CHAPTER ONE

RELATIONAL IMPACT ON BILATERAL BARGAINING AND CONTRACTING

1.1 GENERAL INTRODUCTION

The subject of this book is the bargaining and contracting behavior of individual business parties. Two fundamental principles of human behavior appear to be relevant in bargaining and contracting behavior, viz., individuals pursue private gains and conform to social norms. Gain-seeking has been considered the sole driving force in much, if not all, modeling of individual bargaining and contracting behavior. Nevertheless, the relevance of the normative effects on bargaining and contracting has for a number of reasons become more important.

Gain-seeking as the sole principle appears inadequate to explain individual bargaining behavior. In line with the interest of economics in markets, experimental studies have therefore been focussed on testing the individual gain-seeking principle on impersonal markets. On these impersonal markets with multiple sellers and buyers, the identity of the actors is not important for the transaction. Inspired by the success of the economic models in experimental studies of impersonal markets (see Smith, 1991; Davis & Holt, 1993), researchers have also used the assumption of the self-interested individual in modeling bilateral bargaining (see Roth, 1985). In contrast to the impersonal markets, the relationship in bilateral bargaining is such that actors can identify the person with whom they are dealing with. Despite a considerable research effort, the results of bilateral bargaining studies appear to be unsatisfactory. A large number of these studies have indicated that individual actors do not come close to maximizing their private gains (Davis & Holt, 1993). The question that arises is why these results are disappointing when the actors can be identified?

Another reason to look explicitly at effects of an identified relationship
between economic parties is a theoretical development that has taken place in the domain of contracting. Central to the theory of contracting is Williamson’s (1985) transaction cost theory. Williamson states that under some conditions the establishment of an identified relationship is even essential for the execution of a contract. Transaction cost theory points out that contracting incorporates not only bargaining behavior, for instance, with respect to different terms of the contract, but it also includes the regulation of the transaction after an agreement has been made. The regulation of a transaction ex post becomes especially significant when one or both parties make specific investments because of the transaction. For example, the seller has to make initial investments in the form of costly adjustments to a production unit in accordance with the buyer’s specifications. The specificity of an investment restricts the number of possibilities for the seller to shift these resources to other uses. In this way, the investment itself becomes locked into the transaction relationship. As a result, the investor attaches value to the continuity of the relationship with that specific transaction associate. It is this theory of transaction cost that has given relational aspects of contracting a prominent place in economic contract research unlike bilateral bargaining research which removed relational aspects from economic bargaining research.

It is striking that bilateral bargaining research has moved in the direction of studying individual bargaining behavior in increasingly anonymous bargaining situations. As will be shown later, these studies too have been only partially successful. When relational effects on bargaining behavior are introduced at all, it happens primarily on an ad hoc basis. For instance, some researchers have introduced post hoc criteria of fairness to explain the individual’s decision to split the given surplus evenly (Güth, Schnittberger & Schwartze, 1982; Güth & Tietz, 1986). Others have pointed to sociological factors, such as social conventions, which influence credibility (Roth, Malouf & Murnighan, 1981), or introduced psychological factors, such as beliefs about the other’s standard of fairness (Rabin, 1993). But why then, does an individual bargainer conform to these conventions or beliefs? Do the social norms only affect the credibility of someone’s claims or do they also have other effects? Harsanyi (1977) developed a social welfare model of bargaining behavior in which individual moral value judgements are incorporated.

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1 In this recent article, the author described a bargaining game called the psychological game, in which fairness is introduced in the "material game" by means of a "kindness function" for the actor.
However, to what extent does the individual integrate the basically conflicting social norms and the private preferences of gain-seeking into one decision? And is this integration of both behavioral principles affected by an individual’s view of the bargaining situation? As the principle of gain-seeking seems to be inadequate to explain individual behavior in bargaining situations, it seems worthwhile to pay specific attention to the integration of norms in bargaining in order to explain variations in private gain-seeking.

The increasing convergence between sociology and micro-economics in common areas such as bargaining and contracting has created new leads with regard to this integration. Most suitable for the context at hand is a recent development in rational choice theory that explicitly incorporates the effects of relational aspects. This development makes it possible to study the relational effects on individual behavior and individual gain-seeking in one general framework. The solidarity theory (Lindenberg, 1988, 1992) is a decision-making model that takes into account that individual decision-making takes place in a relational context. Rather than attempting to make bargaining more and more anonymous, the solidarity theory encourages the explicit incorporation of the relational effects on bargaining and contracting. For this reason, the solidarity theory was the instrument chosen to answer the central question of this book: How do relational aspects affect contracting? Before describing solidarity theory in more detail, the bilateral bargaining paradigm will be introduced. The solidarity theory explicitly addresses problems that come up within this paradigm.

1.2 Gain-seeking behavior in bilateral bargaining

Bargaining about aspects of a contract can be considered as an essential element of contracting. Even in a process of bilateral bargaining, the process of wheeling and dealing about the price or quantity of goods can be quite complicated in practice. This bargaining process has been stylized as a bilateral bargaining game (see Harsanyi, 1977; Friedman, 1989; for a historical overview, see Aumann, 1992). The basic elements of a bilateral bargaining game and related experimental studies are introduced in the following sections.

1.2.1 Introduction to bilateral bargaining games

The complex process of bargaining can be simplified to a basic form
of bargaining, i.e., the two-person bargaining game (Harsanyi, 1977) in which two actors (say a seller and a buyer) negotiate a set of agreement alternatives. For example, both actors can bargain about the level of the selling price for the commodity to be exchanged. The set of feasible selling prices forms the negotiation set. The negotiation set can be restricted because of the concession limits of the actors. These are usually the costs the seller has incurred and the maximum amount the buyer is prepared to pay for the commodity. Given these concession limits, the negotiation set then equals the difference between the costs for the seller and the maximum amount for the buyer. It represents the "surplus" to be divided by the actors. If there is a disagreement, there is a specific (lower) outcome for both actors, called the disagreement payoff. Generally, this payoff equals zero.

An important step toward a mathematical solution for the bargaining game has been the formulation of assumptions concerning the behavior of the individual actors. An influential suggestion has been proposed by Nash (1950, 1953; see Harsanyi, 1977). Nash (1950) employed the expected utility theory as formulated by Von Neumann & Morgenstern (1944). Based on this theory, it is supposed that individuals in a well-defined choice situation prefer the option representing the highest level of expected utility. The expected utility of an option is based on the evaluated outcome(s) related to the option, each of which is weighted by the probability of its occurrence. Nash formulated additional utility postulates concerning individual behavior. The postulates brought forward a mathematical solution for the two-person bargaining game, which is called the Nash solution. The solution predicted a split of the surplus in a way that each actor maximizes the level of private gain. Gain is the difference between the outcome of the option minus the disagreement payoff. Thus, when everything else between the actors is kept equal, the Nash solution predicts that actors split the surplus evenly.

An influential postulate in the Nash solution for bargaining theory is the linear invariance assumption (Harsanyi, 1977) or independence of equivalent utility representations (Roth & Malouf, 1979). The postulate states that the actor’s utility function is invariant up to linear transformations; the choice of origin and scale on which the actor’s payoffs are measured (e.g., on

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2 In short, Nash’s main postulates for an unique solution of a bilateral bargaining game were: the outcome is joint efficient, the parties are symmetrical with respect to the utility weights they attach to gains, the solution is independent of irrelevant alternatives available in the bargaining game, and the party’s utility function is invariant to linear transformations (see Harsanyi, 1977).
a specific monetary scale) does not affect the actor’s utility function. With the assumption that interpersonal utility comparison is not possible, the postulate also states that an actor’s utility function can be determined linearly independent from that of another actor. This means that the utility can be measured for each actor on a different scale with unequal utility units (Harsanyi, 1977). The assumption implies that each actor can only focus on maximizing his/her individual utility including only private interests and other-regarding, normative aspects can therefore not be considered.

The Nash postulate made possible a simple mathematical solution for the bargaining problem of how actors split a given surplus. Quite a number of studies have been conducted to test the empirical predictive value of this postulate. A general outline of this quest will be presented in the following section.

1.2.2 Experiments concerning bilateral bargaining games

The predictive value of the Nash postulate concerning self-interestedness has been reviewed by various authors (see Roth & Malouf, 1979; Roth, 1985, 1988; Davis & Holt, 1993). Many early studies were conducted in a straightforward form of bargaining, i.e., the so-called Split-The-Dollar game. The two bargaining actors engaged in a single face-to-face negotiation. The aim was to come to an agreement about the division of a fixed and known surplus (i.e., the so-called "dollar" is the negotiation set here). If the actors agreed on a particular partitioning, they were paid out accordingly. If not, each actor got nothing or a very small disagreement payoff. According to the Nash solution, the results showed that, by and large, actors agreed on an equal partitioning of the "dollar" (Nydegger & Owen, 1975).

Yet, the assumption of self-interestedness did not hold up when tested explicitly. Nydegger & Owen (1975) conducted another experiment in which

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3 Although the Von Neumann & Morgenstein utility function in principle allow for other preferences than private gain-seeking (e.g. altruism), most economists assume the parsimonious model of man with self-interestedness as the only general behavioral goal. Self-interestedness is mostly used in terms of private gain-seeking in (experimental) bargaining research. Chapter Eight will examine whether altruism is an alternative explanation of the relational effects.

4 So far, bargaining is considered in the realm of the cooperative bargaining theory in which the agreement between actors is considered binding or (self-)enforceable. The enforceability of the agreement is not assumed in the non-cooperative bargaining theory. Both theories assume the self-interested behavior of the actors participating in the bargaining game which is the central starting-point of this book.
actors negotiated the division of a fixed number of chips. In contrast to the previous experiment, the chips had a different value for the actors. For one actor, the chips had twice the monetary value as for the other actor. The results showed that the actor with the higher valued chip agreed on a proportion smaller than the equal split of the chips if they were fully informed about the lower monetary value these chips had for the other actor. Similar results were obtained by Roth & Malouf (1982) in a risk-neutral experiment in which actors negotiated over binary lottery tickets. Both experiments suggested that actors engaged in an interpersonal comparison of utility and that relational aspects matter. Yet, bargaining research at this point did not begin to study relational aspects. On the contrary, the development was in the opposite direction.

In these "split-the-dollar" games, the bargaining consisted of unstructured, face-to-face negotiations between actors. In such cases, it is difficult to isolate the impact of a particular move by an individual actor during a bargaining process independent of the other actor’s offers. If the possibility for relational concerns was reduced, would the Nash postulate then be corroborated? The reduction of possible relational concerns was realized in the so-called ultimatum games (see Harsanyi, 1977; for a survey, see Güth & Tietz, 1990). Here, the focus was the first move of a single actor in an one-period bargaining game. In such a game, one actor, say the seller, decides unilaterally over a split of the surplus. The other actor, say, the buyer may then either accept or reject this proposal. In the case of a rejection, each actor receives a certain disagreement payment, usually zero. The ultimatum type of bargaining game allows a closer examination of the assumed self-interestedness of a single bargaining actor. Given the assumption of self-interestedness, the actor having the opportunity to make the first move is expected to make a maximum claim on the available surplus. The actor will "donate" to the other actor a proportion of the surplus that is only slightly more than the disagreement payment. The other actor, confronted with these alternative payments and being individually rational, should accept the small offer proposed.

In an ultimatum-game experiment, however, Güth, Schnittberger & Schwartzte (1982) noticed that an actor having the first move claimed far less than the maximum (for comparable results of non-maximizing behavior, see Meyer, 1992). Most of the actors claimed only 50% instead of a near maximum of the available surplus. When actors did make a near maximum claim, the other actor was more likely to reject the proposal. In their
discussion, the authors suggested that this may be the result of fairness effects (see also Bolton, 1991; Ochs & Roth, 1989). However, they did not elaborate on the origin and working of these norms. It was not asked whether gain-seeking is socially unacceptable (Güth & Tietz, 1986) or is it necessarily so that fairness norms lead to an equal split? Why do people conform to these norms? Instead, it was attempted to eliminate possible fairness effects by further reducing the relational aspects. For example, Forsythe, Horowitz, Savin & Sefton (1994) let the actor having the first move be anonymous with regard to the other actor. Payoffs were also not maximized under these conditions.

Was it possible to remove the relational aspect even further out from the bargaining game? Indeed it appeared to be possible to reduce the relational aspect even more, namely, in a bargaining game called the dictator game. In an ultimatum game, the other actor has the opportunity to block a proposal of the first mover. Forsythe et al. (1994) suggested that actors might be guided by expectations of a possible rejection of a proposed claim by the other actor. The larger the proposed share is for this other actor, the less likely it is that he or she will reject the offer. The first mover is then likely to propose a higher offer in order to avoid the lower disagreement payment. In a dictator game, the considerations concerning a possible rejection of the proposal are removed for the actor who is the dictator. As in an ultimatum game, one actor has the opportunity to decide unilaterally on a split of the available surplus. In the dictator game, however, the other actor cannot reject the offer. The dictator’s offer is final. Furthermore, Forsythe et al. (1994) arranged the experiment in such a way that the dictator was strictly anonymous with regard to the other receiving actor. It was predicted that at least in this kind of situation, the dictator would claim the complete surplus for himself, leaving nothing at all for the other actor. However, the result showed that only a minority of the dictators (smaller than 40 %) claimed 90 % of the surplus or more. For the other 60 % of the dictators, gain-seeking was apparently still restrained.

In a number of comparable dictator games, Hoffman, McCabe, Shachat & Smith (1992) investigated several other factors affecting the self-interestedness of actors besides the anonymity among the actors bargaining. When actors had to earn the right to be the dictator - by means of a contest instead of the usual random assignment - the number of gain-maximizing actors claiming 90 % of the surplus or more rose to about 60 %. In a subsequent experiment, Hoffman et al. (1992) made the dictator not only completely anonymous with respect to the receiving actor, but also with respect
to the experimenter. The results showed that with all relational aspects stripped away - the other actor is virtually unidentified for the dictator - 84% of the experimental dictators claimed 90% or more of the surplus for themselves. Here, bargainers came close to pure gain seeking, as was originally predicted for all bilateral bargaining situations.

From these findings, Hoffman et al. (1992) concluded that actors in general have a predominantly private preference for seeking private gains, rather than an autonomous preference for other-regarding behavior. This other-regarding behavior could be considered as a primarily strategic phenomenon, according to the authors. Remarkably, this conclusion was based on results stemming from an experimental setting in which the relational context of the bargaining situation had also been removed. Does this mean that the presence of the relational context affects actors only by strategic considerations?

It is the aim of this book to examine whether and to what extent the relational context affects individual behavior within bargaining and contracting. Some sociological research suggests that relational concerns may systematically reduce strategic considerations because of the pursuit of a goal other than private gain. The effect of the relational context on individual behavior will be elaborated on in the following section.

1.3 RELATIONAL EFFECTS IN TRANSACTIONS; THE SOLIDARITY THEORY

1.3.1 Introduction

So far, transaction cost theory has focussed on a further identification of the (contract) situation, whereas bargaining theory has focussed on a further anonymization of the (bargaining) situation. What both theories have in common is that the identification of the relationship is generated by the (inter)dependence between actors only in terms of their (private) gain. In transaction cost theory, the identified relationship is created by (inter)-dependence of gain between actors because of the transaction specificity of investments. In bilateral bargaining theory, the identified relationship is specified by the bargaining situation describing an (inter)dependence between the actors in terms of the surplus (gain) to be divided among themselves. The definition of the situation in terms of gain fits the actor to the extent that gain-
seeking behavior can be considered as the sole general behavioral goal. That another general behavioral goal besides private gain can be pursued by actors is well known in sociological and psychological research.  

Following Adam Smith’s Theory of Moral Sentiments, Lindenberg (1990, 1992) identified another general behavioral goal, namely, the pursuit of getting from others for one’s own ‘self’, in short, social approval. Instrumental to achieving this general goal for people is conforming to social norms. Ongoing interactions in identified relationships generate social norms specifying what actions are regarded as proper or improper (Coleman, 1990b; Schwartz, 1975). These norms can be acquired, for example, by means of repeated exchanges or iterated social dilemmas in which people learn the beneficiary effects of refraining from immediate gain-seeking (Ullmann-Margalit, 1977; Coleman, 1990a; 1990b; Lawler & Yoon, 1993). The solidarity norms reflect particularly those norms that govern the social interactions of people within an identified relationship, e.g., to help in need, not to harm the other, and not to increase the social distance between oneself and the other (Lindenberg, 1988).

Solidarity norms in particular can have various effects on the individual’s behavior. It has been shown that the extent to which solidarity norms affect individual behavior varies among individuals (Liebrand & McClintock, 1988; Caporael et al., 1989) and among forms of personal relationships (Loewenstein, Thompson & Bazerman, 1989). Other studies show that norms can enhance transactions - more reciprocity (Brewer & Kramer, 1986), more cooperation (Caporael, Dawes, Orbell & van de Kragt, 1989; Van

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6 Economists Stigler & Becker (1977) also gave way to other general human goals in their theorizing: assume general human goals and then look at all other goods as means for reaching these goals (see Lindenberg, 1992).

7 There are a number of (social-)psychological theories that elaborated on motives other than private gain-seeking. For example, social identity theory (Tajfel & Turner, 1979; Turner, 1985) mentioned individual motives related to social categorization, social identification and social comparison. These motives stress the importance of the social context for individual behavior. The (social-)psychological theories will not be used throughout this book, because they study human behavior in much detail. Social approval can be considered as a goal that comprises these motives at a higher level of abstraction.

8 Some researchers study repeated interactions in an evolutionary context. For an introduction, see Mailath (1992). It is noteworthy that Bester and Güth (page 18, 1994) concluded at the end of their study concerning the evolutionary stability of altruism that ”.... altruism is more likely to emerge in societies where individuals are not anonymous.” This book will stress that "altruism" depends on the solidarity relationship by which individuals are identified.
Lange, 1991) -, but can also inhibit exchanges -restriction of the number of choice alternatives, forfeited profits (Kahneman, Knetsch & Thaler, 1986), equal distribution of outcomes despite unequal initial investments (Mikula & Schwinger, 1978). These studies underscore that solidarity norms have an effect on transactions and that these norms affect the individual’s behavior. The studies are less elaborate when and to what extent norms are operative in transactions. Do these norms affect the principally gain-maximizing individual by changing expectations, as suggested by the studies in bilateral bargaining gaming? Or do relationships have an impact on the individual’s private preference for normative behavior? In terms of the Nash postulate, the latter implies that individuals can find a common numéraire on the basis of which an interpersonal comparison of utility can take place. Apart from the question of whether a normative principle is needed to explain individual behavior, it remains to be studied whether social norms replace gain-seeking as the predominantly behavioral principle for the individual or just mitigate the pursuit of gain-seeking. Or is it sometimes the one and sometimes the other?

The problem with these questions is that economic theories have tended to stress the strategic aspect of norm conformity, while sociological theories have favored pure learning (i.e., internalization) effects without any strategic concerns. In this way, it has not been possible to study degrees of strategic behavior affected by learning. In recent years the situation has changed. Lindenberg (1988, 1992) has suggested a rational choice theory in which the impact of relational aspects can be predicted. This theory, which is called the solidarity theory, is, in turn, based on a decision model of bounded rationality, which is called the discrimination model. The discrimination model is a stochastic decision making model that accounts for framing effects (Lindenberg, 1980; 1988). The model has recently been tested experimentally in comparison to Kahneman & Tversky’s prospect theory and fared well in this comparison (Braspenning, 1992). In the following, the discrimination model will be described first, then the solidarity theory will be presented.

1.3.2 The discrimination model

The discrimination model\(^9\) distinguishes three general cognitive

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\(^9\) The discrimination model was originally developed as a stochastic decision making model for repeated individual choices. The stochastic model is mathematically described as follows (Lindenberg, 1980):

(...continued on the following page...)
activities in the human decision making process. An individual structures a choice situation, evaluates choice alternatives, and makes a choice. The model focuses primarily on the structuring activity within the decision making process. A situation is structured in the sense that choice alternatives are defined and the criteria for their ordering are established. This process is affected by the individual’s limited rationality (Simon, 1957). Lindenberg reasons that the bounded cognitive capabilities of the individual enable him or her to pursue only one goal at a time. Although a habitual goal in a recurring situation has the first chance to structure that situation, there is a competition among the potential goals in a choice situation. Somewhat simplifying the model by ignoring the effect of habitual "triggering", one can say that the goal that structures the situation most clearly, i.e., that discriminates most clearly among the choice alternatives, is the one that wins the competition. Thus, competition produces one winner (the dominant goal) and a number of losers (the "background" goals).

The most dominant goal "frames" the choice situation in the sense that it determines what is being looked at (the choice alternatives) and how it will be looked at (the order of choice alternatives). For example, a business man in a transaction has the habitual goal of gain-seeking in that situation. The choice alternatives are those pertaining to gain, and the ordering is according to the expected gain. Other potential goals in this situation, such as concern for quality or concern for the welfare of a buyer, are not likely to yield a clearer structuring of the options. Consequently, it is most likely that gain-seeking will remain the frame for that business man. Consequently, the business man selects profit opportunities as the options, and he orders them from "higher profit" to "lower profit".

The discrimination model is a stochastic model. In contrast to a deterministic utility model, an individual is said to choose the option with only a certain probability. According to the discrimination model, the further apart the expected net rewards of the options, the higher the choice probability for the "best" option. Thus, if the best option is 100 dollars and the second best is 20 dollars, 100 dollars will be chosen with a higher probability than if the

\[ P_i = B(g_i - g_o) + \frac{1}{k} \]

\( P_i \) is the choice-probability of option i; \( g_i \) is the expected utility of option i, and \( g_o \) equals the mean expected utility of all options. The parameter B denotes the salience of the situational goal (the "frame"). Low salience of the frame reduces the first element in the equation to zero; in other words, the choice probability for an option is then determined only by k, the number of options.
second best option had been 99 dollars. Yet, the choice probability does not only depend on the difference in expected net rewards, the losers, i.e., the background goals, also influence the choice situation, even though they do not frame it. Their influence determines the salience (strength) with which the dominant goal structures the situation. For example, if gain-seeking is the dominant goal, then if the expected net rewards differ at all, a very high salience of gain-seeking will produce a high choice probability for the best option. If money is very important, then even a few cents will count. However, a background goal that is incompatible with gain-seeking, for instance a concern for the impression you make on the transaction partner, will lower the salience of gain-seeking and the probabilities will shift in the direction of an equal distribution over all options. Thus, the incompatible goals in the background can still influence an individual’s choice behavior, but only in an indirect, tempered way. The discrimination model is schematically summarized in Figure 1.1.

Figure 1.1 The main concepts of the discrimination model

10 Note that there is no direct calculation of the cost of a bad impression versus the monetary gain. So, there is no problem of commensurability between the numeraire of the frame and the numeraires of the background goals.
Because the influence on behavior of the background goals that are incompatible with the dominant frame is only indirect, changes in the parameters of a background goal are assumed to have a smaller impact on behavior than identical changes when that same goal is the frame. Thus, the increased importance of avoiding a bad impression influences behavior less when concerns about the impression one is making is a background goal than when it is the dominant goal.

The discrimination model appeared to be successful in explaining and predicting individual choice behavior in different types of choice situation (see Lindenberg, 1981 and Braspenninck, 1992). The model has also been used with relational concerns to describe and explain individual behavior in economic transactions (Lindenberg, 1988). This application (called the solidarity theory) seemed particularly relevant for the purpose of this book because it combines the workings of relational concerns with rational choice. The solidarity theory will be explicated in the following section.

1.3.3 The solidarity theory

In solidarity theory, the two basic concepts of the discrimination model, i.e., the frame and the salience of the frame, are particularly important. These concepts are used to distinguish between two different forms of solidarity, viz., weak and strong-solidarity. Norms have a very different effect in each of these forms of solidarity.

The theory distinguishes two instrumental goals: to gain in wealth and/or status, and to conform to solidarity norms.\(^{11}\) The former is called gain and the latter solidarity. Either of these goals can become dominant, i.e., frame the choice situation. Thus, one can distinguish between a gain frame and a solidarity frame.

A gain frame can be evoked by for example the opportunity to gain a large profit in a given situation. The individual then orders the choice alternatives in terms of their gain prospect. For example, a seller orders selling prices with respect to their profitability. A solidarity frame can be brought about by a strong dependency on certain others. Behavior instrumental to establish or to maintain a positive social relationship is in general terms quite uniform over the world: to give a gift, to help in need, not to harm the other,

\(^{11}\) In turn, these goals are related to the production of physical well-being and social approval (see Lindenberg, 1992).
and not to increase the social distance between himself and the other (see Weber’s "Binnenmoral" (1961), "generalized reciprocity" (Sahlins, 1972), Williamson G.M. & Clark’s "communal orientation" (1989)). This repertoire of behavior is more or less codified into norms for any strong social relationships (such as kin and close friends). In a concrete situation, the individual can operationalize the general dominant goal of solidarity in terms of behavior that clearly signals fulfillment of one or more of these expectations. For example, in an exchange situation with a friend, realizing a profit at the expense of the other violates at least the social distance norm (possibly also the harm and help norm). In this specific situation, the solidarity-framed individual orders the choice alternatives in terms appropriate to the signal. The less profit is being made off the other, the more appropriate the signal. The appropriateness is not just being signaled to the other, but also to the actor. Thus, even if the other had no way of telling whether a profit was being made off him, a friend would choose not to make a profit. Thus, in a buyer-seller situation, the seller, a friend of the buyer, would insist on a selling price equal to the cost price. In repetitive situations, frames will be triggered by situational signals, such as: this is a business situation requiring a gain orientation, or this is a matter of friendship, requiring a solidarity orientation.

On the basis of both the gain and the solidarity frame, solidarity theory distinguishes three different forms of orientation\[12\] that individuals can have in a relationship: an opportunistic orientation, a weak-solidarity orientation, and a strong-solidarity orientation. The individual in the opportunistic relationship has an unbridled gain frame, i.e., a gain frame with a salience so high that other concerns (such as solidarity) do not appreciably affect it.

A weak-solidarity relationship exists, if solidarity considerations are not strong enough to displace gain as a frame, but they are sufficiently strong to lower the salience of the gain frame. Here, the dominant gain objective determines the structuring of the choice situation, while solidarity norms operating in the background lower the likelihood for the "best" choice alternative within this frame (e.g., a 100% claim on the surplus) to be chosen. In other words, solidarity norms limit gain-seeking but leave it as the primary goal in the perspective of the individual. Giving gifts, helping in need, reducing

\[12\] The term orientation is employed interchangeably with relationship throughout this book in order to stress the individual perspective on the relationship.
social distance, and not harming the other will be operative, but only from the background and only to the degree that gain-seeking is incompatible with these norms.\textsuperscript{13}

The weak-solidarity relationship has to be distinguished from the strong-solidarity relationship in which the individual has a high salient solidarity frame. Here, conformity to solidarity norms is the dominant goal criterion for the individual defining the choice situation in terms of solidarity norms. Gain-seeking (being in the background) can here only lower the salience of the frame; a strongly salient solidarity frame will not be much affected by that. Note that weak-solidarity is not a weakened form of strong solidarity because the former is tied to a gain frame. In the two forms of solidarity relationships, solidarity norms thus have a differential impact on the behavior of the economic actor. With a solidarity frame, gain prospects enter the choice situation only by mitigating the solidarity frame. The solidarity-framed individual will not be very sensitive to gain related aspects or changes therein. As a result, the solidarity-framed individual will also not respond effectively and efficiently to profitable alternatives and changes of opportunities in the market place. For instance, another supplier offers the individual better terms for a contract than the one with whom he or she is sharing a strong-solidarity relationship. The solidarity-framed individual is directed primarily towards conforming to solidarity norms.

In the case of weak-solidarity, norms only help to mitigate pure gain-seeking behavior. According to solidarity theory, the pure gain-seeking behavior assumed by Nash and most economists can only occur if an individual has a gain frame with a high salience and thus untempered by any normative considerations from the background. Pure gain-seeking behavior as such is thus not excluded by solidarity theory, but it is considered as a special (and not very frequent) case.

Figure 1.2 shows an outline of the different forms of solidarity relationships based on the two frames and the underlying principles of the individual’s behavior.

\textsuperscript{13} See Lindenberg (1988). Recently, Lindenberg (1993) introduced a more elaborate definition of weak-solidarity. However, for the sake of simplicity we will stay with this definition here.
### Frames

<table>
<thead>
<tr>
<th>Frames</th>
<th>Solidarity Relationships</th>
<th>Principle in the individuals' behavior</th>
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<tbody>
<tr>
<td>Gain Frame</td>
<td>Pure gain-seeking (opportunism)</td>
<td>Gain-seeking unlimited, conformity to Solidarity norms absent</td>
</tr>
<tr>
<td></td>
<td>Weak solidarity</td>
<td>Gain-seeking dominant, indirect via 'signaling behavior'</td>
</tr>
<tr>
<td>Solidarity Frame</td>
<td>Strong-solidarity</td>
<td>Gain-seeking indirect, dominant</td>
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**Figure 1.2.** The two frames with their corresponding solidarity relationships in terms of the principles of gain-seeking behavior and conformity to solidarity norms.

### 1.3.4 The implications of solidarity theory for bargaining and contracting

The solidarity theory provides a general framework for explaining the effects of solidarity norms on economic behavior such as bargaining and contracting. This is in contrast with the Nash postulate that assumed gain-seeking as the sole behavioral principle. In this section, a number of general predictions will be formulated to contrast the implications based on the Nash postulate of seeking for private gains and those emanating from solidarity theory. These predictions specify the conditions under which, and the extent to which, relational aspects affect the individual’s pursuit of private gain within bargaining and contracting. In order to contrast maximally solidarity behavior and private gain-seeking, it is supposed that the individual can only make a private gain at the expense of somebody else. For the purpose of generating predictions from the stochastic model, it is assumed that the choice probability for the maximum claim is indeed the share of the maximum claim being chosen. For example, if in the stochastic version, the maximum is chosen with a probability of 55 %, then (in the gain frame) the individual is said to claim 55 % of the maximum given the deterministic interpretation of the model.

The first set of predictions concerns the implications of relational aspects for bargaining. How do relational aspects between the bargaining actors affect their splitting a given surplus? According to Nash, the individual who is the first mover will be unaffected by the relationship and if he or she is in the position to dictate the split unilaterally (dictator condition), the individual is expected to claim the whole pie. However, if an aspect enters the bargaining situation affecting the individual’s expectations, e.g., making an offer less
likely to be accepted, then the individual is expected to adjust the offer strategically. For instance, Hoffman et al. (1992) showed that, in the presence of uncertainty of the buyer’s acceptance in an ultimatum game, the seller lowers his or her claim to increase the likelihood of the buyer’s acceptance. The authors suggested that relational aspects would affect an individual in a similar way, i.e., they predominantly affect the individual’s expectations instead of generating conformity to solidarity norms.

In solidarity theory, predictions depend on frame and salience. Given a gain frame with very high salience (an opportunistic orientation), an individual is expected to claim the maximum in the dictator game, and somewhat less than the maximum in the ultimatum game, as predicted by the Nash postulate. Given a weak-solidarity orientation (a gain frame with low salience), the claim should be just above the equal split because only a salience of zero would produce an equal split. The dictator versus ultimatum game will only make a small difference because the gain frame is weak. Given a strong-solidarity relationship between the actors, the claim would be one in which all the surplus would go to the other (no profit is being made from the other one). Given such a highly salient solidarity frame, there should be no difference in claims between dictator and ultimatum games.

The second set of predictions concerns the implication of relational aspects on contracting (ex post), not just on the ex ante aspect of bargaining. Under uncertainty, contracting given asymmetrical information, can be especially hazardous (see Williamson, 1985). Under these conditions, transaction parties risk being exploited by opportunistic others. Three aspects of contracting are particularly relevant for this book, viz., the actor’s actions concerning previously unforeseen windfall profits, setbacks, and temptations to breach an agreement. The asymmetry in the information about these ex post aspects enables the seller to determine unilaterally the pricing of the good. Knowing the maximum amount the buyer is willing to pay, the seller can then freely decide about the level of the selling price between this maximum amount and his or her own purchase price.

Following the gain-seeking postulate, it can be expected that the seller will ask for a selling price that is equal to the maximum amount the buyer is prepared to pay, regardless of whether the purchase price decreases because of a windfall or increases because of a setback. When the seller has the possibility of selling to another buyer, the difference in their gain prospects will be decisive in whether or not to breach the agreement. It is expected that the
seller will sell to the buyer who offers the highest amount.

Restrained gain-seeking brought about by relational concerns (solidarity) has important implications for the contracting behavior of the seller. When solidarity mitigates private gain-seeking, it can provide a basis for contracting under (large) uncertainties. The effect of solidarity norms on different aspects of contract behavior can be highlighted by studying the individual’s responses to windfall profit, unforeseen setback, or temptation to breach the contract. Solidarity-based trust can enable transactions when only incomplete contracts are possible. Perhaps, when transaction actors can rely on each other’s restrained gain-seeking, fewer investments in coordination and control costs (the transaction costs) are necessary. However, these features of solidarity beneficial for transacting are expected to have a price in terms of forfeited profit. To what extent does investing in a solidarity relationship make any economic sense? Solidarity theory suggests that weak-solidarity will make the most economic sense. Here, solidarity norms only mitigate gain-seeking; they do not overpower the pursuit of gain-seeking as they do within a solidarity frame. By still remaining the dominant goal, gain-seeking can seemingly regulate decisions concerning earnings and expenditures more effectively than when solidarity is the individual’s frame. Given the solidarity frame, choice alternatives are predominantly evaluated in terms of their effect on the relationship instead of what is best for the ongoing transaction. When both are in conflict, solidarity considerations will prevail given a solidarity frame. As a consequence, it is expected that, in the end, this does not lead to decisions beneficial for the economic transaction.

In the following section, the research method is described which was used to study the effects on individual bargaining and contracting behavior of identified solidarity relationships -in contrast to unidentified, anonymous relationships. Most prominent under the relational effects will be the normative consequences of the solidarity relationships. The research method extended the bargaining research paradigm to make possible an explicit study of these solidarity effects.

1.4 Outline of the experiments conducted

1.4.1 The design of a relational bargaining game

To make it possible to systematically study how the relational
solidarity norms affect bargaining and contracting, the ultimatum and dictator bargaining game was transformed into a relational bargaining game. A relational bargaining game focuses on a seller and a buyer and has the following features.

First, the game has to allow an identified relationship between the actors and to allow for a distinction between strategic (gain-seeking) considerations and relational, normative ones. The strict anonymization of the ultimatum and dictator game by Forsythe et al. (1994) and Hoffman et al. (1992) were meant to exclude strategic use of a relationship. Simultaneously, the identification of the relationship had been eliminated as well. Second, the game has to introduce asymmetric information. Identified relationships might entail varying frequencies of future interaction and thus make it impossible to distinguish between the shadow of the future (say reputational effects) and relational effects. For these reasons, the relational bargaining game is restricted to a single transaction between the seller and the buyer, it gives private information to the seller concerning the actual costs, and it provides public information about the maximum price the buyer is willing to pay. The private information about the actual costs enables the seller to claim a share of the negotiation space without affecting his reputation. The public information on the maximum price the buyer is willing to pay allows relational effects to show up in the difference between the possible maximum price and actual price asked by the seller.

Third, a relational bargaining game must allow variation in the incentives for gain-seeking claims of the surplus (pricing in our case). In Hoffman’s et al. dictator game, the focal actor has the opportunity to determine the payoff unilaterally. There is no incentive for strategic behavior. Such a game offers certainty for the seller because the threat of rejection of the offer by the other actor is eliminated. By contrast, in the ultimatum game, uncertainty about the other’s acceptance or rejection creates an incentive to anticipate the other’s reaction before making an offer. In the relational bargaining game, it must be possible to have a dictator game (under certainty) and an ultimatum game (under uncertainty).

Fourth, an important aspect of possibly opportunistic behavior in contracting is the question of how a change of circumstances after an agreement has been made affect behavior (so-called ex post behavior of contracting). In line with Williamson (1985), three behavioral aspects are considered to be relevant for incomplete contracting: the actor’s behavior
concerning windfall profit, unforeseen setbacks, and post hoc temptations to breach the contract. The pricing behavior of the seller under these different conditions can be seen to reflect gain or relational concerns in the ex post phase of an incomplete contract.

These four features - the identification the relationship between the bargaining actors, the asymmetry of the information between the actors, the possibility to study bargaining under certainty as well as uncertainty, and attention to ex post behavior - will be used as directives to develop a concrete relational bargaining game. The relational bargaining game will make possible a critical experiment by which the theoretical suppositions concerning solidarity and private gain-seeking can be tested.

1.4.2 The operationalization of the relational bargaining game

On the basis of the features mentioned above, the following bilateral relational bargaining game will be designed. The game will be conducted as a scenario experiment. The seller will be given a short, clear-cut description of the transaction. There is no direct confrontation with the buyer.

The relational bargaining game will be described here in a general form. The specific conditions necessary for specific hypotheses will be presented when the accompanying experiments are described. The focal individual in the relational bargaining game is the person selling a privately owned second-hand book. In the scenario, the seller is confronted with a specific relationship he or she has with the potential buyer (for example, a friendship). For the moment, we use an X in the place of a specific relationship. The general form of the scenario is as follows:

"The situation:

Suppose you are the owner of a second-hand bookshop. You offer people the extra service of ordering books when they are not in stock. From experience you know that it is wise to have people fill in an order form, because sometimes ordered books are not purchased after all. A filled-in order form obligates people to purchase the ordered book.

During a busy moment in the shop, X calls you and expresses interest in a particular book for his own use. This book is not in stock. The book appears not to be no longer current either, no one has asked for it before. X is willing to pay at most 50 guilders for the book. Because it is so busy in the shop, no one asks for an order form to be filled in.

The following week, you visit a flea-market for books. In one stand you find the book and it is in good condition. The book costs 10 guilders. You then realize that it is not certain that
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In this relational bargaining game, the focal individual is the seller, i.e., the private owner of the bookshop. As such, he or she can determine unilaterally the level of the selling price for this book up to a given maximum. The seller has **private information** concerning the actual cost of the commodity to be exchanged. The buyer cannot easily figure out the actual cost of the commodity, because it concerns an unusual second-hand book bought at a flea-market. By determining the selling price, the seller also decides about the partitioning of the surplus. The surplus equals the maximum amount of gain available in the transaction, which is equal to the maximum selling price the buyer is willing to pay minus the procurement cost for the seller, thus 40 (50 - 10) guilders. The amount the seller asks directly affects his or her private gain, which, in turn, is at the expense of the buyer. Given **public information** on the maximum selling price, the actual price asked will reflect concerns other than gain-seeking. Because of the relational differences that are introduced, these non-gain related aspects can be safely interpreted as relational concerns.

In this bargaining game, **the type of identified relationship** between the seller and the buyer can easily be varied. In the present example, the relationship has been presented as X. The buyer can be identified as "stranger", or as "friend", or as "acquaintance". These three types of personal relationship can be utilized to elicit the typical forms of solidarity relationships described by the solidarity theory. The seller, being the owner of a bookshop, will probably have a high salient gain frame\(^{14}\) and thus, following solidarity theory, it can be expected that the buyer being a stranger will elicit at best very weak concerns about solidarity. By contrast, the seller’s acquaintanceship with the buyer will trigger relational concerns in the gain frame (i.e., lowering the salience of the gain frame, and the friendship will bring about a solidarity frame in which concerns with gain only operate from the background. These effects, predicted by solidarity theory, will of course have to be tested.

The transaction presented in the scenario can be transformed into a dictator game (a **transaction under certainty**) as well as an ultimatum game (a **transaction under uncertainty**). This hinges on the order form. If there is

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\(^{14}\) See the study by Hoffman et al. (1992) who used (successfully) the seller-buyer context to elicit gain-seeking behavior from the focal bargaining actors.
a signed (i.e., legally binding) order, then the relational bargaining game becomes a dictator game. The claimed selling price - equal or less than the maximum amount authorized by the buyer - will be accepted by the other party. Without a signed order form, the relational bargaining game is an ultimatum game (i.e., a transaction under uncertainty). The seller is not sure whether or not the buyer is still prepared to purchase the book for the given price. Although the maximum offer of the buyer is known by the seller, the acceptance of the offer is thereby not guaranteed by the buyer returning to the bookshop. The buyer can strategically stated the maximum offer to urge the seller to find the book.

In the relational bargaining game, the seller has private information on whether he or she got the book and, if so, what the actual costs were. But this also gives him or her the possibility to renege freely ex post. Given the private information, the seller can unilaterally adjust the level of cost of unforeseen changes (windfalls, setbacks), or to opt out completely when he or she is tempted by another, more attractive deal. Opting out can be justified by the sellers without reputational effects (he/she did not find the book or it was too expensive). The responses of the seller to these different options can be seen as an indicator of his or her future contract behavior.

The four features of the scenario make this relational bargaining game suitable for a critical investigation of the normative effects on bargaining and contracting and for testing the predictions of the solidarity theory against predictions based on pure gain-seeking without relational concerns (as was assumed on the basis of the Nash postulate).

1.4.3 The experiments reported on and the plan of the book

The experiment in Chapter Two tests two of the basic tenets of the solidarity theory regarding the individual’s claiming behavior: solidarity norms have a mitigating effect on individual gain-seeking when the seller partitions a given surplus, and solidarity has a differential effect depending on the individual frame. The seller having private information concerning the actual costs can decide unilaterally about the partitioning of the surplus, and, thus, whether he or she will make a profit at the expense of the buyer. In addition, the seller is related to the buyer by means of three possible solidarity relationships. As described earlier, the solidarity relationships are evoked by means of different labels for relationships. These relationships are expected to make solidarity norms salient for the seller to varying degrees. The seller’s
relationship with a "stranger" is introduced to bring about an opportunistic relationship between the actors similar to the unidentified one in the bargaining studies reviewed. For the other two relationships ("acquaintance" and "friend"), the predictions following solidarity theory and the gain-seeking assumption are expected to diverge. The specific hypotheses concerning the seller’s claims will be elaborated on in Chapter Two.

The second basic tenet elaborates on the framing effect of solidarity. Following the discrimination model, the impact of an aspect depends on the goal pursued by the individual. Aspects belonging to the frame will have a much stronger impact than aspects from the background. The latter influences behavior only by affecting the salience of the frame. For example, gain does not enter into the "calculations" in the solidarity frame, but only lowers the strength of this frame if solidarity behavior leads to less gain. An aspect can have a differential impact depending on whether it is related to the dominant goal, i.e., the individual’s frame, or to a background goal. This framing hypothesis will also be tested in Chapter Two.

This experiment does not problematize the certainty concerning the buyer’s acceptance of the commodity. The difference between certainty and uncertainty about the acceptance are explicitly introduced as a factor for the seller in the experiment described in Chapter Three. The relational bargaining game equates with a dictator game if the seller’s offer is certain to be accepted. If the buyer’s acceptance of the offered price is still uncertain for the seller, the relational bargaining game equates with an ultimatum game. It has been suggested in the literature that given the uncertainty of the buyer’s acceptance, the seller will ask a lower selling price (Hoffman et al., 1992) in order to make the offer more attractive to the buyer. As a result, the seller reduces the likelihood that he or she will have to accept the lower disagreement payoff. Following this line of reasoning, it can be expected that the selling price proposed by the seller is lower within an ultimatum game (under uncertainty) than within a dictator game (under certainty). Within the uncertainty condition, the price should be highest for the friend and lowest for the stranger because the level of uncertainty differs in each of the three relationships. The promise of a friend is likely to be more certain than the promise of an acquaintance, which in turn, is more certain than the promise of a stranger. The more certain that the book can be sold to the buyer the less attractive the price has to be for the buyer.

Second, there is a risk premium prediction. To buy a book that is not
otherwise in demand implies a risk for the seller if it is uncertain that the buyer will purchase it. Again, the seller can expect different risks associated with the relationships and, anticipating the differences in risk, the self-interested seller will charge a risk premium which is highest for the stranger and lowest for the friend. Such an effect will only occur under uncertainty. Given certainty, the price should be high and identical for all three relationships.

Third, there is a relational prediction. Solidarity theory implies that the price depends on the relationship and not on considerations concerning the pursuit of private gains. Therefore, there will be no difference for dictator (certainty) and ultimatum (uncertainty) conditions. Within each condition, the price is highest for the stranger and lowest for the friend.

Whereas ordinal differences between the two frames were looked at Chapter Two, the study in Chapter Four tests the discrimination model by looking at cardinal differences of salience within a frame. If the parameters of the model can be estimated, cardinal predictions about the size of the claim are possible. By entering individual salience into the discrimination model, individual claims can thus be predicted.

Up to this point, the focus has been on the (differential) effects of solidarity norms on bargaining. The fifth and sixth chapters will focus on the seller’s contracting behavior. Contracting behavior here refers to an actor’s actions concerning previously unforeseen windfalls, setbacks, and temptations to breach the contract after an agreement has been made. The private information the seller has concerning the actual level of cost equals the position of a seller ex post given an incomplete contract. Solidarity theory has some specific predictions about this ex post behavior. Chapter Five presents hypotheses concerning the effect of solidarity norms on the seller’s likelihood of shifting windfall profit or setback costs to the buyer that will be formulated and subsequently tested.

Another indicator of contract behavior besides the seller’s cost accounting is the seller’s response to temptations to breach an agreement. In the dictator games, so far, the seller had no alternative to break with the given buyer. In Chapter Six, the opportunism of the seller is tested by a second buyer offering a higher gain prospect than the first buyer. The gain-seeking argument leads to the prediction that the seller will switch to the second buyer because of the higher gain prospect without reputation cost. Following solidarity theory, however, it is predicted that the higher gain-prospect is primarily tempting for the gain-framed seller, not for the solidarity-framed
seller. The contrasting hypotheses will be tested.

In Chapter Seven, implications of solidarity theory for economic performance will be examined. Does it make economic sense to make use of friendship or acquaintanceship between actors in an economic transaction? Solidarity relationships - so it is predicted - reduces the seller’s uncertainty about the buyer’s behavior. However, solidarity norms also restrict the extent to which the seller can make profit off the buyer - see the predictions concerning the first and second experiment. Do these solidarity costs (i.e., the forfeited profit) outweigh the benefits of reduced uncertainty? Following transaction cost theory, an identified relationship becomes more interesting when one or both contract actors invested specifically in the transaction. If not regulated carefully, these transaction specific investments create a hazardous risk for the seller. In this chapter, it is hypothesized that under a wide range of conditions "weak" solidarity (acquaintanceship) offers a better bargain than friendship, which in turn offers a better bargain than opportunism.

In Chapter Eight, one of the main concepts in this book, i.e., solidarity, will be analyzed with special attention to the internal validity of the solidarity relationship and its effect on social value orientations. In Chapter Nine, general conclusions will be drawn concerning the theoretical and empirical value of solidarity theory for bargaining theory in particular and the theory of contracting in general.