator: R$339-R$635; television: R$350-R$450; digital camera: R$539-R$1,198; mountain bike: R$950-R$1,650. The goods were selected in order to create a continuous scale of prices, allowing us to verify whether friendship exerts a different effect in agreements based on the level of prices. The researchers instructed the participants to assume the role of players in which they would decide to sell/to buy from a hypothetical individual (stranger/friend), assuming that the price to be received/paid in the transaction was just, based on the roles played in the Experiments 1 and 2.

Experiment 1

Instructions to the Participant

You decided to buy/to sell from/to a friend/colleague the indicated good, assuming that the price is just. You simply need to decide which price that he/she needs to pay/to receive for the listed good. In some cases, you may want to know more information on this product or situation. However, for the purpose of this experiment, concentrate on making a decision based solely on the supplied information. Do not try to examine the hypothesis with great detail; we are simply interested in the first price that comes to mind. You have only one chance to make an offer for this good; the buyer/seller may or may not accept. As a buyer/seller, assume that no other comparable items are available, even so, you should not propose a value that is not just.

Sample of the Scene Considered by the Player

You desire to buy/to sell, from/to a friend/colleague, a ticket for one show. You have only one chance to make an offer for this highly desirable ticket to the show. Your friend/colleague bought the ticket, but he will not be able to attend, nor obtain a profit by selling it. The price of the show is not printed on the ticket, and your friend/colleague does not recall with any certainty the exact amount paid. The market price of the ticket is between R$30,00 and R$160,00. Your friend/colleague is not obligated to accept offers. But, for your knowledge, he/she does not plan to offer it to anyone else. (Remember: You do not have any chance to bargain and will not have a second possibility of negotiation) How much would you offer to your friend/colleague for the ticket? The value you offered was R$________.

Experiment 2

Instructions to the Participant

You decided to try to sell a determined good on behalf of your friend/colleague, and agreed to the procedure of sale, and will act in accordance with the agreement. For this exercise, you need to decide the final value that you will accept for the good on behalf of your friend/colleague. Your desire is that he/she receives a good deal, therefore, you are acting on good faith (this means that you will search for an offer that is reasonable). At the same time, your friend/colleague trusts you and desires that you sell it well. Moreover, he/she does not want to have a substantial financial loss.

Sample of the Scenario Proposed to the Player

Your friend is currently away from home and is unable to return in the near future, you will take care of your friend's dearest pet Rex. Rex is a very pretty dog with good pedigree. The dog is happy, healthy and has the papers of pedigree in sequence. During his/her last visit, your friend/colleague passed little time with Rex and he/she did not seem as attached to the dog. Your friend/colleague is not certain whether he would return and does not know if he would be able to keep the dog. Therefore, he/she asks you to sell the dog. You agree that selling the dog is favorable for your friend/colleague. This should happen as fast as possible, since the older the animal, the harder it is to sell it. In addition, you have your own affairs to attend to so you don't have much time. The market value for a similar animal is between R$450 and R$2,300. What is the final value what you would be willing to accept when negotiating to sell Rex? The final value that you accepted for Rex was R$________.

Analysis

The appropriate use of parametric estimation methods requires, in general, a normal distribution of the population and a constant variance. Often, it is impossible to correctly ascertain the distribution of the probabilities of assumed values with a stochastic variable in a given population. Therefore, without being able to clarify the exact mathematical distribution of the population, non-parametric estimation methods appear to be a better alternative. The *t* test for differences between means assumes that the distribution of random variables is normal. In order to verify this assumption we used the Kolmogorov-Smirnov test, which compares the function of the observed distribution of a variable with its theoretically determined distribution. After testing the distributions of the continuous variables (at a 99% confidence level), it was not possible to assume that the random variables do not exhibit a normal distribution. Non-parametric statistics were used for the necessary tests for the remainder of the study. As an alternative to the *t* test for differences between means, a Mann-Whitney *U* test was used.

Empirical Results

Experiment 1

The analysis of the results indicates that friends and strangers differ in their pricing behavior. Strangers disagree while friends agree on prices attributed to a good, supporting H_2, which posits that people agree more easily with friends than strangers during a negotiation. This finding goes against the arguments of Schuster and Copeland (1996), who claim that the interests of personal relationships are irrelevant to the negotiation process. As shown in Table 1, except for the digital camera ($p < 0.05$), with its price interval between R$539-R$1,198, and the bicycle ($p < 0.01$), there was no observed difference between the values attributed by the players in the position of seller or buyer when the two are friends.

Reinforcing the results found in Table 1, Table 2 (at a 1% significance level) shows that for the eight hypothetical goods, the prices required by the sellers and the propensity of the buyers (in the absence of friendship) to accept the price is significantly different than

Table 1: Non-Parametric Test for Prices Proposed by Buyers and Sellers with a Relationship of Friendship

	Dictionary	Ticket	MP3 Player	Cellular Telephone	Financial Calculator	Television	Digital Camera	Bicycle
U	3533	3897.5	3601.5	3868.5	3459.5	3827.5	3262.5	3018.5
Z	–1.372	–0.313	–1.175	–0.397	–1.589	–0.530	–2.155	–2.869
p-value	0.170	0.754	0.240	0.691	0.112	0.596	0.031	0.004

Note: This table presents the results of the Mann-Whitney U test of the prices proposed by the buyers and sellers (players) when the two have a relationship of friendship. These results suggest that when the two sides are friends, there is greater agreement in the price given by both sides *a priori*.

Source: Developed by the authors based on the data collected.

Table 2: Non-Parametric Test for Prices Proposed by Buyers and Sellers Who have no Relationship

	Dictionary	Ticket	MP3 Player	Cellular Telephone	Financial Calculator	Television	Digital Camera	Bicycle
U	2627.00	3022.50	2975.50	2854.00	3252.00	3320. 00	2575.50	2876.00
Z	–5.090	–4.055	–4.18	–4.48	–3.44	–3.34	–5.22	–4.43
p-value	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000

Note: This table presents the results of the Mann-Whitney U test for the difference in means between the prices proposed by the buyers and sellers *(players)* when the two are strangers. These results suggest that when the two parties are strangers (not friends), there exists a greater disagreement in the price given by both sides *a priori.*

Source: Developed by the authors based on the data collected.

when friendship exists between the two. That is, when strangers engage in a negotiation the equilibrium price is more difficult to arrive at than when the buyer and seller are friends. The indication that strangers tend to disagree on the price of a good, according to Halpern (1994), would encourage a bargaining process in the transaction between the two parties. The fact that friend-buyers and friend-sellers appear to agree upon the value of a hypothetical good, is perhaps due to mutual trust, partnership, or even the desire to maintain a good relationship between the two parties (Rubin, 1973).

Surprisingly, the players made their pricing decisions, with friends tending to agree and strangers tending to disagree *a priori*, entirely independent of one another and without the opportunity to confer (i.e., negotiate) with each other. Moreover, the deals agreed upon are not simply in the middle of the price interval suggested in the experiment. Thus, the results shown in Table 1 as well as those presented in Table 2 provide evidence for H_2 and at the same time support the arguments and corroborate the findings of Halpern (1992 and 1994).

Table 3 indicates, at a significance level of 10%, that the required prices given to the hypothetical goods when selling to a friend are significantly different from the required prices when selling to a stranger. In other words, the results support the idea that the individual in the selling position requires a lower price for the good from a friend than from a stranger (selling price to friend < selling price to stranger). This conforms to the rationale proposed by Fry *et al.* (1983), lending support to H_1.

Table 3: Non-Parametric Test for Prices Required in Sales to Friends and to Strangers

	Dictionary	Ticket	MP3 Player	Cellular Telephone	Financial Calculator	Television	Digital Camera	Bicycle
U	2816.00	2908.50	3432. 00	3080.00	3670.00	3531.00	3274.50	3649.50
Z	–4.120	–3.880	–2.44	–3.39	–1.78	–2.25	–2.87	–1.84
p-value	0.000	0.000	0.015	0.001	0.075	0.024	0.004	0.065

Note: This table presents the results of the test for the difference in means between the prices required by the players in the selling position to a friend or stranger. The statistics contained in this table suggest that when individuals are selling a good to a friend, they are likely to require lower values for the goods than if they were selling to a stranger.

Source: Developed by the authors based on the data collected.

On the whole, in the light of the results of Table 4, no significant differences exist in the prices that the players in the buying position are willing to pay for the

Table 4: Non-Parametric Test for Prices Offered When Purchasing from Friends and from Strangers								
	Dictionary	Ticket	MP3 Player	Cellular Telephone	Financial Calculator	Television	Digital Camera	Bicycle
U	3960.50	4190.00	4112.50	3995.00	4108.00	4051.50	4199.00	4198.50
Z	–0.746	–0.105	–0.322	–0.648	–0.334	–0.498	–0.079	–0.081
p-value	0.456	0.917	0.748	0.517	0.738	0.618	0.937	0.936

Note: This table presents the results of the test for the difference in means between the prices offered for a good by the players in the buying position from a friend or stranger. The statistics contained in this table suggest that when individuals are buying a good, they do not offer different prices to friends and strangers.

Source: Developed by the authors based on the data collected.

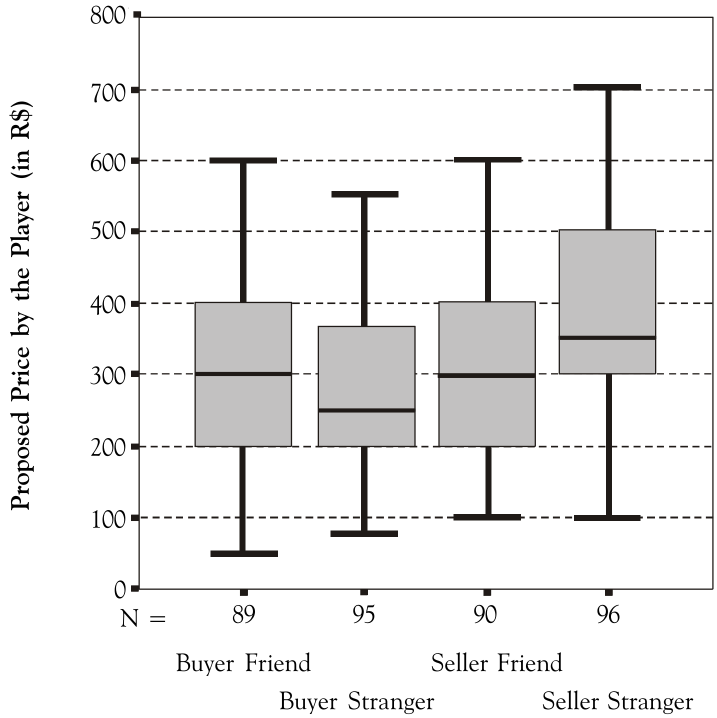
hypothetical goods. This is independent of whether they are buying from a friend or stranger. These results go contrary to H_1, which posited that buyers would offer more to friends than strangers. Thus, it was not possible to reject H_1 when dealing with sales transactions, but there is no evidence for H_1 when dealing with purchase transactions. An alternative explanation for this finding, according to the data collected, is that people would be more reluctant to part with money than to gain assets of similar value.

Exhibit 1 presents a comparison between the prices proposed by the players in the positions of buyer or seller, acting as friends or strangers in a negotiation transaction involving a cellular telephone. The different treatment that friends and strangers employ in this experiment support the arguments developed by Thaler (1985) with respect to 'transactional utility'. The individuals in the experiment demonstrated different behaviors in analogous situations, depending on their personal relationship with the other party in the transaction.

Experiment 2

In experiment 2, we seek to test H_3, The participants in this experiment seek to obtain the best results possible in a sales transaction while acting as agents for principals with whom a relationship of friendship either exists or does not exist. The friend or stranger (principal) in the experiment is unaware of the behavior of the agent during the transaction. In order to test H_3, we begin with a preliminary examination of the descriptive statistics of the proposed sale prices deemed acceptable by the agent. In Table 5 it is apparent that in the first, second, and third quartiles, the prices reached higher values when the agent was acting on behalf of a friend instead of a stranger.

Exhibit 1: Box Plot of the Prices (in R$) Proposed and Required by the Players in the Position of Buyer and Seller (with Relationships Varying between Friends and Strangers) of a Hypothetical Cellular Telephone



Note: This exhibit presents the comparison between the values that players propose to pay for the purchase of a cellular phone (from a friend/stranger) or receive for the sale of the phone (from a friend/stranger). It is apparent that individuals demand less of friends in sales transactions as well as offer more to friends than strangers in purchase transactions (however, the non-parametric tests did not support this last idea).

Source: Developed by the authors based on the data collected.

Table 5: Values (in R$) that the Player in the Position of Seller is Willing to Sell a Pet that belongs to Another Individual

Friend -Owner						Stranger-Owner					
N	Mean	DP	Quartiles			N	Mean	DP	Quartiles		
			1st	Middle	3rd				1st	Middle	3rd
186	1301.83	553.51	900.0	1300.0	1800.0	184	1160.03	538.49	712.50	1100.0	1500.0

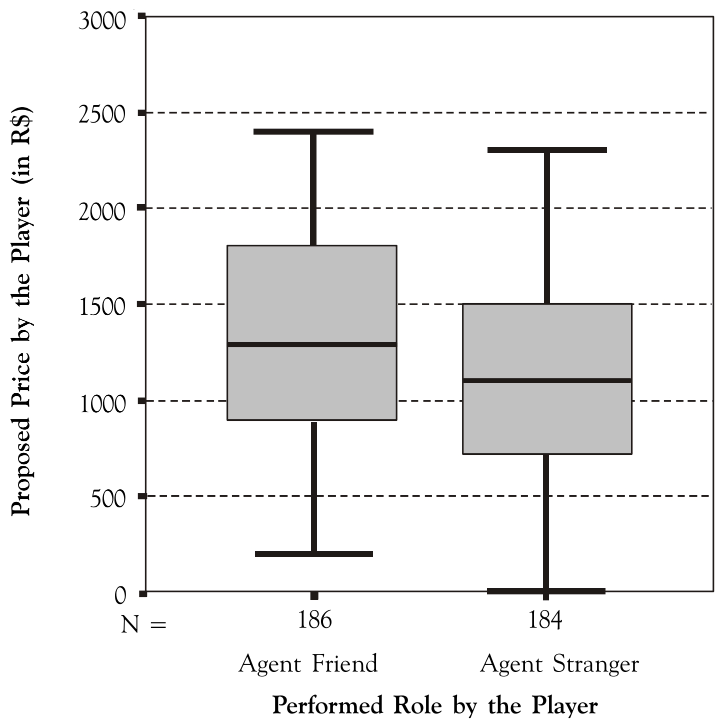
Note: This table presents the values assumed by the prices for which the players were willing to sell a pet as cited in Experiment 2. The table is divided into two columns, those that have a relationship of friendship with the owner of the animal and those that have no relationship with the owner. The results of the non-parametric test suggest that when the owner of the animal is a friend to the individual who is charged with selling the animal, the individual seeks a higher price for the animal than if the owner were a stranger.

Source: Developed by the authors based on the data collected.

After analyzing the descriptive statistics, a non-parametric test was used (since the data does not meet the necessary assumptions for parametric tests) to verify the independence of the relationship of friendship and the price that the player (seller) seeks for on behalf of the principal (friend or stranger). The test results (Mann-Whitney $U = 14606.50$; $p < 0.05$) provide evidence for the existence of a difference between the prices proposed by agents in a sales transaction on behalf of principals with whom a relationship of friendship exists and those transactions where the principal is a stranger.

Exhibit 2 illustrates that the price for which people are willing to sell another person's pet varies depending on the relationship between the person selling and the owner of the pet. People who sell pets for others are more likely to seek a higher price for an animal

Exhibit 2: Box Plot of the Price Proposed by the Seller Agent (According to the Relationship)



Note: This exhibit presents the comparison between the values that the players propose to obtain in the sale of the pet, according to the type of relationship the seller agent has with the pet owner. In the graph it is apparent that when a player is selling an item as an agent for someone who is a friend, the player proposes to obtain a higher price than if the agent is acting on behalf of a stranger.

Source: Developed by the authors based on the data collected.

that belongs to a friend than a stranger. These results support the idea that agents attempt to assist friends more, even if the results of the transaction are required to be reported to the principal. This is consistent with the implied obligation in the script that friendship takes on in a transaction. In other words, the results suggest that during a transaction, friends respond to forces other than those that are solely economic. These other motivations are a part of the script implied when agents and principals have a relationship of friendship.

These results provide evidence in support of H_3, which argues that individuals are more likely to seek better results in a transaction when they acting in behalf of their friends, even if the friends do not have an explicit knowledge of how the transaction is being handled (no accountability). This view is also shared by Krackhardt and Stern (1988) and Zand (1972) who state that friends involved in a particular culture (what culture?) enjoy mutual loyalty and expect honesty and transparency (self-disclosure) from the each other. In other words, friends tend to expect reciprocity for their deeds, notwithstanding, according to Halpern (1997, p. 842) that the mutual expectation in the relationship may be one of "give and take." At the same time, these results go against the view of Castanzias and Helfat (1991) which assumes as wholly valid, the premise of agency theory discussed by Jensen and Meckling (1976), in which an agent that works under conditions of low accountability and low expectations of value by the principal should not attempt to obtain significantly greater value for friends over strangers.

Conclusion

Some studies in the area of behavioral finance have sought to understand how the mind categorizes information, an area of study which is concentrated in the social cognition research. Especially on the national level where studies in behavioral finance are still in their early stages, the main research focus used to explain agent behavior has been heuristics and their consequent cognitive slants, together with their repercussions on the market. However, there has been little discussion of the effects of human behavior apart from research in social psychology and anthropology, both of which have been shown to be helpful in understanding the behavior of individuals when making financial decisions.

Under the premise that individuals act in accordance with social norms, cognitive structures or scripts exist that incorporate rules for behavior in multiple situations involving other individuals (i.e., relationships of friendship). This study examines the effects of friendship on the price expectations that players have in certain transactions. In practical terms, the behavioral finance research seeks to establish a link between the psychological sciences and economic theory with the intent to better understand choices made in relation to the management of wealth.

There are two principal results that point to the existence of scripts for the behavior of friends in negotiation transactions. The first is that individuals involved in transactions where the two parties are friends will act differently than when the two parties are strangers. Friends will tend to agree on a price attributed to a good while strangers will be more willing to disagree and bargain with respect to the price. The second result that points to a script when dealing with friends in a negotiation transaction is when an individual acts as an agent for another. If the agent and principal have a relationship of friendship, the agent will seek to better protect the interests of the principal according to the script that the friendship implies between the agent and the principal. In addition, despite the interesting evidence found about the influence of friendship on transactions, no less important are the implications the evidence has for transactions with strangers. Indeed, individuals are more likely to transact with potential players in an environment of weak ties rather than only transacting with friends.

In sum, it is apparent that scripts exist due to friendship in the context of negotiation transactions. These scripts are comprised of social norms that restrict the full exercise of rational behavior in a transaction according to the concept of rational behavior as outlined in classic economic theory. This study, when considering the methods used, possesses some limitations that are appropriate to discuss. The tests performed were done on a specific age group and geographic region, thus limiting, in some form, the results obtained. Also, the experiments used to test the hypotheses are the result of a construct adopted by the authors, the scope of which may be insufficient. Similar limitations as those mentioned above are found throughout the behavioral finance literature and together they suggest a vast field of study for future exploration. Future studies could seek to replicate this study in greater and more diverse situations, as well as employ other experimental designs to test the hypotheses.

Finally, it is apparent that finance research is moving towards the acquisition of a new construct that will further strengthen and complete the current models used in the research. Furthermore, according to Thaler (1999), the concept of behavioral finance tends to be incorporated within modern finance, and as Bachelard (1978, p. 18) taught, "Absolute reason does not exist. Rationale is relative. It is ever-changing and alive".

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